CONTENTS

Comparing Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) methods in rural research

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Abstract: RRA is a social science approach that emerged in the late 1970s. The basic idea of RRA is to rather quickly collect, analyse and evaluate information on rural conditions and local knowledge. This information is generated in close co-operation with the local population in rural areas. Therefore, the research methods had to be adjusted to local conditions, i.e. they had to meet the communication needs of illiterate people or people who are not used to communicating in scientific terms. Participatory Rural Appraisal (PRA) as a method falls under the qualitative and participatory group of research methods. PRA evolved from Rapid Rural Appraisal (RRA). In recognition of the fact that the community to which development projects are supposed to serve is not involved in the process and the subsequent flaws implicit in designing and implementing such projects, development practitioners and thinkers started to investigate ways for effective community participation in the overall process. This led to a series of information collection techniques used to collect and analyze data in rural areas, nown as Rapid Rural Appraisal (RRA), which was developed in the 1970s and 1980s.
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Keywords: Participatory Rural Appraisal (PRA), Rapid Rural Appraisal (RRA), rural research

Introduction:

Robert Chambers (2004) describes PRA as "a growing family of approaches, methods, attitudes and behaviours to enable and empower people to share, analyze and enhance their knowledge of life and conditions, and to plan, act, monitor, evaluate and reflect". While RRA focuses on data collection or extraction, PRA focuses on empowerment. It needs to be noted that although RRA and PRA carry the term 'rural', they can both be and have been applied in urban settings. To make it more inclusive and to emphasize the empowerment aspect, the term Participatory Learning and Action (PLA) is used interchangeably with PRA.

PRA has many sources. The most direct is rapid rural appraisal (RRA) from which it has evolved. RRA itself began as a response in the late 1970s and early 1980s to the biased perceptions derived from rural development tourism (the brief rural visit by the urban-based professional) and the many defects and high costs of large-scale questionnaire surveys. PRA has much in common with RRA but differs basically in the ownership of information, and the nature of the process: in RRA information is more elicited and extracted by outsiders as part of a process of data gathering; in PRA it is more generated, analyzed, owned and shared by local people as part of a process of their empowerment. The term Participatory Rural Appraisal (PRA) is being used to describe a growing family of approaches and methods to enable local people to share, enhance and analyze their knowledge of life and conditions, to plan and to act(Bhat and satish, 1993).

PRA flows from and owes much to the traditions and methods of participatory research , applied anthropology, and field research on farming systems and has evolved most directly from a synthesis of agroecosystem analysis and rapid rural appraisal (RRA).

RRA - Rapid Rural Appraisal

RRA is a social science approach that emerged in the late 1970s. The basic idea of RRA is to rather quickly collect, analyse and evaluate information on rural conditions and local knowledge. This information is generated in close co-operation with the local population in rural areas. Therefore, the research methods had to be adjusted to local conditions, i.e. they had to meet the communication needs of illiterate people or people who are not used to communicating in scientific terms (Blackburn and holand, 1999).

Tools like mapping, diagramming and ranking were developed or improved in order to gather information for decision-makers in development agencies. One of the key principles of RRA is the visualisation of questions and results by using locally comprehensible symbols. A main reason for developing RRA was to find shortcuts in the search for relevant information on rural development issues in order to avoid costly and time consuming research procedures (Cernea, 1999).

In most of the cases RRA is carried out by a small team of researchers or trained professional in one to three days in a kind of workshop. The role of the local population in RRA is to provide relevant local knowledge for research purposes and development planning. The RRA team manages the process and maintains the power to decide on how to utilise this information(Chambers, 1997).

Rapid Rural Appraisals are based on the following principles:
1. quick and cost-effective;
2. multidisciplinary teams (at least social and technical sciences being present);
3. optimal ignorance: don't collect more information than strictly needed; as far as possible the information should come from the people themselves;
4. triangulation: in order to ensure that the crucial information is valid, information from one person is checked by seeking it from another person as well;
5. observations in the village, the houses and the fields are seen as a valuable source of information.

The central idea is that a group of outsiders spends some time in a village and has informal and open dialogues with the people on (all) aspects of their daily life. The group works with (interdisciplinary) teams of 2-3 people who exchange their experience every evening and identify gaps in their understanding. Profiles are made of the respondents (e.g. old/ young/ male/ female /rich /poor /etc.) in order to be better able to understand their ideas. The following day, the composition of the teams is changed and the dialogue with the target groups is continued. A series of tools have been developed to facilitate the interaction between the team and the people. Most commonly used are(Scoones and Thompson, 1994):

- semi-structured interviews: an informal dialogue with farmers, loosely structured by a check list of issues the team wants to address;
- dialogues with key persons or local experts: the importance of the first is based on their (formal) position and of the latter on their expertise/skills;
- transect walks: walking with a (small) group of villagers along a transect, e.g. from the top of the hills to the centre of the village in the valley;
- group interviews. A complementary standard tool is the analysis of secondary data.

RRA delivers what it set out to do: it assists outsiders to gain insight into the daily life of the members of the target group and their problems and opportunities. Using a series of tools it is able to deliver fairly reliable information in a cost-effective way. In RRAs the target group is given a voice: they become the experts who explain their ideas and their knowledge to outsiders. The 'dead' and impersonal information of surveys is replaced by personal stories from the people concerned(Cornwall, 2008).

The tools used during RRAs assume that local people are willing to provide the information requested, but in practice people can have several reasons not to do so:
- they can be afraid of all kinds of political complications;
- they can be short of time to explain everything;
- they can be afraid of having to pay taxes;
- they can give desirable answers in order to please the enumerators ('those poor guys who seem to know nothing should not be given too complex answers');
- they can give those answers which they think will assist them to be among the beneficiaries of expected projects (not only the project doing the RRA!);
- they can be afraid to show they do not understand a question or do not know the answer, and so they just make up an answer(Chaudhari, 1995).

Indeed, these are the same as listed in for structured surveys. There is no reason to assume that with RRAs these problems are less serious than with surveys. In comparison with surveys, RRA teams have a better chance of overcoming these problems. They have more time and possibilities to:
(a) put the farmer at ease (especially by using non-verbal communication);
(b) show interest in what (s)he does, e.g. by taking some soil or anything else with a low social value and examining it together;
(c) discuss things that they observe;
(d) adjust the dialogue to the specific interest of the farmer;
(e) cross-check crucial answers of one respondent with that of another(Mancarenhas, 1991).

Although the much used semi-structured interview offers many more possibilities to enter into a normal dialogue than pre-coded questionnaires, the initiative is still with the visitor. Many semi-structured interviews start with such questions as 'How many children do you have and how much land?'. With these questions the respondent will start to wonder what the expert is going to do with this information. The information as such is meaningless. If there are 8 children and 3 hectares of land, does this mean the family has a shortage of land? In some situations, yes, in others, not at all. So let the farmer talk freely and she will elaborate herself on this issue

when she thinks it is relevant. Often there is only a weak link or no link at all between the results of an RRA and the follow-up activities of projects. Experts can always find reasons to continue doing what they have always done(Gary, 1992).

Since there is no feedback to the people who have been interviewed during the exercise, nobody will ever notice. The simple fact that an RRA took place raises expectations in the community that they will profit from future project activities, which might not be the case. The results of RRAs can be misleading when the people whom the teams have met are not representative of the total target population. The following biases are often found:

- more men than women are seen;
- villages close to central towns or good roads are selected;
- better-off farmers are visited more often (they have the time, they do not migrate, they live near the road, etc.);
- farmers involved in projects or applying new technologies are visited more often(Guijt and shah, 1998).

All in all, the weak points in the way RRAs are too often implemented lead critics to the conclusion that RRAs are indeed much quicker and cheaper than the lengthy surveys they have replaced, but that the quality of the results is all too often not much better. In practice many RRAs are still 'extractive'; information is gathered in the villages and the analysis is done elsewhere by experts. Critics conclude that the quality of an RRA highly depends upon the expertise of the individuals carrying it out(Mikkelsen, 1995).

Participatory Rural Appraisal (PRA):

PRA are good for:

• Providing basic information in situations where little in known
• Identifying and assessing problems
• Appraising, designing, implementing, monitoring, and evaluation programs and projects
• Getting a better picture of needs and organizations' ability to meet them
• Developing and transferring appropriate technologies
• Appraising emergencies
• Planning projects that are more relevant, restructuring administrations, assisting in decision-making and policy formation
• Generating hypotheses, ruling out inappropriate ones
• Providing guidelines for survey designs and assessing the applicability of their results to other places.
• Fleshing – out complementing, interpreting, or giving depth and context to information obtained through other methods(Chambers, 1998).

PRA is not very useful for:

Working in situations in which the problem is not usefully addressed at the local or group level, for example, in situations where large-scale structural reorganization is necessary (but even then, local views may help to shape the change).

PRA TECHNIQUES

There are six popular techniques/methods that are used to facilitate PRA exercise that enables the community to develop and compile a detailed profile of themselves and their situation(Daane, 1997).

• **Venn Diagram**

Venn Diagrams are drawn to help understand the current formal and informal institutions in the area under study and the nature of relationship between the communities and these existing institutions and structures. The community is led to identify their needs, analyze these needs and assess the **cause and effect** relationship. This process provides an opportunity for the community to arrive at the most pressing or priority need utilizing a logical format and this often culminates into a problems tree(Rajaratnam, 1993).

• **Time line**

This technique describes chronologies of events, listing major remembered events in a village with approximate dates. The process involves elderly people in a village to narrate their life history, summarizing major events and changes that have taken place over a period of time. Major events and political regimes including their significance and influence to the change in the lives of the community over time are recorded. Time line shows a broad movement of different aspects in a village during the community's lifetime (IUCN, 2001).

• **Time trend**

This is a technique where people given an opportunity to account about their past and discuss how things close to them have changed. Issues such as ecological history, changes in land-use, cropping patterns, changes in customs, practices & trends in population, migration, education, health, prices, yields, etc. This technique is more precise in giving indication of change (increase or decrease) about a particular item/activity.

• **Mapping**

This is where people use ground, floor or flip charts to map and draw the different aspects of their village e.g. social issues, demographic, resources, health, wealth, literacy, livestock,

economic activities, water resources, trees, housing layout etc. This technique portrays the image dwellings in a village.

• **Transect Walk**

This is a systematical walk with the Community members through the village observing, discussing, identifying different forms, local techniques, introduced technologies, seeking their uses, problems, solutions and opportunities. It is done to ensure that the team fully explores the spatial differences in the community, assessing the infrastructure that exists and any possible activities that might be taking place within the village.

• **Matrix**

Matrix is a ranking & scoring technique that is used to discover local attitudes and perceptions about a particular resource. This may be about the land use, water conservation measures, seasons, weather conditions, rainfall pattern or rainfall distribution, intensity and efficiency. These are assessed to determine the extent they affect and influence the way of life within the community. This helps to provide a better understanding of constraints and opportunities for possible development interventions. A graph is usually drawn in a matrix format displaying these constraints and opportunities.

The objectives of the PRA are:

• to enable rural people to organize their knowledge, share experience among
themselves and gather information on resources they have

• to understand the rural environments and social as well as economic
dynamism

• to understand the trends in the rural socio economic conditions

• to enable the community identify their problems, causes of these problems and
possible solutions

• to enable the community develop a community action plan to address their
problems

In order to limit the PRA to the objectives set and to have consistency in conducting the PRA in the different villages, a PRA manual was prepared by the socio economic team. In line with the manual, emphasis was accorded to the following topics:

1) Village History. The first day of the PRA discussion begins with history of the village which enabled participants to easily and comfortably tell about the history of their village.

2) Agriculture and Livestock. Focus group discussions were made on agriculture and livestock rearing practices including the problems encountered and possible solutions.

3) Social service. The provision of social services like education and health including the associated problems were also discussed in focus group discussions.

4) Village institutions. Institutions, both from within the village and outside, as well as formal and informal with which the rural communities interact have been addressed.

5) Trend lines. Trends in food availability, forest, population growth, wealth, rainfall and poverty are addressed in this section.

6) Wealth ranking, problem analysis, and community action plan. Finally, the participants ranked the community on the basis of its wealth, discussed the major problems and formulated action plan. The PRA is to be followed with a more quantitative and structured socioeconomic survey, which will then be followed by specialized researches in specifically selected areas; notably, poverty and coping mechanisms, microfinance, marketing, utilization and management of natural resources, and gender.

At the end of the 1980s, Participatory Rural Appraisal was developed in response to the too mechanistic and extractive implementation of RRAs. In PRAs the target group is encouraged to learn and the role of outsiders is reduced to a facilitator of the learning process. PRA aims to empower local people by encouraging them to share, enhance and analyse their knowledge of life and conditions and to plan, act, monitor and evaluate.

As with RRA it is hard to define what exactly a PRA is (some even prefer not to define it and just refer to "a family of approaches"). PRA shares the basic principles of RRA (quick, multidisciplinary, observations, etc.), yet now it is the local people who are encouraged to analyse their own situation and plan activities to improve it. The three basic pillars of PRA (and the basic differences from RRA) are:

1. the behaviour and attitude of outsiders, who facilitate rather than dominate;
2. the methods, which are open, group-oriented, visual and comparative;
3. sharing of information, food, experiences, etc. between in- and outsiders.

For the tools used, two issues stand out:

1. 'Handing over the stick': instead of outsiders trying to understand the knowledge of the local people, PRA tries to facilitate local people to develop their capabilities. They collect and analyse the data and propose actions to be undertaken.
2. Visualisation and sharing: local people convey their ideas and knowledge in a visual way. In verbal communication, outsiders dominate the dialogue more easily (via eye contact, cross-checking, etc.) than in communication via visual aids. When a map

is drawn by a stick in the soil all can contribute, and local people feel more confident than when outsiders try to draw a map on a piece of paper with a pen - a typical tool of powerful outsiders. Sharing also explicitly involves the food and shelter during the PRA.

The most commonly used tools are:

- participatory mapping: a group of villagers makes a map of the community. The way they do this and what they find important provide good entry points for discussions about crucial aspects of village life;
- village transects: together with a (small) group of villagers the team walks through the village (or another relevant area) and discusses the things observed;
- ranking: people are asked to compare units (e.g. families /trees /crops) and to group them according to their own criteria. For example, via pair-wise comparing the importance of certain trees, people find out which criteria they use to assess the usefulness of these. Ranking is also used to stratify the local population, e.g. via wealth ranking. Both the results of the ranking and the criteria used provide entry points for further discussions.
- historical recalls: the lifestory of families are recalled and the main events are used as reference points in the analysis of the present situation;
- calendars: people indicate how things change over time, e.g. in which months they have to borrow money, when their children get malaria, when the rains are normally expected, etc.

Combining information obtained from all the tools provides the villagers with an explicit picture of their daily life. This not only helps them to start a discussion on their main problems and how to tackle them, it also boosts their self-esteem because they are able to make this analysis themselves.

Conclusion:

It is imperative that development activities/initiatives should not be attempted until participatory rural appraisal (PRA) or participatory action research (PAR) has been carried out and that the socio – economic and other factors affecting communities are well understood by the people confronted with the problem.

Kamla Bhasin (1999) suggests that development practitioners should constantly ask themselves: “am I increasing the confidence of the poor, their faith in themselves, and their self – reliance, or am I making them instruments of my own plans of action, imposing my own ideas on them and that of my organization and/or institution?” Social Development is a process of gradual change in which people increase their awareness of their own capabilities and common interests, and use this knowledge to analyse their needs; decide on solutions; organize themselves for cooperative efforts; and mobilize their own human, financial and natural resources to improve, establish and maintain their own social services and institutions within the context of their own culture and their own political system. To give effect to this understanding of social development, participation of communities in their own development is important. The participatory approaches, including PRA provides first step/stage in sustainable community development.

As a result of the PRAs, the communities are expected to attain many benefits including:

• Expressing their own ideas and concerns;
• Organizing their knowledge about the past and present;
• Identifying as a community their problems, the causes of these problems and possible solutions;
• Developing a common plan to address these problems;
• Developing the ability to use their own resources more effectively and attract more resources from the outside.

The academicians/researchers involved in the PRAs are expected to get the following benefits:

• Developing better understanding of rural environments and social as well as economic dynamism taking place there;
• Appreciating the fact that communities are capable of analyzing their problems and outlining possible solutions to their problems;
• Participating in designing possible solutions to community problems;
• Utilizing the results of the PRA work as a research output for publications and presentations;
• Building their research and problem investigation capabilities;
• Supporting their classroom discussions to students with practical examples from the PRA findings.

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Importance of Indigenous knowledge in agriculture

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Abstract: Today, experts from all over the world are reaching to use of this knowledge again and they have accepted the second use of this knowledge in sustainable development provisionally. The condition for accepting this knowledge is to remove negation aspects of Indigenous knowledge and specifying correlate Indigenous knowledge, evolution the constancy of this knowledge and improve it and applying developed Indigenous knowledge in Indigenous environment. In other word in Sustainability development, the Indigenous knowledge should be a compilation of these two knowledge according to mentioned instances.

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Introduction:

Maybe the main reason for inattention for Indigenous knowledge in third world countries is that colonist countries don't pay any attention to the peoples' knowledge and information in these countries and always have reminded the people of these colonized countries as a stubborn, superstitious and retrogressive people (Karami and Moradi, 2003). On the other hand, the colonist countries attention to industrial productions and agriculture policies has caused to promote industrial and single product agriculture which will influence the Indigenous farmer's knowledge about different productions and will make it inconspicuous. Also, colonized plans and imported extension programs have intensified the alienation of Indigenous knowledge (Nowroozi and Alagha, 2000). In the middle of 1980 decade, there was a new view" giving priority to farmer" that increased the attention to Indigenous knowledge. This view that emphasized on "listen people and learn of them" emphasized on people's active communion on developing and searching process. Before using of this way, understanding rural society's culture was in another way and it was thought that rural people have failed in economic, politic, innovation and its transfer, creation of knowledge and using of that in rural societies. Before representation of this attitude "giving priority to farmer", it was thought that development need in other people management who are not living on that village. But in this way, we look rural people as the one who are able to solve their problems with relying on their knowledge and experience (Eshraghi, 2000).
Indigenous knowledge of each nation has enabled them to supply their needs from natural sources without reducing these sources. So, indigenous knowledge collection of world is valuable source of practices and time-tested tool that would be useful for sustainable development of all societies.
At third world countries, unconsidered triumph of world development policies has led to various social, economic, cultural and environmental issues (Agrawal, 2002).
Imbalance population growth, non-sustainable efficiency of natural sources and unequal distribution of resources, goods and services made involved societies in confusing issues and impasses. In these countries , inappropriate sampling of abroad countries and inordinate imports (e.g. heterogeneous and non-indigenous technology) devastated independent collection of micro local systems , and instead has established heterogeneous and dependent system to global economy system , that obviously couldn't supply people's needs. Since , this development process is formed without considering social , cultural and environmental consequents so isn't continuing and human have to find strategies which can make development sustainable and humane(Popzan, 2002) .

Definition of indigenous (Indigenous) knowledge:

Different definitions were presented about indigenous knowledge by experts that each of them present their idea about this knowledge from their viewpoint. Each of them emphasis on a special aspect of indigenous knowledge according to their viewpoint. Oxford vocabulary define the word indigenous knowledge such this" it is created naturally in a region which is related to the people of that region. (Azkia and Imani, 2008). Indigenous knowledge is a knowledge that has been grown in a long time and has transferred from one generation to other generation in hereditary form (Karami and

Moradi, 2003). Williams and Molina have defined indigenous knowledge such this: indigenous knowledge is the learning methods, understanding and attitude to the world which is the result of experience and solving problems according to test and error by the people who are active and have used their available resources on its suitable time. Chambers with emphasizing on people's role in development process, believed that the phrase rural people's knowledge is more sensible than the other phrase such ethnic ecology, ethnographic knowledge, ethnic classification. He also believed that indigenous knowledge is a knowledge that is created naturally and is emanated from geographical circle. (Chambers, 2000).

Concept and nature of indigenous knowledge:

Indigenous knowledge is local knowledge that is restricted to one specific culture and/or certain society. Indigenous knowledge is different with scientific knowledge that was established by universities and scientific communities. This knowledge is basis for decision making at field of agriculture, health, education, food and natural sources (Warren, 1993).

Indigenous knowledge is set of all knowledge and skills that people enjoy in one geographical area (in one environmental conditions) that most of their skills and knowledge be transmitted to next generation , and new generation would be adapted with them and add to it (Merrewij , 1999) .

Since, each knowledge is consequent of individual interaction with environment, so indigenous knowledge is consequent of indigenous people interaction with their environment. Chambers with emphasis on people's role at development process believes that "rural people's knowledge" term is more eloquent than other terms for indigenous knowledge. Our purpose of rural people are producer farmers , input buyers , agriculture production sellers and etc. "people" in above phrase emphasis that this knowledge is more verbal and less has been written . This word also referred to whole knowledge system which contains concepts, beliefs, and attitudes and also contains gain, store and transmitting knowledge process (Rajasekaran, and Babu, 1996).

Advantage of indigenous agriculture:

It is more than one hundred century that is passed from anthropologist studies in farming societies and production systems and during the last thirty years, comprehensive reports were obtained of subsistence practices. These reports consist of important information about social relations of production, operational practices and environmental protection that includes indigenous methods for using of earth and rural people's encounter with their environment (Smita, 2003).

These studies have given new dimension to agriculture research. Now, in many countries the managers of agriculture resources are the people who are trained in western countries. So if the manager become familiar with the culture and environment roots of indigenous system of resource management, they won't do mistake. Indigenous agriculture is based on cooperation of farmer with nature. Recently researchers of ecological agriculture have more attention to these systems. The result of these studies is important from two sides:

1- At the first, in the process of agriculture renovation in the third world that is indeed unavoidable, the indigenous agriculture knowledge and local methods in management of agriculture resources is to be destroyed and simultaneity environmental regions are on the verge of destruction. Modern agriculture prefers huge profit from resources and didn't pay attention to environmental, cultural, social and economic varieties of traditional agriculture. So incongruities of agriculture development plans are not compatible with rural needs and talents and also rural conditions. By recognizing indigenous agriculture features such as traditional classification for identifying plant and animal species and using of indigenous practices like simultaneous cultivation of compatible crops, we can get useful information about suitable ways for agriculture. Surely these guidelines will be more compatible with rural needs and agriculture and environmental features of each region and won't be reckless to social, economic and environmental complex issues (Appleton and Jeans, 1995).
2- Second, with studying indigenous agriculture we can get points that will help us to design the same systems in industrial countries. Sustainable agriculture which is taken from indigenous systems will remedy the shortcoming of modern agriculture. In a single-product of modern farm, life circles of nature has changed by using chemical poison that give no chance for using principles of ecological agriculture. But completeness (evolution) of culture and environment is the result of local

agricultural systems (Ahmed, 2000). In indigenous agriculture, variety and alternation of cultivation make minimize the possibility of farming products destruction. Although these systems have resources limitation, but they use of learning advantage and intellectual ways for use of animals, soil and compatible farm species. For this reason, researchers of ecological agriculture know these systems as unexampled kinds to specify constant static scales for agriculture activities. In industrial countries they use of these scales for designing and managing ecological production systems (Emadi and Amiri Ardekani, 2004).

With all the advantage we account for Indigenous knowledge we should contemplate that for reaching a balanced understanding of this knowledge, we shouldn't indicate it very important or not very unmeaning as Chambers say. Also we shouldn't consider rural people an intellectual people. Because they can make mistake like any other people or group. And also this knowledge is not reliable forever. In some places this knowledge is combined with some superstition believes and we should not forget its spiritual and mental aspect (Warren, 1999).

Conclusion and discussion:

In order to develop agriculture extension activities, considering indigenous knowledge is critical because, sense of self-esteem and reliance on local sources would be reinforced by citing of vast application of Iranian indigenous knowledge and others ancient culture of world at sustainable development of industrial countries.

also , necessity of considering indigenous knowledge at developing extension programs is emanated from where that is considered as principal components and sustainable human development items is emanated from same sources. At sustainable human development, people are considered as “goal” of social and economic policies that their range of their selections would be extended in order to actively participate at decision making. Therefore, people’s participation is one of tools of sustainable agriculture development. But active rural people’s participation at extension programs as a form of sustainable would not be possible unless by believing role of rural people’s knowledge, vision and skills (Brouwer 1998).

Necessity and importance of indigenous knowledge and sustainable human development prepared field for establishing “united nation conference, about nature and development” at 1992.

this conference was established due to complaints against damaging environment in order to prepare basis for active indigenous people's participation at legislation and policy making , how to manage sources and related activities to development ; and also if people presented some suggestions about recent subjects , so find way to practice them. Failure of moved technology to rural societies also manifested necessity of considering indigenous people and their knowledge. At the other hand, considering indigenous knowledge is essential to help formal knowledge; because indigenous expert's attendance beside other experts has very critical importance. For example, indigenous peoples know condition of their regional epistemology, very well. Thus, their attendance is very affective for extending incompatible technologies with condition of region and at least, it conceives propagators to test these innovations at small scales and under natural condition and helps to extend them at larger scales, after being ensured of their appropriateness.

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Necessity of Participatory Rural Appraisal (PRA) Utilization in rural research

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Abstract: PRA is intended to enable local communities to conduct their own analysis and to plan and take action . PRA involves project staff learning together with villagers about the village. Much of the spread of participatory rural appraisal (PRA) as an emerging family of approaches and methods has been lateral, South-South, through experiential learning and changes in behavior, with different local applications. Rapid spread has made quality assurance a concern, with dangers from "instant fashion", rushing, formalism and ruts. Promising potentials include farmers' own farming systems research, alternatives to questionnaire surveys, monitoring, evaluation and lateral spread by local people, empowerment of the poorer and weaker, and policy review. Changes in personal behavior and attitudes, and in organizational cultures, are implied. PRA parallels and resonates with paradigm shifts in the social and natural sciences, business management, and development thinking, supporting decentralization, local diversity, and personal responsibility.

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Keywords: Participatory Rural Appraisal (PRA), rural research

Introduction:

Robert Chambers (2004) describes PRA as "a growing family of approaches, methods, attitudes and behaviours to enable and empower people to share, analyze and enhance their knowledge of life and conditions, and to plan, act, monitor, evaluate and reflect". While RRA focuses on data collection or extraction, PRA focuses on empowerment. It needs to be noted that although RRA and PRA carry the term 'rural', they can both be and have been applied in urban settings. To make it more inclusive and to emphasize the empowerment aspect, the term Participatory Learning and Action (PLA) is used interchangeably with PRA.

PRA has many sources. The most direct is rapid rural appraisal (RRA) from which it has evolved. RRA itself began as a response in the late 1970s and early 1980s to the biased perceptions derived from rural development tourism (the brief rural visit by the urban-based professional) and the many defects and high costs of large-scale questionnaire surveys. PRA has much in common with RRA but differs basically in the ownership of information, and the nature of the process: in RRA information is more elicited and extracted by outsiders as part of a process of data gathering; in PRA it is more generated, analyzed, owned and shared by local people as part of a process of their empowerment. The term Participatory Rural Appraisal (PRA) is being used to describe a growing family of approaches and methods to enable local people to share, enhance and analyze their knowledge of life and conditions, to plan and to act(Bhat and satish, 1993).

PRA flows from and owes much to the traditions and methods of participatory research , applied anthropology, and field research on farming systems and has evolved most directly from a synthesis of agroecosystem analysis and rapid rural appraisal (RRA) .

PRA TECHNIQUES:

There are six popular techniques/methods that are used to facilitate PRA exercise that enables the community to develop and compile a detailed profile of themselves and their situation.

• Venn Diagram

Venn Diagrams are drawn to help understand the current formal and informal institutions in the area under study and the nature of relationship between the communities and these existing institutions and structures. The community is led to identify their needs, analyze these needs and assess the **cause and effect** relationship. This process provides an opportunity for the community to arrive at the most pressing or priority need utilizing a logical format and this often culminates into a problems tree(Clayton, 1997).

• Time line

This technique describes chronologies of events, listing major remembered events in a village with approximate dates. The process involves elderly people in a village to narrate their life history, summarizing major events and changes that have taken place over a period of time. Major events and

political regimes including their significance and influence to the change in the lives of the community over time are recorded. Time line shows a broad movement of different aspects in a village during the community's lifetime(Chambers, 1994).

• **Time trend**

This is a technique where people given an opportunity to account about their past and discuss how things close to them have changed. Issues such as ecological history, changes in land-use, cropping patterns, changes in customs, practices & trends in population, migration, education, health, prices, yields, etc. This technique is more precise in giving indication of change (increase or decrease) about a particular item/activity(KGVK, 1991).

• **Mapping**

This is where people use ground, floor or flip charts to map and draw the different aspects of their village e.g. social issues, demographic, resources, health, wealth, literacy, livestock, economic activities, water resources, trees, housing layout etc. This technique portrays the image dwellings in a village(Hollandand and Blackburn, 1998).

• **Transect Walk**

This is a systematical walk with the Community members through the village observing, discussing, identifying different forms, local techniques, introduced technologies, seeking their uses, problems, solutions and opportunities. It is done to ensure that the team fully explores the spatial differences in the community, assessing the infrastructure that exists and any possible activities that might be taking place within the village.

• **Matrix**

Matrix is a ranking & scoring technique that is used to discover local attitudes and perceptions about a particular resource. This may be about the land use, water conservation measures, seasons, weather conditions, rainfall pattern or rainfall distribution, intensity and efficiency. These are assessed to determine the extent they affect and influence the way of life within the community. This helps to provide a better understanding of constraints and opportunities for possible development interventions. A graph is usually drawn in a matrix format displaying these constraints and opportunities.

Procedures for collecting spatial data

Who draws the maps?

The community members of their representatives together with the PRA team and the local extension field staff undertake this exercise. The various parties having different but complementary ideas to the process.

HOW?

The community members are the best experts of their area. While it is tempting for a team member to take charge and save time by drawing the map, it is advisable to let ordinary villagers draw the map on the ground. Literacy is not necessary in order to draw a map of one's place. The PRA team should explain the process clearly. The sketch map is drawn using their fingers, sticks and other locally available materials such as pebbles, leaves, and flowers. The community should be guided through questions to draw the map of their community territory of application(IUCN, 2001).

Community sketch map helps in defining micro-zones, knowing about disparities in wealth, differences in land use. This exercise provides to locate areas where particular problems are thought to be prevalent. The map is also used to lay the transect route. While the map is still on the ground the community members mark the most representative cross section of the community.

How should one proceed to sketch maps or models?

Before:

- Decide what type of map you want
- Bring people together who will have some knowledge about the area and can contribute
- Choose suitable time and place
- Bring materials with you on which you can copy a map drawn on the ground(Scoones, 1993).

During:

Try to minimize your own participation be an observer?

- Encourage by asking op0en questions
- Encourage the use of different materials, i.e. flowers, twigs, sticks etc
- Be patient!(Swift and Umar, 1991)

After:

- Maker a copy of the map or model, including mapper's names
- Try drawing the same type of map with different groups of people. i.e. one group of women, a group of old men and the young
- Keep it simple
- Orient it appropriately
- Cross-check the map, compare with what you see
- Draw it in the area of study with the local people.

PRA LIMITATIONS AND CHALLENGES

There are limitations in PRA and it is not the answer to all rural development problems and these limitations must be acknowledged and caution should be exercised so as to avoid unrealistic expectations and disappointments.

- **(FORMALISM)-** the urge to standardize in-order to produce quality by keeping to strict manuals can do more harm than help.

Practitioners must take risks, experiment, improvise and be creative.

- **(FADDISM)** PRA could easily be discredited by misuse, i.e. calling every development intervention with local community a "PRA" especially when it is one that excludes them from active involvement in decision-making and planning.
- **(RUSHING)-**the rationale behind PRA is to make time to find the poorest and move at their own pace, to learn from them, and to empower them. Poorly conceived and rapid interventions, lack of commitment from officials to followup, compound errors and mean that the poor are, once again, neither seen, listened to, nor learnt from(Chambers, 1997).

Since PRA seeks to assist local people to plan, implement, monitor and evaluate their own action plans, in theory PRA should be used only during the implementation of a project. Since PRA aims at people taking action themselves it is most suited for the community level.

PRA presents a major step forward from RRA. Local people do the analysis and plan for the future. Their own values, needs and priorities are the point of departure. They themselves develop criteria to classify aspects of their life. This not only leads to a better understanding of the situation (for both the in- and the outsiders) and therefore increases the chance for realistic plans, it also generates a much higher commitment of the people to the planned activities(Scrimshaw, 1992).

The many different perspectives on daily reality and the visualisation offer good opportunities to go beyond the most obvious and dominant points of view in the community. The only warning here should be that too much attention to group discussions/ -activities might enable some groups to dominate the discussion(Cornwall, 2008).

The methodology is open to modification; everybody can develop new tools and new ways of organising things. This makes PRA applicable in a very wide range of situations. Indeed, it has been used in both rural and urban areas, both in developing countries and industrial countries, in agriculture, in health care and in social programmes. PRA can also be used to collect data; local people are able to generate and/or collect reliable data which they themselves analyze and use for planning(Mukherjee, 1992).

Steps in participatory planning

PRA has steps of planning:

1. Defining the objective of PRA

2. Site selection and clearance form local administrative officials. Fro programmed implantation (or) problem solving purpose. For site selection, use-ranking methods with local people and outsiders; then select the sites for intervention(Ekins, 1992).

3. Preliminary visit
- Survey team visit
- Extended discussion with local leaders
- Agreement to do a PRA
- Sharing responsibilities with the people

4. Data collection
- Local people and survey team collect information
- The data includes:
- Spatial data
- Time related information
- Data on institutions and social structures
- Technical information

5. Data analysis
- PRA team spends days organizing information
- Make large charts and tables of trends, maps transects etc
- Compile a list of all the problems mentioned
- Summarized the problems

6. Ranking problems
- Present to the community data collected in a large meeting
- Include line department staff DA s etc
- Rank the problems by discussion and voting

7. Formulate and rank opportunities
- From discussion groups on the solutions of the problems
- Obtain advise from the technical officers on:
- Feasibility
- Sustainability
- Productivity
- Equity of the solutions
- Rank opportunities
- Set an action plans

8. Adoption of action plans
- Look for technical information to develop a comprehensive plan
- Specific expert join PRA team
- Line ministry departments take part in the implementation

9. Implementation
- All partners in development contributes to activities as:
- Manpower allocation
- Materials needed
- Time needed
- Funds required(Pretty, 1993)

PREPARATIONS BEFORE THE PRA:

Proper preparations determine the success of PRA for it involves learning-by-doing and depends on team

contributions. In addition to selecting the site where PRA is to be conducted and collecting secondary information regarding the specific sites and their neighborhoods, it is necessary to:

- Establish a PRA Team;
- Establish a Kushet PRA Committee;
- Conduct Preliminary Visits to the Community;
- Developing PRA Schedule.

1. The PRA Team:

The PRA Team consists five faculty members of the faculty of business and economics.

Note that other member(s) already involved in development activities in or near the specified areas shall be included if found necessary, for in PRA, the Team is expected to have the necessary technical know how in different areas (agriculture, health, education, infrastructure, credit, marketing, culture, etc.). It also needs to have a fair gender composition.

Although every team member should be familiar with all aspects of the PRA, each team member is also designated for specific tasks which are described as follows(NCAER, 1993):

a. PRA team leader: One of the PRA Team members will be designated as a leader in each of the four PRAs. That is one team leader will be assigned for each of the four villages. The team leader will be selected in such a way that four members will alternatively serve as team leaders for each of the four PRAs. The role of the team leader is to(Scoones, 1993):

- Play the leading role in the formation of the village PRA committee;
- Ensure that all preparatory work has been done;
- Make sure that the objectives of each session are achieved;
- Coordinate preparation of the PRA report;
- Resolve any problems which may arise;
- Assign facilitators and note-takers for each session;
- Organize the reports from the note-taker/s into a coherent whole;
- Work as the principal editor of that particular PRA report.

Importantly, the PRA team leader is also responsible for ensuring that all technical areas are appropriately covered. Though not intended to do so, many PRA exercises may reflect the technical bias of the facilitators or note-takers as opposed to community needs and interests. This should be avoided at all costs, and the PRA team leader should ensure that.

b. Facilitator: For each PRA session, one individual should be designated as the lead facilitator (note that the team leader may also serve as a facilitator in some of the sessions). As a key objective of the PRA is to promote active community participation, the role of the facilitator is very important and includes:

Before the Session:

- Knowing the contents of their session very well in order that they rarely have to look at the manual for guidance
- Ensuring that the site is well prepared – that there are enough places to sit, that there is not too much noise close by, that the area is well shaded, etc.
- Ensuring that the seating arrangement is good – and that participants can be seated in a circle so that they can see the facilitator, other participants, as well as any flipchart or blackboard which may be used. Important: if participants are not properly seated, have everyone get up and rearrange the meeting place. During the Session
- Ensuring that all participants understand and contribute to the discussions.
    1. If one participant is talking too much, thank him/her for his/her comments and ask another opinion;
    2. If some participants are not contributing at all, ask them directly what they think;
    3. Do not let only one person or a small group of participants dominate the discussions;
    4. Pay special attention to women and the poor who may not feel comfortable contributing.
- Ensuring that team members share their ideas only after the community members have provided their own, and that the team members avoid influencing the community's decisions.
- Managing the time available for the session to ensure that all objectives are achieved.
- At the end of the session, thank participants for their contributions and explain to them the next activity(Drummond, 1992).

CONCLUSION:

As a result of the PRAs, the communities are expected to attain many benefits including:

• Expressing their own ideas and concerns;

• Organizing their knowledge about the past and present;

• Identifying as a community their problems, the causes of these problems and possible solutions;

• Developing a common plan to address these problems;
• Developing the ability to use their own resources more effectively and attract more resources from the outside.

The academicians/researchers involved in the PRAs are expected to get the following benefits:

• Developing better understanding of rural environments and social as well as economic dynamism taking place there;
• Appreciating the fact that communities are capable of analyzing their problems and outlining possible solutions to their problems;
• Participating in designing possible solutions to community problems;
• Utilizing the results of the PRA work as a research output for publications and presentations;
• Building their research and problem investigation capabilities;
• Supporting their classroom discussions to students with practical examples from the PRA findings.

The main objectives of the current PRA are:

1. empowerment of rural communities by assisting them to systematically utilize their local knowledge to identify problems and strengths, develop skills of analysis, and design appropriate mechanisms for intervention by themselves and/or by development agents;
2. advancement of understanding by academicians/researchers of local knowledge and acknowledgement of the capacity of communities to gather data, conduct analysis, and identify as well as prioritize problems and solutions;
3. utilization of the research questions/problems identified during the PRAs for further investigation;
4. documenting and presenting the outcomes of the PRAs to development agents (governmental and non-governmental) and other stakeholders so that they could undertake interventions in line with the findings.

PRA consists of a series of participatory exercises which help community members better assess their history, resources, and overall situation as concerns agriculture, health, marketing, credit, coping mechanisms, education, and other important areas. During the conduct of the PRAs, rural communities in the selected villages will gather information on the resources they already possess; organize their knowledge; share experience among themselves; learn from each other; identify and prioritize local development needs; and develop action plans which respond to these needs.

The many different perspectives on daily reality and the visualisation offer good opportunities to go beyond the most obvious and dominant points of view in the community. The only warning here should be that too much attention to group discussions/ -activities might enable some groups to dominate the discussion. The methodology is open to modification; everybody can develop new tools and new ways of organising things. This makes PRA applicable in a very wide range of situations. Indeed, it has been used in both rural and urban areas, both in developing countries and industrial countries, in agriculture, in health care and in social programmes. PRA can also be used to collect data; local people are able to generate and/or collect reliable data which they themselves analyze and use for planning.

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Private extension in developing countries

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Abstract: Agricultural extension increasingly has become defined as one or other of (apparently) differentiated activities of technology transfer or rural development. In many situations, the transfer of technology, heretofore considered the purview of public sector systems, has been reconceived. Such changes suggest a refocussing of paradigms for the delivery of public sector extension. In developed industrialized countries, which often provide models for extension service delivery elsewhere, the declining relative importance of agriculture for economic growth, the increasing education and affluence of smaller populations of rural producers, and the increasing use of externally purchased inputs have changed the nature of publicly funded extension services and led to a questioning of the means of delivery of extension services by governments . In developing countries, where publicly funded extension is often more important, there has been considerable questioning of the structure and forms of extension delivery.

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Introduction

Extension services may be loosely defined as including all activities involved in the exchange of information relevant to agricultural and livestock production, processing and marketing. The word "extension" has been criticized as inherently emphasizing the "top-down" dissemination of information while ignoring other types of information flow between farmers, extension and research – particularly activities that involve farmers as equal partners in the process. This paper uses the term "extension" while recognizing that extension functions are multi-faceted and go beyond "top-down" dissemination of new technologies. For example, the information flow through extension channels may include anything from advice from a consultant on refrigerated flower shipping to the feedback to researchers of results from farmer-managed varietal trials.

Private firms provide services in accordance with their specialized incentives and farmers respond in terms of what they see as most beneficial to them. As each type of extension (public and private) has limitations, the objective for farmers, and agricultural development organisations of all types (local and international) is to attain the best mixture of public, private and NGO services. As Roth (1987) asserts, the public sector in general is over-burdened by numerous activities and moving some of them to the private sector might allow more effective implementation of essential services. While extension services cannot, and should not, be totally privatized, there is room for both some privatization of public extension activities and active promotion of private and NGO extension activities which complement rather than replace existing public extension services. The analysis in this paper draws on cases in which information exchange, feedback to research, and all other major extension functions form only one part of a larger agribusiness operation or agricultural project. This paper focuses on Implication of private extension in developing countries .

Throughout the world the powerful effect of agricultural development vivid on rural livelihood not only by increasing their incomes but also by releasing labor and capital that can be used in non-agricultural enterprises and goods (Johnson, 2000; Lanjouw & Lanjouw, 2001; Haq, 2003). This better utilization of skill and craft mainly dependent on the swift movement of market information, which is the main cause of agricultural extension, that serves as important tire of agriculture and rural development process. The whole process of agricultural development showed weak linkages between its different components (Sharma, 2003; Mubangizi et al., 2004) and it seems necessary to revive the shattered agricultural education, research and extension system (Khan, 2002). Agricultural extension is one of the main institutional components of agriculture as it promotes the transfer and exchange of information that can be converted into

functional knowledge. It is better to say that extension is the instrument, which is helpful in developing enterprises that promote productivity and generate income in the present climate of change, which ultimately reduce poverty in developing as well as developed countries (Kaimowitz, 1990; Alston & Pardey, 1996; Carney, 1998; Wanga, 1999; Anderson & Feder, 2003).

All over the world agricultural extension assists the rural population of remote areas to up-lift their living standard through increase in crop production . The Government of Pakistan is well aware of this fact therefore from the Day of Independence different extension and rural development programs at national level launch by her e.g. Village Agricultural and Industrial Development Programme (Village-AID), Basic Democracies System (BDS), Integrated Rural Development Programme (IRDP) and Training and Visit System (T & V) . Un-fortunately all these programmes were abolished one after the other because of their conventional, top down nature and inherited less effective technology transfer model (Williamson, 2002; World Bank, 2003). The last efficient extension programme was (T & V) that become ineffective due to its rigidity, top down orientation, non-responsiveness to farmers' needs, much expensive, least effective in feed back communication with farmers and un-able to meet the challenges of changing circumstances . To overcome the weaknesses and shortcomings in (T & V) system Government introduced Decentralization of Agricultural Extension reforms with the name Devolution of Power Plan to up-lift the local people's economic status through pooling all the national sources and resources at grass root level . Devolution is the complete, permanent (SPDC, 2000) and advanced form of decentralization and also helps in strengthening the functions of and empowering with more authority to the elected representatives (FAO, 2001). With the promulgation of this new system, institutional reforms have been introduced almost in all the line departments including Agricultural Extension (Luqman et al., 2004). The new system of agricultural extension, works under the supervision of district Government in which each district is managing its agricultural extension activities, where the functions of all sister organizations such as Water Management, Fisheries, Livestock, Soil conservation, Forestry, etc; are put under single manager called as Executive District Officer of Agriculture (EDOA) (World Bank, 2003). The administrative changes in the setup of agricultural extension department affect the working efficiency of Extension Field Staff (EFS) in their area of jurisdiction having both positive and negative impacts (Luqman et al., 2005), while on the other hand Farooq (2005) conducted a research study in two districts of North West Frontier Province (NWFP) and observed the difficulties faced by the extension staff in post devolution framework. The major hurdles in creating difficulties for EFS in the research area were multifarious duties, double chain command and lack of administrative staff and burden of increased paper work.

Implications of extension "privatization"

In general, a more commercialized approach broadens the focus of extension personnel and makes an extension service more responsive to client needs and changing economic and social conditions. But other immediate implications of privatization appear to include

(1) the tendency toward a reduction of linkages both among organizations and among farmers in the exchange of agricultural and other relevant information;

(2) the tendency to enhance large-scale farm enterprise to the detriment of small-scale farming;

(3) the diminishing emphasis on public-good information and the advancement of knowledge as a saleable commodity; and

(4) the trend toward agricultural development services that cater primarily to large-scale farming.

The Netherlands' experience in moving to a partially privatized system highlights some of the implications for agricultural extension, particularly in developed countries. The Netherlands' approach reduced government outlays as well as the government agency role conflict between concern for farmers' interests and the implementation of increasingly stringent environmental policies. With farmers paying for an increasing share of the extension services, their representatives have more influence on the direction of the extension service. New organizational structures and linkages have had to be established to link the "privatized" and private extension services with the research institutes, experiment stations, and regional experiment farms. Consequent upon, or in parallel with, the changed Dutch arrangements, other changes have taken place in the Netherlands' extension system. There is some evidence, at least for the vegetable greenhouse sector, that the high level of cooperation among extension information organizations in both the public and private sectors no longer exists (Huang, 1992). The more commercial orientation of the system appears to be creating tensions between extension workers and their clients in a less "open" knowledge and information system, with farmers who used to share information during study-group meetings now being more reluctant to do so.

The New Zealand Ministry of Agriculture and Fisheries advisory service, now fully commercialized

and receiving no direct government funding, if sold will be the first extension service fully privatized from government ownership. In 1994 the number of consultants employed in this agency was about half of the peak number of advisers employed in 1987. Some of these advisers will have retired or departed voluntarily; others have established private consulting businesses. The consequence of the changes in New Zealand has been an increase in fee-for-service consulting (the number of farm and horticultural consultants has approximately doubled), with the traditional "advisory" extension no longer existing on a large scale. While, in most cases, the changes seem to have been readily accepted, there remains concern over the effective transfer of scientific findings to agriculture (Walker, 1993). Wider structural changes have sharpened the focus and efficiency of research agencies and advisory consulting work. Traditional technology transfer extension is now largely confined to agricultural commodity boards. Agriculture New Zealand engages in some specific "public good" technology transfer projects on a contract basis to commodity research agencies and the national Foundation for Research, Science and Technology.

There has been no formal assessment of the impact of the New Zealand changes. However, there does appear to be less interaction among organizations, reduced feedback from farmers to science providers, and more limited information distribution, particularly to less well-off and poorer performing farmers (Walker, 1993).

Those extension services that have adopted a commercialization or privatization strategy most vigorously have traditionally employed an advisory approach to extension delivery. The advice given is more likely to be a private good. As well, the extension advisers are more likely to be able to adapt to providing services commercially. However, some staff will not make such a transition easily, new commercial skills will be required by newly commercialized advisers, and the dynamics of any change will have to be planned carefully. Le Gouis (1991) has noted that government "commercial" fees should be set at the market rate so as not to compete unfairly with existing private consultants.

2- Strategies for change

Public sector extension, facing criticism for its cost and its lack of efficiency and for not pursuing programmes that foster equity, is confronted with a number of possibilities for change. There has been a trend, perceptible throughout various extension systems undergoing adjustment, of greater flexibility and multiple partners in funding agricultural advisory services (OECD, 1989). Le Gouis observed three major policies adopted by government and farm organizations regarding privatization of extension:

1. Public financing by the taxpayer only for the kinds of services that are of direct concern to the general public
2. Direct charging for some individual services with direct return (in the form of improved income)
3. Mixed funding shared between public and private professional association contributions for some services where the benefits are shared. A pervading development in new forms of financial support for extension is the trend to mixed sources of funding, reflecting strategies to gain access to additional sources of funding. In several developing countries, public-private extension coordination is already established. Alternative patterns indicate a fostering of private corporate initiative, encouraging cooperative ventures by farmers, coordinating public-private extension services, and privatizing the public system (Wilson, 1991).

The need for improved and expanded extension activities, together with a strengthening philosophical view of less government involvement in national economies, has led to a number of strategies for changing the way extension services are delivered.

2-1- Revitalization

The United States Cooperative Extension Service, when criticized for lack of relevance and vision (Dillman, 1986), regrouped and reviewed the criticisms. Its Extension Committee on Organization and Policy (ECOP) organized a Futures Task Force to review issues and put forward recommendations with a view to revitalizing the system (ECOP, 1987), which has led to various alterations structurally and programmatically.1 Meanwhile, the advancement of electronic information systems is resulting in increased privatization, with important implications for the future structure of U.S. agriculture (Goe & Kenney, 1988).

2-2- Commercialization

New Zealand's Ministry of Agriculture and Fisheries' (MAF) agricultural advisory service now operates under user-pay, commercial criteria (Hercus, 1991). The MAF advisory service, renamed MAF Consulting and, subsequently. Agriculture New Zealand, has remained (temporarily) a public agency, although its employees have given up a number of public employment benefits and now receive commissions for consulting work undertaken. The agency depends for its annual budget on consulting fees received from farmers and contractual arrangements with government for the supply of policy information and rural intelligence to government.

2-3- Cost Recovery

Other public extension systems have moved toward cost-recovery approaches. Mexico has developed a fee-based system among large-scale farmers in the northwest region and plans the development of a similar arrangement among small-scale farmers in the south central region (Wilson, 1991). The Agricultural Development and Advisory Service (ADAS) in England and Wales, notionally "commercialized," operates on a partial cost-recovery basis. Clients of ADAS pay a fee for advice which formerly was free of charge. This process of cost recovery, introduced in 1987, was directed towards the agency receiving 50 per cent of its income from commercial fees by 1993-94 (Bunney & Bawcutt, 1991; Harter, 1992).

2-4- Voucher Systems

Some countries have replaced public extension delivery systems with vouchers, distributed by government services, for farmers to use in hiring private extension consultants (as in Chile). Coupons attached to agricultural bank loans, committing a certain percentage of the loan for extension services, have been used in Colombia.

Gradual "Privatization"

In 1990 The Netherlands "privatized" approximately one-half of its public extension service by transferring field extension personnel, with initial government financial support, to the farmer associations. The elements of the extension service responsible for linking research and the privatized extension services, policy preparation, implementation, and promotion and regulatory tasks remained under the aegis of the Ministry of Agriculture (Le Gouis, 1991). The "privatized" extension service is governed by a board on which farmers' organizations and the government are equally represented (Proost & Röling, 1991). Dutch farmers make a partial contribution to the cost of the new organization through membership subscriptions to farmer associations, as well as through direct payment for individual analyses. Farmers will eventually contribute 50 per cent of the cost of the service: special services such as individual analyses will be fully paid for by the farmer clients. The Dutch government has established new government-funded structures for integrating subjectmatter specialists into extension teams to facilitate the transfer of information and knowledge and for the provision of information on government policy (Bos, Proost, & Kuiper, 1991; Proost & Röling, 1991).

A gentler form of "privatization" has been proposed for the delivery of government extension services in the Australian state of Victoria. A review of extension services determined that, for government-provided services conferring essentially private benefits to individuals, rather than cost recovery by government fee charging, it is more desirable and more efficient that private advisers deliver such services. However, because of the complexities of extension service delivery and the varying nature and levels of development of different agricultural sectors, a number of constraints were identified which precluded universal application of such a principle (Cary, 1993).

In order for rural industry organizations to take a greater responsibility for technology transfer, the Victorian government has proposed "outsourcing" for delivery of future extension programs. Outsourcing means that the government extension agency will retain a core pool of extension project staff and "buy in" private sector professional services with skills that the agency considers unnecessary to maintain. Agricultural consultants and contract staff will be employed to help deliver services in specific projects funded by rural industry and the federal government. Such projects are likely to be broad and industry wide and not tailored to individual farm circumstances.

In most cases, governments have not actually "privatized" their agricultural extension services. In its pure sense, privatization implies a full transfer of ownership (usually by way of sale) from government to a private entity, with that entity meeting all costs and receiving any profits. In the case of extension, governments have followed a number of distinct pathways such as commercializing the service while retaining it as a public agency, shifting public sector delivery services to private sector delivery of the service while maintaining oversight and basic funding of delivery, or pursuing cost-recovery measures to pay for the service. Thus the phrase "privatization of agricultural extension" generally is misleading.

Conclusion:

Privatization may have some attendant disadvantages because of unequal access to resources and because of a diversity of "agencies" and the associated difficulty of coordinating external groups and other government departments. Private delivery agents will be less responsive to government policy direction, and there may be linkage problems with public applied research organizations. While the process of information transfer amongst farmers traditionally has been characterized by a cooperative, free exchange of information, industrial information traditionally has been a private good characterized by patent rights, process licensing, the use of paid consultants, and differentiated production and marketing processes. In developed economies with

commercialized agriculture sectors, many of these features of industrial information transfer are becoming more common in agriculture. The trend to privatization will be stronger the more such circumstances exist. The range of different circumstances prevailing in agricultural extension worldwide suggests that a wide variety of approaches should prevail.

The rationale for private sector provision of agricultural extension services is generally based on an expectation of increased efficiency with the operation of private markets and with the resulting efficiencies contributing to the growth of a country's GNP. In contrast, the rationale for public provision of agricultural extension services is based on the following points: (1) much agricultural information is a public good; (2) only government extension services are likely to promote concern for natural resources management; (3) public sector extension may enhance the education of farmers who often lack adequate access to educational institutions; (4) the public service often provides information that reduces risk to farmers; (5) the service may provide information that reduces transaction costs; and (6) an extension service may be concerned with community health issues related to possible human hazards such as accidents and poisonings linked to agricultural chemicals. The argument for privatization is based upon:

- More efficient delivery of services
- Lowered government expenditures
- Higher quality of services

The diverse financial arrangements adopted in the last two decades by governments worldwide to fund agricultural extension services provide a valuable menu of options for consideration by other countries confronting the "privatizing" of public sector services. Still, several countries have resisted the trend toward privatization of agricultural extension, concerned perhaps by the implications reviewed in this chapter. In both developed and developing countries, renewed debate and experimentation around extension is certainly needed, but not only around allocation decisions and how best to develop cooperative arrangements with the private sector.

In most countries, government-funded extension is likely to focus its activities more selectively on public-good activities which exist and on areas where the marketplace is unlikely to provide services at a socially optimal level. Such areas will include "broad" rather than "specific" technology transfer, dissemination of environmental and resource technology, and human resource development. The move in the public sector toward privatization and efforts to decentralize government functions can serve to highlight the continuing and key role of the public sector and focus the operative question on its responsibility as a coordinating agent. Its roles of regulation and providing service for priority audiences unserved by the private sector will be undiminished. Some suggestions are as follows:

- Governments in developing countries should take a quick and serious step to take on maximum number of agricultural extension professional in the Agriculture Department (extension wing) and also designed a proper policy for it.
- Governments in developing countries should impart extensive in-service agricultural trainings to train the extension personnel to cope with the growing needs of rural people.
- Governments in developing countries should impart trainings and refresher courses to train the extension field staff (EFS) about the philosophy and methodology of Decentralization of agricultural extension reforms.
- Effective and efficient evaluation mechanism should be launched to monitor and evaluate the activities of EFS and also their performance.
- Service structure for agriculture extension department should be revised like other departments so that young, talented and energetic staff can join the department.

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Personal Characteristics as Determinants of Attitude and Importance of Television- based HIV/AIDS Prevention Programme among Secondary School Teachers in, Rural Botswana

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Abstract: In Botswana, the urgency with which the prevention of HIV/AIDS should be addressed necessitated the need for the adoption of Teacher Capacity Building Project. Talk Back- programme has contributed to HIV/AIDS prevention and mitigation of its impact through interactive distance education and had proved successful in Brazil. Using a random sampling technique, this study examined the personal characteristics as determinants of attitude and importance of television- based HIV/AIDS prevention programme among secondary school teachers in, Molepolole Botswana. Data were collected with a structured questionnaire that has a reliability coefficient of 0.85 and were analyzed with frequency counts, percentages and multiple regressions. The result shows that teachers are favorably disposed to the Talk Back programme and that the topics were most important in building their capacity. Important predictors of importance attached to the programme are tenure status (t = -7.41) and Position (t = 2.03), while significant determinants of teachers' attitude towards Talk Back programme are age (t =3.40), tenure status(t=-3.51), position(t = 3.58) and reasons for viewership(t = - 2.62). The paper recommends that it is important to ensure that the programmes are not clashing with thing periods, and that teacher in school are of confirmed status so as to serve to motivate them to be committed to the programme.

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1. Introduction

Education and training lie at the heart of development efforts and that without human development most development interventions will be ineffective. It is also a series of actions directed at helping participants in the development process to increase their knowledge, skills and understandings and to develop the attitudes needed to bring about the desired developmental change (Van Crower 1996). Capacity building strengthens knowledge, abilities, skills and behavior of individuals and improves institutional structure and processes such that the organization can efficiently meet its mission and goals in a sustainable way. It is generally recognized that a country's human resource capacity for productivity is a prerequisites for social and economic development**.** In schools, Teachers are the agents of change and must play a central role in mitigating the scourge of HIV/AIDS. According to the MoH (1993), the alarming increase in HIV/AIDS among young people presents critical challenges to the government. The department of Teacher Training and Development in the Ministry of Education and Skill Development plays an increasingly important role in enabling teachers to enhance their capacities and effectiveness. The quality of instruction is one of the most important determinants of the level of learning achievement. (RNPE, 1994).

Although schools have been identified as appropriate settings for health promotion, the content of information on the change in the personal behaviors of youths, from health-damaging to health-promoting one as a main target of intervention strategies, has not achieved the desired results, may be due to little knowledge about health related issues on the part of teachers or lack of support and capacity. The urgent need is, therefore, to improve the quality and content of the health education provided to students. As a result of its focus on improving the capacities of teachers, the Department of Teacher Training and Development, in the Ministry of Education and Skill Development, also recognizes that improving the skills of teachers goes beyond simply providing their basic needs. Teachers are considered as agents of dissemination of information, and generally recognized that they play an important role in shaping the lives of youths and, therefore, building their capacity is a pre-requisite for combating the scourge of HIV/AIDS (Bridges and Kerry 1993). The scourge and menace of HIV/AIDS in the SADC region necessitate the need to strengthen school teachers' capacity as a method to

combat and disseminate information to students. It was on this background that the Ministry of Education launched Teacher Capacity Building (TCB) project, a television programme popularly known as "Talk Back" as a strategy for the promotion and sustainability of health issues, to introduce and maintain behavior change, thus reducing the level of risk for contracting HIV/AIDS by youths in schools.

Information and Communication Technologies (ICTs) have become an integral component of capacity building at all levels (Backingham (1993). Widespread dissemination of experience of innovation and supporting services, including training and information activities are necessary to assist the teacher in the selection of the new methods appropriate to his own particular situation. Bagulia (2005) argued that in the midst of social and technological explosions in various fields of knowledge, as well as in the technique by which this burgeoning knowledge is communicated, the teacher can no longer attempt to be the sole information-giving instrument in the classroom. Indeed, the teacher himself can no longer keep pace with the expanding world of information. New developments in subject areas are far beyond the experience of the teacher who would have been trained five years ago.

The teacher capacity building project is a south to south cooperation between Brazil and Botswana, that aims at creating capacity for multimedia interactive distance education on HIV and AIDS prevention in the school environment. This is based on the effectiveness of the same project in Brazil. The project is jointly funded by African Comprehensive HIV/AIDS Partnership (ACHAP) and United Nation Development Program with the Botswana Ministry of education as the executing agency. Other partners include Botswana television, Ministry of Local Government and the national; AIDS coordinating agency. The program covers a wide range of topics, but most importantly issues related to HIV/AIDS. The objectives of the project are to transfer knowledge and skills on HIV and AIDS using television as means to reach teachers and students, develop values, attitudes and behaviours on prevention and care of HIV and AIDS and institutionalization of educational television broadcasting. Major components of the project are curriculum development, training in the use of interactive teaching methods, television broadcast in schools, tagged "Talk Back", interface with information and communication technology and monitoring and evaluation.

The project was launched in 2003 in schools, as an informational strategy, aimed at equipping teachers with information related to health issues and its equitable availability to students. The Teacher Training and Development division within the Ministry of Education in collaboration with the African Comprehensive HIV/AIDS Partnership (ACHAP) and United Nation Development Program provides and coordinates "Talk Back" assistance and related resources. The department offers support to teachers by developing teaching material to enhance their ability of basic-health awareness and to help in disseminating information. All schools are supposed to be active in support of "Talk Back" by encouraging teachers to slot HIV/AIDS and related issues in their subjects' lessons. The program is broadcast on Botswana Television for an hour every week, at 12 noon on Tuesday. Teachers are expected to watch this program and if possible make some phone calls and be part of the discussion. There is provision that the program can be recorded and the teachers would watch it at their convenient times. Schools are provided with television sets and each school has the program coordinator, whose responsibility is to promote organized viewing, conduct post telecast discussions and convey the viewers' reactions and comments as feedback to the program producer (MoE, 2008).

Youths remain at a greater risk for contracting HIV/AIDS than other sectors of society through ignorance. According to MoH (1993), the national estimate of persons infected country wide in 1993 was 92,000 or 7 % of the population of 1.3 million. This placed Botswana among the worst affected countries in the African continent. In 1993 the government of Botswana established a plan for the prevention and control of HIV/AIDS. Schools were assigned a central role reflected by a considerable number of national activities aimed at the control and prevention of the AIDS pandemic.

Although the Botswana government has taken great measures in combating the scourge of HIV/AIDS by building the capacity of teachers, the community at large is concerned about the wayward behavior of students and their individual risk still persist. This apparent lack of change in the behavior of students may be attributed to the attitudes teachers have about "Talk Back" and may be they are ineffectively utilizing the program and/or may be they are not sharing the information they get from the program with the students. Some schools are in rural areas where there is no electricity and hence the teachers could not watch the program live. They rely on recorded materials and they are unable to take part in current discussions and give feedback on time. The program is broadcast at a time when some teachers are still in classes teaching. It is, however, not clear whether the teachers should leave their

classes and go and watch the program or should the program be time tabled in the school master time table. Nevertheless, the program has been going on for more than five years and it seems it has achieved mixed results. This study aims to find out whether with the lot of spending in terms of time, labor, and money into the program, has it achieved its objective of empowering teachers on HIV and AIDS related issues and whether it is expanding or not, and the attitudes of the teachers towards the program. Specific objectives of the study were to determine the attitudes of teachers towards the program, identify teachers' demographic characteristics, ascertain the listenership of the program, and examine the adequacy of the programmes' content.

2. Materials and Methods

The cross sectional design was used and the population for the study comprised all teachers in all secondary school in Molepolole, which are 8 junior secondary schools and 1 senior secondary school. There were six hundred and four (604) teachers in these nine (9) schools with hundred and eighty (180) teachers in senior secondary school and four hundred and twenty four (424) teachers in junior secondary schools. Proportional sampling technique was used to select forty (40) teachers from senior secondary school, while 80 were selected from junior secondary schools, to give a sample size of hundred and twenty (120) teachers. Data for this study was obtained through a structured questionnaire that was subjected to face validity and having a reliability coefficient of 0.87. The questionnaire was carefully crosschecked for non-responses after collection from respondents, and a follow up of the respondents was made a week after delivery to enhance respondents' response rate. Data was coded and analyzed with the Statistical Package for Social Science (SPSS) version 16 using percentages, mean, standard deviation, frequencies and multiple regression.

3. Results

Table 1shows the personal characteristics of Teachers and table 2 presents the Talk Back viewership. In Table 3, teachers' perceptions towards talkback were presented while in Tables 4 and 5 Talkback topics responsible for building teachers' capacity and Multiple regression analysis of relationships between personal characteristics, importance and attitudes towards Talk Back Programme were presented respectively.

Table 1: Personal characteristics of Teachers

Demographic characteristics	Frequency	Percentage
Gender		
Male	54	45.0
Female	66	55.0
Age		
21-24	19	15.8
25-31	78	65.0
34-38	17	14.2
39-and above	6	5.0
Marital status		
Married	59	49.2
Not married	61	50.8
Educational qualification		
Diploma	65	54.2
Degree	55	45.8
Teaching experience		
1-4 years	19	15.8
5-9 years	64	53.3
10-14 years	31	25.8
15-20 years	6	5.0
Tenure status		
Confirmed	118	98.3
On probation	2	1.7
Post of responsibility		
Head of department	3	2.5
Senior teacher 1	26	21.7
Senior teacher 11	63	52.5
Teacher	28	23.3

Table 2: Talk Back Viewership

Talk Back Viewership	Frequency	Percentage	Mean	Standard deviation
Talk Back Viewership				
Yes	59	49.2	1.72	0.79
No	36	30.0		
Reasons for non-Viewership				
Clash with teaching period	60	50.0	0.55	0.59
Programme is boring	58	48.3		
Topics are irrelevant	2	1.7		
Frequency of Viewership				
Weekly	59	49.2	0.93	1.00
Fortnightly	32	26.7		
Once a month	8	6.7		

Table 3: Teachers' perceptions towards talkback

	SA	A	U	D	SD	Mean	SD
The time allocated to the programme is enough	54(45.0)	34(28.3)	3(2.5)	13(10.8)	16(13.3)	3.8	1.46
The time slot for broadcasting the programme is appropriate	0(0)	1(0.8)	0(0)	57(47.5)	62(51.7)	1.50	0.55
The resources in your school are enough to run the programme	1(0.8)	20(16.7)	18(15.0)	45(37.5)	36(30.0)	2.21	1.08
Your school management encourages teachers to watch the programme	48(40.0)	44(36.7)	2(1.7)	10(8.3)	16(13.3)	3.81	1.41
The programme covers adequately the needs of teachers concerning issues of HIV/AIDS	49(40.8)	45(37.5)	12(10.0)	10(8.3)	4(3.3)	4.04	1.07
It should be made compulsory that every teacher should watch the programme	47(39.2)	51(42.5)	4(3.3)	17(14.2)	1(0.8)	4.05	1.04
Majority of the teachers take the programme seriously	2(1.7)	20(16.7)	17(14.2)	56(46.7)	25(20.8)	2.32	1.04
Accessibility of school telephone to teachers is unlimited to give feedback after viewing the programme	2(1.7)	6(5.0)	2(1.7)	58(48.3)	52(43.3)	1.73	0.87
After watching the programme teachers go back to the students and share with them	0(0)	1(0.8)	10(8.3)	90(75.0)	19(15.8)	1.94	0.52
The programme is a waste of time and resources	1(0.8)	1(0.8)	0(0)	32(26.7)	86(71.7)	1.33	0.61
The presenter presents the topics under discussion in an organized manner	58(39.2)	53(48.3)	0(0)	4(3.3)	5(4.2)	4.29	0.96
26The presenter maintains an environment where teachers are comfortable to ask questions	47(39.2)	70(58.8)	0(0)	1(0.8)	2(1.7)	4.33	0.69
The presenter shows activeness, personal interest and enthusiasm about the program	61(50.8)	57(47.5)	0(0)	1(0.8)	1(0.8)	4.47	0.63
The programme is empowering teachers about the ever changing challenges of teaching profession	28(23.3)	55(45.8)	2(1.7)	31(25.8)	4(3.3)	3.60	1.20

Table 4: Talkback topics responsible for building teachers' capacity

LIST OF TALKBACK TOPICS	VI	I	NI	NS	Mean	SD
Inclusive HIV/AIDS knowledge base; towards an informed, safe and secure nation	97(80.8)	23(19.2)	0(0)	0(0)	3.81	0.40
Safety for people with special needs; a challenge for the community	113(94.2)	7(5.8)	0(0)	0(0)	3.94	0.24
Safety; An issue for the pre-schoolchild too	99(82.5)	21(17.5)	0(0)	0(0)	3.83	0.38
Waste management; a safety measure in the area of HIV/AIDS	74(61.7)	43(35.8)	2(1.7)	1(0.8)	3.59	0.57
The school Guidance and counseling Programme and HIV/AIDS; The link for effective school safety	85(70.8)	31(25.8)	3(2.5)	1(0.8)	3.67	0.57
Achieving personal hygiene; The gateway for addressing HIV stigma	107(89.2)	12(10.0)	1(0.8)	0(0)	3.88	0.35
Building a strong web of support; a safety measure	91(75.8)	29(24.2)	0(0)	0(0)	3.76	0.43
Safety through routine HIV testing	99(82.5)	20(16.7)	0(0)	1(0.8)	3.81	0.45
HIV and blood pressure; facts for life	97(80.8)	22(18.3)	1(0.8)	0(0)	3.80	0.42
HIV testing; a challenge for people with special needs	79(65.8)	40(33.3)	0(0)	1(0.8)	3.64	0.53
HIV and transport; the link	94(78.3)	23(19.2)	2(1.7)	1(0.8)	3.75	0.52
A holistic approach to treatment adherence for children	107(89.2)	12(10.0)	2(1.7)	0()0	3.88	0.35
Confidentiality; the pledge for effective teacher and student relationship	107(89.2)	13(10.8)	0(0)	0(0)	3.89	0.31
HIV and Epilepsy; facts for life	99(82.5)	21(17.5)	0(0)	0(0)	3.83	0.38
Children utilizing information on HIV/AIDS	104(86.7)	13(10.8)	2(1.7)	1(0.8)	3.83	0.47
The family; an invaluable resource for children	101(84.2	19(15.8)	0(0)	0(0)	3.84	0.37
Mentality challenge children; minimizing their risk to HIV infection	100(83.3)	17(14.2)	3(2.5)	0(0)	3.81	0.45
A human rights based framework for HIV prevention and care	101(84.2)	18(15.0)	1(0.8)	0(0)	3.83	0.44
Drugs and substance use; a risk presenting issue for children	70(58.3)	50(41.7)	0(0)	0(0)	3.58	0.50
Committing to healthy teacher and student relationships; breaking the silence	80(66.7)	40(33.3)	0(0)	0(0)	3.67	0.47
Boy-girl interactions; schools providing the healthy moral connection	100(83.3)	19(15.8)	1(0.8)	0(0)	3.83	0.40
Children and media reporting of HIV/AIDS	74(61.7)	28(23.3)	11(9.2)	7(5.8)	3.41	0.88
Childhood dynamics and implications for adulthood	91(75.8)	22(18.3)	3(2.5)	4(3.3)	3.67	0.69
Dispelling myths and closing the knowledge gaps; The gateway to positive self management	114(95.0)	5(4.2)	1(0.8)	0(0)	3.94	0.27
Attaining safe and enterprising ways of living	83(69.2)	33(27.5)	1(0.8)	3(2.5)	3.63	0.63
Aging; immunity and HIV infection; The link	101(84.2)	13(10.8)	2(1.7)	4(3.30)	3.76	0.65
HIV and herpes zoster; facts for life	95(79.2)	20(16.7)	4(3.3)	1(0.8)	3.74	0.56
HIV and food safety; a risk reduction measure	91(75.8)	23(19.2)	6(5.0)	0(0)	3.71	0.56
Innovative partnerships for addressing HIV	106(88.3)	14(11.7)	0(0)	0(0)	3.88	0.32
Abstinence; The engine for addressing HIV	102(85.0)	13(10.8)	4(3.3)	1(0.8)	3.80	0.53
Relationship challenges in the era of HIV	109(90.8)	11(9.2)	0(0)	0(0)	3.91	0.29
Living the promise for a brighter future	97(80.8)	20(16.7)	3(2.5)	0(0)	3.78	0.47

Table 5: Multiple regression analysis of relationships between personal characteristics, importance and attitudes towards Talk Back Programme

	Importance B (Std. Error)	Attitude B (Std. Error)
(Constant)	160.41(6.94)**	50.72 (7.15)**
Gender	0.04(0.75)	.41(0.78)
Age	1.75(1.12)	3.91(1.15)**
Marital status	-0.91(0.73)	-0.15(0.75)
Education level	0.34(.75)	1.04(0.77)

Teaching experience	-1.33(1.03)	-1.70(1.06)
Tenure status	-20.82(2.81)**	-10.14(2.89)**
Position	1.100(0.54)**	2.36(0.66)**
Viewership	-0.38(.78)	0.97(0.80)
Reason for viewership	-0.45(0.94)	-2.54(0.97)**
Frequency of viewership	-0.02(0.53)	-0.56(0.55)
F	7.17	4.32
p	0.00	0.00
R	0.63	0.53
R Square	0.39	0.28

4. Discussion

The personal characteristics of respondents examined in the study were presented in table 1; about 55 percent were female which indicated the dominance of females in the teaching profession. Also, 50.8 percent were not married, while about 65 percent were between 25-34 years of age, which implies that majority of teachers were within the productive years. About 53 percent had teaching experience of between 5-9 years while 54 percent had diploma as their qualification. In terms of job position, 52 percent are in the senior teacher 11 category. The results might mean that teachers were not progressing by the ministry as of when due. From the respondents, 98 percent were confirmed which indicated that schools are well staffed with qualified teachers with relatively good experience. From table 2, 59 percent respondents indicated that they watch to the programme and clash with teaching period, was cited as prominent hindrance to the viewership for the programme with 50 percent. Thus it is pleasing however, that majority of teachers are willing to listen to the programme, but are rather discouraged by the time the programme is aired. This therefore calls for the rescheduling of the programme time slot, so as to solve the problem of non-viewership due to clashing with teaching periods in school. Table 3, shows a list of 14 statements about the perceptions of teachers toward talkback television programme. The respondents were asked to rate the statements using the 5-likert scale as follows; 1 (Strongly disagree), 2(Disagree), 3(uncertain), 4(Agree), and 5(Strongly agree). The actual mean is 3 due to the rating scale, and mean of greater than 3 to denote that teachers are favorably disposed to, mean of less than 2 to denote teachers are unfavorably disposed to and a mean of 3 and more but less than 4 to denote marginal or uncertain. The results revealed that teachers are favorably disposed to presenter's personal interest and enthusiasm about the programme with a mean of 4.47, conducive environment created by the presenter 4.33, presenter's ability to present topic in an organized manner (4.29), listenship to the programme to be compulsory (4.05) and programme caters adequately for the needs of teachers 4.04 as mean. On the other hand teachers are unfavorably disposed to programme as a waste of time and resources with a mean of 1.33, appropriate time slot for broadcasting the programme (1.50) and accessibility of school telephone 1.73 as mean. Teachers are marginal/uncertain about the time allocated to the programme with 3.8 as mean, school management encourages teachers to watch the programme (3.81) mean and programme empowering teachers with 3.6 mean. In table 4 respondents were asked to rate the topics of talkback on the extent of importance towards building the capacity of teachers as follows; 4(Very important), 3(Important), 2(Not important), and 1(Not sure). The mean of 2.5 was used to denote actual mean and mean of more than 3 was used to denote most prominent importance. The most common topics with most prominent importance toward building the capacity of teachers as indicate by respondents are Safety for people with special needs; a challenge for the community (94.2 percent),Confidentiality; the pledge for effective teacher and student relationship (89.2 percent) and dispelling myths and closing the knowledge gaps; the gate way to positive self management (95 percent), A holistic approach to treatment adherence for children (89.2 percent), Relationship challenges in the era of HIV (09.8 percent), Innovative partnership for addressing HIV (88.3 percent). The result of the multiple regression analysis of relationships between selected personal characteristics and importance and attitude towards Talk Back programme is presented in Table 5. The independent variables are significantly related to the importance and attitude towards Talk Back programme with F value of 7.17, $p < 0.05$, and 4.32, $p < 0.05$ respectively. Also the R values of 0.63 and 0.53 shows that there is a strong correlation between the independent variables and the

importance and attitude towards Talk Back programme. The personal and viewership characteristics were able to predict 39 percent of the variation in the importance attached to Talk Back programme and 28 percent of the attitude towards Talk Back by the teachers. Significant determinants for importance attached to the programme are tenure status (t=-7.41) and Position (t=2.03). It implies that the more the number of teachers whose appointments are confirmed, the more the importance attached to the programme. Similarly, significant determinants of teachers' attitude towards Talk Back programme are age (t=3.40), tenure status (t =-3.51), position (t=3.58) and reasons for viewership(t =-2.6).

The significance of these variables as determinats of attitude may be due to the fact that majority of the teachers are in the sexually active age groups and thus the need to use the information from Talk Back for themselves and then as teaching materials to their students. For tenure status and position the more the number of teachers whose appointments are confirmed, the more they are favourably disposed to Talk Back programme. The inverse relation ship with the reasons for viewership shows that the more the programme clashes with teaching periods the lower the teachers will be favourablly disposed to the programme. It is important to ensure that the programmes are not clashing with thing periods, and that teacher in school are of confirmed status so as to serve to motivate them to be committed to the programme.

5. Conclusion

The study has shown that majority of the respondents were females in Molepolole secondary schools, which implies a gender imbalance of teachers. Most of respondents were Diploma holders and held the position of senior teacher 11 with 5-9 years of teaching experience. Majority of teachers that the programme time slot was not appropriate since it clashed with their teaching periods and that the programme covered adequately the needs of teachers concerning issues of HIV/AIDS and that Talk Back topics were most important in building their capacity. The study therefore recommends that it is important to ensure that the programmes are not clashing with thing periods, and that teacher in school are of confirmed status so as to serve to motivate them to be committed to the programme.

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Rural women's role in promoting of indigenous knowledge

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Abstract: Experience shows that indigenous knowledge not only has no contradiction with formal knowledge but different indigenous knowledge features, put it as well complementary for formal knowledge. Indigenous knowledge is accessible, useful and cheap. Its perspective is holistic and its transmission is verbal. Knowledge is dynamic and time-tested, and while it has grown within local natural and social environment, so it is very sustainable with indigenous condition. Indigenous knowledge refers to both component and whole part of culture of each nation and this component and whole integration is so that stop to change traditional society of life without indigenous knowledge out of its cultural origin and therefore would lose it concept and effectiveness.

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Introduction:

Our today's world is the contradictions and collision's world. Contradiction between cultures, religions, different societies and countries. In recently years, from Renaissance till now, as much as human had developed, they also had contradictions and collisions in their world (Azkia and imani, 2008). One of these contradictions is the contrast between tradition and modernism. Maybe we can find these contrast roots in colonial era, the time when colonists promote their innovation in their colonies. Mostly these techniques and innovations show their native knowledge and the way of their living is foolish and inefficient and tried to enter industrial ways in to their life to increase production efficiency through this way. Thus the way of their living which was been formed during thousands of years has gone to be forgotten little by little (Bouzarjmehri, 2004). We can say, agriculture part is bearing the most damage in this rapid industrialization process. Absolving old and compatible ways in agriculture part and replacing and using of implant, harvest patterns without any proportions with environment has caused decrease of production efficiency, soil erosion and hard destruction of environment during a long time. Finally, at the end of the 20th century decades, some solutions were suggested to solve these inconsistencies and problems. So the importance of native knowledge and effort in compilation of that with modern knowledge were considered and it was tried to make general and stable view in relation with environment and the way of living through this way (popzan, 2002).

Maybe the main reason for inattention for native knowledge in third world countries is that colonist countries don't pay any attention to the people knowledge and information in these countries and always have reminded the people of these colonized countries as a stubborn, superstitious and retrogressive people (Karami and Moradi, 2003). On the other hand, the colonist countries attention to industrial productions and agriculture policies has caused to promote industrial and single product agriculture which will influence the native farmer's knowledge about different productions and will make it inconspicuous. Also, colonized plans and imported extension programs have intensified the alienation of native knowledge (Nowroozi and Alagha, 2000). In the middle of 1980 decade, there was a new view" giving priority to farmer" that increased the attention to native knowledge. This view that emphasized on "listen people and learn of them" emphasized on people's active communion on developing and searching process. Before using of this way, understanding rural society's culture was in another way and it was thought that rural people have failed in economic, politic, innovation and its transfer, creation of knowledge and using of that in rural societies. Before representation of this attitude "giving priority to farmer", it was thought that development need in other people management who are not living on that village. But in this way, we look rural people as the one who are able to solve their problems with relying on their knowledge and experience (Eshraghi, 2000).

Indigenous agriculture is base on farmer's cooperation with nature. Sustainable agriculture that inspired by indigenous systems would rectify most of deficiencies of modern agriculture. Indigenous agriculture systems is production of centuries of cultural and subsistence revolution. These systems are collections of farmer's experiences that haven't enjoy sources except inputs, capital and indigenous knowledge. And consequently they accessed to such

sustainable agriculture that just is dependent on using restricted local resources and existing humane and animal power. At indigenous agriculture, culture diversity and frequency would minimize possibility of loss crops in spite of simple technology. These systems despite of limitation of sources enjoy merits of sponsors traditions and intelligent methods of using animals, fields, and compatible crop species. Thus ecological agriculture scholars consider these systems as unique samples to determine sustainability standards in agricultures activities (Penny, 2001).
This knowledge would rise at different fields such as language, botanical and zoology and also skills and manual and agriculture professions that all are product of human efforts in his environment. This information contain best, useful and consistent collocation of exploiting methods and living in special environment which be transmitted through verbal and empirical way from one generation to another (Smita, 2003).

Definition of indigenous (native) knowledge:

Different definitions were presented about indigenous knowledge by experts that each of them present their idea about this knowledge from their viewpoint. Each of them emphasis on a special aspect of indigenous knowledge according to their viewpoint. Oxford vocabulary define the word indigenous knowledge such this" it is created naturally in a region which is related to the people of that region. (Azkia and Imani, 2008). Indigenous knowledge is a knowledge that has been grown in a long time and has transferred from one generation to other generation in hereditary form (Karami and Moradi, 2003). Williams and Molina have defined indigenous knowledge such this: indigenous knowledge is the learning methods, understanding and attitude to the world which is the result of experience and solving problems according to test and error by the people who are active and have used their available resources on its suitable time. Chambers with emphasizing on people's role in development process, believed that the phrase rural people's knowledge is more sensible than the other phrase such ethnic ecology, ethnographic knowledge, ethnic classification. He also believed that indigenous knowledge is a knowledge that is created naturally and is emanated from geographical circle. (Chambers, 2000).

Indigenous knowledge and sustainable rural development:

Unlike development that is dependent on using maximum of natural sources in order to current generation's access to maximum economic growth and income , sustainable development insists on supplying current generation's needs without jeopardizing next generation's facilities for supplying their needs. Policy making is impossible and unacceptable with no program that leads to starvation, poverty, social inequality and environment pollution at cities and villages and finally to ecologic devastation. In contrast, kind of development is acceptable that leads to continues improvement of life quality for all global society and next generations. Accessing to this goal is possible just through protecting natural sources and sustainable use of these sources.

Accessing to indigenous knowledge would enforce primary foundation of sustainable development. On the on hand, indigenous knowledge is production of empirical learning process and at the other hand is test and error of few thousand years of one society in relation to its environment. It is obvious that this knowledge represents human's interaction with nature and displays features of climate and specifications of vegetarian and animal nature of one region and more important , it displays their interactions with human(Kolawople, 2001).

By possessing this valuable information it is possible to predict its component relations , and it is possible to use of its latent power intelligently so that both balance be preserved and also human's needs be supplied.

At the other hand furthermore valuable latent information in indigenous knowledge, villager's epistemology would enforce relation between experts and local men. This issue is possible through deep analyzing of indigenous knowledge and familiarizing with local people's attitudes and epistemology and through that raft between men and experts would be restored. Everything is inter-related at village and intelligent rural people by considering accessible things in nature or easily is obtainable, would supply their needs (Box, 1999).

Broaching indigenous knowledge issue in order to presenting new approaches was reinforces in current decade which insists on human-oriented developing and sustaining. In this attitude, development process, environmental, social and cultural considerations, was considered important in addition to economic interests. Principle of sustainable development can be summarized so that development should be consistent with desired society from aspects of sustainable environment, fair social aspect, and from economic efficiency and cultural viewpoint. Considering people's indigenous knowledge was emphasized directly or indirectly as one of the development needs, at most of forty principles of sustainable development charter. Considering indigenous knowledge means accepting variation principle and describes that all people share

and participate at variation and culture richness and they create common human's heritage. Sustainable development would not be able to be success without identifying people's indigenous knowledge, role and its position and also without protecting knowledge and indigenous people's rights, because indigenous knowledge has most consistency with principle of sustainable development (Karami and Moradi, 2003).

Necessity of attention to indigenous knowledge was appeared more due to failure of common development samples, especially at rural development, and being attracted to it to help formal knowledge was identified very critical. At the context of cooperative approach as new approach that is base on paradigms which forms concepts of development, focus on new revolution is emergence of new proficiency that is called indigenous knowledge. Cooperative approach is seeking to systematic use of indigenous knowledge at related researches to technologic actions.

According to different definitions of indigenous knowledge, it is possible to count it as part of unique culture of each ecosystem or country and that is knowledge and findings which obtained through experience in order to be consistent with certain ecosystem conditions, and changed as part of social and productive culture of that society over time. This acknowledges, represent compatibility methods with nature and establishing reasonable relationship between human and his environment. And has complete harmony with principle of sustainable development, form this viewpoint (Burger, 1997).

Characters of indigenous knowledge:

The characters of indigenous knowledge like the definition of this knowledge are presented by experts in different ways which we will explain about them as follow:

1- it is based on experience:

Indigenous knowledge is the result of people's experience during many centuries.

2- it was tested during centuries by working on it.

3- it is compatible with indigenous environment and culture:

Indigenous knowledge was created through native societies and it was formed according to their needs and during time the things which were not compatible with indigenous environment were omitted, so what was remained was compatible with the environment and culture of that society (Amiri Ardekani and 2003).

4- it is dynamic and is changing:

Simultaneously with changing indigenous culture, the indigenous knowledge was changing too.

5- the knowledge of rural people was not technical:

This knowledge was consisted of rural people's wishes, values and preferences.

6- the rural people's knowledge is not statistic:

This knowledge was formed according to people's culture, social and economic history. The history which was written by these rural people shows that their manner and activities were efficient in changing of their conditions.

7- rural people's knowledge is not enough.

Maybe the rural people are knowledgeable but they like to know more and more. Because they want to be powerful in their discussions with political, economical and social forces who made these people poverty before give them technology (Zare and Yaghoubi, 2003).

8- rural people's knowledge has root on their political economy and is more important in political field.

The advantages that rural people can get from indigenous knowledge are the knowledge that is created and released locally and is on their authority and also depends on main factors in regional politic economy (land distribution, marketing relations, and vertical links and …). So improvement of their livelihoods depends on interferences which were made to pervade on these main factors.

9- most of the rural people are public-oriented

Mostly, they have a little information about many things which is in contrast with academic educations. Specialist people in universities have deep knowledge in little fields (of course some of these native people are specialist too) (Razavi, 1999).

10- indigenous knowledge systems are holist:

Local people consider the other people's problems as their problems and try to solve these problems in a whole frame with using their knowledge.

11- indigenous knowledge systems combine the culture and religious believes.

Religious believes as a part of indigenous knowledge are not separated from technical knowledge and these believes effect on people' do and don't

12- indigenous knowledge systems prefer the less risk to most profit

Escaping of risk is important for native people, for example a native person usually keeps some goats for possible cases such as disease of his children and he and he didn't expect any incomes of these cases.

Advantage of indigenous agriculture

It is more than one hundred century that is passed from anthropologist studies in farming societies and production systems and during the last thirty years, comprehensive reports were obtained of subsistence practices. These reports consist of important information about social relations of production, operational practices and environmental protection

that includes indigenous methods for using of earth and rural people's encounter with their environment (Smita, 2003).

These studies have given new dimension to agriculture research. Now, in many countries the managers of agriculture resources are the people who are trained in western countries. So if the manager become familiar with the culture and environment roots of indigenous system of resource management, they won't do mistake. Indigenous agriculture is based on cooperation of farmer with nature. Recently researchers of ecological agriculture have more attention to these systems. The result of these studies is important from two sides:

1- At the first, in the process of agriculture renovation in the third world that is indeed unavoidable, the indigenous agriculture knowledge and local methods in management of agriculture resources is to be destroyed and simultaneity environmental regions are on the verge of destruction. Modern agriculture prefers huge profit from resources and didn't pay attention to environmental, cultural, social and economic varieties of traditional agriculture. So incongruities of agriculture development plans are not compatible with rural needs and talents and also rural conditions. By recognizing indigenous agriculture features such as traditional classification for identifying plant and animal species and using of indigenous practices like simultaneous cultivation of compatible crops, we can get useful information about suitable ways for agriculture. Surely these guidelines will be more compatible with rural needs and agriculture and environmental features of each region and won't be reckless to social, economic and environmental complex issues (Appleton and Jeans, 1995).

2- Second, with studying indigenous agriculture we can get points that will help us to design the same systems in industrial countries. Sustainable agriculture which is taken from indigenous systems will remedy the shortcoming of modern agriculture. In a single-product of modern farm, life circles of nature has changed by using chemical poison that give no chance for using principles of ecological agriculture. But completeness (evolution) of culture and environment is the result of local agricultural systems (Ahmed, 2000). In indigenous agriculture, variety and alternation of cultivation make minimize the possibility of farming products destruction. Although these systems have resources limitation, but they use of learning advantage and intellectual ways for use of animals, soil and compatible farm species. For this reason, researchers of ecological agriculture know these systems as unexampled kinds to specify constant static scales for agriculture activities. In industrial countries they use of these scales for designing and managing ecological production systems (Emadi and Amiri Ardekani, 2004).

With all the advantage we account for native knowledge we should contemplate that for reaching a balanced understanding of this knowledge, we shouldn't indicate it very important or not very unmeaning as Chambers say. Also we shouldn't consider rural people an intellectual people. Because they can make mistake like any other people or group. And also this knowledge is not reliable forever. In some places this knowledge is combined with some superstition believes and we should not forget its spiritual and mental aspect (Warren, 1999).

Conclusion and discussion:

In order to develop agriculture extension activities, considering indigenous knowledge is critical because, sense of self-esteem and reliance on local sources would be reinforced by citing of vast application of Iranian indigenous knowledge and others ancient culture of world at sustainable development of industrial countries.

also , necessity of considering indigenous knowledge at developing extension programs is emanated from where that is considered as principal components and sustainable human development items is emanated from same sources. At sustainable human development, people are considered as "goal" of social and economic policies that their range of their selections would be extended in order to actively participate at decision making. Therefore, people's participation is one of tools of sustainable agriculture development. But active rural people's participation at extension programs as a form of sustainable would not be possible unless by believing role of rural people's knowledge, vision and skills .

So, effort and national commitment and multi-dimensional support is very critical for recording, valuing, extending and exchanging this rich source and also preparing mechanism and practical strategy for synthesizing this knowledge with new knowledge and agricultural development programs.

Agricultural extension was identified as one powerful IT focused area, due to role variation at knowledge system and agriculture information at one hand and at the other hand due to its dependence on various exchanges among farmers, that can has great affect on rural society and developing agriculture. So that work and productions of farmers would increase by farmer's access and use of Internet and subsistence farmers at all over the world are at developing by gaining needed knowledge and information that during time would becoming as commercial producers. Transmitting from system-cycle source of

agriculture to technology-cycle system of agriculture placed more responsibility on agricultural extension because agriculture extension system is as vital technology transfer crossing to farmers at one hand and as crossing for referring feedbacks, needs and agriculture issues, researchers and policy makers of market.

What that is obvious is that extending and researching agriculture can help to sustainability through close relation to farmers , attending to their experiences , gaining their information and logical understanding of agriculture activities , attending to their vital needs for doing “demand-base” researches and extension education efforts for developing agriculture , at process of improving agriculture development.

Finally native knowledge as a constant structure, with many years experience could attain a deep understanding and insight of the environment and ecologic exchanges. This knowledge is conveyed to next generation and the next conveyed it to their children. Native knowledge is on the verge of destruction like a curative prescription that has hidden a constant glamour on it. By dying each native person, the great treasury of knowledge will lay underground and these knowledge sources are destroying very speedily.

On the research which was done by Bozarjomhari (2004) with this title "analyzing native knowledge position on rural sustainable development". It was specified that although there are many differences between native and modern knowledge but they are not in contrast with each other, because they are each other's supplement and we can't be success when we use them separately. According to new parameters in rural development, for solving rural problems, at the first we should use of native solutions and if it was not efficient, we can use and test external solutions.

Research findings which was done by Emadi and Amiri (2004) with this title " compilation of native and modern knowledge is necessary for reaching agriculture sustainable development" signify that The believe of educated people to native people and their knowledge " precondition for making them close" is called combination and compilation. Making evolution in modern system for attention to tentative knowledge is the main necessity for this compilation. Another necessity for this evolution is the researcher's attention to experimental accumulated wisdom and historical exploit by using qualitative and communion methods. Also applying compilation methods and making evolution among government, educational centers, farmers and peasant is the necessity and pre condition for combination of modern and native knowledge.

Research findings that was done by Karimi with this title " native knowledge in development process" signify that native knowledge was a essential element and important source for realization of sustainable development, poverty reduction, making local people capable and motivate them to participate in activities for agriculture and rural development, developing and product suitable technology, rural society's self-reliance and self sufficiency. For this reason all side's try, partnership and protection for record and registration, compatibility, distribution and promotion , exchange of this resources and also suitable and scientific guidelines for compilation of this knowledge with new knowledge and rural and agricultural development plans are needed.

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Effect of plant density on percent of remobilization, chlorophyll content, light penetration rate and effective grain filling period of chickpea (*Cicer arietinum*) in dry farming

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Abstract: One of the ways is to increase yield Chickpea, determine the appropriate density and plant varieties. This study aims to determine the effect of three planting densities (25, 50, 75 plants per square meter) on some morphological characteristics such as percentage remobilization of stem, leaf chlorophyll content and grain filling process pea cultivars include: ***Arman, Hashem, ILC482 and Greet*** (Local varieties) Was. Factorial experiment in randomized complete block design with three replications at the Agricultural Research Station in Khorramabad 2005-2006 was conducted. If plant density decreases leading to increased chlorophyll content of leaves was chickpea. On the other hand at low planting densities, due to less competition between plant so number of branches per plant, stem remobilization and percentage light penetration significant increase ($P \leq \%1$) were. Most effective grain filling period (***EFP***) to ILC482 variety approximate was 26 days. The least of ***EFP*** to Hashem variety approximately was 26 days. Density of 25 plants /m^2 on the highest floor canopy light penetration and density 75 plants /m^2 at the bottom of the lowest penetration of light Canopy included.
[Ashraf Alizade, Tayeb Saki Nejad, Masaaod Rafiee. Effect of plant density on percent of remobilization, chlorophyll content, light penetration rate and effective grain filling period of chickpea (*Cicer arietinum*) in dry farming. Life Science Journal. 2011;8(3):36-39] (ISSN:1097-8135). http://www.lifesciencesite.com.

Key words: Chickpea, plant density, remobilization, chlorophyll, light penetration, grain filling period (***EFP***)

1. Introduction

Beans, the second important source of food grain are known. Grain legumes, with 32-18 percent protein plays an important role in supply protein can have a human need and as a complementary and balanced cereal grains that contain 12-9 protein are considerable role in human nutrition play(5).

Fayaz Vayshya and judge (1992) expressed that they pea leaf chlorophyll content were significantly affected by different seed rates 90 and 120 days after sowing was. These results showed that 75 and 100 kg seed ha significantly higher chlorophyll content than the rate of 125 kg seed per ha during the desired time had (12). Dutta and Lahiry (1988) and majnon Hosseini and colleagues (2002) were also expressed that with increasing density, leaf chlorophyll increased to a Optimum failed (1, 5).

Appropriate density change within species competition improved growth characteristics and yield increase. Khajehpour (1996) several studies have shown that between the number of secondary branches and plant yield is directly related to positive (3). Watt and Singh (1992) Expressed density, the number of secondary branches and thus the number of pods am able this category affects deficiency conditions and plant number per unit area yield of chickpea increased branch cannot compensate the decrease Saxena and colleagues (1995). Also expressed in the grain, unlike grain, reducing the density increase is not sub-branches (9).

This means that little number of plant unit area through increased compensation secondary branches, but what form that will change is faster than sub-branches. Mackenzie and Hill (1995) expressed that they plant density canopy floor in light transmission plant is effective in chickpea plant density 15 m 40% radiation reaches the floor Canopy but increased density to 60 plants per square meter of floor radiation only 28% shade save the plant seems Majnon Husseini and colleagues (2002)(5, 6). In a study this transmission in chickpea shoot dry matter showed that the mean dry stem this transition between the flowering and maturity time in about 18 to 30 percent is compensation and stability of the main function of this group of plants is the number of pods category. The purpose of this density effect and interaction of cultivar and its growth characteristics, percent of this transfer, the rate of leaf chlorophyll content in light penetration Canopy floor and grain filling process in the Dry land planting is autumn(5, 6).

2. Materials and Methods

In this experiment farm from 2005-2006 Agricultural Research Station SARAB CHANGAHII Khorramabad city was conducted. Khorramabad city with latitude 33 degrees 29 minutes north and longitude

48 degrees 18 minutes east of the prime meridian located and its height above sea level is 1170 meters and the mean annual rainfall statistics based on 35 years 520.5 mm and the mean temperature 17.5 º C is. In this experiment, statistical factorial design in terms of equal importance in the form factors evaluated randomized block design with three replications was used. Factors were the four cultivars of chickpea cultivars ***Arman, Hashem, ILC482*** and ***Greet local*** mass density and three levels 25, 50, 75 plants per square meter. Each plot size 2.4 × 6 m and the number 9 line planting distance lines in each plot was 30 cm percent this transfer using stem Mitsuru and colleagues (1991) the following formula and the difference between stem dry weight flowering stages (maximum) and maturity (at least), respectively. In each of the stages of flowering and maturity of a sampling area of a square each treatment withdrawal (from the second row) and only the stem dry weight (without leaflets) were terms.

With the plant to the flowering stage (90 percent flowering) light intensity at floor level when the afternoon sun Canopy Control unit field model loi lx carefully a luxury (lox) was measured and recorded. Calculate the amount of leaf chlorophyll SPAD device Minolta502 model was used. This was the measuring of the 10 plants selected from each plot and leaf chlorophyll content determined by the device and its average for each plot, respectively. They then compared the mean and statistical analysis was performed. Evaluate grain filling rate (b) and effective grain filling period (EFP), two weeks after the flowering stage and started 5 set pods sampling interval was 5 days of each other. Every step of the 10 plants harvested per plot and all its seeds and pods separated for 24 hours at 65 ° C dry temperature and then weighing times grams per plant single mean was calculated. Then to calculate grain filling rate and effective grain filling period of this formula was used:

Final weight = EFB × β

EFB: Effective grain filling period

β = grain filling rate seed weight

β = maximum transfer rate of Assimilate to grain

Of the formula:

x = total number of days of sampling is usually based on placing the base after flowering or pod formation is.

y = weight of grain in each sample

n = number of count samples

3. Results and Discussion

Analysis of variance showed that the density of plant height was not significant. Although the expected high density due to competition for light increases plant height, but apparently this experiment provides enough light and there is competition for it. That the difference in height which results Fallah and colleagues (2001) standards. Comparison with the mean figure is all Hashem 53.55 cm with a mean height and the highest figure grit with the lowest average 44.91 cm height is able table (2). Since the height due to genetic differences between cultivars are available, most being the height and ideal figures Hashem can probably be attributed to their genetic potential. Because plant height was more related to plant genetic and environmental factors are less affected will be less and plant height can grit m explained that due to similar results obtained by Fallah Saxena N.P. and A.K. Sheldrake. 1980.

Density of the number of branches at 1% level is very significant. Comparison shows that the mean density of 25 plants per square meter with the mean 11.2 and the density of 75 plants per square meter with a mean 4.71 the highest and lowest rate of production have had sub-branches. Because with increasing density, the number of main branches and sub-branches decreased the number of results Romania, Alicante and colleagues (1998) standards. Reduced number of lateral branches with increasing density due appearing over the competition is a high density of growth factors. Enough space in low density and water and enough food in to the plant and therefore will plant can produce more number of lateral branches can but due to high density speed competition at the time expected to produce sub-branches, the number of branches main branches to be more affected.

Comparison shows that the mean number ILC482 mean 9.18 digit branch and Hashem mean 6.5 Branches, respectively the highest and lowest numbers of secondary branches are having. Number of branches in plants is genetic trait that somehow time will be influenced by environmental factors.

In fact determines the type of growth is the number of secondary branches. Umbrella, such as growth in the number of cultivars with more lateral branches growing cultivars with type stands. Digit growth ILC482 type umbrella terms such as having the highest and lowest number of secondary branches is height. If the figure Hashem with long standing type the lowest and the highest number of secondary branches was the height. Comparison shows that the mean density of 25 plants per square meters this transition with the highest average 0.428 and the density of 75 plants per 302 square meters with mean 2428 the lowest transmission won this Table (1). In other words, increasing density and decreasing ability to compete due to plant photosynthetic material transfer to the reproductive organs at the end of the growing season reduced the frequency of encounters with Thompson and Martin (1995). During the study showed that the pea density increased the percentage of

carbohydrates to the tank at the end of transmission season is facing significant growth reduction. Mean comparisons showed that the highest ideal figure this means 426% transfer and transfer this figure Hashem lowest mean 0.284 is having the ideal figure due to photosynthesis of green plant material transfer Manufacturer higher photosynthetic and reproductive organs to Therefore; with this percentage transmission is highest. Hashem, and contrary ideals with figure lower extremities, thus photosynthetic material transfer to reproductive organs and ultimately percent less this transfer is less.

$$b = \frac{\sum xy - \frac{(\sum x)(\sum y)}{n}}{\sum x^2 - \frac{(\sum x)^2}{n}}$$

Table 1: Comparison of mean grain yield and some morphological and physiological traits at different planting densities, **Density= A p/ m2, yield=B kg/ ha, number of branches=C, high=D percentage of leaf chlorophyll=E, Remobilization=F, transfer of light penetration to the floor canopy=G**:

A	B	C	D	E	F	G
25	*a* **1645/24**	*a* **11/12**	*a* **1/5**	**49/9** *a*	*a* **0/428**	**4310/5** *a*
50	*b* **1500/54**	*b* **7/02**	*a* **2/04**	**46/36** *a*	*b* **0/346**	**3300/83** *b*
75	*c* **1369/82**	*c* **41/74**	*a* **1/95**	**49/88** *a*	**0/030** *c*	**2428/5** *c*

Table 2: Comparison of mean grain yield and some morphological and physiological traits in varieties planting, **Varieties=A, yield=B kg/ha, Total leaf chlorophyll=C, branches=D, high=E, percentage remobilization=F, transfer of light penetration to the floor canopy=G:**

A	B	C	D	E	F	G
Arman	*b* **1510/09**	*ab* **7/21**	**3/15** *a*	**49/98** *ab*	*a* **0/426**	**3512/22** *a*
Hashem	*c* **1329/57**	*b* **6/5**	**1/99** *a*	**53/55** *a*	*a* **0/284**	**3208/88** *a*
ILC482	*a* **1650/90**	*a* **9/18**	**2/33** *a*	**45/47** *bc*	*bc* **0/337**	**2910/22** *b*
Greet	*b* **1503/62**	*ab* **8/69**	**1/88** *a*	**44/91** *c*	*bc* **0/309**	**3754/44** *a*

Comparison shows that the mean density of 25 plants per square meter on the highest floor Canopy light penetration and density of 75 plants per square meter of light in the lowest floor Canopy includes Mackenzie and Hill (1995). Plant density was expressed on the floor of the light transmission rate canopy plant is effective. The density of pea plants in 15 square meters floor to 45% radiation reaches Canopy but increased density to 60 plants m only 28% radiation reaches the plant floor Canopy Saxena and Sheldrake (1980). Were expressed that increasing plant density through Canopy radiation absorption increases. Comparison shows that the number ILC482 lowest penetration of light in the floor Canopy are more reasons, growth rate and thus less light penetration in the plant floor is canopy.

Comparison shows that the mean density of 50 plants per square meter leaf chlorophyll highest mean 2.04 and density of 25 plants per square meter with the lowest leaf chlorophyll mean 1.34 is having law and Lahyry (1998) and Majnon Hussein and colleagues (2002). Those were expressed with increasing density, leaf chlorophyll to a much increased Optimum failed. This experiment also the density of 25 plants per square meter density 50 plants m had increased leaf chlorophyll content and Optimum point reached, but density of 75 plants per square meter leaf chlorophyll content to 50 plants per square meter density that can be reduced due plant internal factors effect plant competition for soil nutrients are absorbed. Among cultivars ILC482 figure was the highest leaf chlorophyll content.

Sigmoid a grain growth process and this process will follow three courses of growth (log), or rapid linear growth period (lag) and maturity stage (Maturation) is divided into periods of growth, although the share little seed weight but the following comments are very important and is important because conditions there should not ever come to be that short. The period is very importance because the event is important that both are involved in determining final yield.

A: The most productive endosperm cell occur in this period of endosperm cell or a potential future target is considered, short of this period due to any stress, disease, dehydration and heat naturally difficult endosperm cell and production will be . Many experiments show that very close and positive correlation between endosperm cell number and grain yield (seed weight) to have shown (10, 13).

B: second place on the course (log) hormone cytokine seed gathering is growing which should reach to a certain period of rapid growth to begin, naturally short period to log accumulation means less material is cytokine hormone, a lack start of rapid growth in the will or that if Re rapid growth period starts will peak very low. Two to three weeks after the flowering period starts, you should log the special care payment (10, 13).

Density in this direction is important. Period of rapid growth, sometimes more than 90 percent of grain weight in a relatively short time is accumulated, this period is called the effective filling period. Density of 25 plants per square meter was the highest value, i.e. the density of EFP effective filling period nurse longer enjoyed the process because of the density due to competition between plant dry matter accumulation and grain slowly during longer made and therefore Dry matter accumulation in grain yield, which lasted longer this density also increased the contrary the density 75 plants m EFP was the lowest effective grain filling period, i.e. the density, the density of 25 plants per square meter is much less and therefore its performance is decreased. ILC482 figure among cultivars and cultivars with highest EFP Hashem was lowest in addition to general environmental effects of effective grain filling period, species and significant effect on the effective period of grain filling process results in grain growth densities showed that at the end of linear growth of density 25 and 75 plants per square meter, respectively the highest and lowest seed weight were. Results of grain growth figures show that at the end of linear growth figure ILC482 highest final grain weight and the lowest figure Hashem final grain weight was included Effective grain filling period between 21.92 and 26.07 figures fluctuate day was..

Most Effective grain filling period the figure for ILC482 approximately 26 days and the lowest effective grain filling period the figure for Hashem was approximately 22 days. Minimum and maximum effective rate of grain filling, respectively, and Hashem ILC482 genotype was observed.

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Assessment Characteristics Morphophysiology of plant varieties horse Bean (*Vicia FabaL*) in different plant densities

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Abstract: In order to study the effect of different densities on bean cultivars, experimental farm in 2008 Farm Research, Islamic Azad University of Ahvaz was executed. Factorial experiment in randomized complete block design in three replications was formed. The first factor consists of three densities (45, 55, 65) plants m and the second factor consists of three cultivar (ZOHREH, SHAME and JAZAYERI) were. The results showed that most varieties LAI ZOHREH to figure the 13 quarters in the early stage of flowering and pod development were achieved. Based on the results, the number of branches to reduce plant density increased. Most biological yield in 55 of the plant density, 3042.89 kg ha was obtained with the other density levels significantly different at 5 percent showed. Process of dry matter accumulation in different cultivars and varieties are not the same ZOHREHs to other two varieties showed superiority, as well as increasing the density of total plant dry matter accumulation increased. The results showed that with increasing density levels also increased CGR and also increase the speed of the CGR in high densities are higher. Bless growth figures earlier CGR respectively higher than the figures had SHAME and JAZAYERI and in shorter time, has reached the maximum CGR. Maximum CGR will be achieved when the vegetation has reached its maximum rate.
[Somaye Ghadaksaz[1], Tayeb Saki Nejad[2], Alireza Shokohfar. **Assessment Characteristics Morphophysiology of plant varieties horse Bean (*Vicia FabaL*) in different plant densities.** Life Science Journal. 2011;8(3):40-42] (ISSN:1097-8135). http://www.lifesciencesite.com.

Keywords: Horse bean, density, variety, Morphophysiology

1. Introduction

Grains of the main sources of protein-rich food for human and animal nutrition are known. About 22 percent in human nutrition of plant protein, 32 percent fat and 7 percent of carbohydrates are whole grains provide. Similarly, 38 percent of protein in animal feed plant, 16 percent fat and 5 percent of the carbohydrate source is provided. Some grains in addition to international trade oil production for different purposes are used in human and animal nutrition. After their importance in Iran cereals, wheat and rice are. Land under cereal cultivation for about 10 percent of food grain production (2),

Planted area of cereals and their total production were about 3.5 per cent. Among grains, soy, beans and peas in terms of acreage, respectively first to third place are met. Nightingale eyed beans in tropical countries especially African countries; the wide level is automatically assigned (3).

A- Density effect on the number of branches

Saki Nejad (2004) declared that the regression relationship between yield and a higher number of branches (r^2 = 0.9) is. Increasing yield of branches increases (6).

Mung bean plant Hassan Zadeh 2000 and McEwen in bean plants (1988) reported that increasing the number of stems per plant density decreases (1, 2).

B- Effect of density on accumulation of dry matter

Slim and Saxena (1998) to increase bean yield rate of 15 percent increase in density from 22 to 44 plants per square meter reported that due to increased absorption of light in the photosynthetic activity is plant community. In this study the absorption of light in the growing season as leaf area index had a trend increase in the value of unlimited growth figures, particularly local varieties grow more varieties was limited(5).

In this report, differences in dry matter production of bean varieties at different growth stages may indicate differences in light absorption and efficiency of its use in the plant canopy is (5).

Pylbm colleagues (2000) Studies and in relation to dry matter accumulation in bean plants suggests reduce the efficiency of light, especially in indeterminate cultivars bean, is due to increased density(7).

His opinion luminous efficiency of energy use to produce solid addition to the light intensity in leaves

of light absorption and factors affecting the efficiency of carbon capture processes such as photosynthesis, nutrient uptake and chemical a participant in photosynthesis and carbon dioxide concentrations in environment depends on the plant(7).

2. Materials and Methods

This test Crop in 2008 University Research Farm in three kilometers south of Ahwaz, Ahwaz city geographic 31 degrees 20 minutes North and longitude 48 degrees 41 minutes east and 18 m above sea level is located. To determine the physical properties and chemical field soil test before planting field soil sampling conducted Shadow following results were obtained.

Treatments were tested in compression as the main treatment and bean cultivars as sub-treatment is intended. In this review Tuesday Picks 45, 55 and 65 plants per square meter as the main factor was applied. That it will provide for easy order results with D1, D2 and D3 will be shown. The bean genotypes tested Tuesday as has been under cultivation, these figures include ZOHREH, had SHAME and JAZAYERI.

3. Results and Discussion

A- LAI

LAI trend of change in all three levels of density is almost the same as the first growth period so that the changes were slow and then with increasing days after planting and then increased rapidly to reach maximum LAI has continued at a constant rate. After This stage of gradually falling leaves and vegetation in lower grain filling period LAI value has declined. With increasing density, LAI raised in shorter time than low planting densities, the maximum LAI is reached. Seedling density (55) plants per square meter after approximately 85 days after planting to its maximum to 3.94 hit.

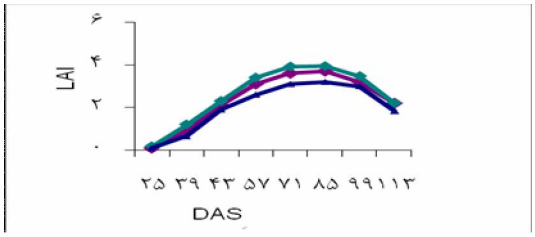

Figure 1 - The trend in leaf area index in different plant densities

LAI changes in trends of different varieties as in the diagram can be seen near the bottom figure ZOHREH to the growing season had the highest LAI. In the process of development between cultivars cultivar LAI ZOHREH of all the other figures were higher, this figure does period and early in their growth and delivered them to 34 days to complete their rapid growth period was entered, the maximum numerical value in the figure blessed with an average LAI 4.22 was obtained and then the figures Shame Jazayeri maximum LAI were allocated to.

B- TDM vegetative organs (TDW)

Process of vegetative organs in total dry matter of different densities is shown. Density increased total plant dry matter accumulation, which increased due to increased leaf area and photosynthesis in line with the increase in plant dry matter accumulation is (4).

The whole process of dry matter accumulation in vegetative organs of all varieties and cultivars was not quite the same slope blessed with rapid growth was higher than other. Process of dry matter accumulation in different cultivars depends Bean has two important parameters are: leaf area index and leaf area duration and period to grow faster during their rapid growth period can be entered and can provide more leaf area duration in This figure therefore completely true ZOHREH.

C- Crop growth rate (CGR)

CGR process of change for different levels of density shows that with increasing density levels also increased CGR and also increase the speed of the CGR at high densities is more, the reason there vegetation (photosynthetic surface types), followed by the emission and absorption Dry matter production per unit area increases and eventually lead to increased crop growth rate has been. Trend changes in the CGR for different cultivars won. As can be seen in the early stages of growth due to the complete absence of vegetation absorbed radiation levels low CGR precedent vegetation is down. Cultivars grown in early ZOHREH CGR respectively were higher than the JAZAYERI and had SHAME and shorter time to maximum CGR reached.

4. Conclusion

General purpose of testing conditions to get the best crop varieties for production in order to achieve the desired yield is maximum. Appropriate distribution of plants per unit area in one of the most consistent factor is to increase performance (4).

The results show that all three varieties in terms of vegetative characteristics, reproductive and physiological environmental conditions suitable for the growth have been good. "Vegetative cultivars affected by plant density and the density increased number of

branches declined. Highest numbers of branches plant varieties were blessed. Density effect on physiological indices also showed a notable difference in the density of 55 plants m these indicators showed the greatest increase. Cultivars tested the physiological parameters of growth, the difference was in terms of variety and excellence was a ZOHREH.

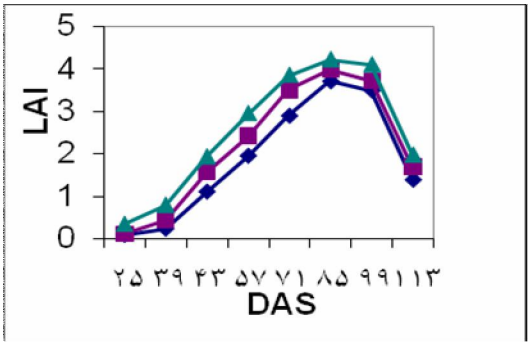

Figure 2 - The trend in LAI plant varieties

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Effect of biological fertilizer of humic acid on metabolic process of biological nitrogen fixation

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Abstract: Soil health is one of the key important factors in determining crop performance. Humic materials in soil have multiple effects of the main components; part of humic material is humic acid that can grow on crops through the effect on physical properties, chemical and biological soil to be effective. Use of organic materials in agriculture to reduce pollution from taking a positive step in the way of chemical fertilizers to achieve sustainable agriculture and fertilizer efficiency is. To order these types of effects on acid Humic biological nitrogen fixation process of bean plants in the form of a pilot project testing split plot with randomized complete block design based on crop year 2010 was conducted in Ahvaz. Invoice number (V1 = Barekat, V2 = Jazayeri, V3 = Shame) in the main plot factor with four types humic acid (F0 = control, F1 = humic acid, F2 = full macro humic acid, F3 = Full Micro humic acid) in sub-plots were placed. Humic acid once, and then at 5-6 leaf after flowering to 2 ppm levels (200 ppm) was sprayed to the plants. The highest and lowest number of nodes in humic acid treatment was respectively humic acid micro average 274.3 and controls with a mean number 179.6 respectively. However, three types of acid humic terms of number of nodes there is no significant difference. The greatest average diameter in micro humic acid treatment was rate 1.39 cm respectively. But between acid and acid Humic Micro significant difference was found. The average minimum diameter to control treatment mean number 0.8 is the cm. The results showed that acid humic improve the process and indicators of biological nitrogen fixation in bean plants were. Results of variance analysis table shows the types of acid humic bean root nodules on the amount of nitrogen in the 1% level were significant. Most nitrous acid humic macro nodes to complete the average 2.06 and the lowest value to control the amount of 0.88 were.

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Key words: biological fertilizer, BFN, Humic acid

1. Introduction

Process that amount of nitrogen available to biological systems, biological nitrogen fixation was called. The monopolies of certain types of phenomena in prokaryotes were performed that contain genetic information necessary for *Nitrogenase* enzymes are synthesized. Nitrogenase enzymes revive the role of a catalyst in N2 to NH3 is responsible and can react in the normal temperature and pressure will lead (5). The following reaction is done through the *Nitrogenase* enzyme in all these organisms is common:

$$N_2 + 6H^+ + 6e^- + n\,MgATP \longrightarrow 2\,NH_3 + n\,Mg\,ATP + npi$$

Biological fixation of nitrogen fertilizer to replace nitrogen in agricultural soils of Iran, qualitative and quantitative study of indigenous Rizobium for maximum efficiency of Rizobium symbiotic systems - Leguminoseae today in the world at large is considered. The wider use of the phenomenon of biological nitrogen fixation as a vital necessity for the realization of sustainable farming systems has been emphasized.

Countries that utilize biological systems nitrogen stabilizers have developed, have proven in practice that theory and nitrogen fixation process or have limited use in laboratory and research program is practical and can be wide performance. In Australia the use of this phenomenon, more advanced than other countries, about one percent of the nitrogen needs of crops through use of chemical fertilizers will be supplied. The overall scale, despite the advanced technology for mass production of these fertilizers are still main plant needs nitrogen, normally provided through the BNF estimated figure of about 175 million tons a year globally confirms the issue (5).

Newer defined humus material is used to the phenol products from lignin and some of the leftover products from decomposition by microbial reactions or through chemical oxidation agglomerate deformation humus find and bring into existence (3). Physicochemical point of view can be combined humus extremely intensely and without external dimensions of the considered variables (screw and polymer chains become more stretched), large internal surface, and changing times and tend to form large complexes with some cations (2).

Exchange capacity of humus 100-300 m/equivalent in 100 g and the specific surface of 800-900 m is g. Humus generally consists of three main materials is:

1. Humin: which includes remnants of cellulose and alkaline solution deposition mode is not playing.
2. Humic acids: proteins that contain material Lignin and alkaline pH in solution and precipitated at pH are acidic.
3. Folic acids from hemicelluloses and wax formation and deposition in acidic and alkaline pH are not (3).

Fertilizers Humic

Recently, using a variety of organic acids to improve the quality and quantity, and garden crops has increased. Very small quantities of organic acids significantly effects on improving physical and chemical and biological properties of soil due to have beneficial effects on hormonal compounds to increase production and improve the quality of agricultural products have (2). Tests showed that adding humus to the soil material in barley cultivation, sugar beet and potatoes to a significant performance increase was caused by Kalat elements enhance absorption by the plant material and humus can cause long-term soil carbon storage, root and shoot growth in plants, nitrogen uptake and storage, increased photosynthesis, increased resistance to disease and .... Is (7). Humic acid and soluble granule forms, there are also applications as well as sprayed on earth is used.

In addition to fertilizers to increase soil nutrient elements can be sprayed on the leaves are used to this method is called a leaf called spry (adequate and colleagues, 1378). Power plants can be sprayed through an effective role in increasing the quantity and quality of agricultural products have.

2. Material and Method

Pilot project specification and plan

In this study the effects of two factors as a split plot with randomized complete block design in three replicates were examined.

2.1. The treatments tested in the study include:

A - Cultivar (V) with three levels as main plots
• BARAKAT cultivars (V1)
• JAZAYERI (V2)
• SHAME (V3)
B - Treated with acid Humic four types as sub-plots
• Control (without taking Humic acid) (F0)
• Humic acid treatment (F1)
• Full macro + humic acid treatment (F2)
• Acid treatment Humic + Full Micro (F3)

Humic acid products used under license Caspian Environment under license *jorafourm* Sweden company fertilizer was recommended according to the amount of 7 liters per hectare (2 ppm per plot) and two times after the 5-6 leaf and flowering plants were sprayed.

2.2. Sampling and procedures

Biological nitrogen fixation for review once every twelve days of two plants per plot completely removed and the roots as cylinders of soil were removed. After separating them from the plant roots washed and the root node, the average diameter of nodes (by caliper), color and dry nodes, the number of secondary roots, root dry weight and volume were measured. Roots and nodules in the oven for 48 hours at temperatures 75 ° C were placed after this time, their dry weight was calculated. To calculate the size of the root count and root dry weight of lateral roots and the difference through the law of Archimedes cylindrical water volume, volume of roots was calculated. Some nodes intact experimental units to estimate the amount of nitrogen to the university and research laboratories were given and the method of micro nodes Kjeldal percent nitrogen calculated.

Fig1. Land preparation and planting procedures

3. Result

3.1. Characterization of biological nitrogen fixation Morph physiological

Number of nodes per plant:

Humic acid treatments impact on the number of nodes during the growing season at 1% level was significant. The highest and lowest number of nodes humic acid treatment, were respectively humic acid micro average 274.3 and controls with a mean number 179.6 respectively. However, three types of acid humic terms of number of nodes there is no significant difference. High average number of nodes in the micro humic acid treatment can be due to the effect of micro elements is on the nodulation process. For example, on the inception of nodes, increasing the amount of hemoglobin and the stork is involved in nitrogen uptake. Other elements also each micro somehow have a positive impact on nodulation (6).

Fig2. In view of the field spraying acid humic

Fig3. A view from the field after spraying acid Humic

Table 1. Effect of treatments on biological nitrogen fixation parameters

Humic acid	N%	No of nodule /Plant	Nodule dry weight	Diameter of Nodule
Humic acid	1.88	252.6	703.9	1.16
Humic acid+macro	2.06	262.9	765.9	1.28
Humic acid+micro	1.97	274.3	818.7	1.39
Control	0.88	179.6	449.4	0.8

And your stated humic acid and acid Folic significant effect on total plant dry weight is. They declared that by taking 100-400 mg kg Humic acid soil and root dry weight and number of nodes compared to the control nodes increased. Acid and sodium acid Humic like Human Folic effect on growth stimulation produced Trifoli Rizobium found (9).

Results showed that the variance analysis table of figures on the number of nodes is significant. Comparison shows that islands with an average figure 248.9 knots maximum number and variety blessed with 236.2 the number of nodes were having the least number of nodes. Any figure that more positive reaction to acid Humic show greater number of nodes allocated to that same figure is Jazayeri.

Interactions humic acid on the number of nodes at 5% level has been significant. According to Table 1 digits islands and micro Humic acid treatment mean 274.3 maximum number of nodes and the treatment and control acid blessed with variety 179.6 the number of nodes to the minimum number of nodes allocated. Greater number of nodes in the treatment of acid interactions and micro Humic figure Jazayeri genetic potential and the effect of this plant is related quality of fertilizer treatments.

3.2. Average diameter of nodes

Results of variance analysis showed that the effect of acid type on the average diameter humic nodes at 1% is significant. The greatest average diameter in micro humic acid treatment was rate 1.39 cm respectively. But between acid and acid Humic Micro significant difference was found. The average minimum diameter to control treatment mean number 0.8 is the cm. More nodes because of the size of micro humic acid treatment can be a positive effect on the activity of microorganism's humic acid soil attributed. Stimulating effect on the activity produced humic acid bacteria by increasing membrane permeability and better use of nutrient elements are (11).

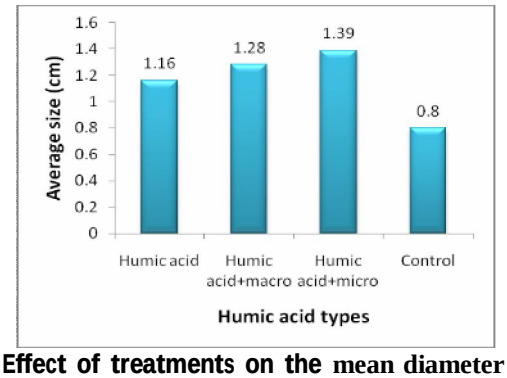

Fig4. Effect of treatments on the mean diameter of nodules

Analysis of variance table of the average diameter of the node number is significant. Node size and diameter is dependent on the plant meristem. In fact, the root meristem anatomical discussions of each variety as different nodes are created. Node size too many factors such as physics, soil, moisture content, consolidation activity, type of meristem plant, plant age and the amount of water depends. All these factors can alter the size of the node. Once in a variety of node sizes are related because the plant meristem, and the varieties are so much a tie between the different varieties of plants with no difference, because the meristem are similar (Saki Nejad, 2010)(10).

But the interaction of varieties and sizes of nodes humic acid at 5% level is significant. Average based on comparisons with related tables and the interaction of two factors most studied in the node size and micro humic acid treatment with a mean figure Barekat 1.45 and figure Jazayeri rate 1.39 cm were observed. Lowest average number of nodes in diameter and blessed with an average numerical control treatment 0.61 cm respectively.

More significant interaction effects related to the effects of variety Cody. Because different varieties respond to different types of fertilizer and the highest value Humic the Barekat and the acid treatment Humic micro figure is derived. Barekat varieties respond better than other varieties with fertilizer micro Humic has shown that the node size is increased. Should be stated that sometimes the size of any relation with the amount of nodes is established (Saki Nejad, 2010)(10).

3.3. Dry weight of nodules

Analysis of variance table of results showed that application of acid humic types and varieties and their interactions, respectively, no significant effect at 1% and 5% had weight nodes. Maximum weight equivalent nodes 818.7 mg treatment plants and micro humic acid were the least related to the control treatment with 4 / 449 mg in the plant. Note that the three types of acid, there was no significant difference Humic.

Comparison of nodes with weight factors that figure was the highest node weight associated with the numeric value 719 varieties Jazayeri mg plant has been. The lowest figure Barekat to rate 567.8 mg plant has been. But between the sizes of knots in three varieties in terms of average significant difference was observed.

According to comparisons with related tables in the islands mean figure acid fertilizer treatments Humic Micro mean number 885.3 mg of plant varieties and the lowest to the islands with control levels 418.7 mg plant has been. Possible environmental conditions or pilot error because the creation of the highest and lowest weight nodes in the figure is Jazayeri.

Node weight parameter that is dependent on the rate stabilization. The consolidation increased the weight of nodes increases. In fact, the weight amount of nodes and positive regression established there. According to test results as a more positive reaction to the islands varieties of treatments has shown that the adjective dry weight than the rest of the knot varieties respond better to treatments has.

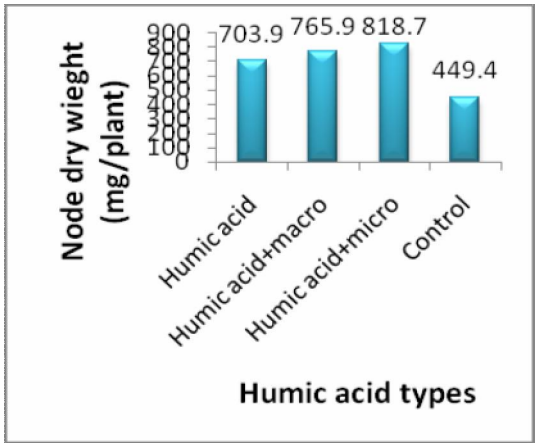

Fig5. Effect of treatments on the mean dry weight nodules

Research on the effect of acid and acid Humic Folic production dry soybeans and peanuts, and clover was studied. The results showed that acid consumption increased crime humic nodes and nodes increase in dry weight and root dry weight increased total plant dry weight was positively correlated (13).

3.4. Percent nitrogen nodes

Results of variance analysis table shows the types of acid on the amount of nitrogen Humic bean root nodules at 1% level was significant. Most nitrous acid humic macro nodes to complete the average were 2.06 and the lowest value to control the amount of 0.88.

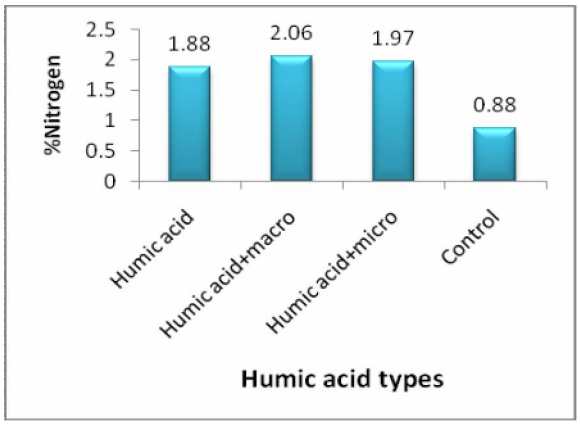

Fig6. Effect of treatments on the mean Nitrogen%

Since the biological nitrogen fixation requires a lot of energy there macro elements such as nitrogen and phosphorus can to solve this need. In fact Humic acid through increased cell membrane permeability of root uptake and transport elements such as Na + and K + and Ca +2 increases (6). When the plant is in possession of all the elements, especially biological nitrogen fixation elements needed to stabilize the biological causes will increase substantially.

According to variance analysis table cultivar effect on the percentage of nitrogen in the nodules was not significant, and all figures of average compared to the same level were. However, most related to the average numerical cultivar barekat was 1.71 respectively. Humic acid interaction in the figure is not significant.

4. Discussion

Statistics indicate the increasing importance of growing and developing as important sources of food grains in most countries have long experience of local culture is a bean (5). Grains with high levels of energy, protein, vitamins, minerals and medicinal properties of elements of Iran's agricultural products are important (8). Protein found in cereal seeds two to three times higher than the protein in cereal grains and 10 to 20 times higher than the protein in glandular plants (starch) and forage legumes is due to the protein having a high nutritional value is high. The bean plant with 25-23 percent protein, like other legumes with high nutritional value and having the ability nitrogen fixation, the periodic effect was very good, and enhances soil fertility and chemical Biological are. Bean plants under cultivation in Iran are about 35,000 hectares (9).

Due to environmental considerations, most recently using a variety of organic acids to improve the quality and quantity, and garden crops has increased. Very small quantities of organic acids significantly effects on improving physical and chemical and biological properties of soil due to have beneficial effects on hormonal compounds to increase production and improve the quality of agricultural products have (celestial and divine, 2006). Humus can be defined as organic material stabilized (10) that part of humic acid, acid Humin Folic and is composed of.

Most parts of the soil humus acid compounds and acid Humic Folic form (12) from different sources (terrestrial plants and vegetative resources) are obtained when considering the source of molecular size and chemical structure together are different. Humic acid compounds naturally in soil, peat, coal, and ... There are (1). Tests showed that adding humus to the soil in the planting material of barley and sugar beet, potatoes, watermelon, tomato, a significant performance increase was caused by Kalat elements enhance absorption by the plant material and humus are caused storage long-term soil carbon, root and stem growth in plants, nitrogen uptake and storage, increased photosynthesis, increased resistance to disease and .... Is (12)

Importance of nitrogen in the formation, survival and development to the extent that life is definitely without this element, life with what we are seeing today was completely different. Approximately 78% of Earth's atmosphere is composed N2. Plants, animals and microorganisms, all are surrounded by nitrogen gas and indeed all the world live in N2. However, this huge source of nitrogen, except for certain bacteria, the rest is useless creatures (10).

New molecular nitrogen to the surface called Biosphere is called nitrogen fixation. This form of consolidation and conversion of nitrogen to form plants can use, mainly through industrial or biological form (by a group of bacteria) is possible (13). Biological nitrogen fixation by bacteria, mainly through the establishment of symbiosis with legumes is a family of plants. Importance of legumes in soil fertility of the six thousand years ago, the Egyptians kill them in their rotation would be; was clear (14).

Symbiotic nitrogen fixation method is a variety from which the example of symbiosis with rhizobial bacteria, legumes family plants have been reported. Legumes in symbiosis with rhizobial bacteria sex Furthermore the Main nitrogen fixation seems to consume plant, the soil will be strengthened in terms of nitrogen (11). Nitrogen fixation in annual grain Lgvmhay 56 to 112 kg ha (6) and according to my research (3) Go 280.2 kg ha have been reported.

Considering the positive Asras Humic acid on the growth and activity of soil microorganisms can be said that this acid improves biological nitrogen fixation in legumes is. Vyramvnd Tanty (1982) showed that the stimulus effect on growth Humic acid may be due to pulses of nitrogen fixation in the soil is improved. Their research Humic acid on dry matter production, nodulation and nitrogen content in nodes of soybean, peanut and clover were studied. Humic acid levels 400 to 800 mg were used. The results showed that acid Humic dry matter production was increased. Dry weight of roots and nodules also increased and correlated positively with the increase in shoot dry weight found.

Bkardvaj and Gear (1972) found that acid and sodium acid Humic like Hvmat Folic effect on growth stimulation produced Trifoli Rizobium found. Highest concentration of 500 mg was found. Folic acid extraction and purification of humus tangible effect on growth stimulation showed Hvmat while untreated sodium showed less effect. Stimulate the growth of the fertilizer producer to farm in an equal amount of acid Humic less than half had positive effects Hvmat sodium. Valine and colleagues

(1997) Humic acid on bacterial activity and Nytrvbaktr Nytrvzmvnas laboratory conditions were isolated. Two Humic acids (derived from plant residues and Lyvnardyt) were added to the culture medium. The results showed that both humic acids, ammonium ions combine with oxygen and nitrite and nitrate grown cells constructive bacteria increased. Humic acid stimulation effects produced on the activities of these bacteria by increasing membrane permeability and better use of the nutrient elements

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Evaluation of horse bean production components

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***Abstract*:** this study was performed in the Research Station, Islamic Azad University of Ahvaz fact Southern city of Ahvaz in the geographic profile: latitude: '20 º 31 Longitude: '40 º 48 Altitude: 18 m and average rainfall: 256 mm in 2006 year. Research projects using the project once chopped plots in a randomized complete block design with treatments main bean varieties: four cultivar horse bean (*Vicia Faba*L.) plant: BARAKAT, ZOHRE, SHAMI and JAZAYERI and sub-levels of nitrogen fertilizer treatments three levels of nitrogen fertilizer (N1, N2 and N3 treatments, respectively 20 and 40 and 80 kg fertilizer N ha) were performed. A BARAKAT variety with highest yield was 4880 kg ha. Among the cultivar, the BARAKAT & JAZAYERI with the amount of dry matter 8209.06 and 8201.01 kg ha from a higher level than other cultivars, respectively. Process of dry matter accumulation in cultivar BARAKAT and T 80 = N3 kg per hectare were higher in treatments 20 = N1 and 40 = N2 kg ha of nitrogen fertilizer at 1% level with a time difference did not check growth parameters indicate superior varieties BARAKAT on the other cultivar in indicators of total dry matter, crop growth rate and leaf area index is. High yield in the treatments 80 = N3 and 40 = N2 probably due to supply fertilizer base required for plant growth in early stages yet stabilized biological nitrogen begin has not plants need nitrogen fertilizer have to be able to level green field increases and photosynthesis do more are to be. This higher amount of leaf area index of this treatment with a mean 3.7 which leads to higher dry matter accumulation was visible in the cause of dry matter allocation to seeds is more.
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Keywords: horse bean, production component

1. Introduction

Structure yield in legumes

Grain yield components as follows:

$$U = \frac{K.L.Z.A}{10^5}$$

U *-yield (ton/ha)*
K*- Number of plants*
L*- Average number of pods per plant*
Z*- Average number of seeds per pod*
A*- Grain weight (g)*

To obtain a more precise, it is necessary, the amount of waste resulting from decreased harvest (6 to 10 percent or more.) Values of k, L and z can be measured as well as observation.

Number of plants per square meter in different parts of the vegetation should be evaluated. (In compare was with the cereals). Non-uniformity also is considered. Plants should be 4 to 8 adjacent rows and rows of about a meter long were counted. During part of rows evaluated using the following formula may be calculated:

$$d = \frac{1}{n.a}$$

d*- Destination in which the evaluation*
n*- Number of rows*
a- *rows wide (m)*

1. ***The average number of pods per plant***

In different locations should be evaluated within the vegetation, must be the minimum number of 30 to 50 plants, the pods should be on neighboring plants and on the main axis and branches are counted together.

2. ***The average number of seeds per pod***,

The proper evaluation component of yield, pods plant a seed to be harvested and then be counted. Upper plant seed pods usually number less.

3. ***Seed weight***

Such as seeds and reach non-uniform moisture content are different. This component is usually specific for each species and cultivar with regard to conditions prevailing during the investigation and consideration of other adverse factors that have adverse effects on the characteristics of the common value can be estimated.

Under very adverse conditions, grain weight probably 20 to 25 percent less than the average figure to the desired decrease. Determining grain weight using the following formula is calculated:

$$A = \frac{Ay(100 - V)}{100 - V_S}$$

A- *Thousand grain weight.*
Ay- *Grain weight (7 percent moisture)*
V- *Actual moisture content of seeds.*
V_s *- Seed moisture content is standardized.*

Seed weight with grain moisture content below 40 percent to almost fully mature stage remains constant. Since determining yield through yield components is almost complex, the possibility of using a more simple way exists. This method, based on average grain weight of standard (25%, 50% or one square meter) based on seed moisture content is determined. Predicted yield calculated from the formula:

$$U = \frac{p \times (100 - V)}{(100 - V_s) \times 100}$$

U *-yield (ton/ha)*
P- *Seed weight in one square meter.*
V- *Seed moisture content, percent.*
V_s *- Standard seed moisture content*

The correct way to decide how to use the complete coating of some vegetation (mainly beans) which has a weak classification sheath helps. If the prediction is low yield, the better the forage plants are allocated.

2. Material and Method

In this study, the Research Station -Research, Islamic Azad University of Ahvaz fact
Southern city of Ahvaz in the geographic profile: latitude: '20 º 31 Longitude: '40 º 48 Altitude: 18 m and average rainfall: 256 mm was in 2006 .

Research projects using design plots once chopped the block ¬ randomized complete with treated major cultivar Bean and treatment sub-levels of nitrogen fertilizer was performed in the treatment main cultivars plant beans (V1=BARAKAT, V2=ZOHREH, V3=SHAME and cultivar V4=JAZAYERI) and secondary treatment levels of nitrogen fertilizer (2 = N1, 40 = N2, and 80 = N3) kg ha were studied in mid-November planting date for two years was conducted. Before this date, including plowing and land preparation operations and drive me yours do calcium phosphate and fertilizer to the land was then based on the experimental plots map classification was done in the field and 24 plots in each square meter of bed by 10 lines were cultured and treated according to the amount of nitrogen fertilizer to test strip was added to the stack. During the test two to three times weeding grass weeds for disposal was done .

3. Result

A - Review of functional components

Growth parameters

ANOVA table of results shows that the trend bean varieties total plant dry matter accumulation and different levels of nitrogen fertilizer treatments at 1% significant having been so matter accumulation with increasing N fertilizer - the total dry plant increased This is due to increased leaf area and photosynthesis in line with the increase in plant dry matter accumulation is (9).

Among the cultivar, the BARAKAT & JAZAYERI with the amount of dry matter 8209.06 and 8201.01 kg ha from a higher level than other cultivars, respectively (Table 1).

But the different levels of nitrogen fertilizer treatments 80 = N3 kg per hectare in terms of higher average dry matter accumulation and treatments have been 20 = N1 and 40 = N2 kg ha of nitrogen fertilizer at 1% with no difference lower dry matter accumulation than treatments 80 = N3 kg ha of nitrogen fertilizer showed (Table1).

Table1. Evaluation of horse bean production components

Yield(Kg/hac)	TDW(Kg/hac)	Treatment
4880 a	**8209/06 a***	**V_1**
4200 b	**6998/81 b**	**V_2**
3998 c	**6896/21 b**	**V_3**
4236 b	**8201/01 a**	**V_4**
4875 b	**8049/62 b**	**N_1**
5114 a	**8051/09 b**	**N_2**
5120 a	**8960/60 a**	***N_3***

****: Average each experimental factor in each column at least one common letter are not statistically different according to Duncan test at 5 percent level be.***

Sinha (1998) declared the process of dry matter accumulation bean varieties depends on two important parameters which are: leaf area index and leaf area duration and the period to digit growth during his slow and more rapid enter a period of rapid growth be more leaf area duration can offer. Results in higher dry matter accumulation of figure gets BARAKAT with the variety of this is completely true. LAI chart bean varieties from a sigmoid curve indicated that it's in elementary period of growth, that trend has slowly until 50 days after planting, leaf area index value of only the numeric value 0.7 is taken to this trend LAI to develop

legume family is a special, high levels of applied nitrogen fertilizer (80 kg per ha), first period to reduce leaf area was expanded, and secondly in the treatment LAI value of treatments which lower levels of nitrogen were applied more so were reduced to 44 and 49 percent respectively LAI values at levels 40 and 20 kg ha treatments than in the early stages of growth were observed.

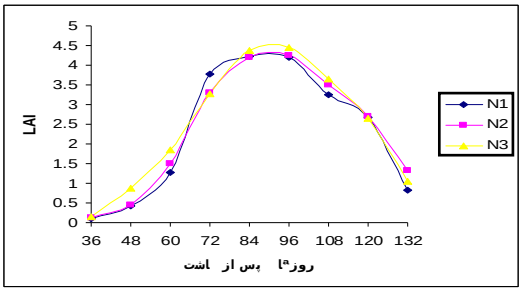

Fig1. Different amounts of nitrogen fertilizer on LAI

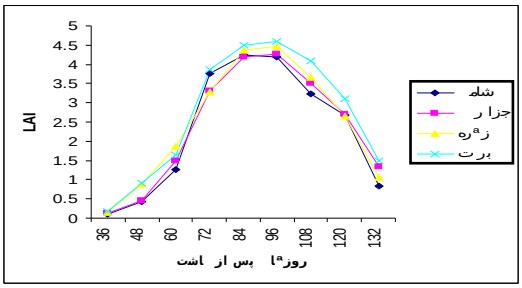

Fig2. Amounts of nitrogen fertilizer on cultivated varieties LAI

But over the early stages of growth and the start biological nitrogen fixation, leaf area index less nitrogen fertilizer treatments which had received approximately parallel to the LAI received more fertilizer treatments had expanded, so biological nitrogen fixation somewhat in terms of the plant need nitrogen fertilizer on the leaves and the growth has caused. Among the cultivars studied process of expanding leaf area index figure was more BARAKAT than other varieties, this variety of courses to and early growth in 43 days to complete, and delivered them into their rapid growth period was the, numerical maximum level indicator BARAKAT with a mean leaf number four quarters was to varieties JAZAYERI, ZOHRE and SHAME respectively maximum LAI at flowering time allocated .

With the number of nodes during flowering varieties were observed when the LAI their peak reached in the bean varieties, the number of nodules on roots showed a significant decrease .

Summer Field (1996) announced during the flowering plants because of their high metabolism and high energy expenditure for flowering, carbohydrate allocation to roots in high doses that it is used to cut nodes will result in symbiotic Rizobium bacteria and plant disorders and nodes are not due to arrive on the carbohydrates of plant roots are starting to fall, this phenomenon during the flowering peak LAI was clearly observed in the tested varieties. High levels of nitrogen fertilizer to increase and expand the base of leaf area index were at an early stage and growth period may reduce LAI and faster plant growth phase of LAI is rapid. CGR indicator of production efficiency in the production of ground vegetation is the live weight, i.e. an indicator of the ability of agricultural production that Watson presented the calculated data. However, only plants that together, in a package of crop covers or natural communities grows used to.

B. Crop growth rate (CGR)

Indicator of production efficiency in the production of ground vegetation is live weight, CGR index of agricultural production capacity is calculated and Watson it has provided. Only plants that together, in a package of crop covers or natural communities grow used to.

Studying the trend of values and crop growth rate in the different treatments applied in this trial was concluded the following :

1- ***N fertilizer in the early stages of the growth increased crop growth rate and the slope was the early stages of growth (48 days after planting) was fast and soon entered a period of rapid ¬ crop growth rate, which was due to high LWR and leaf area index in this time period, because crop growth rate (CGR) is obtained by multiplying these two parameters .***

2- ***maximum crop growth rate(CGR) in N31V treated with 22.5 g m a day were almost within 96-72 days after planting when the maximum crop growth rate and this will keep one of the main reasons increased grain yield in this treatment that the topic of grain will be discussed .***

3- N2V3 applied treatment with a maximum crop growth rate at 96 days after planting was obtained (19 g square meter per day) and durable product growth rate of the time interval 96-84 days after planting was obtained. Biological nitrogen fixation process of changes in crop growth rate somewhat different levels of nitrogen has similar with shortages because of high levels of nitrogen with nitrogen managed somehow to equality, but equality in the early stages of growth is seen after getting into a period of rapid growth and the anthesis differences in crop growth rate trend is observed .

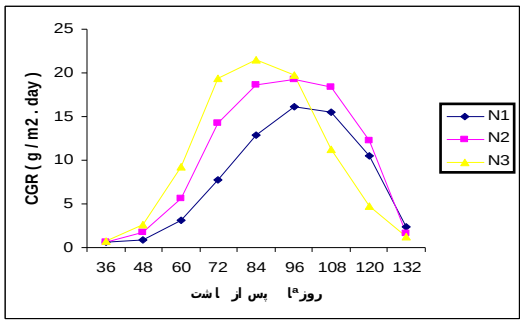

Fig3. Effect of different levels of nitrogen fertilizer on trend CGR $(g/m^2.day)$

B. Yield

ANOVA table of significant treatments by applying different amounts of nitrogen fertilizer and bean varieties and their interactions on yield showed.

Duncan test showed that among the cultivated varieties, varieties with the BARAKAT of the highest yield was 4880 kg ha grain yield than other varieties less demonstrated. Duncan test showed that different amounts of nitrogen fertilizer, causing changes in grain yield and fertilizer treatments were 80 = N3 and 40 = N2 had the highest average yield.

High yield in the treatments 80 = N3 and 40 = N2 probably due to supply fertilizer base required for plant growth in early stages yet stabilized biological nitrogen begin has not plants need nitrogen fertilizer have to be able to level green field increases and photosynthesis do more are to be. This higher amount of leaf area index of this treatment with a mean 3.7 which Chart 3-4: Effect of different amounts of nitrogen fertilizer on TDW leads to higher dry matter accumulation was visible in the cause of dry matter allocation to seeds is more. Increased dry matter accumulation in the treatments in line with the high value crop growth rate of these two treatments as the average 19-18 g m is the day that treatment was higher than N1. But the treatment 20 kg ha-N1 Nitrogen fertilizer supply base was not cause the plant and consequently growth and leaf area index has risen slowly, so some of the plant growth period over the farm has no full coverage that reduced dry matter accumulation process and ultimately reduce yield although it has treated approximately 30 days after the biological fixation of nitrogen was started and partly on the plants but the amount of fertilizer is the primary means 20 kg ha as the base is low .

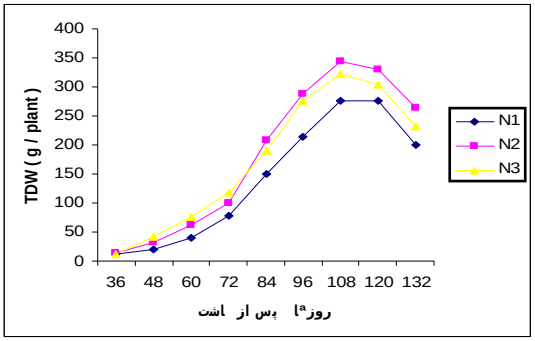

Fig4. Effect of different amounts of nitrogen fertilizer on TDW

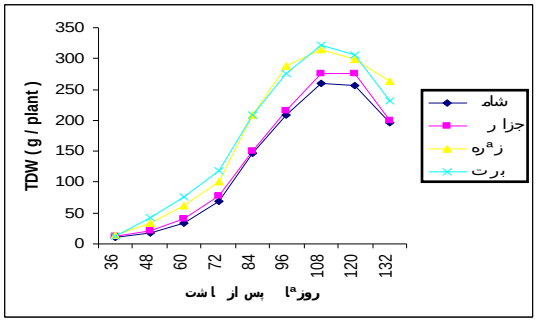

Fig5. Effect of amount of nitrogen fertilizer on cultivated varieties of TDW

4. Discussion

Among the varieties cultivated varieties BARAKAT with the highest yield was 4880 kg per hectare yield and other cultivar far lower than demonstrated. Similarly, different amounts of fertilizer nitrogen causes changes in grain yield were and treatments 80 and 40 kg ha, the highest average yield had, although accumulation of nitrogen in plant fertilizer treatments 80 kg ha highest accumulation of nitrogen in the plant showed that This high potential of the bean plant uptake of this element specifies that the increased vegetative growth and the emergence of a greater number of side branches that eventually became the plant grain yield increase. Digit growth parameters indicate superiority over other varieties BARAKAT of LAI, total dry matter and crop growth rate can be BARAKAT with a total consumption figure 40 kg ha nitrogen fertilizer is recommended - should be .

Duncan test showed that among the varieties cultivated varieties BARAKAT with the highest yield

obtained with 4880 kg per hectare and other varieties yield much less demonstrated. Duncan test showed that different amounts of nitrogen fertilizer, causing changes in grain yield and fertilizer treatments were 80, 40 had the highest average yield

With the number of branches per plant FabaL correlation coefficient ($0.69 = R^2$) was calculated and a direct positive regression (but not too high) of it's offered. Applying more fertilizer N_3 in tests to increase the number of branches found significant spatial yield was increased. Among the figures of the number of digits Blessing had more branches that this figure will increase performance.

Applied nitrogen fertilizer in the early stages of growth has increased and the slope CGR early growth (48 days after planting) was sharp and rapid phase earlier that CGR has been high due to NAR and LAI in this period, because CGR is obtained by multiplying these two parameters. Maximum CGR treatment with 22.5 m g per day is achieved in approximately 72-96 days interval after planting around the maximum amount, CGR, and retains one of the main reasons for increased yield this is seed treatment.

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Characteristics of Online Education and Traditional Education

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Abstract: Distance education is education designed for learners who live at a distance from the teaching institution or education provider. It is the enrollment and study with an educational institution that provides organized, formal learning opportunities for students. Presented in a sequential and logical order, the instruction is offered wholly or primarily by distance study, through virtually any media. Historically, its predominant medium of instruction has been printed materials, although non-print media is becoming more and more popular. It may also incorporate or make use of videotapes, CD or DVD ROM's, audio recordings, facsimiles, telephone communications, and the Internet through e-mail and Web-based delivery systems. When each lesson or segment is completed, the student makes available to the school the assigned work for correction, grading, comment, and subject matter guidance by qualified instructors. Corrected assignments are returned to the student. This exchange fosters a personalized student-instructor relationship, which is the hallmark of distance education instruction. Historically, most distance education courses were vocational in nature, but today courses are offered for academic, professional, and avocational purposes for students of all ages. There are numerous specialized programs, such as those for blind persons and for parents of small children with hearing impairments.
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Keywords: Online Education, Traditional Education

Introduction:

No doubt requirements and identify the correct tools and proper utilization of their functions according to accelerate the development expected in the knowledge-based information society will be effective. Such concerns and problems that any country in its development plans in motion to the information becoming a knowledge based society means a society would be faced with the centrality of knowledge, Dealing with existing tools and how these tools are used.

Led the way when dealing with those massive training programs available to speak to the technological tools that we expect to occur that planners and decision makers that planners and decision makers of large structures, especially university education according to the image Access to the development of community information are available on these tools are selected and used.

Massive wave of data produced in today's world it nicknamed the "information age" has all day and through various means of communication in the world will move on its size are added. Other hand, as we're not the world witnessed the development of the role of information communication devices transporting feedback fast and absorb the information around the world, we forget. Therefore, information and communication as the main lever or two important moves in developing wings, we learn. Meanwhile, proper utilization of the capacities of these two valuable and effective indexes in the general development concept for any society and the principles of a critical need is considered. With a view to clarifying this issue can be paid in the best way to create a platform for developing data standards and access to a knowledge based society, what really can be. To achieve a clear and practical answer in this area before all the existing definitions and indicators mentioned placed.

Distance Education:

Distance education courses vary greatly in scope, level, and length. Some have a few assignments and require only a few months to complete, while others have a hundred or more lesson assignments requiring three or four years of conscientious study. Since 1890, more than 130 million Americans have studied at DETC member institutions, including Franklin D. Roosevelt, Walter P. Chrysler, Walter Cronkite, Barry Goldwater, Charles Schulz, and many other distinguished alumni of DETC members.

Unlike most distance education courses offered by traditional colleges and universities that are semester and classroom oriented, with courses offered by most of the DETC-accredited institutions you can study any time and anywhere. Distance education is especially suited for busy people who wish to increase their knowledge and skills without giving up their jobs, leaving home, or losing income. You learn while you earn. Many courses provide complete vocational training; others prepare you for upgrading

in your present job, without losing wages, experience or seniority. You receive individual attention, and you work at your own pace.
In recent years, technology has played a significant role in transforming the traditional distance education school into a dynamic, interactive distance learning method using toll-free telephone lines, as well as a diverse array of personal computers, video devices, CD and DVD ROMs, online courses over the Internet, interactive devices, and other modern technological innovations. The future for distance study promises to be exciting!

Benefits of Distance Learning:

Benefits and opportunities that distance education provides, include:

- training a wide range of audiences.
- meet the needs of students and students who can not attend in place.
- Possible connection between students and students with cultures, beliefs and experiences are different.
- Benefiting from coaches and speakers who do not live in the country.

Educational methods in distance learning:

Today, under the new system replaced the traditional systems of learning and learning week (ie tutoring methods, lectures) are:

- **Multimedia courses:**

These courses and widely used elements of image, communication, graphics and simulated components, animation and communication elements for guidance and tips, and talk back on course and curriculum issues are held.

- **Enhanced communication mechanisms:**

The mechanism of any texts simultaneously, and asynchronous audio-visual communications to protect you. This case allows students to practice on topics learned will give.

- **Written test:**

thus, question and test via a distributed communication network, are corrected and returned. These exams through video conferencing support and runs**.**

-Virtual Seminar:

thereby different groups of students in different geographical environments linked together makes.

- **Collaborative virtual laboratories:**

the laboratory of the Group's activities are supported. Workshops such as software engineering.

-Smart academic factors:

academic factors that inform intelligent, support and guidance students pay.

Remote educational tool:

distance learning tools and supplies various uses. These tools in four main courses are:

A - Audio Tools:

Audio tools include training such as two-way interactive telephone, video conference, shortwave radio and a strain of tools such as audio tape and radio.

B - Image tools:

including slides, films, video tapes and video conferences.

C - Data:

computers as electronic data are sent and received. Because the data word description for a wide range of educational tools is used.

Computer applications for distance education are varied and include the following:

1- Training to Computer Management.

2 - Computer Assisted Instruction.

3 - through PCs.

4 - e-mail, telegraph, computer conference and the World Wide Web simultaneously.

D - Print:

The main element of distance education programs, particularly in the exchange and delivery system information tools are considered.

Pros and Cons of Online Education

Nowadays it is possible to do almost anything online.Many different types of diplomas, certifications, and academic degrees are available from online learning institutions.

This article discusses both the advantages and the disadvantages of online education.
The Internet has enhanced and changed every aspect of our life, and now it is making inroads into the world of education.
Online education and classes are not just a buzz; they are a new technology that is making a difference for teachers as well as students.

Online Education Pros

Of the many advantages and new possibilities of online education, here are some of the Strengths:

1. Greater flexibility

Online students have more freedom in choosing their programs and schedules. This allows many busy adults to adapt online courses to their already established everyday life of work and family. For many, this is simply the only way they can study for that degree which will take them farther in their career and life.

2. Saves Time and Money

Online education saves an enormous amount of time and money which in traditional education is wasted on commuting. Commuting is also very tiring, while online education means you can study from home, in

a comfortable environment with everything you need close at hand.
Tuition also costs less for most online institutions.

3. Logistics

Traditional education is restricted due to logistical issues; there is only this amount of students who can be in a place at a given time, whereas in online classes, there is no question of paucity of space. As long as the online classes have the necessary bandwidth, an unlimited number of students can study, all over the globe.
Then again, traditional classes would turn up expensive to maintain, because the educational institution needs to maintain a place and its facilities. When it comes to online education, all they need to do is to set up E-learning tools, an Internet connection and a website where people can learn. While this is not cheap too, but it is definitely cost less as compared to the costs of a place to carry on.

Online Education Cons:

To balance our view of online education, let's consider some of the disadvantages/Weaknesses:

1. Requires Self Discipline

The greater freedom of online classes requires greater self disciplines, but not everybody has it. The comfort of studying from home may also reflect negatively on your motivation to do your best.
Depending on your personality, home can provide as many distractions as traditional campus facilities (designed especially for studying).

2. How well have you learned

With online education, the students have a greater hold on the education process, and that is not always a good sign. For example, in online education, though the teachers set up the audio and video clips with the same dedication, it remains to be seen whether the students study it with the same dedication that they would in a classroom.

3. No Campus Life

Many people remember the college/university as the best time of their lives.
Part of it is the campus life – During and after classes. One of the disadvantages of taking online education rather than traditional one, is that in online education you will not have the atmosphere of campus lawns, corridors and classrooms, huge libraries with real books you can hold. There will be no campus buddies and no campus culture.

4. Internet Connection

Another negative point of online education is that it entirely depends on the internet connection. Though many countries have a robust Internet connection and others are getting it soon, there are still countries, and areas in countries that do not have access to Internet and other enhanced technologies. It would be difficult to get online education in countries that have a limited online presence.
These are just some of the distinguishing points between online classes and traditional classes.

Online Education VS Traditional Education

This article reviews the differences and the pros and cons of online VS traditional education.
Gone is the world where only traditional, campus-based education existed and you only had to choose the university or college you wanted to study in.
Someday, probably in the near future, Online Education will replace traditional institutions. At least, many degree programs will combine the on campus courses as well as online classes as a standard educational approach.
But for now, the future student has to decide first whether he/she wants to study online or on a campus degree.
Here are some points to consider the pros and cons of online and traditional institutions:

Differences between Online and Traditional Education; Comparison

1. Convenience

One of the most striking, innovative, and unprecedented features of online education is their convenience for almost anyone. Persons busy with careers or families will be able to compose their schedules so that they fit their individual time constraints. This is possible because courses are delivered in the form of electronic-based modules online.
It is also convenient because it requires no commuting, saving a great deal of time and money. It allows to study from home, with the only requirement being the possession of an adequate computer and internet connection. Basic computer skills only are required to acquire higher education online.

2. Expenses

Tuition costs less for most online institutions. Online education also eliminates the additional expenses usually entailed by traditional "campus life", commuting, and the purchase of study materials.

3. Feedback

Feedback is somewhat better in traditional education. Students can interact directly face to face with both classmates and teachers, which makes feedback easier to understand and faster to get. Some online institutions do offer chat rooms and video/audio meetings.

4. Accreditation

The credit of online education depends on its purpose and context. If you only have online degree(s) and are just trying to find work, employers may prefer

traditionally educated candidates. If you are already an employed and valuable professional, online learning will be seen favorable as a way to improve your skills, expand your professional knowledge, and thus contribute more at work.

5. Ecology

Online education has obvious positive effect on the environment.

It may not be measurable now, but if online education largely replaces traditional institutions in the near future it will mean that less paper will be used for books and writing material and fewer campuses will be built while the number of students and employed teachers will only increase radically.

Disadvantages of Online Education: Drawbacks to Consider

This article reviews the main disadvantages of the online education.

As online services in general are revolutionizing Internet activity and the business industry – Online Education is becoming increasingly popular.

It is not merely a new trend – for many people it is the only convenient way to acquire education. Online education already provides unique new opportunities which hadn't exist before.

The distance/online Education has not come to replace Traditional Education yet. The number of online universities and colleges is still relatively small and their services are not as well established as the services of traditional institutions.

Online Education – Disadvantages

The following are its 4 main drawbacks one would want to consider -

1. Human Interaction

Online classes means there is not live, face-to-face classroom and office interaction between students and teachers. For many this is highly significant. Consulting lecturers in person and being able to discuss matters in groups, in and outside the class is, for many, an important motivational activity and learning strategy. Moreover, for many programs interpersonal communication is crucial, but it is not easy to seriously practice online. Many people also prefer traditional campus-based education simply for the on-campus atmosphere and the opportunity to meet many people there face-to-face between and during class, conferences, campus parties, concerts, fairs, and various cultural events.

2. Study Materials

Online institutions provide all or much of their material online, which may be convenient, since you have to buy and photocopy less. But while online information in general is, of course, extensive, approved and trusted scholarly academic material is not easily to be found online.

The resources of online universities and colleges are not yet as extensive as those of traditional institutions with their on-campus libraries (and the private libraries of generous lecturers who will always lend you that hard-to-find book you absolutely must have for your paper).

3. No Lab Sessions

Degrees science, especially the natural sciences, require lab hours. Online education as yet cannot provide a substitute for actual hands-on experience that students find in the labs on campus. Such experience is crucial in general, and it is often noted in particular by employees. One reason why graduates from traditional institutions are preferred is that they have extensive and relevant lab experience.

4. Difficulties of Self-Discipline

For many a significant advantage of traditional education is that it leaves little room for procrastination. You have to show up on campus and be in class, and for many this is a great motivational aspect and the reason for their eventual success. With online education the student has much more freedom. This can be both an advantage and a disadvantage. For many it is a disadvantage because it encourages procrastination. This leads either to unnecessarily prolonged studies or even failure to fulfill requirements, simply because there was too much freedom.

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The Level of Local Participation in Rural Cooperatives in Rural Areas of Marvdasht, Iran

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Abstract: The purpose of this article is to describe the level of community participation in rural cooperatives. The paper is based on the survey questionnaire carried out among 250 cooperatives members in rural areas of Marvdasht, Iran. The findings revealed that the level of local participation in rural cooperatives is low. Therefore, the rural residences especially, the cooperatives members have little contribution to the development of rural cooperatives and rural development as well.
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Keywords: participation, rural cooperatives, rural development

1. Introduction

Local participation is considered as an important factor for successful and prosperity of rural development. The greater proportion of people in the world lives in rural environments. The World Bank (1975) defined rural development as a strategy designed to improve the economic and social life of aspecific group of people- the rural poor. The contribution of rural areas to conomic development is usually lirnited; however, the future potential for fire conti'ibution is great, especially in developing countries. A number of researchers have highlighted the role of people participation in rural development (Aref & Sarjit, 2009; Chizari, Lindner, & Bashardoost, 1997). According to Aref & Ma'rof (2009), without community participation, there are obviously no accountability, no development, and no program. Participation plays a crucial role in developing rural development as well as promoting rural and agricultural cooperatives. This is basically reflected in the attempts of international agencies to enhance people participation. This study attempts to highlight a relationship between rural participation and rural cooperatives.

2. Literature Review

Rural cooperatives are the groups of people who work together voluntarily to meet their common economic, social, and cultural needs (Tanzanian Federation of Cooperatives, 2006). The International Cooperative (ICA) (1995) defines a cooperative as "an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democraticallycontrolled enterprise"(ICA, 1995). Rural cooperatives are generally considered as a tool for rural development. Many developed countries such an England, France, German and United Stated largely depend on incomes earned through rural cooperatives (Aref A, 2011). Rural cooperatives have played an important role in the development of agriculture in industrialized countries as suppliers of farming requisites, marketers of agricultural commodities, and providing services such as gain storage and transport. It appears that many of these agricultural cooperatives are adapting their operations to the rapidly changing economic environment characterized by technological change, industrialization of agriculture and growing individualism (Ortmann & King, 2007). However, the rural cooperatives in most developing countries are faced with some constraints and barriers. In this way, participation plays a crucial role in development of rural cooperatives (Aref A, 2011). Ashley and Roe (1998) describe community participation as a spectrum ranging from passive to active involvement to full local participation, where there is active community participation and venture ownership. Arnestin (1969) also defines citizen participation as the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future. Meanwhile, some scholars such as Pretty (1995), Oakley (1991) and (David & wandersman, 1990), provided a typology of participation, but the most suitable typology that is suitable for urban issues is Anstein's ladder. Arnstein's ladder of participation is the most well-known continuum of citizen participation which frames participation in terms of citizen power (Arnstein, 1969).

Table 1: Level of citizen participation in rural cooperatives

Levels	Types	Description
Citizen-power	Citizen control	This range is the highest level. People have the degree of power which guarantees the participation in governing a program from citizens (Arnstein, 1969).
	Delegated power	Local participation is performed through negotiations between local people and authorities, this results in positive role the citizens played in partial decision making with the authority over a particular plan or project (Arnstein, 1969).
	Partnership	Power is in fact redistributed through negotiation between local people and power-holders (Arnstein, 1969).
Tokenism	Placation	Placation is a stage that people begin to have some degree of influence though tokenism is still apparent (Arnstein, 1969).
	Consultation	People are invited to give their suggestions; this rung of the ladder is still a sham since no assurance is offered. Concerns and ideas of citizens will not be taken into consideration (Arnstein, 1969).
	Informing	Authorities inform citizens of their rights; However, more emphasis is put on a one-way flow of information (Arnstein, 1969).
Non-participation	Therapy	With respect to group therapy, masked as citizen participation, should be on the lowest rung of the ladder because it is both dishonest and arrogant (Arnstein, 1969).
	Manipulation	Based on so-called citizen participation, people are placed on rubber stamp advisory committees (Arnstein, 1969).

Source: Arnestein, (1969)

Rural cooperatives and people participation in local areas reinforce each other and also contribute towards promoting the rural development. Putnam (2000) states that the more the people are engaged in social activities the more likely they are to participate in rural cooperatives activities (Putnam, 2000). This is because, participation as a main component of community capacity building, enables participants to work together more effectively to pursue shared objectives at the community level (Aref, 2011). Although, people participation is affected by community engagement, but people participation also plays a crucial role in promoting rural cooperatives, as well as in development of local development. Pedersen (2000) identify the effective role of participation of poorest social sectors, women, youth, and indigenous people.

3. Research Methods

This study is based on quantitative method to investigate the level of community participation in rural cooperatives. This study was carried out in rural areas of Marvdasht, during the March and April 2010. Marvdasht is one of the northern cities and also counties of Fars province. The city is located 45 kilometers north of Shiraz and has an altitude of 1620 meters above the sea level. The county has an area of 3687 square kilometers . Marvdasht as a county is divided into four districts: Central, Kamfirouz, Doroudzan and Seydan. Marvdasht has a cold weather in the hilly areas and moderate climate in other regions (Wikipedia, 2011). Agriculture is the major development sector in Marvdasht (Allahdadi, 2011). Marvdasht is among the foremost city which established rural cooperatives in Iran. The study used survey design, where a questionnaire was used to collect the data. The questionnaire was structured around a Likert scale. The respondents answered each statement based on five scales. Each statement was situated on a 5-point scale as recommended by Dong-Wan and William (2002), and Aref (2010) with 1 representing a response of “strongly disagree” and 5 representing “strongly agree.”

The respondents were 250 cooperatives member where each respondent was chosen based on cluster sampling. The population of this research was rural residents, including the cooperatives members of in rural areas of Marvdasht, Iran. The respondents were asked to answer these questions which were constructed to gauge their level of participation in rural cooperatives.

The questionnaire was piloted tested to have its contents validated. Statements for level of participation were tested for their validity using Cronbach‘s alpha. Descriptive analysis was employed to determine the level of people participation in rural cooperatives in rural areas.

4. Results

This study determines the level of participation in rural cooperatives through descriptive statistics. Table 2 reveals the mean score of eight domains of the participation. Table 2 reveals the findings of the analysis, which show the differences between domains of the participation. Using the mean of the total score as a standard indicator, it was found that generally participation levels in tokenism and citizen-power was low, whereas in non-participation (manipulation and therapy) was high.

Table 2: Total scores of the level of participation in rural cooperatives

Levels	Dimensions	Mean
Citizen-Power	Partnership	0.70
Mean=0.63	Delegated Power	0.59
	Citizen control	0.52
Tokenism	Informing	1.37
Mean=1.39	Consultation	1.60
	Placation	1.21
Non-Participation	Manipulation	4.83
Mean=4.50	Therapy	4.18

Table 2 showed the differences in the levels of participation (non-participation, tokenism, and citizen- power). Using the mean it was found that participation level in non-participation dimension was higher than tokenism and citizen-power (4.50, 1.39 and 0.76 respectively). Levels of local participation in tokenism and citizen-power dimensions, which are genuine participations, have low scores as compared to non-participation level. It shows citizens cannot collaborate with the local government organizations and have not been empowered to influence policies and expand their opportunities in rural organizations. Generally, the findings reveal that the level of community participation in rural cooperatives is low and people are mostly involved in the non-participation stage. This means that most citizens are not involved in the decision-making process, and do not attempt to voice their views and hold the local government accountable.

For rural residence to be effective in rural cooperatives, they should come together and interact with governing bodies collectively. Local residence should be more involved in community activities and influence decision-making processes that affect their lives, their communities. They need to interact with the rural cooperatives and foster active relationship with local organizations. However based on descriptive results, it was revealed that the level of local participation in rural cooperatives is low. However people are more interested to participate in rural organization activities, such as rural and agricultural cooperatives.

As Putnam stated the term 'local participation' is related to collaboration of people in rural cooperatives (Putnam, 2000). On the other hand, strong rural communities generate rural capacity, and connect local people with government. Therefore, based on the mean scores of participation, it could be concluded that in this study they do not have significant contribution towards development of rural cooperatives and rural development as well.

5. Conclusion

In this study, the level of participation in rural cooperatives was examined. The basic argument was that effective local participation in rural cooperatives. Community participation is considered as an instrument for rural cooperatives and a foundation for empowerment of local people. In addition, participation in rural cooperatives is essential for rural development activities, as, it strengthens the relationship between rural areas and local organizations and provides the space for their partnership. From the findings of this study, it is noted that the level of participation in rural cooperatives is low. In other words, people do not participate at the decision-making level, are not able to interact with councilors and they are not interested to engage in civic activities. Hence, it could be concluded that they have limited contribution towards rural cooperatives**.**

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Human Resource Development for Poverty Alleviation in Iran

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Abstract: This study illustrate the role of human resource development in poverty alleviation in rural areas of Marvdasht, Iran. Data were collected using focus group discussions. The findings of this study show that, there is a little effort to building human resource for poverty alleviation. The results also indicate that although there is high level of education between local people, but rural areas still face with barriers which hinder their participation in poverty alleviation.
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Keywords: human capital, human resource development, poverty alleviation

1. Introduction

Does human resource development generate positive influences on poverty reduction? This question has important theoretical and policy implications for the contemporary world, especially for the developing countries. Human resource development is one of the necessary conditions for all kinds of growth-social, political, cultural, or economic (Harbison & Charles, 1964). Human resource development has close relation with human capital. The formal concept of human capital was developed in the 1960s by a group of economists associated with the University of Chicago (Becker, 1964; Mincer, 1958), although the idea that investment in education has a long-term economic and social payoff for the individual and society at large goes back to Adam Smith if not earlier. In recent years, several researchers have developed measures of human capital to facilitate empirical studies on the role of human capital for rural development (Barro, 1991; Barro & Lee, 1993; Psacharopoulos & Arriagada, 1986, 1992). This study attempts to illustrate the level of human capital for poverty alleviation in rural areas of Iran.

2. Literature Review

The concept of human resource development is generally closed with human capital. Human capital is defined as the aggregation of investments in such areas as education, health, training, and migration that enhance an individual's productivity in the labor market, and also in non-market activities. Some definitions of human capital (Laroche & Merette, 1999) include the innate abilities as well as the knowledge and skills that individuals acquire throughout their lifetimes. It is argued that since the number of skills individuals acquire through their lifetime depends partly on their initial abilities, this potential is an important aspect of the human capital concept. Human capital is the skills and abilities of people, as well as the ability to access outside resources and bodies of knowledge in order to increase understanding and to identify promising practices. Human capital also addresses leadership's ability to "lead across differences," to focus on assets, to be inclusive and participatory, and to be proactive in shaping the future of the community or group (Iowa Satate University, 2008).

The importance of human capital as a source of progress and economic growth has long been recognized in the economic literature. Adam Smith (1776) was the first classical economist to include human capital in his definition of capital (Laroche & Merette, 1999). Woolcock (2001) had counted at least seven fields that had employed the concept of human capital: families and youth, schools and education, community life, work and organizations, democracy and governance, problems related to collective action, and economic development. Therefore, there is scant literature on human capital for poverty alleviation. Empirical studies including Schultz (1963), Denison (1964, 1974), Becker et al (1990), Harbison and Myers (1964), Mankiw, Romer and Weil (1992) and many others have shown that increased education of the labor force appears to explain a substantial part of the growth of output in both developed and developing countries (Woubet, 2006).

Overall, poverty can be reducing by investing in human resource development. Poverty being a rural phenomenon where the majority of the people live in most developing countries, the mechanisms to be used should target the recipients (Aref A, 2011). Empirical works on human capital most of which are

based on the experiences of Western societies, indicate that communities endowed with a diverse of human capital will achieve superior outcomes in multiple spheres such as, tourism development and local development while, communities with a low level of human capital tend to have a poor performance in these spheres.

Poverty has been defined as the "denial of opportunities and choices most basic to human development to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self-esteem and respect from others" (Hirschowitz, Orkin, & Alberts, 2000). Poverty can be reduced through building human capital. This research is guided mainly by the theoretical framework of human capital theory, and also, by empirical studies from previous work. Laroche and Merette (1999) identify five aspects or characteristics of human capital that merit attention. They are:

• Human capital is a non-tradable good embodied in human beings, although the flow of services generated by human capital is marketed;
• Individuals, particularly the young, do not always control the channel or pace by which they acquire human capital;
• Human capital has a qualitative as well as a quantitative aspect reflecting the quality of the educational inputs;
• Human capital can be either general in nature or specific to a firm or sector; and
• Human capital generates individual and social externalities (Sharpe, 2001).

To date many researchers agree that the forces of human capital influence important political and economic phenomena (Aref, 2011; Aref, 2010; Putnam, 1993; Putnam, 2000; Strzelecka & Wicks, 2010). Perceiving human capital holistically as a resource for individuals, communities and regions, exposes complex community processes. This is because networks of relationships often have the potential to accelerate democratizing processes and local democratic cultures within their members (Strzelecka & Wicks, 2010). In this research the question is that; how rural communities can offer a viable solution for poverty alleviation. The researcher's answer to this question is building human capital.

This answer is supported by the literature and research evidence from some filed such as families and youth, education, community life, work and organizations, democracy and governance, problems related to collective action, economic development, physical and mental health, and public protection (Aref, 2009; Franke, 2005).

3. Methodology

This study was carried out in rural areas of Marvdasht, Iran. This survey was conducted over two months during the period March and April 2010. Marvdasht is counties of Fars province. The city is located 45 kilometers north of Shiraz. This study is based on qualitative method to investigate the level of human capital in poverty alleviation. Focus group discussion was performed to collect data from rural residents in ten villages in Marvdashat, Iran. Focus group was used for obtaining a better understanding of participants' attitudes (Aref, 2010). The questions for focus group were developed based on review of literature and existing indicators of human capital. The respondents were 80 rural residences, where they chosen based on convenient sample. There is no consensus among researchers on the optimal number of participants in FGD. But the ideal number in each FGD is six to ten. All respondents were male. Eighty people were participated in FGD. They ranged in age from 22 - 69 years. The researcher explained to them the objectives of the study. The respondents were asked to answer these questions which were constructed to gauge their level of human capital for poverty alleviation. In the end of any focus groups, the respondents' group rated any answers from 0 to 4

4. Results

This study was used focus group discussions to determine the level of human capital in poverty alleviation in rural areas of Marvdasht. This study involves 80 respondents, the age of the respondents ranged between 22 to 69 years. Table 1 reveals the mean score of five domains of the human capital including: education, communication skills, job satisfaction, training and health). Table 1 reveals the findings of the focus group analysis, which show the differences between dimensions of human capital in poverty alleviation (max=4, min =0). The answers were summarized based on 0 to 4 for each domain the study found that generally human capital domains in communication skills, education were high, whereas the level of job satisfaction, training, and health were in low level.

Table 1: Total scores of human capital indicators in poverty alleviation

Indicators	Mean
Health	1.09
Training	0.50
Education	3.49
Job satisfaction	0.90
Communication skills	2.03

Table 1 showed the differences in the domains of human capital for poverty alleviation. Using the mean it was found that the level of education, and communication skills were high(3.49, and 2.03 respectively), whereas the level of training, job satisfaction, and health were in low level (0.50, 0.90, and 1.09 respectively). It shows local government is unable to prepare the rural people for training and other skills that needed for poverty alleviation. Generally, the findings reveal that the level of human capital in rural areas of Marvdasht for poverty alleviation is low. This means that most people are not involved in the decision-making process for poverty alleviation. For rural residence to be effective in poverty alleviation they should come together and interact with local government. Local residence should be more involved in rural actions and influence decision-making processes that affect their lives, and their locations.

5. Conclusion

The pivotal role played by human capital in the process of rural development is alleviation of poverty. Human capiatl is an important dimension in rural development. Any country wishing to enhance its rural development needs to take into account the development of human development as part of the growth measurement. This study promises to make a significant contribution to the study of human resource development for poverty alleviation in rural areas of Marvdasht, Iran. The findings of this study showed that the there is a little effort from local government to building human resource development for poverty alleviation. This finding of this study will assist social workers in understanding the barriers of poverty alleviation in Iran. Since human resource development has fundamental role in rural development and poverty alleviation as well. This paper suggests that in knowledge-based economies, a major shift in the way we look at human capital is necessary.

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Effect of Citrus Waste Substrate on the Production of Flavor Constituent of *Grifola Frondosa*

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Abstract: No studies have previously been published on the flavor content of *Grifola frondosa* cultivated on citrus wastes. The free sugars, non-volatile organic acids, and free amino acids components in *Grifola frondosa* mycelial extracts cultivated on citrus wastes such as citrus peel and premature Hallabong fruit drop, and their substrates were determined in the present study. The extracts of *Grifola frondosa* mycelium grown on citrus wastes contained fructose (11.0 - 168.4 mg/g), glucose (1.7 - 108.1 mg/g), sucrose (8.4 - 75.3 mg/g) and maltose (13.5 - 21.1 mg/g). The fructose and maltose contents were significantly higher, whereas glucose and maltose contents were declined in mushroom extracts using citrus peel and premature Hallabong as substrate than in their substrates. Non-volatile organic acids analysis showed that lactic acid (108.6 - 181.2 mg/g) is the major organic acid found in mushrooms cultivated on citrus wastes. Monosodium glutamate-like and sweet taste amino acids were 1.4- to 7-fold higher in *Grifola frondosa* mycelia cultivated on premature Hallabong drop than those of *Grifola frondosa* cultivated on sawdust and log substrates, which was reported in the previous findings. Taken together, citrus waste substrate may be responsible for the better taste of *Grifola frondosa* mycelia as compared with conventional substrate and it, therefore, could be utilized as a practical substrate to offer a viable alternative use for these abundant agricultural wastes with a double benefit: the cultivation of valuable mushrooms and a reduction in environmental impact.
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Keywords: *Grifola frondosa*; citrus waste; free sugar component; organic acid component; amino acid component

1. Introduction

Grifola frondosa (huishu hua; maitake), one traditional edible mushroom in Asia, has been used as food and food-flavoring material in soups and sauces for centuries, due to their unique and subtle flavor. Recently *Grifola frondosa* also has attracted as functional foods and as a source of physiologically beneficial medicine (Borchers et al., 2004; Inoue et al., 2002; Masuda et al., 2009). *Grifola frondosa* is generally produced in solid culture using composts or sawdust of broad leaf trees supplementing the source of nutrients such as rice or wheat bran, and this method makes it possible to cultivate on a large scale and to harvest all year around. Extensive research has been carried out to find the most efficient cultivation methods for the edible mushrooms by employing the optimal growing conditions exist within a limited range of temperature, moisture, humidity and other environmental factors (Garibay-Orijel et al., 2007; Sanchez, 2010; Chen st al., 2010). As one of the greatest challenges to mushroom cultivation, investigators have recently exerted their efforts to optimize existing cultural techniques for the mushrooms using cheap and locally sourced substrate materials such as agricultural and food wastes (Xiaoke and Shunxing, 2005; Chiu et al., 2000).

Citrus is the main fruit crop in the world, with a total production of 122 million tons in 2008 (Terol et al., 2010). In Korea, Jeju island is well known for its important production of citrus fruits (0.6 million tons in 2008/2009) (Department of Citrus Policy, Jeju Special Self-Governing Providence, Korea). Citrus fruits are utilized primary for juice recovery, where about half of the processed citrus including peels, segment membrane and seeds ends up as wastes. These solid residues are referred to as citrus wastes with estimated worldwide production of 15 million tons per year (Marı´n et al., 2007). Only a very small part of the wastes has been properly converted into useful or high-value products and most are disposed in landfills, constituting severe economic and environmental problems (Tripodo et al., 2004; Montgomery, 2004). In Jeju island, more than 50,000 tons of citrus wastes including citrus peels generated by juice processing facilities and canning industries, and premature fruit drops in orchards annually have been incinerated in disposal yards and dumped into the ocean (Yang et al., 2009). The by-products industry has a potential for growth since products have also been produced from citrus fruit residues. The peel of citrus fruits, the primary by-product, is a rich source of flavones as well as many polymethylated flavones, they could be which are very rare in other plants (Nogata et al., 2006). These beneficial actions suggest new value-added uses for these compounds as nutraceuticals and specialty

ingredients, and studies of the occurrence of the polymethoxylated flavones in byproducts generated from citrus juice processing or premature fruit drops caused by poor condition from climate change, some diseases and other stresses are currently of considerable interest to both pharmaceutical and food industries. Therefore, this study was performed to test the potentiality of using citrus wastes such as peels and premature fruit drops as nutrient supplements for growing *G. frondosa* mycelia. The present report analyzed the flavor components including free sugars, non-volatile organic acids, and free amino acids in the *Grifola frondosa* cultivated on citrus wastes and their substrates.

2. Material and Methods

2.1. Substrate

The peel waste of citrus fruit (Citrus *unshiu* Marc) after juice extraction was obtained from a local food processing company (Jeju Provincial Development Co., Jeju, Korea). The fruit peels were dissected, weighed, lyophilized and then ground into a fine powder using a blender. Premature Hallabong ([C. *unshiu* Marcov × C. *sinensis* Osbeck] × C. *reticulate* Blanco) fruit drops, kindly supplied by commercial orchards (Seogwipo-si, Jeju, Korea), were washed, dried in an oven with air circulation at 40 ºC, and ground with a mortal mile. The powered substrates were stored at -20 ºC prior to use.

2.2. Microorganism, inoculum and sample preparation

Grifola frondosa (KACC 50027), obtained from the RDA-Genebank Information Center, Suwon, Korea, was maintained on potato dextrose agar (PDA, Difco, Detroit, MI, USA) slant at 4 ºC. Fugal inoculum was prepared from mycelia grown on PDA for 5 days at 24 ºC in the dark and agar plugs taken from the periphery of the growing colony were used to inoculate media. An agar disk of the strain was inoculated (2%, v/v) in a 50 mL of a medium (pH 5) containing 50 mg of powdered substrate, 100 mg of $CaCO_3$ and 1 g of agar. After incubation for 10 days at 27 ºC, the 50 mL culture was added to 1 L media which consisted of powdered substrate (1 kg) and $CaCO_3$ (50 g). The fermentations were implemented in a 5-liter jar fermenter for 15 days at a 25 ºC. One gram of free-dried mycelia was ground into powder, extracted with 60 mL of 80% ethanol solution by ultrasonication at room temperature for 6 h, and then purified by using a Sep-Pak C_{18} cartridge and a 0.45 μm membrane filter (Waters, Milford, MA, US), which were used directly for analysis of their chemical components.

2.3. Analysis of free sugar

Free sugar analysis was performed by the high-performance liquid chromatography (HPLC) (Waters, Milford, MA, US) with an evaporative light scattering detector (ELSD 2000ES) using a Prevail carbohydrate ES column (5 μm, 4.6 mm × 250 mm; Alltech, Deerfield, IL, US) at 30 ºC and flow rate of 0.8 mL/min, with acetonitrile-water (70:30, v:v) used as the mobile phase. The acetonitrile was HPLC grade (Fisher Scientific) and the water was Milli-Q purified (Millipore, Bedford, MA, US). A calibration curve was obtained from six concentrations (0.16-5 mg mL^{-1}) of a mixture of standards containing D-glucose, D-fructose, sucrose and maltose (Fisher Scientific, Rockford, IL, US). Sugar content was expressed as mg sugar g^{-1} samples, on a lipid-free, dry weight basis.

2.4. Analysis of non-volatile organic acid

Organic acid analysis was performed by the same HPLC system as for sugar analysis. Separation of organic acids was by a Prevail organic acid column, 3 μm, 4.6 mm × 150 mm. The mobile phase was 25 mM KH_2PO_4, pH 2.5, and the flow rate was 1 mL/min. Sample injection volume was 20 μL. Tentative identification of organic acids was based on identical retention times of organic acid standards. Organic acid standards, oxalic acid dehydrate, DL-tartaric acid, DL-malic acid and lactic acid (Sigma Chemical Co., St. Louis, MO, US), were dissolved in 25 mM KH_2PO_4, pH 2.5 (pH adjusted with 1 N HCl). The profiles for separation of organic acids (Alltech) were used as references for organic acid identification. Three replicates were measured per sample class.

2.4. Analysis of free amino acid

The filtrate samples was mixed with *o*-phthalaldehyde reagent (Sigma) in an Eppendrof tube, shaken to facilitate derivastion and then immediately injected onto an X-Terra RP18 (5 μm, 4.6 mm × 150 mm) column of the Waters HPLC system equipped with a 626 pump, a fluorescence detector JASCO FP 1520 (Jasco, Tokyo, Japan) plus autosampler (Waters, Milford, MA) with the flow rate of 1.2 mL/min. The excitation and emission wavelengths were 442 and 480 nm, respectively. Each amino acid was quantified by the calibration curve of the authentic standards.

2.5. Statistical analysis

All analyses were replicated three times. Each data presented as means ± standard deviation. The data were statistically analyzed one-way analyses of variance followed by Duncan's multiple range tests (SPSS 12.0). Difference with *p* value less than 0.05 was considered statistically significant.

After multiple comparisons, the means in the following table and figures were followed with different small letter "a-d" based on their values and statistical differences. In the case that a mean was followed with "ab", this mean was not significantly different from a mean with "a", and was not significantly different from another mean with "b". However, means with different letters were significantly different at the level of 0.05.

3. Results and Discussion

Table 1 shows the free sugar contents in the *Grifola frondosa* mycelial extracts cultivated on citrus waste and their substrates. The free sugars found were fructose (11.0 - 168.4 mg/g), glucose (1.7 - 108.1 mg/g), sucrose (8.4 - 75.3 mg/g) and maltose (13.5 - 21.1 mg/g). Fructose (168.4 mg/g) had the highest concentration on a dry weight basis in the extract of *Grifola frondosa* mycelia cultivated on premature Hallabong fruit drop substrate (Table 1). The fructose and glucose contents were significantly higher, whereas maltose content was significantly lower in the extracts of *Grifola frondosa* mycelia cultivated on premature Hallabong fruit drop substrate than in the mushroom extracts cultivated on citrus peel substrate ($p < 0.05$) (Table 1).

Table 1. Free sugar composition of *Grifola frondosa* mycelium cultivated on citrus waste substrate

Free sugar (mg/g dry matter)	Citrus peel substrate	Premature Hallabong substrate	*Grifola frondosa* cultivated on citrus peel	*Grifola frondosa* cultivated on premature Hallabong
Fructose	11.0±0.71^{*,a}	111.5±5.19^{b}	13.1±0.22^{a}	168.4±5.30^{c}
Glucose	8.0±0.10^{a}	108.1±3.80^{b}	1.7±0.73^{c}	37.9±0.71^{d}
Sucrose	11.8±1.05^{a}	75.3±1.84^{b}	8.4±3.39^{a}	10.1±1.16^{a}
Maltose	16.4±0.36^{a}	13.5±0.29^{b}	21.1±1.33^{c}	17.7±0.93^{a}

*Mean ± S.D. for n=3; $^{a\sim d}$Values with different superscripts in a row are significantly different ($p < 0.05$).

Comparison between the results obtained using the two mushrooms grown on the citrus waste and their substrates showed that fructose and maltose were significantly higher in mushroom extracts than those in their substrates ($p < 0.05$) (Table 1). On the contrary, glucose and sucrose were declined in mushroom extracts using citrus peel (1.7 and 8.4 mg/g) and premature Hallabong (37.9 and 10.1 mg/g) as substrate than in their substrates (8.0 and 11.8 mg/g, and 108.1 and 75.3 mg/g, respectively). Sucrose was the only sugar which demonstrated no difference between mushrooms cultivated on citrus wastes (Table 1). Glucose has been associated with bitter flavor, and the taste attribute of sweetness decreased with increasing content of bitter glucose, influencing consumer acceptance (Bail et al., 2003). The type of sugar has an effect on flavor in addition to sweetness: Fructose is 5 times sweeter than maltose (Biester et al., 1925). Therefore, the high fructose and low glucose contents in mushrooms grown on citrus wastes would give rise to the sweet taste of *Grifola frondosa* (Table 1). This implied that citrus waste as substrate could possibly influence on flavor of *Grifola frondosa*.

Table 2. **N**on-volatile organic acid composition of *Grifola frondosa* mycelium cultivated on citrus waste substrate

Organic acid (mg/g dry matter)	Citrus peel substrate	Premature Hallabong substrate	*Grifola frondosa* cultivated on citrus peel	*Grifola frondosa* cultivated on premature Hallabong
Oxalic	0.02±0.004^{*,a}	0.32±0.026^{b}	0.02±0.008^{a}	1.7±0.22^{c}
Tartaric	1.4±0.03	2.4±0.06	1.7±0.14	2.8±1.46
Succinic	1.3±0.16^{a}	3.5±0.16^{b}	2.3±0.09^{ab}	6.5±0.96^{c}
Lactic	145.4±0.26^{a}	108.6±1.01^{b}	181.2±7.37^{c}	172.9±4.17^{c}

*Mean ± S.D. for n=3; $^{a\sim c}$ Values with different superscripts in a row are significantly different ($p < 0.05$).

Organic acids can be one of the compounds studies for its potential as flavor enhancers. Organic acids not only elicit sourness but also contribute to bitter and astringent taste quality (Thomas and Lawless, 1995; Kang et al., 2007). The composition and concentration of organic acids in mushroom are major factors in influencing their taste and flavor, and some organic acids contribute to antioxidant activity (Valentao et al., 2005). Hence, we investigated the effect of citrus waste substrates on the organic acids composition of *Grifola frondosa* in the following experiments. Four non-volatile organic acid contents of *Grifola frondosa* mycelia cultivated on citrus wastes and their substrates are shown in Table 2. These include lactic acid (108.6 - 181.2 mg/g), succinic acid (1.3 - 6.5 mg/g), tartaric acid (1.4 - 2.8 mg/g) and oxalic acid (0.02 - 1.7 mg/g). The results showed that lactic acid is the major organic acid found in mushrooms cultivated on citrus wastes and their substrates. The contents of lactic acid were significantly higher in the extracts of mushrooms grown on the citrus wastes than those in their substrates ($p < 0.05$), with the highest content found in the mushroom extracts cultivated on citrus peel (181.2 mg/g) (Table 2). In addition, mushroom extracts using premature Hallabong drop as a substrate show more succinic (6.5 mg/g) and oxalic (1.7 mg/g) acid contents than those of its substrate (3.5 and 0.32 mg/g), respectively ($p < 0.05$). However, no significant difference in tartaric content between mushrooms and their substrates was observed in this study (Table 2).

Table 3. Free amino acid composition of *Grifola frondosa* mycelium cultivated on citrus waste substrate

Amino acid (mg/g dry matter)	Citrus peel substrate	Premature Hallabong substrate	*Grifola frondosa* cultivated on citrus peel	*Grifola frondosa* cultivated on premature Hallabong
L-alanine	5.7±0.78[*,a]	11.3±1.24[b]	6.2±1.07[a]	14.8±2.36[b]
L-aspartic	3.1±0.66[a]	3.3±1.17[a]	2.0±0.36[b]	2.9±0.41[a]
L-glutamic	7.9±2.24[a]	11.7±3.13[b]	9.2±2.46[a]	13.4±3.01[b]
L-histidine	3.3±1.43[a]	3.6±1.04[a]	0.8±0.08[b]	0.7±0.03[b]
L-isoleucine	0.2±0.01	0.2±0.02	0.1±0.03	0.1±0.04
L-leucine	0.2±0.01	0.3±0.01	0.2±0.01	0.3±0.02
L-tyrosine	0.2±0.01[a]	0.8±0.04[c]	0.5±0.02[b]	0.6±0.02[b]
L-valine	0.5±0.02[a]	0.7±0.05[b]	0.7±0.04[b]	0.8±0.03[c]

[*]Mean ± S.D. for n=3; [a~c] Values with different superscripts in a row are significantly different ($p < 0.05$)

Free amino acids play an important role in the taste of mushroom (Mau et al., 1998). Thus, the quantitative analysis of free amino acids in *Grifola frondosa* grown on citrus wastes and their substrates is indispensable for the effective utilization of citrus wastes. Table 3 shows the free amino acid contents in the mushrooms and their substrates. Alanine (5.7 - 14.8 mg/g), aspartic acid (2.0 - 3.3 mg/g), glutamic acid (7.9 - 13.4 mg/g) and histidine (0.7 - 3.6 mg/g) were the major amino acids in the mushrooms and their substrates. Tabata et al. (2004) identified 15 amino acids in *Grifola frondosa* cultivated on sawdust and log substrates: the major one was alanine, aspartic acid, glutamic acid, histidine, and tyrosine (Tabata et al., 2004). However, our present results show that tyrosine is not major free amino acid.

Aspartic and glutamic acids are monosodium glutamate-like (MSG-like) components which give the most typical mushroom taste (Yamaguchi et al., 1971). MSG-like and sweet taste amino acids such as alanine would mainly be responsible for the attractive taste of *Grifola frondosa*. In the present study, the content of alanine, aspartic acid and glutamic acid were significantly higher for *Grifola frondosa* mycelial extract cultivated on premature Hallabong substrate (14.8, 2.9 and 13.4 mg/g) than those for *Grifola frondosa* mycelial extract cultivated on citrus peel substrate (6.2, 2.0 and 9.2 mg/g) ($p < 0.05$) (Table 3). These contents of mushroom cultivated on premature Hallabong drop were 1.4- to 7-fold higher than those of *Grifola frondosa* mycelia cultivated on sawdust (2.2, 1.6 and 8 mg/g) and log (3.1, 1.3 and 9.1 mg/g) substrates (Tabata et al., 2004). Moreover, the contents of bitter and tasteless amino acids histidine, tyrosine and valine in our study were appreciably lower in the mushrooms cultivated on citrus wastes than on sawdust (1.53, 1.77 and 0.96 mg/g) and log (0.94, 0.73 and 0.91 mg/g) substrates (Tabata et al., 2004). These findings indicate that citrus waste substrate may be responsible for the better taste of *Grifola frondosa* mycelia as compared with conventional substrate.

Together with these results, citrus waste could be utilized as a practical substrate for promotion of the cultivation and consumption of *Grifola frondosa*. Furthermore, the bioconversion of non-conventional substrates such as fruit peel and premature fruit drop by citrus offers a viable alternative use for these abundant agricultural wastes. This is not only useful in mushroom cultivation, but it will also keep the area green and environment good. A further sensory evaluation is in progress to confirm the findings of chemical compositions.

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Destroying of Word War II Metallic Land Mines by the use of Stray Current Electrolysis

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Abstract: Based on corrosion action caused by stray current electrolysis, it is possible to use such concept as a new technique to destroy metallic structure of the land mines. This new technique saves a lot of money, effort and time. The idea of this new technique is to corrode the metallic material of a group of cascaded land mines at one time by the acceleration of the corrosion action. Then, the charge, the explosive material, will expose to the surrounding soil which in turn will be spoiled by humidity.
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Keywords: Destroy; Word War II; Metallic Land Mine; Stray Current Electrolysis

1. Introduction

Dating minefields to World War II, the focus of mine in Egypt in the Western Desert, El-Alamein, as well as some in the Sinai from the remnants of war. Those vast fields of others and a clear cause of many accidents and fallen because many of the victims, as they prevent the development and use of this land in agriculture or prospecting for oil and mineral wealth. There is a project Qattara Depression, which examine the possibility of generating electricity through the construction of the course conducts the Mediterranean Sea with Qattara Depression, but the project is not so far because of the following: The problem of mines (abandoned in the area of El Alamein since World War II) impede the implementation of the project

2. Landmines

2.1 Anti-personnel mines

Perhaps this type of mine is the most dangerous of all, which is a fundamental problem, and was the signing of the global conventions, which criminalize the use of anti-personnel mines but it is still a problem. Exploding anti-personnel mine if the weight of a certain weight, say not less than 80 kg for an adult, and over time due to factors rust and moisture and erosion, a minimum weight required for the mine to be exploded. Then mine explosion shall be at any weight going through it. There are also types of mines have a wire connecting with each other and to stumble by a person unleash, and that there were several explosive charges.
Change the location of minefields and by the time of the floods in the desert and the movement of vegetative growth in the region so it is extremely difficult to determine the beginning and the end of the mine sites to be exact. Issued an international treaty to ban the manufacture of anti-personnel mines, but the problem still exists in most parts of the world. Figure 1 shows an example of anti-personnel mine.

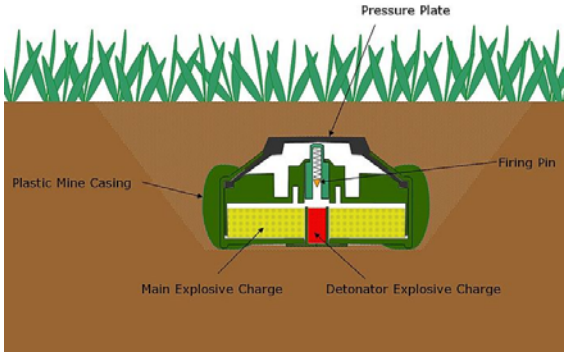

Figure 1: Anti-Personnel Mine Components


Figure 2: Anti-tank mine

2.2 Anti-tank mines

Those mines are usually addressed to repel tanks explode in practice if it had been passed by the higher weight of 150 kg, so it is possible for the soldiers and people to pass it safely without exploding. As well as exploding if passed by the carriers and to other equipment. Figure 2 shows an example of anti-tank mines

3. Composition of land mine

Consists of landmines in the structure of plastic or material non-corrosive (structure was a metal in word war II), above an area of broad bottom pressure plate linked to «Yai» starts when step on the individual to blow up a shipment bombing initial in the middle (red zone in figure 1), which broke the explosive device core (on the sides). In this way, similar to the way the bombing of the regular bullet and increase the effectiveness of the mine increased age. Configuration consists of the detailed mine filling fast ignition of gunpowder and Kheradeg toxic, fuse, spring and needle, and when the needle hit the ground vibration spring triggering fuse and this leads to the rapid explosion and this process takes one moment.

4. Removal of Land mines

Require operations to remove mines a lot of time in light of the widening scope of the minefields and the absence of maps that have been developed on the basis of the minefields in times of war or change the terrain. Usually assume the units of military engineers, mine-clearance tasks, at the outset open a safe road by minesweepers and then comes the role of the engineering teams art that clear the area, after cutting areas to equal areas, by the use of regular detectors for metal and explosives, and are dealing with mine all Separately, a process which involves a lot of risk, since in some cases, be mine booby traps in the form of mines on top of each other, so that continues to mine the top until they snap the bottom because it is not apparent, and that experience is very important in this area and caution in addition to Security commitment to safety rules and wear protective equipment when available to reduce the risks as much as possible.

5. Stray Current Electrolysis

Dissimilar buried metals such as copper and steel can function as the poles of a galvanic cell, using moist soil as the electrolyte. Stray direct currents in soil may counteract the anti-corrosion effect of a cathodic protection system. Design of high voltage direct current transmission systems must take care so that current flowing in the earth does not cause objectionable corrosion to buried objects such as pipelines. Typically an electric railway will have at least one of the rails used as a return conductor for the traction current.

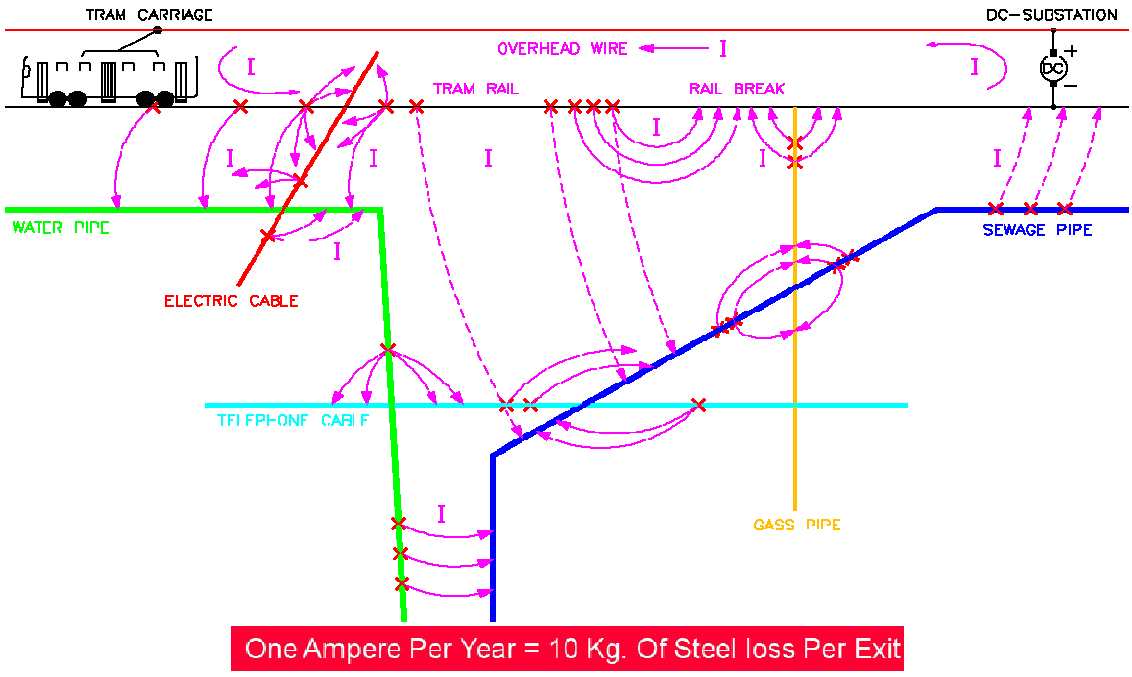

Figure 3: Damage caused by stray current electrolysis

This rail is in contact with the earth at many places throughout its length. Since current will follow every parallel path between source and load, some part of the traction current will also flow through the earth. Where the railway uses direct current, this stray current can cause damage to other buried metallic objects by electrolysis and accelerate corrosion of metal objects in touch with the soil. Figure 3 shows an example of damage may takes place due to stray current electrolysis.

Stray current problems on pipelines arising from direct current transit systems and mining operations can be very severe. Solving such problems is more complicated. This is because of the continuously varying nature of exposure as the load on the DC power sources varies. This type of problem is limited to relatively small areas in Egypt "Cairo, Alexandria". Electrified railroads operate on DC transit system, are operated normally overhead insulated feeder connected to positive bus of DC substation. The load current (which may be thousands of amperes) is supposed to return to the substation via tracks, which are connected to the negative bus at the substation. A common operating potential for transit system is 600 Volts. Because tracks are laid at the ground level and not insulated completely from earth. Some part of the load current will enter the ground where the tracks are most positive and take an earth back to substation. Pipelines in the area constitute a good return path for a portion of the earth current. Such a pipeline will carry the current to location in the vicinity of the DC substation where it will flow from the pipeline to earth and return to the negative bus of the substation. Severe pipe corrosion will result if corrective measure are not used. Where the pipeline is picking up current it is receiving *cathodic protection.* In severe cases, the pipeline may be many volts negative to adjacent earth in this area and, at the same time, many joints in the pipeline, there may be enough driving voltage to force current to bypass the joint and corrode the pipe on the side where the current leaves the pipe. The best solution to this problem is to know the area where the current leave the pipe and connect it with a feeder to the negative bus on the substation. This means that no current will leave passing in the ground "i.e. electrolyte", no ionization will arise.

The return path of the stray current will not only be a pipeline but also, telephone cable, power cable, bridges, …etc. Any buried structures will suffer from it.

N.B. One Ampere per year will cause a loss of steel equal to approximately 10kg.

6. This Patent

1. To handle all mines in a filed as one unit instead of handling each mine alone.
2. That's to say, to destroy all mines in the field together in one time.
3. Time to destroy all mines in the field, in one time by using this new technique, is too much less than the sum of all individual time removal for each one by the old techniques
4. Cost of destroying all mines together in the field in one time is too much less than that of old techniques
5. Perimeter of mines' field is a must to be defined by safe roads.

6.1 Patent Idea

Acceleration of corrosion process by considering all land mines in a field to be in the cathodic zone of a system of cathodic protection for an artificial metallic structure, say a pipeline. The control in cathodic protection current of this artificial pipeline will equal to the control of the stray current outgoing from the land mines metallic material. That's to say that: the corrosion rate of land mines in the cathodic zone will be controlled by the cathodic protection current flow to protect the pipeline. Equation 1 governs the corrosion process of land mines by stray current electrolysis which is equal to:

One DC Ampere Per Year = 10 Kg. Of Steel loss per each landmine exit (1)

In other words:

If rectifier output is 10 A DC per year, this will equal to:

= (10×10)/1 = 100 kg of metal loss per each landmine exit / year.
= (10×10)/2 = 50 kg of metal loss per each landmine exit / 6 months
= (10×10)/4 = 25 kg of metal loss per each land mine exit / 3 months
= (10×10)/12 = 8.3 kg of metal loss per each land mine exit / month

Again, the distance between the CP ground bed and the scrap pipeline to be cathodically protected contain cascaded landmines. Landmines lie in cathodic zone which means corrosion takes place at each landmine current exit as per figure 5.

To understand the concept one time - landmines destroying technique, let us consider 10 cascaded land mines only for simplicity.

Then, if rectifier output is 10 A DC per year, this will equal to:

= (10×10×10)/1 = 1000 kg of metal loss for all 10 cascaded landmines exit / year.
= (10×10×10)/2 = 500 kg of metal loss for all 10 cascaded landmines exit / 6 months
= (10×10×10)/4 = 250 kg of metal loss for all 10 cascaded landmines exit / 3 months
= (10×10×10)/12 = 83 kg of metal loss for all 10 cascaded landmines exit / month

Now, if the rectifier current is increased to be 100 A DC per year, this will equal to, as we will consider the 10 cascaded landmines:

= (100×10×10)/1 = 10 ton of metal loss for all 10 cascaded landmines exit / year.
= (100×10×10)/2 = 5 ton of metal loss for all 10 cascaded landmines exit / 6 months
= (100×10×10)/4 = 2.5 ton of metal loss for all 10 cascaded landmines exit / 3 months
= (100×10×10)/12 = 833.33 kg of metal loss for all 10 cascaded landmines exit / month

A proper design of this corrosion system such that the DC rectifier output will be according to time required for landmines metal loss in a field and of course it will be according to both landmines types and enclosure weight. And so on, by increasing rectifier output DC current the acceleration rate of metal loss (corrosion) of landmines in the field is increased.

6.2 Procedures to Destroy Land Mines:

One time - landmines destroying technique**,** please refer to figures 4 & 5

Steps:

1. Determine the perimeter of the land mines field
2. Create save roads such that to split the mines field into suitable equal areas
3. By the use of impressed current system, build up a proper cathodic protection system for a pipeline such that land mines in one area to be located in the cathodic zone of the pipeline.
4. Destroying time calculation: adjust CP rectifier output to control the corrosion rate of metallic parts of land mines in the pipeline cathodic zone.
5. Then filling with sea water or fresh water each area, after complete land mines metal loss, until humidity reaches the explosive charge of the land mines.

6.3 Example of Real Metal loss Due To Stray Current Electrolysis

Concrete rebars of a road crossing were corroded to great extent because of the reinforced concrete lies in the cathodic zone of the Arab Petroleum Pipe Line Company SUMED. Figure 6 & 7 show the corroded rebars while figure 8 compares the original size of rebar and the corroded one.

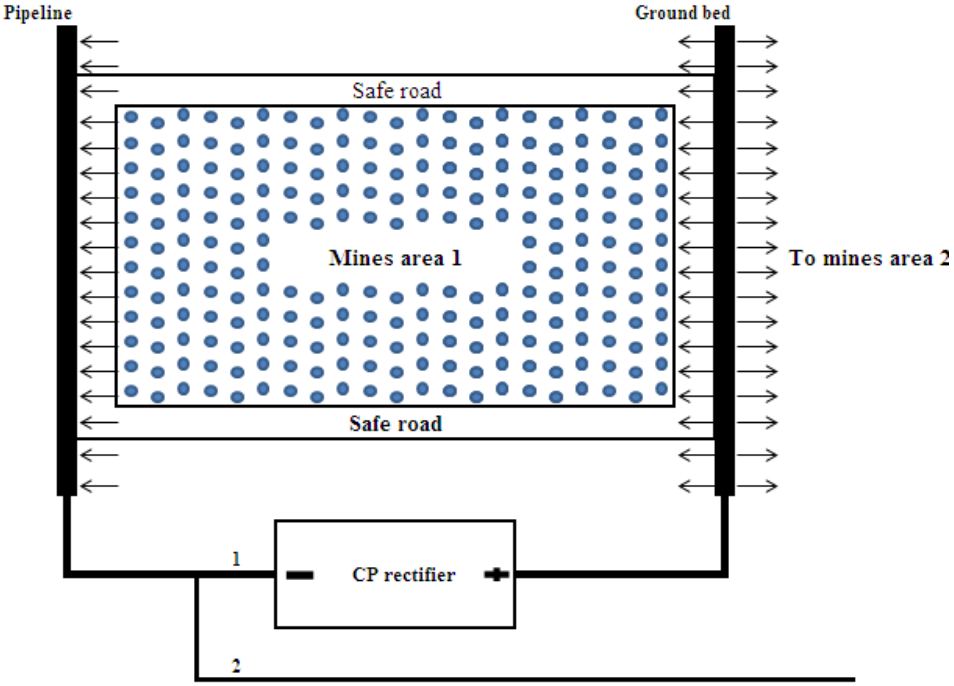

Figure 4: General landmines area layout

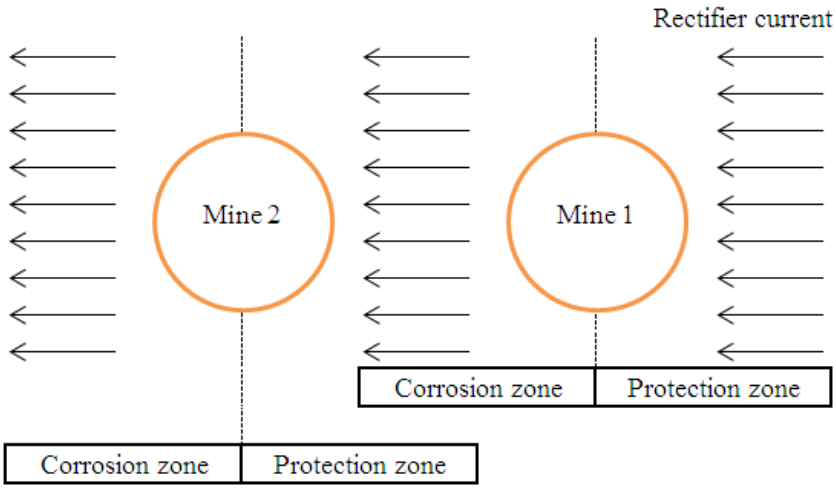

Figure 5: how mines corroded in one time

Figure 6: corroded rebars were subjected to the cathodic zone of SUMED pipeline

Figure 7: Example of corroded rebar

Figure 8: Comparison between rebars before and after metal loss due to stray current electrolysis

7. Conclusion

We can use the concept of metal loss in rebars due to stray current electrolysis to apply it to destroy the word war II metallic land mines. The metallic land mines field will be within the cathodic zone of a cathodically protected of any other metallic structure, say scrap pipeline. Acceleration of corrosion process of the metallic body of word war II land mines could be managed by the cathodic protection rectifier output in a system to protect this scrap pipeline cathodically. After metal loss process, explosion charge should be spoiled by suitable source of humidity say, by seawater feeding to the landmines field.

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Andragogy and Pedagogy: differences and applications

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Abstract: The field of adult education and literacy is plagued by confusion about definitions. Over the years definitions have evolved from provisions in federal law and initiatives of groups advocating particular methodologies or the needs of specific adult populations. The result is that definitions tend to merge statements about the goals to be achieved (e.g., improving the literacy of a particular population) with a particular means (e.g., adult basic education) to achieve the goal. Teaching adults can be very challenging, but also very rewarding. Most teachers would agree that the benefits derived from a successful adult education program in agriculture far outweigh the costs. In addition to the direct benefits to adult participants, the teacher, the school, the community, and the secondary program also benefit from a quality adult education program in agriculture. Adults in agriculture use a number of sources to gain new information that can be used to help them solve problems. Persons employed in agriculture utilize newspapers, magazines, newsletters, radio, television, government publications, internet, and meetings to gather information which can be directly utilized in their business activities. In many communities, the agriculture teacher is the primary source of agricultural information.
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Keywords: Andragogy , Pedagogy, adult education

Introduction:

Adult illiteracy feeds the state's unemployment, its welfare rolls, and the correctional institutions. Adult illiteracy severely hinders the life chances of young children, undermines school reform, and limits the opportunities for postsecondary education. To be successful, the Commonwealth's strategies must energize and gain the commitment of all the state's political, education, business, and civic leaders. No strategy will succeed unless it engages leaders in each community and county to identify needs and develop programs and services appropriate to the community's unique circumstances. The most serious challenge will be to motivate low-skilled, under-educated adults within the working age population to seek further education. Simply expanding the number of providers and programs will not necessarily increase demand from the populations and communities where the needs are greatest. Deepseated social, economic and cultural barriers—many dating back generations—lead people to undervalue education. In addition, in many counties it is difficult for people to see a direct relationship between better education and better-paying jobs. Either there are no jobs available or many existing employers do little to emphasize the connection between better education and the possibilities for getting a job, keeping a job, or earning a higher wage. For many, getting more education and earning a high school diploma or a college degree has little positive meaning.

Only the negative consequences are obvious: getting more education often means leaving one's family and community for jobs and opportunities for advancement somewhere else. The future of Kentucky depends on uplifting the quality of life and economy of all of Kentucky. The social and economic costs of neglect of large parts of the state will drag down the rest of the state and seriously hinder its capacity to compete in the global economy. Much like strategies to curb epidemic, strategies to reduce illiteracy and raise the educational attainment of Kentucky's population must include both short-term efforts to face the immediate crises as well as long-term strategies to get at the underlying causes. Short-term crises include the imperative to keep helping welfare clients make the transition from welfare to work within the constraints of federal and state mandates and the need to train workers for immediate employer demands. Long-term prevention must address the underlying, persistent problems of the state's economic structure as well as the low awareness--if not appreciation--among segments of the population of the vital connection among education, employment, and improved standards of living.

adult who is able to recognize their needs. He is who knows what will. Refers to individual adults in their lives cross and understand their responsibilities and has accepted the role is social. Adult learners are often those that distinguish each other and have many

different targets at the same time and will follow a common challenge to fulfill the goals of building self motivation vectors as educational materials to learn and use the forge.
Educational materials on adult education with daily life, needs, goals, aspirations and past experiences of adults and their relationship helps to results learned in life and career are used.

Classification of Adult Education

1. reading and writing literacy level
2. Technical and professional education, people are ready for work
3. in the field of health, behavior and health in the family
4. tutorials political, social, religious. Operating political social goals
5. to satisfy emotional needs and entertainment, like art, literature and the like

Adult education goals:

a) Literacy goals:

a. To provide primary education and to allow other adults to learn skills during childhood and youth have been deprived of them.
b. Increase the ability and skills for adults over the executive government and community programs.
c. Preparation of programs and classes that form the adult intellectual development is dedicated to the goal, get a job or degree is better.
d. Increased confidence in adults, through increased awareness and knowledge.
e. raising awareness of adult interest to participate in decision-making
f. to raise awareness of citizens rights, their duties and responsibilities
g. Adults develop abilities to solve problems of personal and social
h. to inform adults the skills and talents.
i. Spread knowledge about their heritage

b) vocational training objectives:

1. Adults equip the skills necessary for subsistence.
2. To provide staffing to promote industry and economy, the third
3. the elimination of class differences and achieve social equality
4. Training of workers with their employment conditions and industrial variables are consistent.

Definition of Andragogy

term andragogy (the teaching of adults as opposed to pedagogy, the teaching of children) and questions whether it should relate more to a type of learner rather than the age of the learner. The blogger is Gwen. She describes her blog as "a reflection on the educational process by teachers working to transform their work into a more learner-centered, evidence-based, andragogical affair.

Gwen suggests that the transition in a student from needing to be spoon-fed learning to a more independent state of seeking sometimes happens as early as middle school, while some adults in graduate school are still asking, "Is this on the test?"

The question is an excellent one and Gwen does a great job of putting it forth. In her examination of the word and its meaning, she puts responsibility on both the student and the teacher. The word andragogy then becomes a fluid term referring to that developmental point at which an individual student becomes able and interested in accepting responsibility for his or her own learning. The teacher's responsibility is to recognize when that has happened and respond accordingly, getting out of the student's way and providing the support needed for their individual pursuit.

adult education in the local agricultural education program is an essential component of the "total" program. Offering adult education programs helps to keep farmers and agribusiness employees better informed of current trends and provides them with opportunities to learn new skills and improve existing ones.
Successful adult education programs develop and utilize an Agricultural Education Program Advisory Committee to assess the informational needs of adults in the community. Agriculture teachers should utilize the expertise and communications link, which an effective advisory committee provides. Specifically, the advisory committee should be asked to provide

advice regarding planning, conducting, and evaluating the adult education program in agriculture. Adult education programs in agriculture should emphasize practical application of the information presented. Topics and information included in adult programs should be provided which fulfills needs of the local community. Providing information which cannot be applied to solve a local problem or address a local issue will generally be viewed as frivolous and over time will result in decreased interest (i.e. participation) in the adult education program.

The role of the agriculture teacher should be as a facilitator of the learning process. Most adults reject the traditional teacher-student relationship, which is necessary to maintain in secondary programs. Teachers should be encouraged to view themselves as partners with adult participants in the learning process. The democratic philosophy of shared responsibility for planning, conducting, and evaluating adult education programs distinguishes adult education from secondary education.

A local plan for adult education in agriculture should consist of two major components. Namely, a broad statement of philosophy, goals, and objectives of the local adult education program, and an annual calendar of program activities.

Adult education in agriculture is important for continued community prosperity, growth, and improvement.

Continuing Education:

Continuing education is a broad term. In the most general sense, any time you return to a classroom of any kind to learn something new, you are continuing your education. As you can imagine, this encompasses everything from graduate degrees to listening to personal development CDs in your car.

Common Types of Continuing Education:

1. Earning a GED, the equivalent of a high school diploma
2. Post-secondary degrees such as a bachelor's, or graduate degrees such as a master's or doctorate
3. Professional certification
4. On-the-job training
5. English as a second language
6. Personal development

1. The methods involved in achieving continuing education are just as diverse. Your school can be a traditional classroom or a conference center near a beach. You might start before dawn or study after a day of work. Programs can take months, even years, to complete, or last just a few hours. Your job can depend on completion, and sometimes, your happiness. Continuous learning, no matter how old you are, has clear benefits, from finding and keeping the job of your dreams to remaining fully engaged in life in your later years. It's never too late. So what is it you want to learn or achieve? Have you been meaning to go back to school to earn your GED? Your bachelor's degree? Is your professional

Conclusion:

Material often set different types of materials and educational content in books and pamphlets, books, training guides, trainers, equipment auxiliary audio, visual and material are included such that during actual teaching sessions, are used in the transmission and content but also to achieve the goals of making education programs are important.

Additional material for the next stage of learning often means to be expected when developing your learning skills Learners to increase awareness and enjoyment of reading and studying to operate.

To improve the quality of life, learning materials should reinforce the skills they acquired previous. This material should have access to information and provide new technology. should also have to make learning more fun. Additional materials should provide opportunities for literacy skills to read and to strengthen their cognitive awareness.

Track materials (continued) which increased literacy skills and knowledge gained is also effective in enriching learning environment for learners are important. Participatory materials to ensure the participation of learners in the learning process and codification are included out of class activities, dialogue, role playing, etc.

Learning activities such as activities outside the classroom, dialogue, role playing and ... Another type of content is presented. Duties are placed on the learner, a resource for developing knowledge, skills and insights he considered.

Curriculum content only from the training provided to learners or not, but put together their learning through activities that can inform or does, skills and attitude to achieve. In this case, apart from learning that the assays taught learners directly to sustainable and effective learning occurs in his.

Another way of providing content that is educational activities outside the learning environment possible

for learning more and better enables adult learners. For example, hits, field trip experiences for learners or transfer is provided, develop knowledge, insight and skills they will.

Some research findings that can be a learning process for the Guidelines for training operations are applied, is given below:

1- - Preparation for adults to learn how much he depends on previous learning. Knowledge that has accumulated because of an ability to absorb new information more person is. Past educational experience features a diverse group of adult learners, the starting point of any activity on the diversity training is emphasized.

2- Positive reinforcement (reward) learning to reinforce the negative (punishment) is more effective. Many adults because of negative experiences at the beginning of schooling, are weak and afraid. Feeling of success in adult learning for continuous learning and adult participation is essential.

3- To maximize learning, information must be provided an organized manner. Entries can be simple or complex can be arranged around related concepts are organized. Starting point for organizing content knowledge for adults and adults is linked to past experiences

4- Learning, especially regarding skills development, will be added frequently.

5 - Duties and meaningful content than meaningless subjects are learned more easily and are later forgotten. This issue, especially for older adult learners is true. Challenges of adult learning facilitators by the way that content was significantly associated with the experiences and needs of learners is.

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Relationship between rural women Employment and empowerment

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Abstract: Employment rate, like any social and economic variables directly or indirectly are affected by many factors among which can be reported the production rate, investment, wage levels, price level, government policies and foreign trade. Each of these factors may be positive or negative effects to be followed. Such factors and how they impact on employment rates, have a great influence in planning and policy and making coherent and efficient policy formulation. However, experts believe that China in contrast to other nations, especially developing countries, participation rate of women labor force is in high level and also their participation rate in the villages are a little more than cities. However, this participation is evident in most areas that the dominant form of employment is agriculture. Aside from the economic role of women that clearly has been made in the past decades, the vital role of women in social and cultural dimensions of development process in rural areas has remained hidden from the polls. They train the next generation of farmers and teach them the next generation necessary knowledge. A Chinese proverb says, "If training a man, just training a man but if you teach a woman you teach a family." Women are local knowledge and local educators themselves, in preparing and providing food, health treatments and cultural values are the next generation.
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Keywords: Employment, rural women, empowerment

1- Introduction:

Macroeconomic view of employment of different aspects such as creating income, production and entrepreneurship, science and technology development, etc. is important, and gives the dignity, status and social position and a sense of confidence from the social viewpoint of man. Working and use of inherent forces, skills and knowledge and personal management to begin to work and to accomplish the activity, are not specific to particular groups. Men and women can work in a community and yet affect it with job situations that are provided to them or they themselves create. Today, the participation rate of women is much lower than men in the world and this factor related to cultural, political, economic and social variables that these factors can be the main barriers to employment of women. Women in the labor market in terms of occupation, employment promotion and income from work are faced with different circumstances, but in recent years women's participation rates have increased.

Increasing Suffrage, lack of relying on vast patriarchal families, increasing cultural acknowledgment, relation with newer institutions, having intellectual independence, making decision for marrying, occupation, emigration and etc are those rights that they gain. gaining aforementioned rights by women in context of cultural and social framework followed some changes that maybe lead to disfunctions and even create disorders and abnormalities at traditional , familial and kinship relations that dominated on villages (Fakhraee 2002). What that performing credits programs, has made in recent years, was on broad outlook with purpose to access to same results as above findings.

Thus, in one inclusive outlook , it is possible to use micro-credits programs to solve those issues which involved with rural women's economic limitations , so that lead them toward social empowerment, in the context of economic growth(Rahmani andalibi, 2001) .

2- Criteria of empowering women:

Enabling as a theory of policy making for women, in it present five criteria:

Welfare, access, Concientisation, participation and control.

2-1- welfare criteria :

In this criteria, men and women as human resources of development should enjoy of desirable welfare conditions and equality (Paknazar, 2000).

Most of timing developmental programs, have worked on base of women's welfare. They have considered and provided some services for women who were passive recipient of these services. But these services were limited to physical needs and mostly were considered to revive their role of productivity, again. sometimes , it has been said that this approach has begun at colonial era and has considered women from poor country and intended services for them that dose not exceed from that poverty level . Agricultural and industrial projects

were designed for men and social programs for women and children. Most of welfare programs were inadequate or its success was limited. Considerable point in this criteria is that men and women as human resources of development should enjoy equality and desirable welfare conditions. At this stage, women's material welfare and their enjoyment of welfare programs, compared to men (nutrition, death rate and …) were considered. And women's role as producer to supply their own needs isn't very important.

2-2- access criteria :

Lack of access or limited access for women to sources including (fields, job, capital and training) cause that their functions at production is less than men (Paknazar 2000). Access to facilities, sources, designed program and projects for women and access to schools and … are in this part. Just whenever most of other legal, cultural and social issues being solved, men and women would equally access to sources and facilities. Concept of enabling at this stage is that women have equal right to access to sources at family and greater society.

2-3- Concientisation criteria

Women should know that their problems aren't due to their individual inefficiency and shortage but it has emerged by social system in which discriminations has become formal and acceptable issue. (Araghzadeh, 2002). This stage is more critical and important than other stages. Because women can participate at development activities not just be passive users. Women have real equality at development, just when be aware. Concientisation will help to increase women's ability to equality at participation at society. At this stage, women face with critical analysis with society and will find that what has been considered natural and unchangeable reality, is changeable. (Bakhshoodeh, 2005).

2-4- Participation criteria

One the most important items that this criteria has considered , is men and women's equal participation at decision making process of affairs of family at society (Paknazar 2000) . Men and women both should participate at process of assessment needs, designing, performing and evaluation of projects and development programs (UNICEF, 1998). In summary, this criterion means women's participation at all stages of surveying needs, detecting problems, planning, management, performing and valuation.

2-5- Control criteria

This criterion emphasize on this point that in addition to equal access of men and women to development sources , they must have adequate control on these sources that this issue is balance criterion , between men and women so that no one exceed other one (Paknazar 2000) . Women should have opportunities for decision making at workplace and home. If woman is producer, should be shared with part of her interest and wage. Women like men, should be able to choose her individual and social field and able to make decision and also development activities should be facilitator of these processes.

FAO (food and agricultural organization) addresses these three purposes as strategic goals while enabling women:

1- equality between men and women to access production sources
2- women's participation at policy and decision making
3- decreasing rural women's workload and increasing job opportunity and income for them (Paknazar 2000)

within theoretical framework of enabling women , having control on sources is presented as highest stage at women's participation process on development , but existing data at most developing countries , indicates that not only rural women haven't any control on financial resources of family but even they were deprived to access to sources and credits , specially through formal credits system (Shaditalab, 2002) .

The question that arises here is that what relation is there between enabling women and micro-credits programs? Nowadays, micro-credits are considered as effective mechanism to eradicate poverty for women. Interests of micro-credits further increasing women's income, include:

- improving women's role in family
- Increasing women's confidence, not only through obtain financial success through business activity, but through increasing women's access to social services and communication with other women.
- Changing at social level (social class) at perspective of women's role.

3- Factors affecting disparities in employment:

Regarding the employment of women should be said that some developing countries and third world have some barriers in women's employment way. Major barriers in this area include:

3-1 - Economic barriers:

A - emphasis on non-economic characteristics and roles of women b - private sector avoiding the investment in busyness jobs; C. - no diversity or low diversity in employment opportunities for women; D - high labor costs women for employers; e - women aren't the capital owner(Arefnia, 2004).

3-2 - Social Barriers:

A - Illiteracy and low literacy level;

B - Women not having the technical and professional skills;

c - Discrimination and the difference in the socialization process of men and women in society;
d - Women early marriage, and
e- Heavy housekeeping duties (Banihashem, 2002).

3-3 - cultural barriers:

A - Attitudes and community attitudes to women's duties;
B - Emphasis on housekeeping activities and social isolation of women;
C - There are certain traditions and beliefs in families;
D - There is male-dominated culture;
E - Discrimination and community attitudes to women,
F- Some inappropriate work environment in terms of ethical issues (Kamali, 2004).

3-4 - political obstacles:

A - Lack of participatory political institutions;
B - Low chance of women to earn Government officials;
C - The power structure and political plays.

Span the range of these barriers indicate that except a coherent and consistent planning and extensive efforts at the national level, can not achieve women's employment improvement even in the long term (Khani, 2000).

Results:

Women as an effective member of society, can crystalline their lead roles in various responsibilities formations. These responsibilities include promoting the concept of participation and employment in life and building the suitable areas for freely activity and introduce the right of economic management, ownership and.... This requires that all fees and necessary training for women to be considered. Due to the fact that the concept of women's participation, is not necessarily the female employment, although certainly part of the participation of women will be crystallized in their employment, but in this context, home and family affairs by women and their role in nutrition and child growth and Their education are also many responsibilities that women often are responsible for them. Throughout history we have always been seen that women have always been active but in culture and tradition, this mentality largely exists that if the job exists, it would be for men. Because they are responsible for their families Economic or wherever there is a good opportunity for participation, men have a prior right.

Perhaps the reason that women are less important in the development is this thought and action. Because women are in occurred opportunities in the second stage, or even sometimes do not come into account. Zanjani in the article "Women's Empowerment" according to economic, social and cultural characteristics, one of the important subjects that have investigated is the effect of number of children in female employment in urban and rural communities. In Iran urban, employment opportunity population continually reduces by increasing the number of children. This reduction is weak, up to the third child and then takes the intensity. So that the employment opportunities of women decrease in pay to first child to the second 3 / 2 percent and the second child to the third 9 / 6 percent, while this reduction from third child to the quarter is 3 / 27 percent. But in rural society due to the household problems, type of activity and employment, increasing numbers of children not only make no reduction in women employment opportunities so with increasing the number of children, women's job opportunities is also growing and by having 7 child reaches its peak. Since then relegated to minor finds, in a way that employment opportunities of rural women that has nine child is equal to the job opportunities of a woman with one child. Thus children are effective on women employment so that increasing the number of children in urban society has negative effect and in rural society has positive effect (Zanjani, 2002).

Safiri in his PhD thesis, as "study of quantitative and qualitative aspects of women's employment and its relationship with economic development", knows that a part of the employment problems is because of some barriers that relates countries structure and also other parts is because of some non development barriers an some parts is also from the social - economic, and cultural barriers as development obstacles.

In some countries where are not appropriate and much needed job, women are damage more. In some where that the social hierarchy is base on physical strength, force and tyranny both in the family system and the hiring of women in institutions and organizations makes the difficult situation for them. Surely also the cultural background are continuing these economic and social conditions, Safiri, the knows the Personality barriers and physiological barriers as non- development knowledge barriers and he say they are effective on women's employment (Safiri, 2000).

Razavi during a study has shown those women's achievements in academic and social areas in the past 30 years; according to their status in the labor market has not improved. Women's participation rates are low and their non- employment rates increase in these years their and their career options are still limited (lahsaeizadeh, 2004). Hashemi (2000) with the employment status of women in Iran has shown that the rate of economic participation of women in Iran were similar with developing countries, while

their literacy and education rate are comparable with advanced countries. He believes that formal institutions, namely laws and regulations have the most effective on women's employment levels that in their turn are under the social and cultural effects.
Bamdad during his study on socio - economic status of women has shown that social and economic improvement of society is associated by increasing employment rate of women. There are also differences in cultural and social discrimination between men and women, is a serious obstacle in increasing the economic participation of women. Finally, increasing women's economic participation is the function of social development – economic factor (Banihashem, 2002).
The positive effect of government spending in women employment indicates the fact that, there are limitations and discrimination for women in the labor market that the market mechanism can not destroy it thus recognizing these limits, discrimination and government intervention in the market (of course in cooperation with people) is necessary to eliminate them.
Today there is this belief that communities rather than, affected by mood men and environmental conditions, affect by personality and education of women. Thus in the process of economic and social development, women affects are more than men, and the non-developed countries have understood the undeniable fact that to achieve the economic development should employ women creative and effective forces. Structure of female employment in different countries shows that there is a direct relationship between population growth and increasing employment rates of women. In other words, in countries where female employment rate is lower, the population growth and economic development is slower.
So if the state goal and the country's development policies, be the attention to women's active participation in society as half of the labor community, the cultural, social, political and economic area of their presence should allow to provide till we can use their intellectual power, creativity, innovation and The large number of workforce innovation for family and society economic development, otherwise, with the slogan and write policies and strategies and using no proper tools and executive Migration, like the former, manpower of this huge group saw little presence in the various community activities.
Different economic sectors (particularly industry and service sector) have the capacity to create many job opportunities for active participation of rural women that can be more benefit in more employment opportunities. Some variables such as marriage to divorce ratio, the share of government expenditure of GDP, the degree of development and Underdevelopment, number of children born and household expenditure are impressive on rural women's employment rates. Thus, if policy makers intend to predict the employment status of rural women, they should attend to affective factors on this group employment.

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Improving education in adult through online Learning

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Abstract: in distance education teachers often are separate and comprehensive. Preparation of educational materials, supporting learners under the supervision of a training center takes place almost never do as a group are not**.** For services to education and electronic learning aids such as printed materials, computers and the Internet rely on. Another look at the educational system of a new e-business and artistic and is a comprehensive solution to the institutions that want to move in the direction that technology and change their teaching methods and environments are possible to achieve the new educational approach provides**.** In its original form, teachers using distance education traveled to remote sites and taught a class, or corresponded with students through mail, telephone, or fax machine. Individualized study has been a method of reaching the remote student for some time. Detailed course instructions are sent to the learner who performs the assigned tasks and returns the completed work to the teacher for evaluation and reassignment if necessary. rural women take different responsibility and roles such as producers of crops , ranching and keeping poultry , children education , housekeeping , supervising family economy and managing it , collecting firewood , weaving carpet , so illiterate women who haven't possibility to utilize mass media properly too , wouldn't able to do their duties and roles and also wouldn't be affective to develop rural societies.

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Keywords: education, online Learning

Introduction:

Distance education in America and for the first time at the University of Illinois Veslin was implemented in 1874. In 1900, university education through correspondence, face became more public. National Association of Home Education in 1926 and led the establishment of distance education and related programs in universities and schools, and more important aspect to find drivers. Education in 1920 invented the radio and TV appearance in 1940 led to important new techniques in communications

that the nature of the field of distance education also created dramatic changes.

Trainers using these new technologies were successful educational programs to millions seek learning opportunities and thereby reach out to the educational spaces, training centers to expand. With the development of long-distance telephone system in the early twentieth century method of capacity and distance learning methods for students to access educational opportunities in the world increased Translation. But until the invention of mobile tele conference ever in the 80 and 90 and the main role in the concept of distance education did not play. Telemetry system, allowing for teachers conference provided that without the slightest delay at a time

when your students can listen to them talk and sometimes they see.

Expansion of computer networks in the decade 1990 and connect millions of people through lines to the telephone networks made it possible to simply distance learning via computers and computer conferences around the world is possible (a) and Today with the development of control technology in science and technology around the world are.

Key factors in the process of distance education:

the process of remote training, the following factors contribute:

- Students:

Regardless of educational content, role and main element in the learning process students are responsible.

- Coaches and Teachers:

Success depends on a lot of educational activities the ability, skills and knowledge are the coaches and professors.

- Facilitators of communication:

Facilitator bases, as the bridge between students and mentors are. Must base expectations of teachers and educational needs of students and service coordination and communication to create.

- Support staff:

One of the important pillars of any development of distance education programs, by development group finds. Operational support staff such as student registration, copy and distribute their resources,

order textbooks, security and copyright, and are responsible for the report.

- Management:

The group decision makers, builders and judges are considered to be educational and should be considered among the factors above, establish the correct relationship formation.

Benefits of Distance Learning:

Benefits and opportunities that distance education provides, include:

- training a wide range of audiences.
- meet the needs of students and students who can not attend in place.
- Possible connection between students and students with cultures, beliefs and experiences are different.
- Benefiting from coaches and speakers who do not live in the country.

Students in distance education settings perform as well or better on assignments, class activities, and exams when compared to campus-based students (St. Pierre, 1998). Nevertheless, students must maintain persistence and a clear focus to succeed in a distance learning situation. Self-direction, a passion for learning, and strong individual responsibility are important influences on achievement. There are indications that distance education works best for more mature, motivated, well-organized, and already accomplished learners (Rintala, 1998).

Garrels (1997) describes five critical elements for successful teaching at a distance:

1. Instructor enthusiasm. This requires animation and comfort in front of the camera, or with the technology utilized. Faculty support and interest are critical to the success of distance learning endeavors.
2. Organization. Teaching materials must be prepared in advance; timing, variation, and smooth transitions must be planned. Instructors should allocate from 3 to 5 hours of preparation for each hour of distance instruction. Great attention to detail is required long before the actual classroom activity occurs (Summers, 1997).
3. Strong commitment to student interaction. Whatever the modality used to teach at a distance, the instructor must encourage and facilitate ongoing communication between the students and the instructor.
4. Familiarity with the technology used in the class format. Faculty development is important before beginning any distance activities, and instructors should be trained in video use, computer use, or other forms of instructional technology used.
5. Critical support personnel. Production staff, graphic designers, and technical staff members will help the instructional setting produce successful teaching at a distance.

Online Learning:

The main principle of Online Learning – also called e-learning, distance learning, etc – is very simple: Online Learning allows students to remain at home or anywhere they like and still be able to study, nowadays mostly via computers and the Internet. But the cultural implications of this simple thing are vast and unprecedented in the history of civilization.

The principle simple: Online Learning works like traditional education, but happens entirely online.

Lectures are viewed on the screen of a computer, with written supplementary material, lecture transcripts, and academic sources provided electronically.

There is email and forum communication between classmates and teachers, as well as video meetings.

Exams are taken online, assignments are submitted electronically (uploaded or sent by email). Some institutions still require exams to be taken in special learning centers, but this is most likely to change over time to total virtual education experience.

What Online Learning can offer?

- Students no longer need to work in snatches during summer vacations, they can combine more easily then ever before full time jobs and studies
- Students do not need to commute, saving great amounts of time, money, and personal energy, as well as global energy.

This seems very simple, and it is, but its implications are, again, enormous. It means much more time spent on actual education and personal life. It means money saved. It even means significantly less traffic and green house gasses.

It also means students:

- Construct their own schedules
- Can finish four-year programs in two years

Online Education – Disadvantages

The following are its 4 main drawbacks one would want to consider.

1. Human Interaction

Online classes means there is not live, face-to-face classroom and office interaction between students and teachers. For many this is highly significant. Consulting lecturers in person and being able to discuss matters in groups, in and outside the class is, for many, an important motivational activity and learning strategy.

Moreover, for many programs interpersonal communication is crucial, but it is not easy to seriously practice online.

Many people also prefer traditional campus-based education simply for the on-campus atmosphere and the opportunity to meet many people there face-to-

face between and during class, conferences, campus parties, concerts, fairs, and various cultural events.

2. Study Materials

Online institutions provide all or much of their material online, which may be convenient, since you have to buy and photocopy less. But while online information in general is, of course, extensive, approved and trusted scholarly academic material is not easily to be found online.

The resources of online universities and colleges are not yet as extensive as those of traditional institutions with their on-campus libraries (and the private libraries of generous lecturers who will always lend you that hard-to-find book you absolutely must have for your paper).

3. No Lab Sessions:

Degrees science, especially the natural sciences, require lab hours. Online education as yet cannot provide a substitute for actual hands-on experience that students find in the labs on campus. Such experience is crucial in general, and it is often noted in particular by employees. One reason why graduates from traditional institutions are preferred is that they have extensive and relevant lab experience.

4. Difficulties of Self-Discipline:

For many a significant advantage of traditional education is that it leaves little room for procrastination. You have to show up on campus and be in class, and for many this is a great motivational aspect and the reason for their eventual success.

With online education the student has much more freedom. This can be both an advantage and a disadvantage. For many it is a disadvantage because it encourages procrastination. This leads either to unnecessarily prolonged studies or even failure to fulfill requirements, simply because there was too much freedom.

Conclusion:

Each method is mentioned with regard to changes in features and creates an education system, and evaluation is used. Judgment of distance education in an educational way, first as a necessity to eliminate barriers to educational climate and geographical areas, age and gender restrictions learners began their work And more in a death education system, especially in the philosophy and goals based on theories of learning theories have evolved to find and promote professional growth. Approach to distance education with regard to the necessity of education in countries formed.

Emergence and development of information societies is the consequences of industrialization. Despite the diversity of information in various forms of media in local, national and international, access, exchange and use of various information easier than last time is. Information society, a member of your buddies know that open information system in terms of geographical location and the last 25 years, organizational development, are limited. Distance learning faster than other forms of training has been. Growth factor in the economic interests of this type of educational approach, flexibility and remove the distance can be named. The methods of distance education, required for building physical education is not providing services. Teachers and trainers in this method - compared with traditional methods - and have more opportunities to more people than are being trained. In this type of teaching style of each person in each academic field, and each job can be arbitrary in time and space, trained without having to leave the house for work or business is education. This method requires that students are dispersed over long distances provides. Distance learning advantages of distance education in comparison with traditional education, the need for physical locations and training programs limited to no specific time period. In this type of teaching style, learning for life without possibility of spatial and temporal constraints for each individual there. In distance education, problems related to lack of qualified teachers and appropriate educational environment - as it posed in the traditional method of M is - is resolved. In this way the use of advanced features in digital libraries and search the various sites during the study, time and cost savings are.

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Distance Education and e-learning: Similarities and differences

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Abstract: Distance education is education designed for learners who live at a distance from the teaching institution or education provider. It is the enrollment and study with an educational institution that provides organized, formal learning opportunities for students. Presented in a sequential and logical order, the instruction is offered wholly or primarily by distance study, through virtually any media. Historically, its predominant medium of instruction has been printed materials, although non-print media is becoming more and more popular. It may also incorporate or make use of videotapes, CD or DVD ROM's, audio recordings, facsimiles, telephone communications, and the Internet through e-mail and Web-based delivery systems. When each lesson or segment is completed, the student makes available to the school the assigned work for correction, grading, comment, and subject matter guidance by qualified instructors. Corrected assignments are returned to the student. This exchange fosters a personalized student-instructor relationship, which is the hallmark of distance education instruction. Historically, most distance education courses were vocational in nature, but today courses are offered for academic, professional, and avocational purposes for students of all ages. There are numerous specialized programs, such as those for blind persons and for parents of small children with hearing impairments. Distance education is available in practically any field, from accounting to zoology. Courses are offered in gemology, high school diploma, journalism, locksmithing, child day care management, yacht design, and many fascinating subjects. Distance education courses also vary greatly in scope, level, and length. Some have a few assignments and require only a few months to complete, while others have a hundred or more lesson assignments requiring three or four years of conscientious study.
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Keywords: Distance Education, E-learning

Introduction:

Distance education in America and for the first time at the University of Illinois Veslin was implemented in 1874. In 1900, university education through correspondence, face became more public. National Association of Home Education in 1926 and led the establishment of distance education and related programs in universities and schools, and more important aspect to find drivers. Education in 1920 invented the radio and TV appearance in 1940 led to important new techniques in communications that the nature of the field of distance education also created dramatic changes.

Trainers using these new technologies were successful educational programs to millions seek learning opportunities and thereby reach out to the educational spaces, training centers to expand. With the development of long-distance telephone system in the early twentieth century method of capacity and distance learning methods for students to access educational opportunities in the world increased Translation. But until the invention of mobile tele conference ever in the 80 and 90 and the main role in the concept of distance education did not play.

Telemetry system, allowing for teachers conference provided that without the slightest delay at a time when your students can listen to them talk and sometimes they see.

Expansion of computer networks in the decade 1990 and connect millions of people through lines to the telephone networks made it possible to simply distance learning via computers and computer conferences around the world is possible (a) and Today with the development of control technology are in science and technology around the world.

Since 1890, more than 130 million Americans have studied at DETC member institutions, including Franklin D. Roosevelt, Walter P. Chrysler, Walter Cronkite, Barry Goldwater, Charles Schulz, and many other distinguished alumni of DETC members. Unlike most distance education courses offered by traditional colleges and universities that are semester and classroom oriented, with courses offered by most of the DETC-accredited institutions you can study any time and anywhere. Distance education is especially suited for busy people who wish to increase their knowledge and skills without giving up their jobs, leaving home, or losing income. You learn while you earn. Many courses provide complete

vocational training; others prepare you for upgrading in your present job, without losing wages, experience or seniority. You receive individual attention, and you work at your own pace.

In recent years, technology has played a significant role in transforming the traditional distance education school into a dynamic, interactive distance learning method using toll-free telephone lines, as well as a diverse array of personal computers, video devices, CD and DVD ROMs, online courses over the Internet, interactive devices, and other modern technological innovations. The future for distance study promises to be exciting.

Forms of distance education:

In its original form, teachers using distance education traveled to remote sites and taught a class, or corresponded with students through mail, telephone, or fax machine. Individualized study has been a method of reaching the remote student for some time. Detailed course instructions are sent to the learner who performs the assigned tasks and returns the completed work to the teacher for evaluation and reassignment if necessary.

Technology has raised the quality of individualized distance instruction. The use of various forms of electronic media increases time effectiveness and improves the delivery of information. Video, audio, and computer-based applications may enhance the product received by the independent learner. Electronic delivery can occur using synchronous communication, in which class members participate at the same time, or asynchronous communication where participants are separated by time (Romiszowski, 1993).

Video/audio models of distance education include broadcast television, cable television, satellite, microwave, fiber optics, and audio graphics. The most widely used format is broadcast and cable television (Parrott, 1995). However, developments in satellite and fiber optic systems have produced other successful programs. The interactive capability of many of these networks has produced a distance classroom that is nearly identical to a regular classroom. Teachers and students can interact through both two-way video and one-way video with two-way audio systems. The recent development of Desktop Video Conferencing (DVC) which brings interactive video capability to the desktop computer, further enhances learning opportunities.

The linking of computer technology through the use of the Internet or CD-ROM with television transmission provides a potentially new dimension to distance education. This technique can link university professors to high school teachers, or to physically disabled students, in a distance setting (McLean, 1996).

Another form of interaction is the use of computer conferencing. This method utilizes asynchronous communication in such forms as an e-mail list group, an Internet discussion group, or other types of conferencing software. Asynchronous methods of communication are especially appealing to the learner who has difficulty scheduling specific time- and place-bound course work.

Have you been wondering about Distance Education?

Distance Education implies the provision of educational services to students who are not physically present.

Put more simply, its educational courses, whether short-term programs granting a specific certification or complete academic degrees, which are delivered online or via other media, like TV and VCR, CDs, audio tapes, or mailed print material.

What Distance Education is all about?

The main aspects of Distance Education are as follows-

1. Geography: The point of Distance Education is to educate despite geographical differences. Online education effectively abolishes geographical as well as time differences, allowing an unprecedented number of students from all over the world to study in an institution, at any time of day.

2. Why higher education and Why take it from Distance: The world of today requires advanced education. Nowadays, advanced degrees are the standard – Having more than one education is not extraordinary but sometimes a must. Foreign studies are also common.

With the increased penetration of the Internet, Distance Education, offering anything from individual classes to complete doctoral degrees online, is a natural development of modern educational processes and requirements.

3. Distance Education as we know it today: It is a web-based education developed using e-Learning software tools and other distance-communication means. With increasing reliance on information, the demand for better and faster education grew and brought about the Internet.

4. Who Uses Distance Education? More and more people acquire higher education. Even professionals with full-time careers acquire new degrees, without change of pace at work. Distance education is perfect for the Military and for social institutions of all kinds. Parents can now combine higher education with family. Foreign education has never been easier – all it takes now is to log on.

Distance Education reaches out to all those segments of population which only a decade or so ago were almost completely neglected by educational systems.

In the nearest future cultural, educational, corporate diversity will reach never-before-seen peaks.

Distance education is any type of schooling that takes place away from a physical campus. Distance education is also known as:

- distance learning
- virtual learning
- online learning
- e-learning
- online education
- web-based training

Educational methods in distance learning:

Today, under the new system replaced the traditional systems of learning and learning week (ie tutoring methods, lectures) are:

- **Multimedia courses:**

These courses and widely used elements of image, communication, graphics and simulated components, animation and communication elements for guidance and tips, and talk back on course and curriculum issues are held.

- **Enhanced communication mechanisms:**

The mechanism of any texts simultaneously, and asynchronous audio-visual communications to protect you. This case allows students to practice on topics learned will give.

- **Written test:**

thus, question and test via a distributed communication network, are corrected and returned. These exams through video conferencing support and runs**.**

- **Virtual Seminar:**

thereby different groups of students in different geographical environments linked together makes.

- **Collaborative virtual laboratories:**

the laboratory of the Group's activities are supported. Workshops such as software engineering.

-Smart academic factors:

academic factors that inform intelligent, support and guidance students pay.

Key factors in the process of distance education:

the process of remote training, the following factors contribute:

- **Students:**

Regardless of educational content, role and main element in the learning process students are responsible.

- **Coaches and Teachers**:

Success depends on a lot of educational activities the ability, skills and knowledge are the coaches and professors.

- **Facilitators of communication**:

Facilitator bases, as the bridge between students and mentors are. Must base expectations of teachers and educational needs of students and service coordination and communication to create.

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One of the important pillars of any development of distance education programs, by development group finds. Operational support staff such as student registration, copy and distribute their resources, order textbooks, security and copyright, and are responsible for the report.

- **Management:**

The group decision makers, builders and judges are considered to be educational and should be considered among the factors above, establish the correct relationship formation.

Conclusion:

Technology transports information, not people. Distances between teachers and students are bridged with an array of familiar technology as well as new information age equipment. What sets today's distance education efforts apart from previous efforts is the possibility of an interactive capacity that provides learner and teacher with needed feedback, including the opportunity to dialogue, clarify, or assess. Advances in digital compression technology may greatly expand the number of channels that can be sent over any transmission medium, doubling or even tripling channel capacity. Technologies for learning at a distance are also enlarging our definition of how students learn, where they learn, and who teaches them. No one technology is best for all situations and applications. Different technologies have different capabilities and limitations, and effective implementation will depend on matching technological capabilities to education needs.

Distance education places students and their instructors in separate locations using some form of technology to communicate and interact. The student may be located in the classroom, home, office or learning center. The instructor may be located in a media classroom, studio, office or home.

The student may receive information via satellite, microwave, or fiber optic cable, television (broadcast, cable or Instructional Television Fixed Services (ITFS), video cassette or disk, telephone - audio conferencing bridge or direct phone line, audio cassette, printed materials - text, study guide, or handout, computer - modem or floppy disk, and compressed video. Recent rapid development of technology has resulted in systems that are powerful, flexible, and increasingly affordable. The base of available information technology resources is increasing with dramatic speed. Much has been learned about connecting various forms of

technology into systems, so that the ability to link systems is growing. Most distance learning systems are hybrids, combining several technologies, such as satellite, ITFS, microwave, cable, fiber optic, and computer connections.

Interactivity is accomplished via telephone (one-way video and two-way audio), two-way video or graphics interactivity, two-way computer hookups, two-way audio. Interactivity may be delayed but interaction provided by teacher telephone office hours when students can call or through time with on-site facilitators. Classes with large numbers of students have a limited amount of interactivity. Much of the activity on computer networks is on a delayed basis as well. Possibilities for audio and visual interaction are increasingly wide.

In the earlier days of distance learning, it was most common to see distance learning used for rural students who were at a distance from an educational institution. The student might watch a telecourse on a television stations, read texts, mail in assignments and then travel to the local college to take an exam. This model is still in use, but as the technology has become more sophisticated and the cost of distance learning dropped as equipment prices dropped, the use of distance education has increased.

High front-end costs prevented an early widespread adoption of electronically mediated learning. Distance learning has been aggressively adopted in many areas because it can meet specific educational needs. As the concept of accountability became accepted and laws required certain courses in high school in order for students to be admitted to state colleges, telecommunications was examined as a way to provide student access to the required courses. Many rural school districts could not afford the special teachers to conduct required courses. Distance education met this need by providing courses in schools where teachers were not available or were too costly to provide for a few students. It also fulfilled a need for teacher training and staff development in locations where experts and resources were difficult to obtain. These systems link learner communities with each other and bring a wide array of experts and information to the classroom.

Challenges which faced the early users of distance education are still with us today. If distance education is to play a greater role in improving the quality of education, it will require expanded technology; more linkages between schools, higher education, and the private sector; and more teachers who use technology well. Teachers must be involved in planning the systems, trained to use the tools they provide, and given the flexibility to revise their teaching. Federal and state regulations will need revision to ensure a more flexible and effective use of technology. Connections have been established across geographic, instructional, and institutional boundaries which provide opportunities for collaboration and resource sharing among many groups In the pooling of students and teachers, distance learning reconfigures the classroom which no longer is bounded by the physical space of the school, district, state or nation.

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The role of micro-credit on social participation of rural women

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Abstract: Rural women are among those major groups at society who previously were considered less by planners, due to specific reasons in the past. And this problem is more observable at developing countries. While, by looking at women's history of economic and social life, we can find that this great group, continuously have played basic role in forming economic condition of country. This great group consistent with men have had active role at areas of social-economic activities and always have had major part on economic production of society. Nowadays, supporting family supervisor women is adopted by universal society, as politic, economic a social concern and nearly all countries applied related approaches, and however these efforts have resulted in failure, in so many cases.
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Introduction:

paying part of cost of life by government or charities , establishing forums to analyze family supervisor women's problems , supplying necessary facilities to grow and improve child's life quality and paying facilities to provide sustainable employment , are among most important approaches to support family supervisor women . Paying credit facilities to access sustainable employment with easy terms at limited time, is one of the most important approaches to support family supervisor women. Because alongside supplying their continues needs, their esteem wouldn't be marred. Currently, this approach is used at many countries and positive results have emerged. (Ghaffari, 2000).

Aforementioned plan, due to containing special advantage such as giving accessible loan with low commission fee and no interest rate and also long-term repayment, could provide chances for many farmers to release from dealers and broker jobbers. In this approach, giving micro-credits to rural women seems more effective. because alongside agricultures activities that needed more investments , women by enjoying of very micro-credits not only could create remarkable creativities in rural productions but also gained worthy economic and social abilities , and even improved their field of social presence , well .(Lahsaeizadeh, 2000).

If rural women can work through receiving credits , loan and others finance facilities at favorite jobs and live through earned income (as it called "self-reliance and independence") , so undoubtedly we would see changes in social, economic and cultural relations of village.

Here, Basic issue is that if changes happened following of these events in villages, have positive aspects or negative? Naturally, every change in institutions and social phenomena has both positive and negative dimensions. (Farghdan, 2001)

Being high and low of each one is depended on various conditions and terms so it is varied from one society to another society. In Iranian rural societies, cultural and social context is such that, consequences of these phenomena maybe being different and sometimes contradictory. However these actions caused that women stand in good economic condition and also gain self reliance and rely themselves with no help from husbands, but dominant cultural space on villages may create some disorders. At most of villages in Iran, patriarchal with all features dominate and women's financial self reliance may not being pleasant for some human and rural groups. When women gain financial independence in villages, impacts and social and cultural consequences would emerge (Chabokru and etal, 2005).

Increasing Suffrage, lack of relying on vast patriarchal families, increasing cultural acknowledgment, relation with newer institutions, having intellectual independence, making decision for marrying, occupation, emigration and etc are those rights that they gain. gaining aforementioned rights by women in context of cultural and social framework followed some changes that maybe lead to disfunctions and even create disorders and abnormalities at traditional , familial and kinship relations that dominated on villages (Fakhraee 2002). What that performing credits programs, has made in recent years, was on broad outlook with purpose to access to same results as above findings.

Thus, in one inclusive outlook , it is possible to use micro-credits programs to solve those issues which involved with rural women's economic limitations , so that lead them toward social empowerment, in the

context of economic growth(Rahmani andalibi, 2001) .

Nowadays micro-credits and supplying micro financial resources, has changed human's life and cause to revive different societies at poorest and richest countries of world, so that we can see growth in human's power to access to common financial services. By accessing to wide range of financial tools, families according to their priorities, invest on cases such as costs of education, healthcare, healthy and good nutrition or housing.

Applicants for Microfinance resources mostly involved family supervisor women, pensioners, homeless people, frugal workers, small farmers and micro entrepreneurs. These people are divided into four groups: Poor, very poor, relatively poor and vulnerable poor.

Whenever repayment afford , bond terms and accessing to data , in this classification will change , in order to supply sustainable financial needs of various clients , procedures and operation structures will be develop .(Fami, 2001)

Generally, in most countries, micro finance sources are considered for poor women. By women's access possibility to finance services, they committed to loan and ensure its repayment and preserve their saving accounts and also enjoy insurance cover. Supplying programs for micro financial resources have strong message for families and societies. Most of qualitative and quantitative studies and researches have proven that accessing to financial services; will improve women's conditions in family and society. Women's confidence has increased and they are aware of their abilities. (Banihashem, 1999)

Thus, it has proven that supplying financial services for poor peoples is powerful tool to decrease poverty so that make them able to establish finance, increase income and decrease vulnerability against economic pressures.

Women, being half the population, play an effective role in the economic welfare of family and society. In Iran's economy, women are one of productive factors, but, so far, researchers and writers have ignored the issue of women's participation in economic activities. While in present situation considering the role of women's participation seems to be obligatory (Balali, 2005).

Participation in its broader sense means to motivate people and thus increase the sensitivity to understand and become responsive of development programs and it also carries the concept of local initiatives.

In fact, participation is to guide people caught by disability, to help them realize their potentials and to empower them to make the best use of life.

According to preceding definition of participation, and the ability of participation to turn potential into imminence power, women should participate more actively in economic affairs. Statistics regarding women and girls' activities, especially in rural areas, are always presented much lower than the real numbers (Ghaffari, 2000).

Village with the word "woman" removed will lose its literally in production and economic activities, their everyday activities in different fields all are evidence of woman being required in rural production. Rural girls and women are responsible for a variety of roles and duties including wife, mother, producing crops, livestock and agricultural activities, making and marketing handicrafts which are common in each area, and food preparation.

Daily activities of girls and women in different fields all are evidence of woman being required in rural production sector. Women are the major potential for developing the rural economy which leads to further growth of rural production. Increasing awareness towards the role of this class in production and towards necessity of their broader participation in economical and social development, have forced the countries to consider and support their activities while making new rural, Local and national policies (Rahmani Andalibi, 2001).

Major obstacles to women's participation:

Considering society's current conditions and the issues mentioned above, major obstacles which result in women's less participation can be classified as follows.

1- Educational barriers

Apparently, one essential factor for development is education. Studies indicate that compared with men and boys women and girls do not have sufficient access to education. Some of the factors effecting women's access to education are:

1. Great need of parents to their daughters as labor force
2. Lack of access to educational experts and planners
3. Lack of schools or proper places for girl's education
4. Mixed classes for boys and girls and rural bias on this issue
5. Education expenses
6. Lack of attention to the importance of girls' roles
7. Social, cultural and traditional beliefs about girls
8. Early marriage

Report by UNICEF, claims that literacy rate of women in developing countries is two third of men's, and of about 860 million illiterate adult worldwide, 640 million are women who never had the possibility to go to school

or have left school unfinished(Bakhshoodeh and Salami, 2005).

2- Social and cultural barriers

Sociologically, women in third world countries- especially in rural areas- believe to be dependent on men.

The thought is deeply attached to their historical beliefs. Thereupon they never share ideas while decision-making or planning. As some sociology and politic experts stated, it's the reason they have developed "the silence culture" and they never let themselves to comment on, or participate in planning.

In addition, customs and prejudices that they have been trained with, indirectly affects women's participation. Such ideology of knowing a sex to be lower than the other is a crippling disease that causes a big part of mental and power sources of community remain disadvantaged. These are all prejudice emphasizing on men's value and denying those of women (Changizi Ashtiani, 2003).

3- Structural barriers

In fact, in most countries, governing power, marketing and production conditions and some values related to them, create serious structural barriers to women's participation. According to United Nations' research institute of second development program, these structures are anti-participation; because they lead to unequal access to the control of wealth and social status. They cause failure of many national-regional innovations encouraging participation, and finally make a small group be responsible for everything and we won't have the beneficial results associated with women's participation. The structure determines the conditions of participation and reacts strongly to any renovation. Its objective is to keep women in their position as a labor. Labor market divides the jobs in workshops and factories in a way that some occupational fields are only for women and some other only for men. Men are chosen to be the administrator in all professions and it's assumed that women are not interested in or not able to handle these positions. Thus, in practice the world of production and work is subject to gender discrimination.

4- Political and organizational barriers

In third world countries, women face with many obstacles for participation in decision making, planning, implementation, and evaluation of projects related to country's developing plans. Although, the structure of the country play an important role in making suitable conditions for participation in different areas, but because they have focused plans and such decisions are made by public organizations and official systems, usually the potential force of participation in society will be palled and in practice, participation will face serious obstacles and problems. A focused government always encourages focused official structures. Such a structure is a major barrier to women's participation. They control structures and systems resource allocation and information and knowledge people need to participate in social activities, besides they never let people and especially women control all these. So it's apparent that such programs are either not comprehensive or it's facing problems because designers are not aware of the realities in their community.

5- Barriers related to wife-mother role

UNICEF reports indicate that women's work hours is 25% longer than men's; because a large number of them work at home to produce livelihood products without payment.

The main role of all women in each society is the role of mother and wife; therefore every other matter such as their employment is subject to these roles. Possibility of finding a job (as administrator or in a lower rank) for a girl is affected by various factors including educational level and their socialization method as a child. They have always been thought that they are not identical to boys in terms of social privileges or social status. Emphasize on the roles of mother and wife may make women think there is no need to promote their social status and in the other hand society will not provide necessary facilities for their development. In this situation they are prevented from studying and schooling. This issue will still be a problem after they are married. It should be noted that with women getting paid, total household's welfare improves; because field studies claim that all women earning money, spend their income on their family and particularly children's needs.

So we should mention that not only participation is a woman's civil right but also it will make her more autonomic, and she'll become more creative and innovative.

6- Economical barriers

One of the factors indicating development progress is how and how much different classes of society participate in vital activities. Although importance of women's participation has always been completely apparent, the appropriate balance between men and women in different fields is not yet established in our country. As women can

only posses a limited sort of jobs and also they always have the smaller share of each job opportunity, they are not able to compete in labor market. What's more, mostly they do not own the capital needed for economical participation, so providing personal credits can solve their problem in some extent.

Conclusion:

In all communities, rural women are considered as an important factor in achieving rural development goals and in fact are half of the manpower needed for rural development. However, in the rural community of Iran, there are gaps between the ruling class (capital owners) and villagers, between literate and illiterate, and between men and women. Especially in villages women have fewer possibilities in terms of investment and less power and credit. Role of rural women, over of men, is more influenced with different economic, social, cultural and ecologic factors. Rural women are considered as a noticeable potential in the community either directly (crops production, livestock, handicrafts, cottage industries) or indirectly by helping the agricultural sector (as labor). About 5.6 million women are involved in agricultural production, and activities related to planting... harvesting, preparation of animal food, and taking care of livestock and poultry and some certain activities related to trading and marketing are all different fields of rural women's role and participation. Based on current statistics, women in rural area participate about 50% in conversion industries, 22% in producing crops and livestock, 75% in handicrafts and in areas related to planting…harvesting , respectively, 25, 24 and 4.26. And also in activities related to livestock, they handle 23% of livestock grazing, 42% of animal care and 100 percent of total poultry in the village.

Supplying credits and analyzing credits approaches cause opportunity to activate poor men's working power , establishing field for sustainable production and income , prevent usurers and pre shoppers of agriculture productions to plunder poor rural men and finally empowering poor people especially women who can work but were deprived to have capital and work tools , and extension accordance to their activities such as needs assessment , identifying target group , organizing poor people , giving needed specialized and public training and … have important role on effectiveness and make effective activities of these credits .

Goetz و Sengupta (2003), presented negative image of credits effects on empowering women. They concluded that most women have minimum control on their loans. And when repayment period is short, this shortage of control has devastating effects on women welfare.

Hashemi and others (2004) found that joining to Gramin Bank, has meaningful positive affects on controlling women, and helps to family income.

In researches that conducted by Nanda (2004) became clear that women participation in credits programs had positive affects on their demand about health care.

Fiona Steele and etal (2008) in researches that conducted as called " influences of credits programs on empowering women at Bangladesh , found that women who joined to credits programs , have participated in more educational programs and have married with more educated men and also they have saved more and they had more cash .

Ellen and her colleagues (2009) used approach called it "credits and education at Bolivia, Ghana, Honduras, Mali and Thailand". This approach looks for empowering women through financial services with education. In this approach, women get familiar with importance of credits through education and extension and also familiar with ways to access it through establishing different groups.

Shahnaj and chaudhury(2009) in research as "credits and its role on empowering women " concluded that there is meaningful relation between attending in credits programs and empowering women , at economical dimensions .

Ruhal amin and others (2010) found that those who joined credit funds had more ability rather than those who didn't.

Jameela (2010) presented that credit programs has shown lot of affects on empowering women so that has increased their social, politic and economic ability.

Thus it is obvious that credits programs and its educational and empowering programs can be affective on social, humane and economic development or rural society, if it be associated with proper and gradual practices and base on reciprocal communications principles and apply opinion of local society.

Maybe the main challenges that threaten credits associations , is lack of necessary emphasizes on social dimensions and on reinforcing their basics , that practically cause that this social foundations lose its efficiency soon and practically changed to unsuccessful institution .

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Required activities before participatory rural appraisal (PRA)

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Abstract: Participatory Rural Appraisal (PRA) is one of the participatory research techniques in the class of qualitative research. Robert Chambers describes PRA as "a growing family of approaches, methods, attitudes and behaviours to enable and empower people to share, analyze and enhance their knowledge of life and conditions, and to plan, act, monitor, evaluate and reflect". There exist different methods of data collection and analysis, each with its own strengths and weaknesses. Through time, more appropriate and refined methods have been developed. In the context of rural development, information regarding the communities, their livelihoods, their beliefs, the physical environment in which they live, and their resource endowments need to be gathered and interpreted in a manner that identifies their priorities with a view of developing better understanding of their status and designing appropriate intervention projects directed at resolving their problems. Much of the spread of participatory rural appraisal (PRA) as an emerging family of approaches and methods has been lateral, South-South, through experiential learning and changes in behavior, with different local applications. Rapid spread has made quality assurance a concern, with dangers from "instant fashion", rushing, formalism and ruts. Promising potentials include farmers' own farming systems research, alternatives to questionnaire surveys, monitoring, evaluation and lateral spread by local people, empowerment of the poorer and weaker, and policy review.
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Keywords: Participatory Rural Appraisal (PRA)

Introduction:

The different ways of data collection and interpretation can be seen under two perspectives(IUCN, 2001): qualitative versus quantitative, and participatory versus top down. While the quantitative methods generate information that can be captured numerically, the qualitative methods generally do not generate specific numbers. Qualitative methods are concerned with exploring meanings, processes, reasons, and explanations (lnglis, 1992).

RRA was criticized for being extractive and highly dependent on expert interpretation. It was thus found useful to replace it with PRA which involves a process of learning from, with and by rural people about rural conditions. PRA shares much with its parent, RRA, but is distinguished from it in practice by correcting two common errors: roles of investigation are reversed; and rushing is replaced by relaxation and rapport. At the heart of all these developments was Robert Chambers, although Paulo Friere has also had strong influence especially in similar developments in education circles (Provention Concertium).

PRA has evolved and spread from beginnings in Ethiopia, India, Kenya, Sudan and elsewhere, and in early 1994 is known to be being quite widely practiced in parts of Bangladesh, Botswana, Ethiopia, francophone West Africa, India, Indonesia, Kenya, Nepal, Nigeria, Pakistan, the Philippines, Sri Lanka, Sudan, Uganda, Vietnam, and Zimbabwe, while starts have been made in at least a score of other countries in Latin America, Africa and Asia. Hundreds of nongovernment organizations (NGOs) have adopted PRA and developed applications, as have a number of government departments. The use of PRA methods is being increasingly explored by students and faculty in universities for research, and by training institutes for fieldwork. Spread appears to be accelerating.

Five key principles that form the basis of any PRA activity:

1. **PARTICIPATION:**

PRA relies heavily on participation by the communities, as the method is designed to enable local people to be involved, not only as sources of information, but as partners with the PRA team in gathering and analyzing the information.

2. **FLEXIBILITY:**

The combination of techniques that is appropriate in a particular development context will be determined by such variables as the size and skill mix of the PRA team, the time and resources available, and the topic and location of the work (Dunn, 1991).

3. **TEAMWORK:**

Generally, a PRA is best conducted by a local team (speaking the local languages) with a few outsiders present, a significant representation of women, and a

mix of sector specialists and social scientists, according to the topic.

4. **OPTIMAL IGNORANCE:**

To be efficient in terms of both time and money, PRA work intends to gather just enough information to make the necessary recommendations and decisions.

5. **SYSTEMATIC:**

As PRA-generated data is seldom conducive to statistical analysis (given its largely qualitative nature and relatively small sample size), alternative ways have been developed to ensure the validity and reliability of the findings. These include sampling based on approximate stratification of the community by geographic location or relative wealth, and cross-checking, that is using a number of techniques to investigate views on a single topic (including through a final community meeting to discuss the findings and correct inconsistencies).

PRA are good for:

• Providing basic information in situations where little in known
• Identifying and assessing problems
• Appraising, designing, implementing, monitoring, and evaluation programs and projects
• Getting a better picture of needs and organizations' ability to meet them
• Developing and transferring appropriate technologies
• Appraising emergencies
• Planning projects that are more relevant, restructuring administrations, assisting in decision-making and policy formation
• Generating hypotheses, ruling out inappropriate ones
• Providing guidelines for survey designs and assessing the applicability of their results to other places.
• Fleshing – out complementing, interpreting, or giving depth and context to information obtained through other methods.

Preparation before the PRA:

Proper preparations determine the success of PRA for it involves learning-by-doing and depends on team contributions. In addition to selecting the site where PRA is to be conducted and collecting secondary information regarding the specific sites and their neighborhoods, it is necessary to:

- Establish a PRA Team;
- Establish a Kushet PRA Committee;
- Conduct Preliminary Visits to the Community;
- Developing PRA Schedule.

1. The PRA Team:

The PRA Team consists five faculty members of the faculty of business and economics.

Note that other member(s) already involved in development activities in or near the specified areas shall be included if found necessary, for in PRA, the Team is expected to have the necessary technical know how in different areas (agriculture, health, education, infrastructure, credit, marketing, culture, etc.). It also needs to have a fair gender composition.

Although every team member should be familiar with all aspects of the PRA, each team member is also designated for specific tasks which are described as follows(NCAER, 1993):

a. PRA team leader: One of the PRA Team members will be designated as a leader in each of the four PRAs. That is one team leader will be assigned for each of the four villages. The team leader will be selected in such a way that four members will alternatively serve as team leaders for each of the four PRAs. The role of the team leader is to(Scoones, 1993):

- Play the leading role in the formation of the village PRA committee;
- Ensure that all preparatory work has been done;
- Make sure that the objectives of each session are achieved;
- Coordinate preparation of the PRA report;
- Resolve any problems which may arise;
- Assign facilitators and note-takers for each session;
- Organize the reports from the note-taker/s into a coherent whole;
- Work as the principal editor of that particular PRA report.

Importantly, the PRA team leader is also responsible for ensuring that all technical areas are appropriately covered. Though not intended to do so, many PRA exercises may reflect the technical bias of the facilitators or note-takers as opposed to community needs and interests. This should be avoided at all costs, and the PRA team leader should ensure that.

b. Facilitator: For each PRA session, one individual should be designated as the lead facilitator (note that the team leader may also serve as a facilitator in some of the sessions). As a key objective of the PRA is to promote active community participation, the role of the facilitator is very important and includes:

Before the Session:

- Knowing the contents of their session very well in order that they rarely have to look at the manual for guidance
- Ensuring that the site is well prepared – that there are enough places to sit, that there is

not too much noise close by, that the area is well shaded, etc.

- Ensuring that the seating arrangement is good – and that participants can be seated in a circle so that they can see the facilitator, other participants, as well as any flipchart or blackboard which may be used. Important: if participants are not properly seated, have everyone get up and rearrange the meeting place. During the Session
- Ensuring that all participants understand and contribute to the discussions.
  1. If one participant is talking too much, thank him/her for his/her comments and ask another opinion;
  2. If some participants are not contributing at all, ask them directly what they think;
  3. Do not let only one person or a small group of participants dominate the discussions;
  4. Pay special attention to women and the poor who may not feel comfortable contributing.
- Ensuring that team members share their ideas only after the community members have provided their own, and that the team members avoid influencing the community's decisions.
- Managing the time available for the session to ensure that all objectives are achieved.
- At the end of the session, thank participants for their contributions and explain to them the next activity (Drummond, 1992).

c. Note taker: Because much information is generated throughout the PRA, the task of taking notes is very important to the program's success. One person shall be assigned as a note-taker for each session. The role of the note taker includes(Uphoff, 1992):

- Sitting among participants and take notes (it may preferably be done in such a way that the participants are not so aware that someone is taking notes);
- Noting all main discussion points, and paying special attention to the comments of participants concerns:
  1. What they feel are problems;
  2. What they believe are the causes of these problems;
  3. Possible solutions, and especially how the community has solved these problems in the past;
  4. Special beliefs, customs and religious practices.
- Asking participants to repeat comments if they are not well understood;
- Assisting the facilitator by reminding if some important things are left out or not properly taken care of;Copying information presented on big paper into a notebook;
- Reviewing the notes with the facilitator to make sure that they are complete and correct;
- Copy the notes to a laptop at the end of each day's work.

d. Technical Resource Persons: Specific team members should be designated to serve as resource persons for key technical areas. If appropriate technical persons are not available with the team, the support of government bureaus or NGOs will be sought(Swift, 1991).

These individuals may serve as facilitators for sessions related to their technical area, or may simply assist the PRA team, the PRA committee or other participants in identifying community problems, causes and possible solutions. Note that even though Technical Resource Persons may have much expertise, they should share their ideas only after community members have discussed their own, and avoid influencing the community's decisions. In addition to focus group discussions, technical persons could be used during transect walk(Appleyard, 1998).

2. Preliminary Visits to the Community:

After selecting the specific areas where PRA is to be conducted, the PRA Team (all members need preferably attend) needs to conduct a visit to meet members (local leaders), development workers in the area, government workers, health workers, teachers, and religious leaders with the following duties:

- Introducing the PRA approach to local administrators and community leaders and explaining the objectives of the PRA;
- Explaining the contents and schedule of the PRA program;
- Requesting that a Village PRA Committee be established;
- Deciding on the dates for the PRA;
- Making necessary logistical arrangements, including:
  1. Identifying sites to conduct large and small group meetings;
  2. Discussing lodging arrangements for the PRA Team (if the PRA team decides to stay in the area during the PRA work).

3. The Kushet PRA Committee (KPC):

Because the success of a PRA depends on strong community participation, a KPC (also called Village PRA committee – VPC) is established. Among

others, the KPC is used as an important means to win the trust of the community. The following describe its major characteristics:

1. Composition of the KPC: To ensure the committee is well-suited for its tasks, it should be composed of:

- Six members with an equal number of men and women;
- One of the six members need to be a member of leadership to facilitate the success of the PRA;
- One of the female members need to be selected from the women's association;
- One member of the committee should come from the church (orthodox) leadership;
- Most appropriately the other members (apart from the representative from the or administration and the representative from the women's association) should be elected by the community during a meeting of the community members. If found difficult, another mechanism may be thought;
- Representatives of different areas of the village; different economic groups; and different religious groups in the case of more than one religion;
- Members who have the time to not only help in preparing the community for PRA, but also to help during the PRA, as well as after PRA with the follow-up activities.

2. Roles and Responsibilities of the KPC: The major tasks of the committee include:

- Explaining to other community members the objectives, schedule and importance of the PRA;
- Arranging the place where meetings take place;
- Encouraging all community members to actively participate throughout the PRA;
- If possible, note-taking and similar tasks;
- Meeting with the PRA Team at the end of each day to discuss issues, team findings, problems, etc.;
- Assist participants in the different sessions of the PRA;
- Assisting in PRA follow up activities.

4. Developing the PRA Schedule:

About two weeks before the PRA, the PRA Team should meet to review activities already undertaken and develop the actual schedule for the PRA. Important activities include:

- Fixing the dates for the different PRA sessions in consultation with the PRA committee;
- Indicate the particular sessions and their specific dates including the results expected of each session;
- Specify the roles of each member (facilitator, note taker, etc.)
- Material preparation;
- Logistics (transport, lodging, food preparation);
- Indicate the specific date when the preliminary report should be produced;
- Others.

The PRA team leader is responsible for developing the schedule and makes follow up.

5. Activities upon arrival in the Community:

As final preparatory activities, and once the PRA Team has arrived in the community and has settled lodging and meal arrangements, they should undertake to:

- Meet with the KPC and or leaders to review
    1. The purpose of the PRA;
    2. The PRA Schedule;
    3. The role of the PRA Committee and village leaders;
    4. Preparatory activities the village has undertaken; and
    5. Other important issues (e.g. PRA Team lodging, if applicable)
- Visit PRA Meeting Sites: With the PRA Committee, the Team should visit sites designated by the village for general meetings and small discussion and working groups(Hahn, 1991).
- Plan Transect Walk: The PRA Team should take some time to walk through and around the village – both to familiarize them with the village and to allow villagers to familiarize themselves with PRA Team members. During this time, the PRA Team should also decide what areas they will walk through when they conduct the Transect Walk exercise.
- Review of the Schedule and Roles: Finally the PRA Team should meet to review all of the above, and make any final preparations and review the roles of Facilitators and Note Takers.

Conclusions:

The main objectives of the current PRA are:

1. Empowerment of rural communities by assisting them to systematically utilize their local knowledge to identify problems and strengths, develop skills of analysis, and design appropriate mechanisms for intervention by themselves and/or by development agents;

2. advancement of understanding by academicians/researchers of local knowledge and acknowledgement of the capacity of communities to gather data, conduct analysis, and identify as well as prioritize problems and solutions;
3. utilization of the research questions/problems identified during the PRAs for further investigation;
4. documenting and presenting the outcomes of the PRAs to development agents (governmental and non-governmental) and other stakeholders so that they could undertake interventions in line with the findings.

PRA consists of a series of participatory exercises which help community members better assess their history, resources, and overall situation as concerns agriculture, health, marketing, credit, coping mechanisms, education, and other important areas. During the conduct of the PRAs, rural communities in the selected villages will gather information on the resources they already possess; organize their knowledge; share experience among themselves; learn from each other; identify and prioritize local development needs; and develop action plans which respond to these needs.

The many different perspectives on daily reality and the visualisation offer good opportunities to go beyond the most obvious and dominant points of view in the community. The only warning here should be that too much attention to group discussions/ -activities might enable some groups to dominate the discussion. The methodology is open to modification; everybody can develop new tools and new ways of organising things. This makes PRA applicable in a very wide range of situations. Indeed, it has been used in both rural and urban areas, both in developing countries and industrial countries, in agriculture, in health care and in social programmes. PRA can also be used to collect data; local people are able to generate and/or collect reliable data which they themselves analyze and use for planning.

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Position of Rural women in extension activities

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Abstract: Women, being half the population, play an effective role in the economic welfare of family and society. In Iran's economy, women are one of productive factors, but, so far, researchers and writers have ignored the issue of women's participation in economic activities. While in present situation considering the role of women's participation seems to be obligatory. Participation in its broader sense means to motivate people and thus increase the sensitivity to understand and become responsive of development programs and it also carries the concept of local initiatives. In fact, participation is to guide people caught by disability, to help them realize their potentials and to empower them to make the best use of life. According to preceding definition of participation, and the ability of participation to turn potential into imminence power, women should participate more actively in economic affairs. Statistics regarding women and girls' activities, especially in rural areas, are always presented much lower than the real numbers.
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Keywords: Rural women, participation, extension activities

Introduction:

Development is a multidimensional process and has various economic, social, political and cultural dimensions. Rural women's participation has not been active and effective; because this participation's most important aspect, namely economics, is for rural women. However the value of their work in agricultural products is rarely considered as income and they are not independent either (Amiri, 2000).

For an active participation of women in development, first we need to give a definition for their role in development and then barriers related to their role will be discussed. Although apparently there is no difference of gender in development programs but reality is that women are less considered in participatory programs and most of these plans are planned for men. Finally, planner's optimistic look toward women's participation will be greatly helpful improve rural family budget and will increase the difference between urban and rural families. If, by credit, loans and other financial facilities, rural families are able to build up their own business and make a living through the income and become financially self-reliance or independent, no doubt we will witness some social, economic and cultural changes in villages (Varzgar and Azizi, 2001).

Village with the word "woman" removed will lose its literally in production and economic activities, their everyday activities in different fields all are evidence of woman being required in rural production. Rural girls and women are responsible for a variety of roles and duties including wife, mother, producing crops, livestock and agricultural activities, making and marketing handicrafts which are common in each area, and food preparation.

Daily activities of girls and women in different fields all are evidence of woman being required in rural production sector. Women are the major potential for developing the rural economy which leads to further growth of rural production. Increasing awareness towards the role of this class in production and towards necessity of their broader participation in economical and social development, have forced the countries to consider and support their activities while making new rural, Local and national policies (Rahmani Andalibi, 2001).

Being aware of women and girls' important role in rural activities, many countries have established institutes and organizations to advance women's progress. These organizations try to remove legal barriers that prevent women to participate in development activities as much as men. And finally improve their social, political and economic status in society. With continues evaluation and analysis of current development plans, we can provide especial conditions to ease women's access to production recourses and social services, and considering women's social situation in every society, we can provide the opportunity for them to increase their participation, share income like men, and take part in decision-making(FAO, 1998).

Importance of women's participation:

It's not possible to reach rural development goals without understanding the present situation of society and its groups. Meanwhile identifying the groups with critical roles in the rural area development program will be of importance. Women, as a rural group, due to numerous reasons have always received the least attention while their activities in non-monetary sector play a certain role in rural household economy. As most men leave the village to work in town, women provide much of the agriculture force in the area. In recent years the situation has been more considerable as rural migration to town is getting more. In most Iranian villages women's population is more than men. According to FAO's reports, in some African regions, for 60% of families, women are responsible for supervising family.

Even for cases that men are the direct responsible of production affairs, women's role in family economy can't be denied just because they don't get paid. Although these efforts appear to register in none of official statistics, they easily replace some other activities with significant financial value.

Studies by FAO show that more than half of the world's crops are collected by women. According to estimates, 1.3 billion of world's poor are women, thus the slogan "poverty has a feminine face" is spread worldwide.

Given that in many parts of the world, the production potential of women is not used properly, a cost-benefit study by the World Bank shows that investing on women in developing countries will be more profitable than any other investment. In addition to financial benefits of this huge force, its ancillary results will also be useful. The ancillary benefits of women's employment include: lower population growth and children mortality rates (Navab Akbar, 1997).

Rural women are a big part of productive force and in developing countries third to half of them are supervising households; as a result they face numerous problems, such as:

-Lack of access to social and health facilities
-Various daily chores inside and outside the home
-Men's skill and increase of women's responsibility
-Lack of professional to educate women

Around the world and in Iran, the issue related to female employment, especially in rural areas (which is a manifestation of participation), is not unemployment but unpaid employment; because all the unpaid work done by women at home, such as cleaning, washing, nursing, social affairs, agriculture and livestock,… are encountered as non-economical activities; While visible economic sector cannot continue to exist without this invisible sector's goods and services. On the other hand, rise of industrial system and expansion of factory job all over the world, attracted men to these economic systems and this has given men an objective vision; Whereas, the majority of women, due to working alone at home have got a subjective vision. Now, as women enter labor market and start to participate, they'll become objectified; because the work system will encourage them to think like men. Being more around the house and their local area will help both men and women in terms of subjectivity and objectivity (Arab-Mazar and Jamshidi, 2005).

Thus the issue of women's participation has important effects, including:

-Acceleration of plans implementation
-Realization of people's every day needs with cooperation and consultation
-Increasing efficiency and reducing functional expanses of projects
-Creating opportunities for talent realization and scientific activities
-Creating sense of solidarity and cooperation
-Increase social and personal awareness
-Women, sharing ideas in decision-making and determining their own destiny
-Participation of women as an important factor and a major power to achieve development

Therefore, according to preceding discussions and importance of women's participation in future plans, it's of great importance to study and recognize the factors affecting their participation in social activities of rural area (Fakhraee, 2002).

Results:

The most important issue of women's social and political participation is to take part in planning, decision making, implementation of decisions, and evaluation of results. Generally they have had a little share in such processes. Although in recent years rural women have participated more in villages' management, social and cultural organizations, and cooperative institutions' management; but having a lower level of literacy, education, income and social status than urban women they still have the smaller share of administrative and official jobs. Some barriers to women's participation which can be categorized in 3 groups of personal, familial, and social include: law literacy level, large volume of work both inside and outside of home for many reasons including seasonal migration of men and the great diversity of rural women's activities(nursing, housekeeping, agriculture, handicrafts, livestock,…), malnutrition, law health indicator, Patriarchal structure of society, father or husbands disagreement with a woman's participation in social and economic activities for various reasons like cultural reasons or unwilling to lose the labor force at home, negative attitudes towards women's abilities, gender discrimination, family's poverty, superstitious beliefs, misleading customs like fatalism, law access of women to credit and facilities, inaccessibility of extension services, men-orientated social activities and participation plans, deficiency of professionals needed to educate rural women, problems of access to health services and social facilities, low income of rural women compared with men, lack of non-governmental organizations dealing with rural women's problems, few women managers in rural area. (Rahimi, 2001)

Nowadays, micro-credit and micro-financing have changed people's lives; it has brought back life to poorest and richest communities of the world. So we can easily observe a great increase in people's access to general financial services. Facilitating the access of families to financial services, they begin to invest on educational expenses, healthcare, healthy nourishment, trading, and housing based on their priorities. Overall in many countries financial plans mostly focus on women. Women, provided with financial facilities, will receive a loan, guarantee to pay it back, keep their saving account and also they'll have insurance coverage. Micro-financial plans have an important message for families and communities. Many studies have proven that women's access to mentioned facilities may improve their conditions

in family and society; it also helps them feel more self-confident and makes them aware of their own abilities. Thus providing micro-credit services for the poor in society is a powerful tool to reduce poverty and so that they are able to create assets, earn more money and become less vulnerable against the economic pressure. Of about 1.3 billion poor in the world there are 900 million poor women, this obviously shows that poverty has a feminine face. According to UN's development fund, 10% of world's income and less than 10% of world's assets belongs to women. While a majority of them never posses the capital needed for their activities, women still play an important role in the economic development of country. Therefore women draw the micro-credit policy maker's attention more than others. Choosing women as the main target of micro-credit plans is an effective strategy to eradicate poverty; because their income will upgrade the family welfare; furthermore earning money improves their social status. In some countries this choice is influenced by society's attitude and culture (Araghzadeh, 2002).

For instance founder of Grumman Bank of Bangladesh, Mohammad Yunes, has stated that: "women have plans for themselves, their children, and their family life; they always have an overlook while men just look for fun" to explain why 94% of their clients are women.

Women's access to micro-credits have shown that their income benefit to improve their family and provide livelihood. In addition to all these another reason of women being the target of micro-credit plans is that women have higher loan recovery rates. Totally, expanding women's access to micro-credits may lead to many useful results which in economy is mentioned as "virtuous spiral"; because their access to micro-credits results in family welfare and in a broader point it'll improve community's welfare and shall be increased welfare this process is repeated.

In researches that conducted by Nanda (2004) became clear that women participation in credits programs had positive effects on their demand about health care. Fiona Steele and et al (2008) in researches that conducted as called " influences of credits programs on empowering women at Bangladesh , found that women who joined to credits programs , have participated in more educational programs and have married with more educated men and also they have saved more and they had more cash .

Shahnaj and Chaudhury(2009) in research as "credits and its role on empowering women " concluded that there is meaningful relation between attending in credits programs and empowering women , at economical dimensions .

Maybe the main challenges that threaten credits associations , is lack of necessary emphasizes on social dimensions and on reinforcing their basics , that practically cause that this social foundations lose its efficiency soon and practically changed to unsuccessful institution .

Fiona Steele and et al (2008) in researches that conducted as called " influences of credits programs on empowering women at Bangladesh , found that women who joined to credits programs , have participated in more educational programs and have married with more educated men and also they have saved more and they had more cash .

Ellen and her Colleagues (2009) used approach called it "credits and education at Bolivia, Ghana, Honduras, Mali and Thailand". This approach looks for empowering women through financial services with education. In this approach, women get familiar with importance of credits through education and extension and also familiar with ways to access it through establishing different groups.

Ruhal Amin and others (2010) found that those who joined credit funds had more ability rather than those who didn't.

Jameela (2010) presented that credit programs has shown lot of affects on empowering women so that has increased their social, politic and economic ability.

Thus it is obvious that credits programs and its educational and empowering programs can be affective on social, humane and economic development or rural society, if it be associated with proper and gradual practices and base on reciprocal communications principles and apply opinion of local society.

A study conducted by Chabokru et al (1384) shows the crucial importance of micro-credits for farmers who do not possess physical financial assets (land, building, livestock, well…) and work in agricultural sector because of environmental conditions (such as living in a village) or because it's their ancestral occupation.

So today, women's participation in sustainable economic, social, and cultural development in rural areas is not optional but an essential matter. Those communities that have not seriously considered the necessity of participation faced failures and delayed community's development, welfare and security process. In any community, village, or social group, broad participation of every women in decision-making and any other matter related to national or local development programs, is a key variable in social sciences and in the last few decades, it has interested many scholars of socio-economic and especially cultural issues, and is considered as one of the most fundamental democratic rights of women in a society. As we know in a popular participation, all people are given the opportunity to participate in planning and decision making for their society and for their own future. When in practice women feel that they can be involved in planning, policy making and deciding or solving problems in the society certainly they'll feel more solidarity and become more interested in social, economic, and cultural development programs.

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Comparative advantage of grape production in Fars province

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Abstract: The purpose of this study to determine comparative advantage and the product is grape in Fars province. In this study required data through the Agricultural Jahad Organization in 2010 were collected using DRC indices were analyzed. The results of this study showed that grape production in Fars province is a comparative advantage. Therefore, the result for practical suggestions to increase production of this product is available at the end of the article.

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Introduction:

Export development and increasing its diversity depends on the production potential and competitive ability of agricultural products produced in the province of the world market and competitive ability of agricultural products affected by factors such as price and quality of their content. One of the indicators which measure a country's competitive ability of products used in the global market index is a comparative advantage. Based on this index if the country or regional production factors and inputs and can be much less expensive than the goods produced in other regions to supply the world market, the production of goods that have comparative advantage against other competitors can market is maintain its export. The concept of comparative advantage to the competition between domestic production and production will focus on competing countries. Another concept of comparative advantage, there are also compared to production in different regions of a country that paid position than other regions of the measures. This concept was more physical and its role in determining the prices are not (Mohammadi, 2004).

In today's world the importance of exports of goods and services beyond the measures for countries that already has been done in Iran. The products for export should be of quality, price and compliance with consumer preferences, the ability to compete with similar types in international markets possess. However, the production of appropriate and consistent with the standards required for export as the export trade and non-oil export products of our country does not have a real place and this causes loss of target markets are. Most countries a wide activity to identify success factors and organize their trade policies to promote exports has. In our country, policies to support farm income and has taken part country a review of the status quo and expression can challenge any planning policy and the best strategy is fundamental role (Hassan translucent, 2005).

The country, including the trees, vineyards scattered around 306 hectares of grapes that 35/91 percent of the grapes are trees. Fars province with a 68/20 percent share of the country's fertile vineyards of the surface is in prime position. Khorasan, Qazvin, East Azerbaijan, West Azerbaijan, Zanjan and Hamedan, respectively 32/16, 99/11, 83 / 7, 45 / 7, 64 / 6 and 22 / 5 percent share of grapes in the fertile country in the next Votes have been. 14/76 percent level of total fertility in the country grapes are seven provinces and other provinces, 86/23 percent level fertile country have grapes. Grape production around the country 87 / 2 million tons of 39/89 percent of the irrigated has been made. Despite the allocation of Fars province ranks first fertile level of production with 96/12 percent share of production in the second position of manufacturers rather than grapes have been (Statistic Agriculture, Volume I and garden crops, 2003).

Fars province is one of the poles is agricultural country with good investment and can be programmed as one of the main centers of production and export of agricultural products, to act (Najafi, 2003). Grape cultivation in 2005 years in Fars province was 67,205 hectares including 18,600 hectares of fertile and 48,605 hectares of fertile non-fertilized and fertilized Diem was. In the years 2006, 2007, 2008 and 2009, respectively cultivation hectares has been 69210,69618,67904,72785 than 2005 years has increased. Production rate in 2005 years, and 412,686 tons in 2009 years production has increased and the rate of 422,625 ton is reached. (Bank of Agriculture Horticultural Fars province).

Many articles about the calculation of comparative advantage in exports of various commodities in different regions have been the following:

Fathi (2002), using index of comparative advantage was revealed comparative advantage to analyze export groups of Iranian food industry in the years 1994-98 and concluded that paying on Iran's naval products not only their share in maintaining world market but not part of it is lost. Also in the period studied, Iran losing its export market in sugar and sugar were untreated, but has failed in global market share of bread and biscuits and sweets as well as its comparative advantage and export performance in the areas and types of pasta Spaghetti increase. About the kinds of fruit, canned fruit and jam, exports improved livestock and poultry Export business has been very little success.

Gholi Beglu (2005), supportive government policies impact on the relative advantages for crops and horticulture in Qazvin has studied. Criteria for calculating results SCB, DRC suggests lack comparative advantage in producing almonds in the province, the common price for the real exchange rate, leading to worsening conditions for peanuts is. In this study, to determine the exchange rate from purchasing power parity value using the price index and consumer goods in America as a country with high integration in trade relations with Iran, the relationship has been used.

Mehdipour (2006), showed that potato production in Iran has a comparative advantage. On the other hand there excise coefficients support the product and the indirect subsidies to business inputs can be confirmed.

Eshraghi and Yazdani (2005), comparative advantage in producing peanut Chaharmahal Bakhtiari, using criteria SCB, DRC, NSP has met on three Yadh index, the almond production in the region has comparative advantage have been considered. Their average rate of buying and selling currencies in non-oil goods estimated shadow prices of inputs have to be used in trading.

Aong (2008), examines the kinds of comparative advantage in export markets has dealt with China. China and Myanmar relations trends showed the economic and technical cooperation between the two countries is growing. Myanmar's exports to China include natural resources such as wood, pearl, raw silk, mineral stones, vegetables and ... Only in the forest products are exported with comparative advantage.

Aksynhva (2008), the analysis of comparative advantage in Asia shrimp production and export of payment. In this study, data from the years 2003-1990 and RCA & NTB & MOR indicators were used. Research results show. Developed countries including America, Japan and Europe's largest shrimp importers and developing countries, especially Asian countries of the world's largest shrimp suppliers are.

Leonardo and others (1993), using the benchmark cost of domestic resources, nominal and effective rates of protection and social profitability of comparative advantage of five major agricultural products in Indonesia, including rice, corn, soy, sugar and flour Kasava began. The results showed that rice and corn production compared to import their comparative advantage, but the comparative advantage of rice is more corn. DRC showed that the efficiency of soybean production is huge and expanding its production can be efficient rather than other products such as maize and rice to take. This is mainly due to government support such as support prices and restrictions applied to imports are soybean. Calculation showed that Sugar production compared with imports of sugar, not economic efficiency.

Research Methodology:

1. Index of domestic resources cost (DRC):

Measured by this method, especially, Michael Bruno and developing found. Superior method of internal resources cost than other methods is that the price changes resulting from fluctuations in exchange rates primarily on research related to the development of export is imported or saving it and cause it seems more accurate calculation in terms of making explicit exchange rate and the size of several factors measured changes in exchange rates is particularly (Bruno 1963).

DRC calculation formula for a pure product is as follows.

(2) DRC = CD / (e.PW- e.CE)

CD = cost of domestic inputs with a shadow price
CE = shadow cost of external inputs to produce a dollar unit (currency)
Pw = product price borders dollars (FOB export price or import price CIF)

This case shows the fraction of all shadows of all costs that domestic inputs to produce a product or products are used and the denominator of this fraction showed net revenue is a shadow price. If DRC <1 is the concept that net income to producers a shadow price (net of exchange received) more than a shadow cost domestic inputs are other words in this case the form of resources used is efficient utilization and consequently produced goods in the global competition, have comparative advantage is if DRC> 1 is that the concept of economic goods than it imports it into production because the exchange saving mode and have no other words reflect the lack of international comparative advantage goods on stage is. DRC = 1 if the concept is that within the production or import of the privilege than me and no

country should be given to materials and experts to produce or export to the action.

2. Nominal protection coefficient of the product (NPCO):
The relationship between the amount of price difference between market prices and shadow shows. Mathematical relationship used to calculate NPCO within PAM matrix is as follows:

NPCO = A / E

If NPCO> 1 is the domestic price (market) over the price of imports or exports and production system has the support and indirect subsidies to producers are paid and if NPCO <1 market price is lower than international prices and the indirect tax imposed on producers and NPCO = 1 if the production system is supportive of the policy will not enjoy.

3. The nominal protection coefficient inputs (NPI):
This cost factor inputs can be compared in terms of trade established by the market price to be cost per trade will calculate a shadow price.

NPI = B / F

If NPI> 1 is an indirect tax on the inputs and if there are significant trade NPI <1 is the concept of an indirect subsidy on inputs available and if business is NPI = 1 means no protectionist policies imposed on inputs does not.

4. Effective protection coefficient (EPC):
The benchmark price of the product value based on market prices to value added production of the shadow price measures through this can factor the effects of government intervention in product markets simultaneously examined.

EPC = A-B/E-F

If EPC> 1 is the government policy of production process and if the product supports EPC <1 means is government intervention to act has hurt production and EPC = 1 no policy about the product cannot be imposed by the government.

5. Net social profitability (NSP)
The index of the fraction of the cost of a shade of shadow income is achieved.

NSP = (E-F-G)

If NSP> 1 is the production and export of the product is profitable and if NSP <1 is not profitable means of production and exports.

6. Determine how a shadow price
PAM determine the most important parts of the shadow prices for inputs of production and opportunity cost for the basic factors that production through the adjustment and correction in nominal prices (market) is done.
Production inputs to be two categories of non-exchange trading, and is divided. Non-interchangeable input refers to those who produced them and not ability to export through imports is not possible because the same feature set domestic prices of them as a shadow price considered. If these inputs are several domestic prices, the highest price as a shadow price is considered. Many of the inputs used for construction of the garden, such as wire, concrete base, animal manure and sand, wind, etc. are such.
Set the table in early PAM opportunity cost inputs such as land and labor must also be calculated. According to research conducted usually land rent costs as a shadow price of these inputs are considered.
But an established exchange, refers to those that are produced within the country and if not have the internal ability to export. To calculate a shadow price of the world price of inputs they used. The shadow price of inputs using prices (CIF) imports, real exchange rate and cost of transportation to field borders can be calculated through all non-precious and precious disorders is neutralized.
So the real exchange rate in calculating shadow prices of imported inputs and a shadow price of the product is used to calculate the PAM components. Despite the lack of units in the field of view calculated real exchange rate, purchasing power parity theory (PPP) agreed to some economists is more.
Shipping costs another product variables that determine the price of imported products and inputs used.

Conclusion:
Comparative advantage to determine the methods Grape (DRC, NSP, SCB) production costs and income should be calculated for each product. Cost and revenue to the market price of the cost of agricultural production by the Ministry of Agriculture is published.

Table 1. The average amount spent on the institutions of a hectare (kg - Rial)

Ptas·h		Other fertilizers		nitrogen		Phosphate	
Value	Kg	Value	Kg	Value	Kg	Value	Kg
100	150	15000	5	100	200	100	150
Water pricing and water harvesting		Pesticides disease		toxin excretion			
Value	Kg	Value	Kg	Value	Kg		
100	8000	8000	6	12000	6		

• Agriculture Organization of Fars Province in 1389

In this section, according to the values obtained for the indices was observed that the product listed has a comparative advantage, which is produced according to comparative advantage index of comparative advantage can produce the products above concluded:

Table 2. Determine internal resource cost index (DRC) for the product Grapes

Real exchange rate (U.S. $ RLS)	1189
Price (CIF / FOB) product of $	854
Horton In terms of tons per hectare yield	16.5
The total transaction cost of inputs per hectare	1329683.5
The total cost of domestic inputs per hectare	11850000
Total cost	13179684
A shadow over the farm product price (Rial / ton)	820406
The total product revenue ha shadow	13536699
Index of domestic resources cost (DRC)	0.97

* Research findings

Grape products according to production costs and price performance with equivalent DRC 97 / 0 with a cost roughly equivalent resources that can be enjoyed almost on the spot said the costs and benefits over the series is. This means that it produces or imports into it from outside is not much difference and should policymakers considering policies and business interests is through the province.

Since comparative advantage is dynamic products and change the variable value will change it, so proper planning can be used to create products of comparative advantage.

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The role of information and communication technologies (ICT) in improving agriculture

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Abstract: The importance of communication in the development process has been acknowledged for many years by the development community. FAO has spent at least thirty years pioneering and promoting - both in thinking and practice - the centrality of communication in development. The most essential ingredient of good communication – putting people at the centre of the communication process - has similarly been understood and documented for many years. agriculture extension and farmer-outreach programs face three major challenges – cost-effective outreach, solutions tailored to needs of individual farmers and an image that is farmer-friendly. The concept of development of the rural, today, is not just project initiatives and governance; it is much more beyond that. This paper uncovers a whole plethora of ICT emergence as a technology of the new millennium. Against the backdrop of the ongoing ICT boom, this paper makes an attempt towards studying its applications and usage planning process and policy making for the rural communities focusing on how it helps in aligning the key factors and reduce the problems of alienation, fragmentation and dislocation of knowledge.
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Keywords information and communication technologies (ICT), agricultural development

Introduction:

The internet and mobile networks have the potential to provide agro-information services that are (i) affordable, (ii) relevant (timely and customized), (iii) searchable and (iv) up to date. Large sections of the farming community, particularly the rural folk, do not have access to the huge knowledge base acquired by agricultural universities, extension-centers and businesses. While telecenters are beginning to dot the rural landscape [1], one of the big barriers remains the lack of agro-content that (i) is in the language of the farmers (ii) is relevant to their needs and (iii) is delivered in a form that is of immediate use to them.

Information Technology, more precisely the Information and Communication Technology (ICT), has emerged world over as a technology of the new millennium. By augmenting the process of information exchange and reducing the transaction costs, this ubiquitous technology is instrumental in increasing productivity, efficiency, competitiveness and growth in all spheres of human activity. The potential benefits of, however, can be harnessed only if the technology diffuses across the different sectors of the society. Unfortunately, we are living in a world of 'digital divide' wherein half of the world population have never made a telephone call . The digital divide is not only an international problem, but for most developing nations including is also a national phenomenon. Nonetheless, it has been argued that in an era of globalization, the ability to harness this technology for the 'rural' improves the capability of the developing country.

Information technology (IT) has connected the world globally and is now changing our lifestyle and social consciousness dynamically. Of late, it has emerged as a best tool for information sharing and mutual communication. None of the walks of life have been left untouched by the IT sector be it grain threshing or global business. Agriculture has also been greatly influenced by IT in the present era though the share of IT in agriculture is only 1.3%.

In the current scenario, the role of IT assumes great importance and only with proper integration of IT with agriculture, the problem of food crisis can be solved and the world can move towards a sustainable production.

Integration of IT with agriculture must be done with following main objectives in mind:

- Develop multi-level decision support models for synergising the natural resource system with economic and social imperatives.
- To develop indicators of sustainability for agricultural production system.
- Based on the above scientific assessment, suggest alternatives to conserve and improve the health of natural resource system.

Two fundamental steps exist in establishing an innovation as a valuable, readily used tool: diffusion and adoption. Both diffusion and adoption must occur in order for an innovation to successfully reach its target user and be implemented (Mahajan, et al.). First, diffusion, the process by which an innovation "is communicated through certain channels over time

among the members of a social system" (Rogers), must occur. In this study, the StratSoy project was a major factor in the IT diffusion process in state soybean organizations. Other factors that influenced diffusion included the media, word-of-mouth, and experiences of friends, associates and family members.

In addition to individuals having access to a new technology, adoption must also occur, which means individuals accept the innovation as valuable and use it. Numerous factors could influence IT adoption and use in agricultural organizations and can be grouped into five categories: access to IT, demographic, IT training/education, trust, and time. It is possible for adoption factors to fit into more than one category.

In the case of IT, access to the technology means an individual must have access to a computer equipped with IT such as e-mail and access to the WWW. The category "access to IT" would not only include the use of a computer with IT ability, but would also include the ability to upgrade computer hardware and software to facilitate IT use. The price of needed computer equipment and the expense of Internet use are also related to access to IT. It is predicted that the higher the level of access to IT, the higher the level of IT use by an individual.

The demographic category includes adoption factors such as age, education level, gender, and income level. It is hypothesized that factors in the demographic category will not significantly influence IT adoption and use. Although previous literature suggests that IT use will be higher for younger, more educated individuals (Batte, et al.), 1997 survey results suggest that demographic factors have little influence on IT adoption and use. This may reflect that demographic factors may influence the decision to adopt a new technology, but once that decision to adopt is made, demographic factors may have little influence on use.

Another category of IT adoption factors is IT training/knowledge. This IT adoption factor can be measured with variables such as type of IT training, days of IT training, and the level of knowledge on IT use. It is hypothesized that as the quality and level of IT training increases, the use of IT will also likely increase.

An important factor influencing the adoption of any new technology is an individual's perception of that technology. It is hypothesized by this research that one of the key perception aspects influencing the adoption of IT is the level of trust that the potential adopter has in the IT system and in those who use IT. Trust can be defined as "an individual's optimistic expectation about the outcome of an event" (Hosmer 1995). There are different aspects of trust related to IT.

An individual must first trust that information technologies will work and that IT will be beneficial in accomplishing his/her goals and in completing his/her tasks. An individual must also trust that the information they obtain via IT is accurate and the information they send via IT will not be tampered with and privacy levels will be maintained.

Trust proves to be a difficult variable to measure. Factors included in the trust category include an individual's perception of the ease of use of IT as well as the benefit of IT. In this study, trust is measured by variables such as helpfulness of IT for work-related communication, problem solving ability, and banking and shopping via the Internet. Some individuals, either due to their background or current environment, have a fear of IT and feel that it is difficult to use. It is hypothesized that an individual will use IT more if they have a positive perception or high trust level in IT.

The final IT adoption category proposed by this research is the passage of time. It is hypothesized that individuals will increase their use of IT over time, as access to IT becomes more commonplace. In this study, the same group of people were surveyed twice to evaluate their changes in IT use over time. Time was measured by establishing a dummy variable where each survey response from the 1997 survey was assigned a value of zero and each survey response from 1998 was assigned a value of one. Time-interaction variables were also created for each variable by multiplying the original variable by the time variable. For example, the "days of training" variable (tdays) was multiplied by the time variable and became the "timeinfluenced days of training" variable (tdayst).

Identifying the determinants of IT adoption and use will help industry participants, especially managers, use information technologies to increase information flow and increase the level of trust in the firm and the demand for the firm's products or services. For example, if a livestock company promotes the use of IT to its producers, it will open up more efficient means of communicating product information and providing other services to its customers. As consumers increase their use of IT, firms will be able to communicate more effectively with them, and demand for the firm's product may increase.

Determining the factors that influence IT adoption can assist companies in determining the IT use profile of their customers based on the significant adoption factors identified in this study. Knowledge of the factors that influence IT adoption can also help companies target individuals, who due to their progressiveness and use of IT, may be potential customers of the company's products and/or services. The company can then focus marketing and

advertising campaigns on attracting these individuals to their business. This research is also important because IT can possibly substitute for trust with an organization just as trust often substitutes for contracts. A customer's comfort and trust level with a company may increase as they are able to gain more information about a company via IT. For example, a customer's trust level with a company will increase if he is able to track his shipment order via the Internet.
In addition to the general managerial implications of identifying IT adoption factors, this research also suggests specific ways in which a manager can promote IT adoption that can lead to more efficient communication and increased demand for the firm's products and services.
First, the research shows that IT training increases IT adoption and use. Therefore, firms may benefit from providing training on information technologies for both employees as well as customers.
Second, managers should proactively use IT to promote the trust their employees, customers, and other business associates have in IT, and thus increase the overall use of IT. The positive coefficient on the variable "e-mail is helpful for work related communication" suggests that the more those with whom you communicate use e-mail, the more helpful e-mail is in communicating with them. An agricultural producer might consider using e-mail to communicate with the firm because she observes that her well-respected chemical sales representative uses IT successfully.
This research also suggests that an individual's use of IT is greater when the individual's access to IT is not restricted. Therefore, managers may want to provide greater access to IT by providing each employee his or her own computer hardware equipped with Internet capabilities.
The employees will be free to use IT at their convenience and will be less concerned with privacy or security problems related to sharing a computer. Managers should promote the use of IT in all aspects of employees' and customers' personal lives and work. The significance of the variable "time-influenced do job related work at home" indicates that employees use e-mail more when they are physically separated from work.
The implication for managers is that IT use is greater when people work outside the office, or have flexible work relationships such as telecommuting. Increasingly, individuals will turn to IT when they need information or to communicate with the firm for personal or work-related reasons.
Certainly many individuals and organizations within society at large still have a fear or mistrust of IT. At the same time, agriculture constantly experiences advances in technology and the use of information technologies is becoming more common place each day. Therefore, it is essential for firms and managers to understand the reasons for IT adoption to remain competitive and to best serve their industry and customers.

Information Technology and its Components

Induction of IT as a strategic tool for agricultural development and welfare of rural requires that the necessary IT infrastructure is in place. The rapid changes and downward trend in prices in various components of IT makes it feasible to target at a large scale IT penetration into rural. Some of the broad factors to be noted with respect to various components of IT are listed below :

1. Input devices :

Radical improvements are witnessed with respect to the means of communication by human beings with computers such as key boards, mouse devices, scanners. The advent of touch screen monitors that allow users to give input to computers by touching on the appropriate location of the monitor has made it possible to develop user-friendly interface for farmers which is easy, intuitive, circumvents language barrier and at the same time provides a relaxed environment to the users. The present day digital cameras make it possible to capture and store good quality graphics and large video clips. The small size and low weight of these digital cameras, which are increasingly becoming affordable, open up the possibilities of providing computer based demonstration clips to educate the farmers.

2. Output devices :

Monitor screens, printers & plotters, data projectors support high resolution and good quality output. The quality of these output devices have the potential of generating renewed interest in the farmers in using IT based services. The light weight portable data projectors can be easily carried by the agricultural extension personnel for serving larger audience. Similarly, speakers can also be attached to the computers to incorporate voice based trainings for farmers.

3. Processors:

The processing speeds of computers have gone up. At present, Intel P-IV based processors @ 1.5 Ghz are available in the PC range which makes it possible to undertake substantial processing of data at the client side.

4. Storage Devices :

40GB and even higher hard disk drives have become common in PC range of computers. This makes it possible to store substantial information at the local level which facilitates faster access. Similarly, high capacity floppy disk drives, CDs make it possible to

transfer large volumes of data to locations which can not be connected to networks immediately. These storage devices are also used for backup of crucial data. As a precaution, many corporates store their backups at locations away from the place of work.

5. Software :

Various operating systems are available which act as interface between the user and the machine. The graphic user interface (GUI) has become an accepted prerequisite for end users. Microsoft's 'Windows' continues to be a favourite. Application softwares which can support complex user requirements are available. Of the shelf solutions for office automation packages, groupware applications, complex database solutions, communication products, solutions based on remote sensing & geographical information systems are available. In addition, solutions based on some or all of these are also readily available. The present downward trend in the IT industry provides an opportunity get customised application for any specific task developed at an affordable price. Rapid Application Development and Deployment (RADD) is a popular model for quick development and deployment of applications. Development environment itself is simplified with tools that quicken the pace of software specialists. Project management and monitoring software are available that facilitate efficient execution of large and complex applications that are required for rural

6. Networking devices :

The capacity of modems, used to convert the data from digital to analog and vice versa, which are popularly employed to use telephone lines have increased. Internal modems are available integrated into the computer so that they are not exposed to outside environment. The capacities of other networking devices such as routers have also gone up which makes it possible to create large networks with smooth data transmission.

7. Transmission Media

: The media through which the data transfer takes place has also undergone revolutionary change. Telephone lines are still the popular source although the reliability and low bandwidth are still major issues. High capacity cables, optical fibre, radio, wireless local loops, satellite transmission and various solutions based on a combination of these are already being used in many parts of the country.

8. Other accessesories :

Uninterrupted Power Supply (UPS) devices are crucial to ensure the
longetivity of the IT equipment as well as provide backup mechanisms. The potential of solar
power packs to provide a feasible solution to shortage of power in the rural areas needs to be
exploited.

Role of IT in Agriculture

In the context of agriculture, the potential of information technology (IT) can be assessed broadly under two heads : (a) as a tool for direct contribution to agricultural productivity and (b) as an indirect tool for empowering farmers to take informed and quality decisions which will have positive impact on the way agriculture and allied activities are conducted.

Precision farming, popular in developed countries, extensively uses IT to make direct contribution to agricultural productivity. The techniques of remote sensing using satellite technologies, geographical information systems, agronomy and soil sciences are used to increase the agricultural output. This approach is capital intensive and useful where large tracts of land are involved. Consequently it is more suitable for farming taken up on corporate lines.

The indirect benefits of IT in empowering farmer are significant and remains to be exploited. The farmer urgently requires timely and reliable sources of information inputs for taking decisions. At present, the farmer depends on trickling down of decision inputs from conventional sources which are slow and unreliable. The changing environment faced by farmers makes information not merely useful, but necessary to remain competitive.

Conclusion

It is likely therefore that assisting people to improve their access to and skills in ICT will be an important means for a Government to grow an inclusive, innovative economy for the benefit of a country. Therefore the ICT-Hub model or mechanism for integrated service delivery to rural communities may be applied for this purpose.

The face of the agriculture can be transformed by a well conceived deployment of IT. The potential of IT as yet remains untapped and urgent measures are required to derive maximum benefit. The key players involved in this process such as industry, government and educational institutions and research centres are required to make contributions in this endeavour. The initiative to develop necessary IT based agricultural services need to be developed immediately. Parallel steps to develop necessary IT communication infrastructure are to be taken up along with the utilisation of fiber optic network whereever it is passing through the rural segments.

It is necessary for the industry related to agriculture, in particular fertilizer companies, to review their present I.T. infrastructure with respect to marketing function and undertake measures to strengthen the same. Online integrated systems, well developed executive information systems, applications to enhance the productivity of the field personnel and

efficiently serve the requirements of channel partners & consumers are to be taken up at the earliest. Marketing field personnel need to be provided with the necessary hardware, software, training and brought on to Internet so that smooth integration is possible. Internet based technologies can facilitate creation of applications which can be operated by the field personnel by using simple browsers. Customer support services can also be partially provided over the Internet which will increase the reach of such programmes. The state and central governments should initiate urgent measures to jump in to IT bandwagon for effective e-governance.

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Using Distance Education in Agricultural Education

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Abstract: Distance learning is expanding and examples of it are increasing dramatically. Fewer than 10 states were using distance learning in 1987; today, virtually all states have an interest or effort in distance education. Distance learning systems connect the teacher with the students when physical face-to-face interaction is not possible. Telecommunications systems carry instruction, moving information instead of people. The technology at distant locations are important and affect how interaction takes place, what information resources are used, and how effective the system is likely to be. Technology transports information, not people. Distances between teachers and students are bridged with an array of familiar technology as well as new information age equipment. What sets today's distance education efforts apart from previous efforts is the possibility of an interactive capacity that provides learner and teacher with needed feedback, including the opportunity to dialogue, clarify, or assess. Advances in digital compression technology may greatly expand the number of channels that can be sent over any transmission medium, doubling or even tripling channel capacity. Technologies for learning at a distance are also enlarging our definition of how students learn, where they learn, and who teaches them. No one technology is best for all situations and applications. Different technologies have different capabilities and limitations, and effective implementation will depend on matching technological capabilities to education needs.
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Keywords: Distance Education, Agricultural Education

Introduction:

Considering the position and role of education in the third millennium on the basis of ICT is also a serious approach to the topic with the knowledge community centered on learning and general trends of technological tools to enjoy much of the information and Find the appropriate place in the information society Third Millennium That actually can be a global community and is without limit is undeniable-and-run. Guidance and therefore move in the direction of society should be education and technology for comprehensive pandemic done. Considering the above definitions and with the knowledge and attitudes towards the third millennium and the desirability and some weaknesses in the achievement of certain standards and dynamic structures in order to achieve a knowledge based society, there is. In the present circumstances to provide our information infrastructure development and integration inevitably link the elements and tools that they are as indicators of technology education and technology education will be remembered. In the new context of combining these two indicators comes to training facilities and a variety of tools that will provide guidance and development in information will be very effective.

While the effect of these two indices of body functions and its other fields (favorable to foster new ideas provides. Technologies training web-based technology as one of the most effective learning tools in educational issues have been identified and a total of E-learning as it is referred. . But if the scientific and cultural infrastructure with this technology's Day is not coordinated development of information will be obtained. This weakness caused by lack of growth and development of training required for pandemic knowledge of existing technology is. In many systems of scientific tools and capabilities needed to provide hardware and commissioning are still technological problems resulting from lack of knowledge of poverty and poor education in these centers to be seen.

In other words, the country still in the feasibility assessment and appropriate to make public the necessary training for operation and application of scientific principles and technological tools is has been done and why certain movements and sometimes non-normative point will not be able node an unlock.

The conditions and according to the capacity of developing countries and training facilities required a knowledge-based society feels is felt. If all processes in technology education and technology optimization and standardization of the Hungarian education should go, and appropriate channels that the best option in this area could benefit from state universities is capabilities.

According to the information in the development of any society should take half of the world to progress until the necessary coordination and synchronization

global developments so as to accept the design structure of a knowledge-based society have a special place for the University and respect the role of education and technology was In designing a model with global standards of dynamism and flexibility at first be necessary to select a sample that the facilities and communications needed for this purpose provide action and then determine optimal cognitive deficiencies than Hammett and weaknesses push.
No doubt the experiences of implementing these standards and to develop troubleshooting information using technological tools would be much more economical. That if we develop a range of information from a city university level and conduct more successful we'll be more acceptable was. Because the utilization and application tools and step up the information they've been successful. Therefore the most important first step needed to coordinate and synchronize technology education and educational technology standards and capability in the high user acceptability of the world is also enjoyed.

Benefits of Distance Learning:
Benefits and opportunities that distance education provides, include:
- training a wide range of audiences.
- meet the needs of students and students who can not attend in place.
- Possible connection between students and students with cultures, beliefs and experiences are different.
- Benefiting from coaches and speakers who do not live in the country.

Educational methods in distance learning:
Today, under the new system replaced the traditional systems of learning and learning week (ie tutoring methods, lectures) are:

- **Multimedia courses:**
These courses and widely used elements of image, communication, graphics and simulated components, animation and communication elements for guidance and tips, and talk back on course and curriculum issues are held.
- **Enhanced communication mechanisms:**
The mechanism of any texts simultaneously, and asynchronous audio-visual communications to protect you. This case allows students to practice on topics learned will give.
- **Written test:**
thus, question and test via a distributed communication network, are corrected and returned. These exams through video conferencing support and runs**.**

-Virtual Seminar:
thereby different groups of students in different geographical environments linked together makes.

- **Collaborative virtual laboratories:**
the laboratory of the Group's activities are supported. Workshops such as software engineering.

-Smart academic factors:
academic factors that inform intelligent, support and guidance students pay.

Key factors in the process of distance education:
the process of remote training, the following factors contribute:
- Students:
Regardless of educational content, role and main element in the learning process students are responsible.
- Coaches and Teachers:
Success depends on a lot of educational activities the ability, skills and knowledge are the coaches and professors.
- Facilitators of communication:
Facilitator bases, as the bridge between students and mentors are. Must base expectations of teachers and educational needs of students and service coordination and communication to create.
- Support staff:
One of the important pillars of any development of distance education programs, by development group finds. Operational support staff such as student registration, copy and distribute their resources, order textbooks, security and copyright, and are responsible for the report.
- Management:
The group decision makers, builders and judges are considered to be educational and should be considered among the factors above, establish the correct relationship formation.

Conclusion:
Distance education places students and their instructors in separate locations using some form of technology to communicate and interact. The student may be located in the classroom, home, office or learning center. The instructor may be located in a media classroom, studio, office or home. The student may receive information via satellite, microwave, or fiber optic cable, television (broadcast, cable or Instructional Television Fixed Services (ITFS), video cassette or disk, telephone - audio conferencing bridge or direct phone line, audio cassette, printed materials - text, study guide, or handout, computer - modem or floppy disk, and compressed video. Recent rapid development of technology has resulted in systems that are powerful, flexible, and increasingly affordable. The base of available information technology resources is increasing with dramatic speed. Much has been learned about connecting various forms of technology into systems, so that the

ability to link systems is growing. Most distance learning systems are hybrids, combining several technologies, such as satellite, ITFS, microwave, cable, fiber optic, and computer connections.

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Interactivity is accomplished via telephone (one-way video and two-way audio), two-way video or graphics interactivity, two-way computer hookups, two-way audio. Interactivity may be delayed but interaction provided by teacher telephone office hours when students can call or through time with on-site facilitators. Classes with large numbers of students have a limited amount of interactivity. Much of the activity on computer networks is on a delayed basis as well. Possibilities for audio and visual interaction are increasingly wide.

In the earlier days of distance learning, it was most common to see distance learning used for rural students who were at a distance from an educational institution. The student might watch a telecourse on a television stations, read texts, mail in assignments and then travel to the local college to take an exam. This model is still in use, but as the technology has become more sophisticated and the cost of distance learning dropped as equipment prices dropped, the use of distance education has increased.

High front-end costs prevented an early widespread adoption of electronically mediated learning. Distance learning has been aggressively adopted in many areas because it can meet specific educational needs. As the concept of accountability became accepted and laws required certain courses in high school in order for students to be admitted to state colleges, telecommunications was examined as a way to provide student access to the required courses. Many rural school districts could not afford the special teachers to conduct required courses. Distance education met this need by providing courses in schools where teachers were not available or were too costly to provide for a few students. It also fulfilled a need for teacher training and staff development in locations where experts and resources were difficult to obtain. These systems link learner communities with each other and bring a wide array of experts and information to the classroom.

Challenges which faced the early users of distance education are still with us today. If distance education is to play a greater role in improving the quality of education, it will require expanded technology; more linkages between schools, higher education, and the private sector; and more teachers who use technology well. Teachers must be involved in planning the systems, trained to use the tools they provide, and given the flexibility to revise their teaching. Federal and state regulations will need revision to ensure a more flexible and effective use of technology. Connections have been established across geographic, instructional, and institutional boundaries which provide opportunities for collaboration and resource sharing among many groups In the pooling of students and teachers, distance learning reconfigures the classroom which no longer is bounded by the physical space of the school, district, state or nation.

The key to success in distance learning is the teacher. If the teacher is good, the technology can become almost transparent. No technology can overcome poor teaching which is actually exacerbated in distance education applications. When skilled teachers are involved, enthusiasm, expertise, and creative use of the media can enrich students beyond the four walls of their classroom.

Teachers need training in the system's technical aspects and in the educational applications of the technology. Areas for assistance include the amount of time needed to prepare and teach courses, how to establish and maintain effective communication with students, strategies for adding visual components to audio courses, ways to increase interaction between students and faculty, planning and management of organizational details, and strategies for group cohesion and student motivation.

The interchange of ideas requires different communication methods than in conventional classrooms: information technologies are predominantly visual media, rather than the textual and auditory environment of the conventional classroom, the affective content of mediated messages is muted compared to face-to-face

interaction, and complex cognitive content can be conveyed more readily in electronic form because multiple representations of material (e.g., animations, text, verbal descriptions, and visual images) can be presented to give learners many ways of understanding the fundamental concept.

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Effective teaching through distance education

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Abstract: Historically, most distance education courses were vocational in nature, but today courses are offered for academic, professional, and avocational purposes for students of all ages. There are numerous specialized programs, such as those for blind persons and for parents of small children with hearing impairments. Distance education is available in practically any field, from accounting to zoology. Courses are offered in gemology, high school diploma, journalism, locksmithing, child day care management, yacht design, and many fascinating subjects. Distance education courses also vary greatly in scope, level, and length. Some have a few assignments and require only a few months to complete, while others have a hundred or more lesson assignments requiring three or four years of conscientious study.Distance education is a method of education in which the learner is physically separated from the teacher and the institution sponsoring the instruction. It may be used on its own, or in conjunction with other forms of education, including face-to-face instruction. In any distance education process there must be a teacher, one or more students, and a course or curriculum that the teacher is capable of teaching and the student is trying to learn. The contract between teacher and learner, whether in a traditional classroom or distance education, requires that the student be taught, assessed, given guidance and, where appropriate, prepared for examinations that may or may not be conducted by the institution. This must be accomplished by two-way communication. Learning may be undertaken either individually or in groups; in either case, it is accomplished in the physical absence of the teacher in distance education. Where distance teaching materials are provided to learners, they are structured in ways that facilitate learning at a distance.
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Keywords: Distance Education, Developing Countries

Introduction:

The background of distance education to mid-nineteenth century dates. Pioneers in America and Europe of the best distance learning technologies for training that day, took advantage. For example: mailing system for creating educational opportunities for those able to go to regular schools were not interested in science education, but had been used. Of course at that time most of those who took advantage of this type of Physically Handicapped facilities, women allowed to attend the classes along with men who did not have a. Location is N. There was a school; were. One of the pioneers in this field English personal name was Isaac Pitman. His short-term training through correspondence and the correspondence began in 1840 in England. Students were required to read the Bible a part of written questions and answers raised by Pittman to get a good score should return by mail.

But distance education in America and for the first time at the University of Illinois Veslin was implemented in 1874. In 1900, university education through correspondence, face became more public. National Association of Home Education in 1926 and led the establishment of distance education and related programs in universities and schools, and more important aspect to find drivers. Education in 1920 invented the radio and TV appearance in 1940 led to important new techniques in communications that the nature of the field of distance education also created dramatic changes.

Trainers using these new technologies were successful educational programs to millions seek learning opportunities and thereby reach out to the educational spaces, training centers to expand. With the development of long-distance telephone system in the early twentieth century method of capacity and distance learning methods for students to access educational opportunities in the world increased Translation. But until the invention of mobile tele conference ever in the 80 and 90 and the main role in the concept of distance education did not play. Telemetry system, allowing for teachers conference provided that without the slightest delay at a time when your students can listen to them talk and sometimes they see.

Expansion of computer networks in the decade 1990 and connect millions of people through lines to the telephone networks made it possible to simply distance learning via computers and computer conferences around the world is possible (a) and

Today with the development of control technology in science and technology are around the world.

Distance education is education designed for learners who live at a distance from the teaching institution or education provider. It is the enrollment and study with an educational institution that provides organized, formal learning opportunities for students. Presented in a sequential and logical order, the instruction is offered wholly or primarily by distance study, through virtually any media. Historically, its predominant medium of instruction has been printed materials, although non-print media is becoming more and more popular. It may also incorporate or make use of videotapes, CD or DVD ROM's, audio recordings, facsimiles, telephone communications, and the Internet through e-mail and Web-based delivery systems. When each lesson or segment is completed, the student makes available to the school the assigned work for correction, grading, comment, and subject matter guidance by qualified instructors. Corrected assignments are returned to the student. This exchange fosters a personalized student-instructor relationship, which is the hallmark of distance education instruction.

Historically, most distance education courses were vocational in nature, but today courses are offered for academic, professional, and avocational purposes for students of all ages. There are numerous specialized programs, such as those for blind persons and for parents of small children with hearing impairments. Distance education is available in practically any field, from accounting to zoology. Courses are offered in gemology, high school diploma, journalism, locksmithing, child day care management, yacht design, and many fascinating subjects. Distance education courses also vary greatly in scope, level, and length. Some have a few assignments and require only a few months to complete, while others have a hundred or more lesson assignments requiring three or four years of conscientious study.

Since 1890, more than 130 million Americans have studied at DETC member institutions, including Franklin D. Roosevelt, Walter P. Chrysler, Walter Cronkite, Barry Goldwater, Charles Schulz, and many other distinguished alumni of DETC members. Unlike most distance education courses offered by traditional colleges and universities that are semester and classroom oriented, with courses offered by most of the DETC-accredited institutions you can study any time and anywhere. Distance education is especially suited for busy people who wish to increase their knowledge and skills without giving up their jobs, leaving home, or losing income. You learn while you earn. Many courses provide complete vocational training; others prepare you for upgrading in your present job, without losing wages, experience or seniority. You receive individual attention, and you work at your own pace.

In recent years, technology has played a significant role in transforming the traditional distance education school into a dynamic, interactive distance learning method using toll-free telephone lines, as well as a diverse array of personal computers, video devices, CD and DVD ROMs, online courses over the Internet, interactive devices, and other modern technological innovations. The future for distance study promises to be exciting!

Types of Distance Education Programs:

There are two types of programs offered by distance education schools: synchronous learning programs and asynchronous learning programs. With synchronous learning, distance education students must log on to the school's website at a set time. Often, they interact with their peers and professors via group chats, web seminars, video conferencing, and phone call-ins. With asynchronous learning, distance education students complete all coursework on their own time. They often learn via assignment sheets, message boards, email, pre-recorded video lectures, mp3s, and traditional mail correspondence.

Distance education began for the delivery of courses to students who live in remote areas. Over the years, though, this form of education has become the preferred method for learning outside of the classroom.

Distance Education is now undertaken by people with busy schedules, hectic lifestyles, special needs, and also those living in isolated areas. What's more, with such flexible learning options you can choose to study at any time and from any location you like.

There are a number of different **forms of distance education** and it's important to know which method you prefer:

- **Correspondence learning:** your course materials are printed and sent out to you by mail/courier. The advantages are that you have a printed set of reference materials, you can study anywhere and you are not reliant on a computer, you can learn for long periods of time.
- **eLearning:** your course materials are provided to you in multimedia format; that is, on CD/DVD. In this way you can choose to take your study materials within you and learn anywhere in the world with just a laptop.
- **Online learning:** no materials are sent to you and you do all your learning online. The limitation is that you need to be logged onto a computer (though you may be able to download and print some of your materials

yourself, though this can cost you more in ink), there is a limit to how much you can absorb and do online, and most people's attention span on-screen is limited to 20 minutes (your eyes get tired after that).

- **Broadcast learning:** where you tune into a series of television, radio or Internet broadcasts (e.g. podcast, YouTube, etc.).
- **Teleconferencing:** where your lessons are conducted in real time through an Internet connection. Limitations are that streaming can be slow, connections can cause problems (students and teachers generally need to be computer literate) and there can be delays in talk-time, depending on software, hardware and connection capabilities.

Forms of distance education:

In its original form, teachers using distance education traveled to remote sites and taught a class, or corresponded with students through mail, telephone, or fax machine. Individualized study has been a method of reaching the remote student for some time. Detailed course instructions are sent to the learner who performs the assigned tasks and returns the completed work to the teacher for evaluation and reassignment if necessary.

Technology has raised the quality of individualized distance instruction. The use of various forms of electronic media increases time effectiveness and improves the delivery of information. Video, audio, and computer-based applications may enhance the product received by the independent learner. Electronic delivery can occur using synchronous communication, in which class members participate at the same time, or asynchronous communication where participants are separated by time (Romiszowski, 1993).

Video/audio models of distance education include broadcast television, cable television, satellite, microwave, fiber optics, and audio graphics. The most widely used format is broadcast and cable television (Parrott, 1995). However, developments in satellite and fiber optic systems have produced other successful programs. The interactive capability of many of these networks has produced a distance classroom that is nearly identical to a regular classroom. Teachers and students can interact through both two-way video and one-way video with two-way audio systems. The recent development of Desktop Video Conferencing (DVC) which brings interactive video capability to the desktop computer, further enhances learning opportunities.

The linking of computer technology through the use of the Internet or CD-ROM with television transmission provides a potentially new dimension to distance education. This technique can link university professors to high school teachers, or to physically disabled students, in a distance setting (McLean, 1996).

Another form of interaction is the use of computer conferencing. This method utilizes asynchronous communication in such forms as an e-mail list group, an Internet discussion group, or other types of conferencing software. Asynchronous methods of communication are especially appealing to the learner who has difficulty scheduling specific time- and place-bound course work.

Effective teaching through distance education:

Distance education dictates changes in behavior for both the teacher and the learner. The successful student develops persistence and skills in self-directing work. The successful distance education teacher becomes conversant with new technology and develops new instructional styles, moving from creating instruction to managing resources and students and disseminating views (Strain, 1987). Administrative and faculty support for distance education are critical to the success of this instructional method. Administrators should take note that the implementation of a distance education program may allow access to a greater number of students. However, the time and work associated with teaching at a distance exceeds the normal requirements of campus-based instruction.

Students in distance education settings perform as well or better on assignments, class activities, and exams when compared to campus-based students (St. Pierre, 1998). Nevertheless, students must maintain persistence and a clear focus to succeed in a distance learning situation. Self-direction, a passion for learning, and strong individual responsibility are important influences on achievement. There are indications that distance education works best for more mature, motivated, well-organized, and already accomplished learners (Rintala, 1998).

Garrels (1997) describes five critical elements for successful teaching at a distance:

1. Instructor enthusiasm. This requires animation and comfort in front of the camera, or with the technology utilized. Faculty support and interest are critical to the success of distance learning endeavors.
2. Organization. Teaching materials must be prepared in advance; timing, variation, and smooth transitions must be planned. Instructors should allocate from 3 to 5 hours of preparation for each hour of distance instruction. Great attention to detail is required long before the actual classroom activity occurs (Summers, 1997).
3. Strong commitment to student interaction. Whatever the modality used to teach at a distance, the

instructor must encourage and facilitate ongoing communication between the students and the instructor.

4. Familiarity with the technology used in the class format. Faculty development is important before beginning any distance activities, and instructors should be trained in video use, computer use, or other forms of instructional technology used.

5. Critical support personnel. Production staff, graphic designers, and technical staff members will help the instructional setting produce successful teaching at a distance.

Distance education is any type of schooling that takes place away from a physical campus. Distance education is also known as:

- distance learning
- virtual learning
- online learning
- e-learning
- online education
- web-based training

Conclusion:

Distance learning is expanding and examples of it are increasing dramatically. Fewer than 10 states were using distance learning in 1987; today, virtually all states have an interest or effort in distance education. Distance learning systems connect the teacher with the students when physical face-to-face interaction is not possible. Telecommunications systems carry instruction, moving information instead of people. The technology at distant locations are important and affect how interaction takes place, what information resources are used, and how effective the system is likely to be.

Technology transports information, not people. Distances between teachers and students are bridged with an array of familiar technology as well as new information age equipment. What sets today's distance education efforts apart from previous efforts is the possibility of an interactive capacity that provides learner and teacher with needed feedback, including the opportunity to dialogue, clarify, or assess. Advances in digital compression technology may greatly expand the number of channels that can be sent over any transmission medium, doubling or even tripling channel capacity. Technologies for learning at a distance are also enlarging our definition of how students learn, where they learn, and who teaches them. No one technology is best for all situations and applications. Different technologies have different capabilities and limitations, and effective implementation will depend on matching technological capabilities to education needs.

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Interactivity is accomplished via telephone (one-way video and two-way audio), two-way video or graphics interactivity, two-way computer hookups, two-way audio. Interactivity may be delayed but interaction provided by teacher telephone office hours when students can call or through time with on-site facilitators. Classes with large numbers of students have a limited amount of interactivity. Much of the activity on computer networks is on a delayed basis as well. Possibilities for audio and visual interaction are increasingly wide.

In the earlier days of distance learning, it was most common to see distance learning used for rural students who were at a distance from an educational institution. The student might watch a telecourse on a television stations, read texts, mail in assignments and then travel to the local college to take an exam. This model is still in use, but as the technology has become more sophisticated and the cost of distance learning dropped as equipment prices dropped, the use of distance education has increased.

High front-end costs prevented an early widespread adoption of electronically mediated learning. Distance learning has been aggressively adopted in many areas because it can meet specific educational needs. As the concept of accountability became accepted and laws required certain courses in high school in order for students to be admitted to state colleges, telecommunications was examined as a way to provide student access to the required courses. Many rural school districts could not afford the special teachers to conduct required courses. Distance

education met this need by providing courses in schools where teachers were not available or were too costly to provide for a few students. It also fulfilled a need for teacher training and staff development in locations where experts and resources were difficult to obtain. These systems link learner communities with each other and bring a wide array of experts and information to the classroom.

Challenges which faced the early users of distance education are still with us today. If distance education is to play a greater role in improving the quality of education, it will require expanded technology; more linkages between schools, higher education, and the private sector; and more teachers who use technology well. Teachers must be involved in planning the systems, trained to use the tools they provide, and given the flexibility to revise their teaching. Federal and state regulations will need revision to ensure a more flexible and effective use of technology. Connections have been established across geographic, instructional, and institutional boundaries which provide opportunities for collaboration and resource sharing among many groups In the pooling of students and teachers, distance learning reconfigures the classroom which no longer is bounded by the physical space of the school, district, state or nation.

The key to success in distance learning is the teacher. If the teacher is good, the technology can become almost transparent. No technology can overcome poor teaching which is actually exacerbated in distance education applications. When skilled teachers are involved, enthusiasm, expertise, and creative use of the media can enrich students beyond the four walls of their classroom.

Teachers need training in the system's technical aspects and in the educational applications of the technology. Areas for assistance include the amount of time needed to prepare and teach courses, how to establish and maintain effective communication with students, strategies for adding visual components to audio courses, ways to increase interaction between students and faculty, planning and management of organizational details, and strategies for group cohesion and student motivation.

The interchange of ideas requires different communication methods than in conventional classrooms: information technologies are predominantly visual media, rather than the textual and auditory environment of the conventional classroom, the affective content of mediated messages is muted compared to face-to-face interaction, and complex cognitive content can be conveyed more readily in electronic form because multiple representations of material (e.g., animations, text, verbal descriptions, and visual images) can be presented to give learners many ways of understanding the fundamental concept.

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Evaluation of protein in persian Gulf Blue crab (*portunus pelagicus*) and The Effect of some Biological parameters on it

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Abstract: Today role and importannce of correct nutrition Is proved in providing health and preventing some diseases. In medical field also, new researches propose limiting consumption of chemical medicines for treating side effects. Therefore biological and medical spetialists consider aquatic's meat and their processed products , because they are proved to have useful compositcs such as vitamines, mineral salts , proteins , antioxidant, and unsatuatod fat acids. In this study , nutritional value of persian Gulf blue crab is investigated considering the amount of total protein . besides extracting proteins in muscle tissue of this variety with column chromatography ,the effect of some biological parameteis are investigated on the amount of these proteins. Results showed that this species have considerable amounts of animal proteins. Also it is observed that with increasing the crab's weight , the amount of muscle tissue and protein increased. Also sex had some effect on protein amount. In such a way that always in male crabs, the amount and number of extracted fractions was higher.

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Keywords: blue swimmer crab, persian Gulf , biological parameters, portunus pelagicus

1. Introduction

Aquatic's meat such as beef and pouttry have total chemical composites such as protein, lipid, water, minerals and vitamin. Which their percentage and their components are different and some how has effect on prothein quality and their nutritional value aquatic's meat are prefrablly consumed because of following. Characteristics considering nutritional value: high digestivity, mineral salts richness such as iron, selnium, Iod, calcium, magnesium , aquatic meat's richness of $Omega_3$ fat acids such as Ecoza penthatonic (EPA) and dekoza Hexanoec acid (DHA) Which have noticeable effects on health and preventing from diseases. New researches showed that among aquatics, crabs and shrimps have special properties because of selnium. In such a way that consuming these aquatics in daily nutrition diet have noticeable effects on preventing early aging , cancer and cardio-Vascular diseases because of their richness in antioxidant compositions.For example consuming 120 gr of fresh shrimp can supply 80% of daily need of individuals. Inspite that in Iran blue swimmer crab is considered only as an incidental hunting and is not consumed only as an incidental hunting and is not consumed exept in some southern areas of the country, but in global market, Fresh hunting of this species is sold 10 dollars per a kilogram and alive is sold 20 dollars. In this research by studying this species and determing its nutritional value considering protein amount. economic justification is performed for planned hunting of this type and processing and exporting the products to other countries.

2. Material and methods

Sampling was perfomed monthiy during a year from October 2007 to the end of September 2008 in persian Gulf coasts. Sampling zone includes eastern coasts (bahrekan hunting zone) whith following specifications:

START LAT 2957/639 ENDLAT 4928/065
START LAT 9540/712 ENDLAT 4928/059

And western coasts (Bouseif and lifea hunting zones) with following specifications:

START LAT 2955/184 END LAT 4906/855
START LAT 2958/199 END LAT 4903/867

Sampling was performed with several methods such as research ship and local fishers (fishing boats) with trawler net and sampler, samples were kept in ice and transfered to labratory at maximum 24 hours. For removing mud, algaes and barnacles sticked to external skeleton , crabs were washed and then they were dryed with drying paper. after sex seperating of male and female crabs. They were divided based on wet weight in 3 groups of less than 50gr, 50-100gr, and more than 100 gr. from this stage, tests were performed separately for each of six groups.

At first beside cutting carapace and removing gills, muscle tissue was isolated and was washed with cold Tris buffer (0.05 M, pH =7.5) and 200 ml of that buffer was added to it and was homogenized with refrigrator homogenizor device for 3 minutes.

Resultant tissue mixture was centri fuged with refrigrator centrifuge for 60 minutes in 6000 g and supernatant was separated. Then again buffer Tris was added to residual layer and is mixed and was centrifuged as previous stage. After second centrifuge supernatant layer was mixed with previous stage 's supernatant and was filtered. In fact this solution was raw tissue extract which was used for extracting protein fractions.

For depositing the protein with amonium sulfate , at first 29.1 g of solid amonium sulfate was added gradually to the extract per 800 mm of extract . then mentioned extract was centrifuged with refrigrator centrifuge for 60 minutes in 4^0c and 6000 g . Residual of this stage was kept (p50). Supernatant was transferred to glass and 12.5gr solid omanium sulfate was added gradually per every 100 mm of that (getting to 70 percent of saturation) and was centrifuged for 60 minutes in 4^0 c and 6000 g. Residual of this stage (p70) was separated and was mixed with the residual of previous stage (p50) (p50+p70) . buffer Tris with amuunt of 3 time more than volume was added to resultant residual (0.05M , pH=7.5) and was mixed completely. This solutiom was dialized for desalting before performing chromatography. In such a way that above solution (buffer+p50+p70) was poured in the dialize bag and the bag containg solution was settled in a big glass containing buffer Tris (0.05 M , pH=7.5) At the whole time (12hours)buffer was mixed with a magnetic mixer and was replaced with fresh Tris. at the end, the whole surface of dialize bag was covered with sucroze and was refrigrated for dehydration for 10 hours . concentrated solution was used in next stage for chromatography as the main sample. for sepatating protein fractions in two successive stages, column chromatography pharmacia 60×2.5 with fixed phase of sephadex G100 and mobile phase of Tris buffer(chloride sedium %1 M, PH=7.5, molarite %5 and flow speed, of 40 ml/h was used.in the second stage of chromatography, pharmacia column with following specifications was used: 60×1.5, fixed phase of cellulose gel DEAE and mobile phase of salty Tris buffer and 40 ml/h speed . for measuring total protein of each fraction, two methods were used: bioret and spectometric method At first sample were prepared according to following table in bioret method .

Above samples were kept in labratory environment for 5 minutes .and then device adsorption amount became zero with the evidente and absorption amount of standard pipe (Bovin Saline albomin 20 percent)was read and registered. Then optical absorption amount of all samples was read in wave length of 540 nanometer .The amount of total protein in each fraction was calculated and registered based on formula.

Tabel 1. Preparing pipes and compositions for bioret test

Preared solution	evidence	standard	Type of compositions
1000µ	1000µ	1000µ	indexkit
-	-	20µ	standard
20µ	-	-	sample
-	20µ	-	Diluted water

In spectometry method, amount of absorption in each sample was read in wavelenght of 280 nanometer and 260 nanometer .Then protein concentration of each unknown sample was calculated and registered with following formula:(Axford method 2008).

Concentration of sample protein =
[1.44×(absorption of 280)]-[0.76×(absorption in 260)]

3. Results

Total protein amounts was measured for raw tissue extract and 4 groups of fractions resultant from the first column . Chromatography results of

the first column (gel filteration) showed the existence of 4groups of protein fractions in male crabs .Maximum amount of protein related to group A(20-20) was 582.5 mg/lit.

Table 2. Evaluating total protein resultant from gel filteration chromatography of male blue crab

Step	Fraction	Total protein mg/L
Cephad ex- G100	Raw extract	1366
	group A	582.5
	group B	204.9
	group C	405
	group D	167

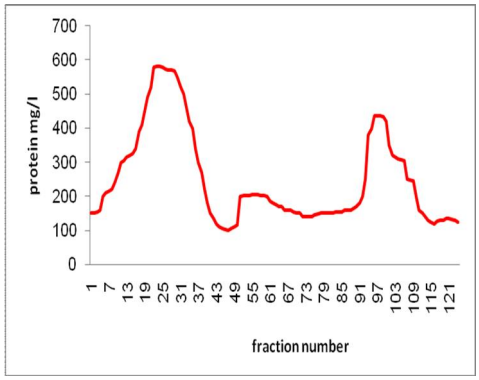

Fig 1. Results of total protein resultant from gel filteration chromatography of male

Whereas the results in female crabs showed the existance of 3 protoin groups which maximum of it was related to fractions group A(16-21) with amount of 410.9 mg/lit.

Table 3. Total protein resultant from filteration gel chromography of female

Step	Fraction	Total protein mg/L
Cephad ex- G100	Raw extract	985
	A group	410.9
	group B	365
	group C	197.5

The results of second column chromatography of group A(16-21) resultant from first column of blue crab showed 5 protein groups in males and 4 protein groups in females.

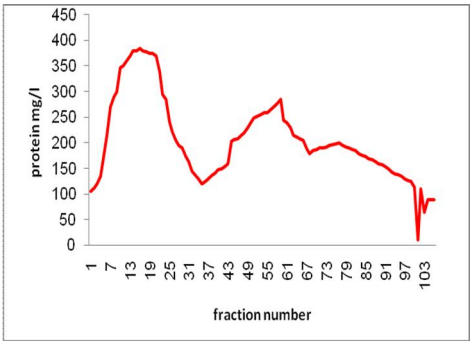

Fig 2. Results of total protein resultant from gel filterationchromatography of muscle tissue of female crab

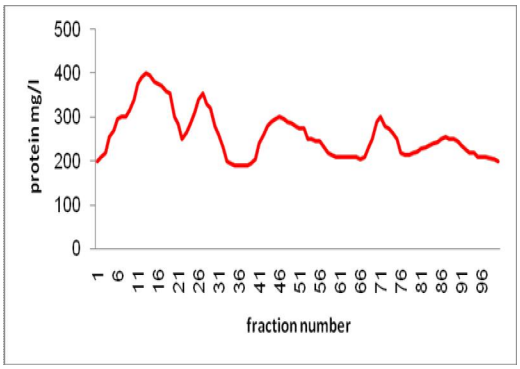

Fig 3. Results of evaluating resultant fractions of protein from group A, Ion x change chromatography in male crabs

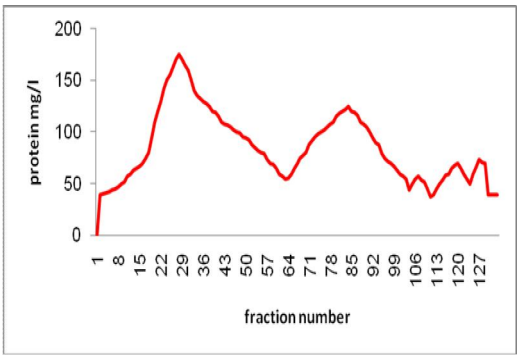

Fig 4. Results of evaluating resultant fractions of protein from group A, Ion x change hromatography in female

Results of mean tests between two sex groups of males and females had same results considering total protein amount in both groups of first and Second column fractions . In such a way that there was a meaningful differene between total protein amount in males and females at the level of 10 %

and always total protein amount was higher in males .

Also results of regression analysis showed that there is always a meaningful relation between crab's weight and total amount of protein (in both sexes) at the level of %1 which always with increase of weight , protein amount increased .

4. Discussion

Studies on *callinectes sapidus* crab showed that hypoxy (Severe decrease or drop of available amount of oxigen) in estuaries, is an important factor in producing protein and subsequently synthesis of oxidative enzymes in this variety . Also this crab is able to maintain its enzyme defense system in hypoxy situation or decreasing the level of enzyme and protein production. (kong 2003) in addition to ecological and environmental situations, biological factors also have effect on antioxidant level of animales and so as crabs . Newest researches on same of the portunidae specieses which have demorphic characteristics showed that some speciad enzyems were extracted from males' gills which are not observed in female .(mayerz and ettal 2008) .These researches belive that such differences contribute to sexual biological differences.

It seems that in greater organisms which are her maphrodite there most be significant difference in structure and type of enzyme compositons. (cleps 2009), Indeed considering this reality that males moult more than females. The animale stores a lot of protein compositons because it losts considerable amounts of water during moulting, (Thomas 1999) So it is edvident that the level of protein storage in male blue crabs will be more than females . on the other hand it can be Seen that higher mean weight of blue male crabs related to females , have a direct correlation and relationship with amount of muscle tissue. In such way that total amount of protein in males is meaningfuly more than female crabs and if this comparison is performed in maturaticn ages more diffecence can be seen .which is related to moulting stages and reproductive process of both males and females (Nelson 2008).

It is observed in this study that there was a positive and meaningful relation between wetweight and total protein in both male and female .(at the level of 0.1)In such way that with increase of weight, the total amount of protein increased considerably. Investigating other varieties of portunidae families showed that if the individuals of the variety are classified in several groups based on weight , in lighter Samples (less than 50 gr) the ratio of protein amount to chitin (Uneatable part) will decrease . where as in heavier ones (more than 100gr) ratio of protein or muscle tissue (eatable part) to uneatable part (chitin) increases significantly (juan 2006). results of this study showed that in male blue crab which have higher mean weight, there was higher total protein .Indeed in three weight classes with increasing the weight always protein amount increased.

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Forming branches in the bean and its relation to yield

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Abstract: In this study was performed in the Research Station, Islamic Azad University of Ahvaz fact Southern city of Ahvaz in the geographic profile: latitude: '20 º 31 Longitude: '40 º 48 Altitude: 18 m and average rainfall: 256 mm. Experiment where climate is arid and semi arid and according to weather data Ahvaz 40 213.94 mm average annual precipitation, average annual temperature of 25.24, 32.94 Average annual maximum temperature, mean minimum degree Annual Heat 18.4 ° C is. Minimum temperatures in agricultural experiment 4.2 in January and maximum temperatures in September 52 have been reported. Some results of various investigations have shown that the number of branches with a yield direct positive correlation shows that, as the number of branches in the optimal density keeps the number of pods per unit area results in much desirable, is placed and yield increases examining this relationship in correlation bean plant (0.72 = r) was calculated and a direct positive relationship (but not too high) showed the cause of this is desirable density that can be used in seeding experiments were created with the low number of branches and their small share of production as the main stem pods to be .Applying 100 kg ha, correlation higher than the other two treatments, 50, 20 kg ha of nitrogen fertilizer showed (0.76 = r) and this is production of branches in high levels of nitrogen fertilizer .Split application of fertilizer in different periods together and showed no correlation in terms of average correlation coefficient of them (0.74= r), respectively. With the number of branches per plant FabaL correlation coefficient (0.69 = r) was calculated and a direct positive regression (but not too high) of it's offered .Applying more fertilizer in tests to increase the number of branches found significant spatial yield was increased. Among the figures of the number of digits Blessing had more branches that this figure will increase performance.
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Key words: legume, Forming branches, yield

1. Introduction

Lateral branches of the primary axis and the second part leaves during the vegetative stage II organogenesis occur. It should be noted that lateral buds before opening branches in bean seeds are present. The core, from which branches may appear, is the low number of leaves on branches that are formed, will be higher. Lower branches longer periods in vegetative stage and thus have contributed to the reproductive organs are formed. Although the region may grow side branches significantly differentiated show, but many buds opening in the side branches remain asleep. Bean sprouts probably sleep until after the phase II development continues. Morphology of lateral branches is a feature a variety of environmental conditions strongly influenced the development of particular factors that the delay is placed. (Short day length) cultivars generally have short branches or short legs are more long-legged figures are split (2, 11).

Although the branches forming the grains is an important factor, but as far as the competitive ability of crop compensation is related to the role will be responsible. For example, when a young is growing main stem terminal damage. The main meristem of pea grown cold suffered last spring. Lateral branches were formed rapidly. And within 12 days of frost plants 20 to 30 percent more leaf area than plants were damaged. In addition, total dry weight per plant varieties increased from 30 to 60 percent, four weeks after the cold damage frost plant dry matter is still 8 to 20 percent more of the plants had not seen (4) .

Period of rapid growth in terms of earliness beans varieties may vary. Daily increase in stem length and weight of dry peas and beans during this period was a significant increase to the range of temperature, light intensity, day length and other factors governing is depends gibberellins (6) .

If the terminal shoots bud differentiation (organogenesis end stage II) is to begin reproductive period of the reproductive period of pulses, usually immediately after its emergence begins. For example, according to Dear observations (Bean organogenesis stage II in 9 to 14 days after emergence begins) was cause reproductive period begins in early

differentiation pulses reproductive organs were much influenced by external factors will not(5) .

According to earlier flowering and formation of the first flowers on the axis of the lower leaves, has been observed that the reaction of bean to low temperature compared with the pea is more pronounced. Lower temperatures in the green stage, a positive effect on yield is and this apparently caused the growth meristem differentiation is higher reproductive organs. Low temperatures in the early stages of growth was caused physiological changes in plants is specific. These changes have produced positive effects. Here we can advice the theoretical basis for early planting is done will see. Among various bean species and sexes, are OK too are capable of wintering. These are real winter types (such as species such as winter cereals), but in comparison with species of spring, low temperatures they are causing delays flowering. For example, pea hybrid 329, which is winter, if the spring is 20 days compared with no spring types, 23 days earlier to flower. Reaction length of day, the day is long bean plant. Many researchers have demonstrated that most species take the day today are not very sensitive. This problem mainly applies to early figures. Here insensitivity to day length as compared to low temperature reaction to the whole growth period depends on the plant. Figures next day are very sensitive and under conditions of short days is that their development is slower and more branches and are shorter internodes is (4, 11 and 9) .

Tests conducted results in an interesting harvest; he noted that the shortening days 12 hours increased as the duration of emergence to flowering was.(8)

Similarly high sensitivity to short days in winter bean species in the UK respectively. Under short-day growth and differentiation apex is slower and because they are able to tolerate mild winters .

2. Material and Method

Characteristics and test design plan map

Research project as a split plot experiment in randomized block design with four replications at the research farm, Islamic Azad University of Ahvaz in southern city of Ahvaz were executed. The main treatment consists of four cultivars of bean plant is that the four varieties include: V_1= BARAKAT, V_2= ZOHREH, V_3= SHAMI and V_4= JAZAYERI and secondary treatment three levels of nitrogen fertilizer (N0 = 20 N_1 = 40, N_3 = 80 kg / ha) were studied.

Statistical calculations

On all results, analysis of variance was followed by Duncan's test, comparison was done and the results are presented as tables with charts, Excel 2000 Plant growth analysis was performed with SAS computer program for agriculture and mini tab and estimates were calculated.

3. Result

Yield correlation with the number of branches

Some results of various investigations have shown that the number of branches with a yield direct positive correlation shows that, as the number of branches in the optimal density keeps the number of pods per unit area results in much desirable, is placed and yield increases. examining this relationship in correlation bean plant (0.74 = r) was calculated and a direct positive relationship (but not too high) showed the cause of this is desirable density that can be used in seeding experiments were created with the low number of branches and their small share of production as the main stem pods to be .

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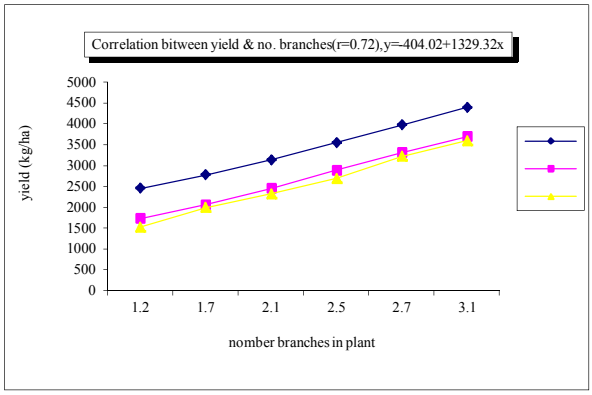

Fig 1. Correlation with the number of branches yield different levels of nitrogen fertilizer

Split application of fertilizer in different periods together and showed no correlation in terms of average correlation coefficient of them (0.74=r), respectively.

Table 1: Comparison of mean grain yield in bean cultivars (Kg / ha)

Treatment	Mean	Duncan
V_1	4880	A
V_4	4236	B
V_2	4200	B
V_3	3998	C

Research results of Baker and Lewis (2001) has shown that the number of branches that grow from the base of the plant yield a direct and positive correlation indicates a reason for the increased density and filling the field of vegetation considered Finally, the number of pods per hectare increases (1). With the number of branches per plant FabaL correlation coefficient (0.69=R) was calculated and a direct positive regression (but not too high) of it's offered .

Table 2: Comparison of average grain yield In different amounts of nitrogen fertilizer (Kg / ha)

Treatment	Mean	Duncan
N_3	5120	A
N_2	5114	A
N_1	4875	B

Applying more fertilizer in tests to increase the number of branches found significant spatial yield was increased. Among the figures of the number of digits Blessing had more branches that this figure will increase performance .

Table 3: comparison of levels of interaction of N rate and bean cultivars on yield (Kg / ha)

Treatment	Mean	Duncan
V_1N_3	5001	A
V_2N_3	4998	A
V_4N_3	4997	A
V_3N_3	4995	A
V_2N_2	4850	AB
V_4N_2	4650	B
V_1N_1	4521	BC
V_2N_1	4320	C
V_4N_1	4320	C
V_3N_3	4200	CD
V_3N_2	4001	D
V_3N1	3994	D

ANOVA table of significant treatments by applying different amounts of nitrogen fertilizer and bean varieties and their interactions on yield showed Duncan test showed that among the varieties cultivated varieties blessed with the highest yield was obtained with 4880 kg per hectare and other varieties yield much less demonstrated.

Duncan test showed that different amounts of nitrogen fertilizer, causing changes in grain yield and fertilizer treatments were the highest average yield High yield in the treatments 80 , 40 probably due to supply fertilizer starter needed for plant growth in early stages yet stabilized biological nitrogen begin has not need for fertilizer N had to be able to level green field increases to photosynthesis more to do this The higher LAI in the amount of treatments with mean 3.7 which leads to higher dry matter accumulation was visible in the cause of dry matter allocation to seeds is more dry matter accumulation also increased in these treatments, in line with the high value of the CGR the two treatments as the average from 19.25 to 18 g m is the day that treatment was higher. But the treatment was 20 kg/ha N caused no starter fertilizer supply and plant growth and leaf area index slowly increased in value resulting from the period of plant growth by not fully cover the field has decreased during the process of dry matter accumulation Finally, yield is reduced, although after approximately 30 days of biological nitrogen fixation and began somewhat by the need to have the plant but the initial amount of 20 kilograms of fertilizer per hectare is low for a starter

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Calculated regression equations and correlation of seed yield with its components in bean plants

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Abstract: Research was performed in field research of Islamic Azad University of Ahvaz, The split plot design experiment in a randomized complete block design with four replications and treatments as the main and were performed, The main treatments for nitrogen fertilization at different stages of plant growth and Secondary treatment includes different amounts of nitrogen fertilizer were. when the amount of each component and functional correlation with seed yield can be studied how the effects of these components impact on yield and realized yield will decrease this purpose by providing regression equations of the correlation coefficient was calculated and evaluated in this calculate the highest correlation with number of pods per plant and seed yield showed what pods increased seed yield increase showed a high correlation between weight and the lowest seed yield was obtained with other words whatever pods plant or seed number per pod increased seed weight, high levels of nitrogen decrease trace higher correlation showed statistically significant with other nitrogen fertilizers, which was low, and no fertilizer at bloom periods together the different growth showed no difference, The highest correlation between yield components, number of pods per plant was functioning and seed weight had the lowest correlation:

regression equations and correlation	No. pods per plant	No. seed in pod	seed weight
Seed Yield	Y=-337.02+163X R^2=0.97	Y=-562.4+1120.99X R^2=0.79	Y=-28987+10998X R^2=0.32

The number of pods per plant increase by treatment nitrogen fertilizer in the early stages of growth before flowering, vegetative growth, which increased by the appropriate number of pods per plant, thus increasing yield and high correlation with the indicated.

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Key words: regression equations, seed yield, components

1. Introduction

The study of dry matter accumulation, leaf area index and net photosynthesis

According to Evans and others, a positive relationship was between plants shoot dry weight and grain yield there. However, maximum dry matter production necessarily a direct correlation between grain yields is highest, because the biological function of path formation (TDM) and economic yield (grain dry matter) is different (environmental impact on the reduction of reproductive organs). Maximum of dry bean yield physiological maturity stage can be produced. After this stage, total dry matter yield 10 to 20 percent decrease and this operation due to shade leaves, this transfer of nutrients to the roots and secrete various substances from roots to soil (1).

Dry weight of each organ as a proportion of the total dry weight confirms that the new bean varieties are more general types of grain are not. Dry matter was because the shares of fruits at 40 percent lower than the same public figures are pea.

Dry matter production of beans of the same factors which affect the total dry weight of pea effect makes. LAI (LAI) between beans 3.5 to 4 is variable. LAI coatings plant in more than 5, increase light penetration and shade leaves commissioning into the vegetation and thus reduces the net photosynthetic rate (NAR) as the crop yield decreases.

In experiments conducted on bean in central Czechoslovakia observed that the highest increase in square planting pattern of dry matter and LAI against 4.2 and 90 cm in height and leaf number 12 to number 13 in the amount of each plant G 20.63 per square meter per day, respectively. With LAI up to 3.5 and large distances row (37.5 cm), increased dry matter 18.1 grams per square meter in the day. LAI increased to 6.5 to 7 dry matter productions to eight to 12 grams per day decreased (3).

NAR values for the bean cultivar in southern Czechoslovakia won. The LAI values with low (0.8-1.6) of 13.2 to 30.3 m g per day varied was. Czechoslovakia East under the NAR median value between 1972 to 1974, 9.09 grams per square meter per day with maximum 12.7 grams per square meter in the day. All parameters in the manufacturing process more beans of soy. (NAR 20% higher). This can result in sensitivity to temperature is soy.

Bean and soybean planting under two sets of different ecological conditions and land south and East Post Czechoslovakia has indicated that before a crop can achieve its maximum production, certain climatic conditions should be established. The main prerequisite in this regard, there are favorable conditions in the days that photosynthesis occurs. The views pica in 1972, NAR values in the Bean 80 days of 150 days than 9 grams per square meter per day have been.

Summer field (1977) NAR beans about 11.89 years and 60 days during 60 days of soybean NAR was 10.74. Thus, under certain conditions during the growing season, higher NAR Bean is able to produce more material in comparison with soybean earn. Vegetation patterns (e.g., 15.8 × 8 / 15 cm with a network model with wider spacing or row 37.5 cm) even with a fixed number of plants per unit area (40 square cm plants) can also impact on the NAR leaves. Vegetation was in an initially higher NAR. Elongation stage in the second half when the plants during the 125 to 150 cm, NAR have wider row distance is greater. If the network type of coverage is higher LAI, but the shadow of more established vegetation and therefore are much lower NAR. Leaf area ratio (LAR) as the ratio of total leaf area as the most important component of the photosynthetic system is the user. The experiments mentioned above LAR in plants values intervals are planted rows high, mid-flowering was higher, but then the result was reversed. Higher amounts of LAR in a network type of vegetation after mid-flowering stage could be due to the more established shade. Establish mutual shadow effects in NAR and LAR may affect yield of bean plants and in particular morphological pattern has leaves. Arrangement with bean leaf beet leaf pattern comparison and announced that while the majority of bean leaves (approximately 85 percent) are more or less horizontal, but more than 50 percent of sugar beet leaves are nearly vertical and thus the light more influence within vegetation will beet. Bean leaves in the shade, horizontal operation increases (7, 11).

As pattern density also plays an important role in crop production is. Development and production plant densities of seed yield, plants with 23 to 139 m were studied under conditions of Czechoslovakia. High density of plant yield, LAR has about 4.5 to 5 and NAR 2.7 to 4.13 grams per square meter per day with a relative increase of 31% to 55% yield was the highest densities in the range of 86 to 96 plants per square meter, i.e. generally the recommended optimum density was observed in agricultural operations. Significant results it was dry seeds as part of the total dry weight in the range of densities, does not change much. (8, 9)

2. Material and Method

2.1. Profile geographic location test

Research was performed in field research of Islamic Azad University of Ahvaz on 3 km south of Ahwaz city is located in the following

Geographical specifications, tests were performed:

Latitude: 20 31	Altitudes: 18 m
Longitude: 41 48	Average rainfalls: 256 mm

2.2. Local climate experiment

Experiment where climate is arid and semi arid and according to weather data Ahvaz 40 94 / 213 mm average annual precipitation, average annual temperature of 24/25, 92/32 Average annual maximum temperature, mean minimum degree Annual Heat 4 / 18 ° C is. Minimum temperatures in crop (80-79) 2 / 3 in January and maximum temperatures in September 51 have been reported.

2.3. Land preparation and planting

In order to experiment on 25/6/79 Date of operation include land preparation tillage depth of 20 cm, disk and trowel and phosphate fertilizer injection (type of phosphate fertilizer, phosphate fertilizer was calcium) were as fallow land in the years before the land Map classification scheme based on the plot that was a size 4 × 6 experimental plots and 10 lines in each plot was planted.

The distance of two rows of seeds between rows 60 and 20 cm were considered. Different amounts of nitrogen fertilizer as a treatment (25 = 50 = and = 1000 kg per hectare) were calculated and weighed along with seeds and tape was placed.

Before planting seeds with rhizobial bean (R. Leguminosarum) sugar syrup by inoculation and cultivation, and irrigation was done immediately. Planting date was 22/7/79.

2.4. Characteristics and test design

The split plot design experiment in a randomized complete block design with four replications and treatments as the main and were performed under defined:

A) Main treatment

The main treatments for nitrogen fertilization at different stages of plant growth and Bean are defined as follows:

a_1 : Forming nitrogen fertilizer while planting

a_2 : $\frac{1}{2}$ N simultaneous planting and $\frac{1}{2}$ the rest during vegetative growth before flowering

a_3 : $\frac{1}{2}$ N simultaneous planting and $\frac{1}{2}$ the rest during flowering

B) Secondary treatment

Secondary treatment includes different amounts of nitrogen fertilizer were as follows:

b_1 : 25 kg ha

b_2 : 50 kg ha

b_3 : 100 kg ha

Land area is 2500 square meters.

2.5. Harvest and measurements

On the final product lines 7 and 6 and 5 as the final area of area 4 / 5 was considered the parameters of grain yield and its components (pods per plant, mean seed number per pod, seed weight) was the whole plant.

2.6. Statistical calculations

On all results, analysis of variance was followed by Duncan's test, comparison was done and the results are presented as tables, charts with Harvard graph, Excel 2000 was to plant growth analysis with computer programs for agricultural SAS estimate was calculated.

3. Result and Discussion

3.1. Yield components of variation

3.1.1. The number of pods per plant

Among yield components number of pods per plant is one of the most important components of grain yield and yield component is variable, the ability to flower and pod formation in legumes is high but so is the actual production potential and genetic characteristics that are completely dependent on environmental conditions and change very much because this is a yield component, analysis of variance of this parameter at 1% indicate that fertilization in different periods of growth and nitrogen fertilizer levels and their interactions have significant effects from their shows (Table 1).

The highest number of pods and treatments and has been obtained (Table No. 2, 3) that this phenomenon is also one of the reasons for increasing grain yield can be considered because the number of pods per plant is a high correlation with yield the interaction of treatments and compared to other treatments showed the highest number of pods, number of flowers in the fall treatments were found and the number of pods per plant showed decreased possibly due to injection of the fertilizer N after flowering, which was worse, is growth.

Table 1. Comparison of average number of pods per plant in the fertilization different periods of growth

Treatment	Mean	Duncan
a_1	30	A
a_2	29	A
a_3	25	B

Table 2. Comparison of average number of pods per plant at different levels of nitrogen fertilizer

Treatment	Mean	Duncan
b_1	29.8	A
b_2	22.3	B
b_1	21.4	B

Table 3. Comparison of cross-fertilization of the different periods of growth and levels of nitrogen fertilizer on the number of pods per plant

Treatment	Mean	Duncan
a_1b_3	30.6	A
a_2b_3	30.1	A
a_1b_2	26.7	B
$a_2\ b_2$	26.2	B
$a_1\ b_1$	23.1	C
$a_2\ b_2$	22.8	C
$a_3\ b_3$	20.8	D
$a_3\ b_2$	20.2	D
$a_3\ b_1$	19.8	D

3.1.2. The number of seeds per pod

Unlike the number of pods that yield one of the variable component is considered, the number of seeds per pod, the most stable component of yield is because the number of cells in all ovarian eggs are nearly equal. Thus the number of seeds per pod and its changes, a similar effect because the number of pods not yield fluctuations. Elongation period of grain filling the pod to the number of seeds per pod is effective.

Table 4. Comparison of average number of seeds per pod in the fertilization different periods of growth

Treatment	Mean	Duncan
a_2	129	A
a_1	127	A
a_3	106	B

Table 5. Comparison of average number of seeds per pod at different levels of nitrogen fertilizer

Treatment	Mean	Duncan
a_3	4.12	A
a_2	4.12	A
a_1	4.11	A

Table 6. Comparison of cross-fertilization of the different periods of growth and levels of nitrogen fertilizer on number of seeds per pod

Treatment	Mean	Duncan
a_3 b_3	4.27	A
a_3 b_2	4.23	A
a_2 b_2	4.23	A
a_2 b_1	4.2	A
a_3 b_1	4.17	A
a_1 b_3	4.12	A
a_2 b_3	4.12	A
a_1 b_2	4.11	A
a_1 b_1	4.09	A

ANOVA table showed that the effects of different levels and split application of nitrogen fertilizer at different periods of the bean plant growth and their interaction showed significant (Table 4, 5) and this shows that different levels of nitrogen fertilizer when the limit were high have been able to plant needs in terms of supply and when they fix nitrogen in the lower level had been applied biological nitrogen fixation needs in terms of plant nitrogen supply and the supply has not changed in different periods of the fertilization effect on growth grain number have.

3.1.3. Seed weight

ANOVA table showed that fertilization in different periods of growth and nitrogen fertilizer levels and their interaction at 1% was significant.

Duncan test at 1% showed that the treatments and the highest seed weight and respectively 129 and 127 g were treated seed weight of 106 grams lowest group belonged to the average (Table 7) in the injection of nitrogen fertilizer after flowering, seed weight and it has caused is due to the intensification and increased leaf length and stem diameter, which makes the assignment less filling materials and increased grain weight has been.

Different levels of nitrogen fertilizer by Duncan test showed that the 1% level and a level of treatment and treatment are higher than your other two treatments showed (Table 8).

The interaction between the treatments and the highest seed weight of 129 grams and the treatment showed little seed weight allocated to that (Table 9).

Table 7. Comparison of average Seed weight in the fertilization different periods of growth

Treatment	Mean	Duncan
b_3	4.5	A
b_2	4.42	A
b_1	4.4	A

Table 8. Comparison of average Seed weight at different levels of nitrogen fertilizer

Treatment	Mean	Duncan
b_3	132	A
b_2	117	B
b_1	116	B

3.2. Yield correlation with pods per plant, seeds per pod and seed weight

When the amount of each component and functional correlation with grain yield can be studied how the effects of these components impact on yield and realized yield will decrease this purpose by providing regression equations of the correlation coefficient was calculated and evaluated in this calculate

the highest correlation with number of pods per plant and grain yield showed what pods increased grain yield increase showed a high correlation between weight and the lowest seed yield was obtained with other words whatever pods plant or seed number per pod increased seed weight, decrease (Fig1, 2 & 3) a small amount of high levels of nitrogen showed a higher correlation statistically significant with the other treatments The nitrogen was low, and did not bloom fertilizer in different growth periods also showed no differences with each other, but on the number of pods per plant by treatment nitrogen fertilizer in the early stages of growth before flowering, vegetative growth that increases in the appropriate result of increased number of pods per plant and high correlation with grain yield showed.

Table 9. Comparison of cross-fertilization of the different periods of growth and levels of nitrogen fertilizer on Seed weight

Treatment	Mean	Duncan
$a_2\ b_3$	129	A
$a_1\ b_3$	127	A
$a_2\ b_2$	127	A
$a_1\ b_2$	126	A
$a_2\ b_1$	109	B
$a_1\ b_1$	108	B
$a_2\ b_1$	108	B
$a_3\ b_1$	102	BC
$a_3\ b_3$	95	C

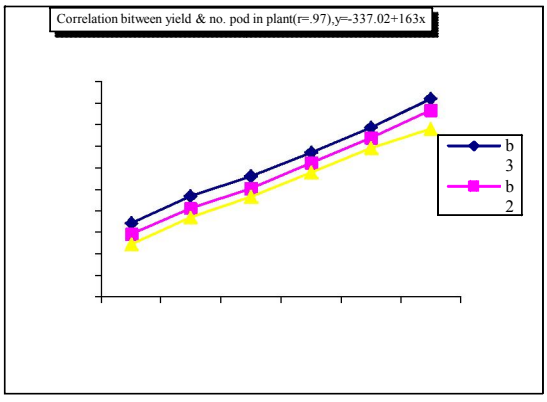

Fig 1. Correlation between numbers of pods with seed yield at different levels of nitrogen fertilizer

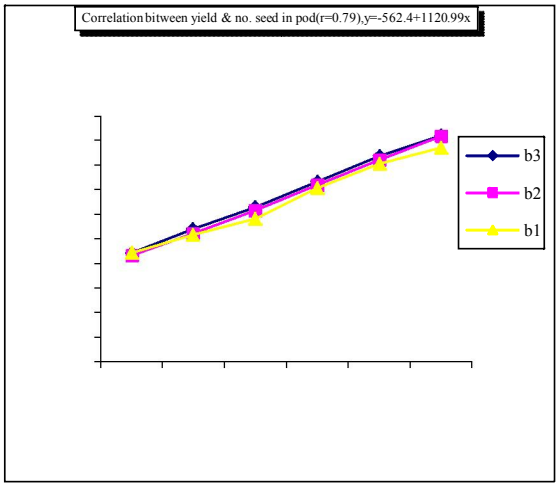

Fig 2. Correlation between the numbers of seeds per pod, grain yield at different levels of nitrogen fertilizer

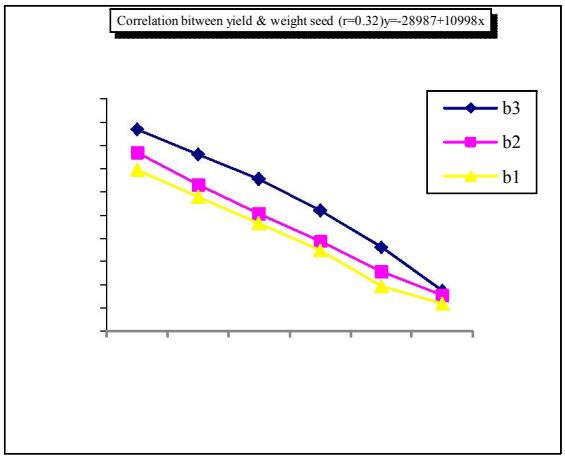

Fig 3. Correlation between seed weight with grain yield at different levels of nitrogen fertilizer

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Effect of Some Production Parameters on Net Wrap Used in Agricultural Products Packaging on the End Use Properties

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Abstract: This research is mainly concerned with designing net wrap used for packaging agricultural products. Twenty seven samples were produced using polyethylene yarns. Warp knitted technique was applied to produce all samples under study using different parameters. Different parameters were studied including, inlay tape thickness 20,25 and 30 micron, inlay tape width 1,1.25 and 1.5 mm, pillar blades number 99, 101 and 213,treatment with ultra violet and anti static. Many tests were carried out in order to evaluate the net according to the final product needs such as tensile strength and elongation of net and inlay tape and linear meter tests. Some more results were reached concerning structures and materials. The results showed that there is a direct relationship between tensile strength and number of pillar, the more inlay tape width, the higher tensile strength of the sample become, the more inlay tape thickness per unit area the more tensile strength of the sample become, the more number of pillar yarns the lower elongation the samples become, and the higher pillar yarns per unit area the more linier meter weight the sample become.
[Ibrahim, G. E. and Dorgham, M. E. Effect of Some Production Parameters on Net Wrap Used in Agricultural Products Packaging on the End Use Properties. Life Science Journal. 2011;8(3):148-155] (ISSN: 1097-8135). http://www.lifesciencesite.com.

Keywords: Production Parameter; Net Wrap; Agricultural Product; Packaging; End Use Property

1. Introduction:

Warp knitting is the most versatile fabric production technique in textiles industry, warp knitted fabrics can be produced continuously, elastic or stable, with an open or closed structure, they can be produced flat, tubular or three dimensional .The flexibility of warp knitting techniques makes them attractive both to the designer and the manufacturer of technical textiles[(1).] Knitted fabrics are textile structures assembled from basic construction units called loops. There are two basic technologies for manufacturing. In warp knitted technology every loop in the fabric structure formed from a separate yarn called warp mainly introduced in the linier fabric direction. The most characteristic feature of the warp knitted fabric is that neighboring loops of one course are not created from the same yarn. [(2)] Warp knitting technology enables the individual products to be adapted to suit specific requirements[(3).] Basic warp knitting constructions, can be given as follows[(1)].

1-Elastic structures.
2-Stable structures.
3-Directionally oriented structures.
4-Multi-axial structures.
5-Open structures.
6-Closed structures.
7-Three-dimensional structures.
8-Bi-axial structures.

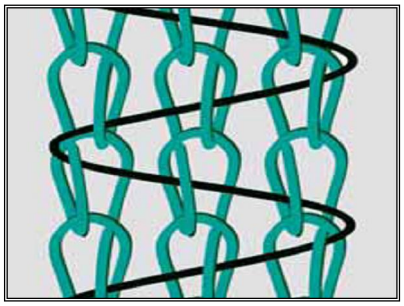

Fig (1) the open warp knitting structures

Mc Murray invented an integrally knitted tubular shaped net structure having first and second parallel knit fabric layers formed on separate parallel spaced front and back needle beds using the same yarn ingredients and knitted identical in fabric construction and yarn runner feed lengths producing a perfect continuously uniform cylindrical shaped tubular blank that can be joined together at one end of the tube by jacquard selected threads being deflected to knit on both front and back needle beds at predetermined joining points in the design. Another Fabrics were produced using circumferentially consecutive portions of one laid-in yarns which are bound in respective spaced chains to stitches aligned in a circumferential or course wise direction, but the consecutive portions of the laid-in yarn are offset in the same wale wise direction which is axial relative to the tube into which the fabric may be expanded in an approximate helix. The amount of

laid –in yarn employed may be varied to suit requirements of mechanical strength or mesh size by varying the number of gaps between adjacent chains. [5]Warp knitting technology can be seen in diverse applications as it offers a wide range of possibilities for producing nets they may have open or dense constructions, and may have fine or coarse structures the net is used to protect persons and buildings during construction. Fishnets are other possible end-uses. Textile nets have a wide range of end uses. One of their main uses is to protect against adverse weather conditions this has led to the development of many new applications, both inside and outside. [3]

Packaging nets (Net Wrap)

Packaging products has always been a major sector of industries; these products are stacked and then secured by wrapping stretch wrap around them. The main issue with this packaging method is that millions of pounds of waste are produced. Some of the other effects include green house gas emissions during its production, limited recycling, and high packaging costs. Net wraps are porous materials designed to shed water and permit greater air flow at the bale surface at less cost than plastic wraps. Like plastic wraps, net wraps can be applied during baling and eliminate the need for twine. Studies comparing yield loss between various storage methods indicate that net wrap is somewhat intermediate between twine-tied outside bales and plastic wrap.

In recent years, new technologies have been developed that attempt to reduce outside storage losses by covering the circumference of product with solid plastic sheeting to shed water. Past research has demonstrated that wrapping the product bale surface with ultraviolet (UV) light-stabilized. [6]

In order to reduce the amounts of stretch wrap used by industries and distribution centers, various other types of packaging materials were developed. There are various reasons for packaging, such as: easing storage and transportation of products, maintaining products together, and preventing products from becoming damaged. This new packaging technology is made of light, but extremely durable polypropylene (PP) or polyethylene (PE) material. Both of these have a good damage resistance to ultra violate (UV) rays. It works like a large plastic cover strapped with strong plastic buckles. With this packaging method, the tension that is created aids to protect and stabilize the load. Due to its reusable nature, it reduces stretch wrap costs, damage claims, waste expenses, plastic stretch wrap by 80-90%, and other shipping wastes. The covers also have the benefit of being easy to handle for operators and it provides personnel with a consistent and uncomplicated method to secure loads.[7] A packaging wrap is also provided for agriculture products, a net can be placed to increase its strength, used material that is safe in accordance with packaging regulation and prevents the products from binding with the packaging wrap during the storage.[8] Large package sizes and rapid baling rates minimize labor requirements for baling and transport around the farm (local). However, storage losses of round bales are frequently much greater than those of similar product in smaller rectangular bales. Most of the increased storage loss for product appears to result from storage outside without protection from the weather. Losses during outside storage of twine-tied round bales result from weathering and from moisture movement from. Weathering is visually associated with a change in color and deterioration of the outer layers of product following exposure to rainfall, sunlight, and other factors during storage. Weathered hay suffers substantial losses of both yield and forage quality and is much less palatable to livestock than undamaged product.

Package type and size effects

Agriculture products storage research indicates that the increase in size and densities of round bales increase heat-damaged protein and fiber concentrations compared with rectangular bales, possibly due to restricted heat and moisture exchange. Due to the cylindrical shape of round bales, even a seemingly insignificant layer of weathered material on the bale surface can represent a substantial loss of yield.

Characteristics of the nets used in packaging

Characteristics of the nets used in packaging to suit the end-use are the level of shade provided, or sun-protection factor, the wind permeability, the opacity, the stability, or elasticity, in the lengthwise and crosswise directions .Most of the nets produced on single-bar raschel machines are produced by a pillar stitch-inlay lapping or by other simple basic constructions. The loops in the various lappings can be processed so that they are open or closed. Some of the most frequently used basic lapping. [3]

2. The experimental Work

This research concerns with producing fabrics suitable for net wrap used for packaging agricultural products. In this study 27 samples were produced using polyethylene yarns and warp knitting technique.

Raw Materials Used and Manufacturing Method

All samples under study were produced in fixed width (123 cm) according to the following variables:

Table (1) Variables used to produce samples under study

Property	Group 1			Group 2			Group 3		
No. of Pillar/piece	49			50			51		
Inlay Tape Thickness Mic	20	25	30	20	25	30	20	25	30
Inlay Tape Width (mm)	1	1.25	1.5	1	1.25	1.5	1	1.25	1.5
Pillar-pillar Gap Approx Cm	2.5			2.45			2.4		

Table (2) Specification of the machine used in producing samples under study

Property	Specification
Machine Type	Warp Knitting Machine
Company	Karl Mayer
Model	RS 2 NK-F-ISO ET1
Manufacturing Year	1996
External Apparatus	ISO
Machine Speed	1225 rpm
machine Width	590 cm
No. of Product Pieces	4
No. of Needle Bar	2
No. of guide bar	2
Long Shogging Distance Guide	1

Table (3) Specifications of raw materials used, and ISO Parameters

Property	Specification
Pillar width Film (mm)	645 Double
Inlay width Film (mm)	335 single
Film (Mic.) Pillar thickness	80
Film (Mic.) Inlay thickness	75
Inlay tape thickness (Mic.)	20,25 and 30
Inlay tape width (mm)	1,1.25 and 1.5
Pillar blades Number	201,209 and 213
inlay blades Number	99, 101, and 103
Number of pillar	49,50 and 51
Pillar-pillar Gap Approx (Cm)	2.5,2.45 and 2.4
No.of Pillar /unit area	196,200and 204
No.of Inlay /unit area	200,208and 212
Film Color	Natural
Chemical Treatment	Ultra violet stabilized and Anti static

Tests applied to samples under study

several tests were carried out in order to evaluate the produced fabrics, these are:

1- **Tensile strength & elongation at break** according to ASTM-D 1682 [9]

2- **Weight test**, this test was carried out according to the **ASTM-D 3776- 1979** [10]

Table (4) results of all tests applied to samples produced with pillar yarn 49, pillar Gap Approx 2.5 cm and varieties in the thickness and width of Inlay yarn.

Property	Sample No.								
	1	2	3	4	5	6	7	8	9
Net tensile strength (Kg)	245.4	249.5	256.1	246.1	254.8	255.7	256.9	258.3	259.2
Net Elongation (%)	14.6	14.9	15.4	15.3	15.6	15.9	15.5	16.3	17.1
Inlay Tensile strength (Kg)	5.9	6.4	6.5	6.2	6.4	6.6	6.3	6.6	6.7
Inlay Elongation (%)	53.2	55.1	56.9	54.3	57.6	61.1	58.8	59.6	62.8
Wt / LM (g)	11.3	11.5	11.7	11.6	11.9	12.1	12	12	12.2

Table (5) results of all tests applied to samples produced with pillar yarn 50, pillar Gap Approx Cm 2.45 and varieties in the thickness and width of Inlay yarn.

Property	Sample No.								
	10	11	12	13	14	15	16	17	18
Net tensile strength (Kg)	252.9	256.2	258.5	254.6	258.9	263.3	262.1	269.3	276.6
Net Elongation (%)	11.7	12.3	12.7	12	13.2	13.7	13.1	13.9	14.4
Inlay Tensile strength (Kg)	6.3	6.5	6.8	6.4	6.7	6.9	6.6	6.8	7.1
Inlay Elongation (%)	39.5	42.5	46.3	45.6	48.9	51.2	49.3	52.8	55.6
Wt / LM (g)	12.1	12.1	12.3	12.3	12.4	12.6	12.5	12.7	12.7

Table (6) results of all tests applied to samples produced with pillar yarn 51, pillar Gap Approx Cm 2.4 and varieties in the thickness and width of Inlay yarn.

Property	Sample No.								
	19	20	21	22	23	24	25	26	27
Net tensile strength (Kg)	261.9	263.0	267.8	265.7	269.1	271.4	268.3	278.9	287.1
Net Elongation (%)	9.5	10.2	11.3	10.8	11.5	11.8	11.3	11.9	12.3
Inlay Tensile strength (Kg)	6.8	7	7.2	7.4	7.6	7.7	7.3	7.6	7.8
Inlay Elongation (%)	33.4	35.7	36.1	35	37.6	39.8	39.2	40.5	41.7
Wt / LM (g)	12.2	12.2	12.4	12.5	12.7	12.8	12.6	12.8	13

Result and Discussion

Tensile strength:

It is obvious from figure (1) to (3) that there is a direct relationship between net tensile strength and number of pillar. We can report that, this is because of the increase in number of Pillar means an

increase in number of yarns per unit area causing fabrics to be more compacted leading to the increase in fabric tensile strength.

It was also found that the more inlay tape thickness per unit area the more net tensile strength for all the samples become, which means that samples with 30 micron and 20 micron have recorded the highest rates of tensile strength, it can be seen from the table and figures that the more inlay tape width, the higher tensile strength the samples become. We can report that the increase in this factor increase number of yarns leading the fabric to be more compacted which cause the increase the cutoff durability.

Table (7) regression equation and correlation coefficient for the effect of number of pillar on net tensile strength, at inlay tape 20 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =223.5833X + 21.4	0.901024
50	Y = 241.6667X + 11.2	0.989483
51	Y = 249.4833 X + 11.8	0.940266

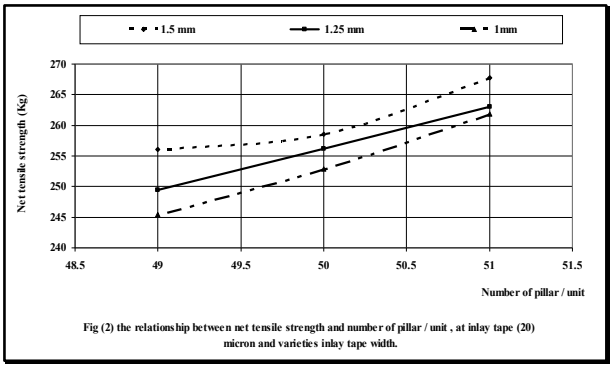

Fig (2) the relationship between net tensile strength and number of pillar / unit , at inlay tape (20) micron and varieties inlay tape width.

Table (8) regression equation and correlation coefficient for the effect of number of pillar on net tensile strength, at inlay tape 25 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =254.4833X + 11.4	0.99385
50	Y = 237.1833X + 17.4	0.999974
51	Y = 228.2 X + 19.2	0.905338

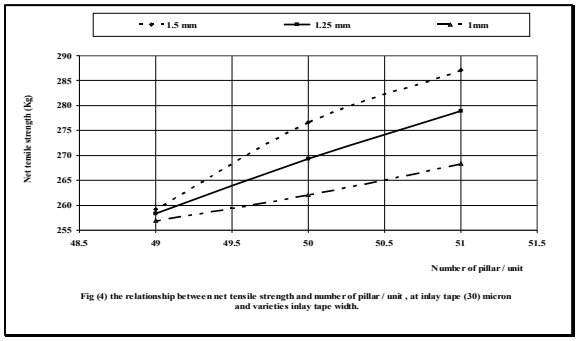

Fig (4) the relationship between net tensile strength and number of pillar / unit , at inlay tape (30) micron and varieties inlay tape width.

Table (9) regression equation and correlation coefficient for the effect of number of pillar on net tensile strength, at inlay tape 30 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =252.3833X + 4.6	0.992215
50	Y = 233.0833X + 29	0.99992
51	Y = 37.6 X + 231.1	0.997295

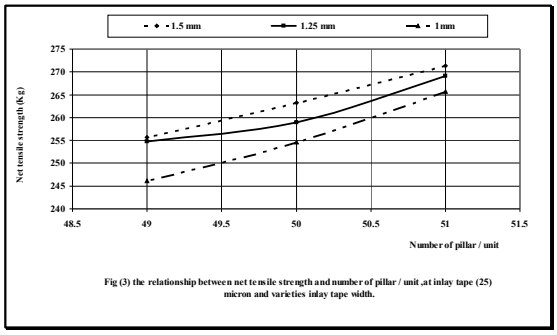

Fig (3) the relationship between net tensile strength and number of pillar / unit ,at inlay tape (25) micron and varieties inlay tape width.

Elongation at break

It can be seen from tables and figures that the more number of pillar yarns the lower elongation the samples become, and so samples with 49 pillar of piece have recorded the highest rates of elongation whereas samples with 51 ends per piece have recorded the lowest rates. It is noticed that % elongation at break of the net samples decrease as the number of pillar yarns increases, this is due to more cohesive forces is resulted between yarns.

It is obvious from the statistical analysis that the increase in inlay tape thickness the lowest rates of thickness, whereas samples with 30 micron have recorded the lowest rates. We can report that increase the thickness of inlay tape stress to which cause net to be more compacted leading to the decrease in fabric elongation.

It is obvious from the statically analysis of the elongation results that there are an inverse relationship between inlay tape width and elongation.

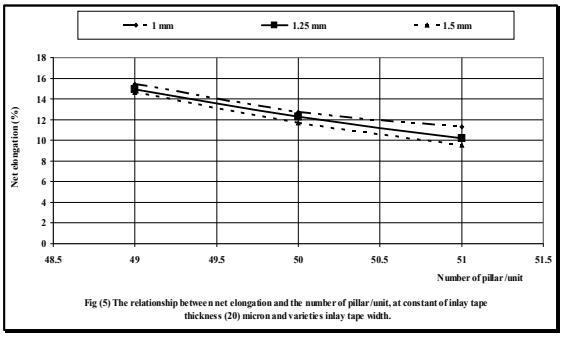

Fig (5) The relationship between net elongation and the number of pillar/unit, at constant of inlay tape thickness (20) micron and varieties inlay tape width.

Table (10) regression equation and correlation coefficient for the effect of number of pillar on net elongation, at inlay tape 20 micron and varieties inlay tape width.

Number of pillar	Regression equation	Correlation coefficient
49	Y =16.7X - 1.3	-0.9285714
50	Y = 14.1X – 1.4	-0.8029550
51	Y =14.2X - 2.9	-0.9226129

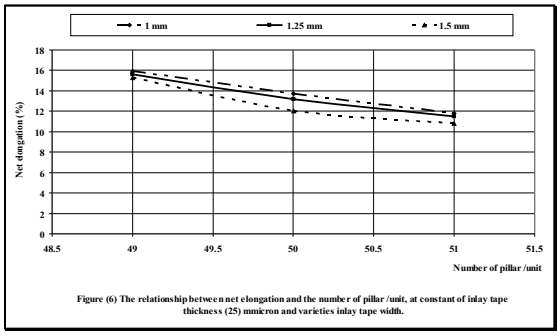

Figure (6) The relationship between net elongation and the number of pillar /unit, at constant of inlay tape thickness (25) mmicron and varieties inlay tape width.

Table (11) regression equation and correlation coefficient for the effect of number of pillar on net elongation, at inlay tape 25 micron and varieties inlay tape width.

Number of pillar	Regression equation	Correlation coefficient
49	Y =16.8X - 0.9	-0.8660254
50	Y = 15.9X – 2.2	-0.72690046
51	Y =13.1X - 1.3	-0.73131071

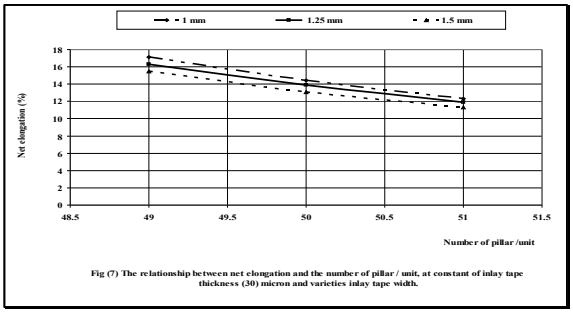

Fig (7) The relationship between net elongation and the number of pillar / unit, at constant of inlay tape thickness (30) micron and varieties inlay tape width.

Table (12) regression equation and correlation coefficient for the effect of number of pillar on net elongation, at inlay tape 30micron and varieties inlay tape width.

Number of pillar	Regression equation	Correlation coefficient
49	Y =19.5X - 2.4	-0.8660254
50	Y = 16.2X – 1.8	-0.7924058
51	Y =13.7 X - 1.4	-0.8029550

Inlay Tensile strength

It is clear from the diagrams from (8) to (10) that there is a direct relationship between Inlay Tape thickness and tensile strength this is due to that the increase in inlay thickness cause the fabric to be more compacted leading to the increase in tensile strength.

It can also be noticed from tables, that there is a direct relationship between inlay tape width and tensile strength, we can report that the increase in inlay tape width leads to higher compactness in the produced fabric, thus increase its tensile strength. So the inlay tape produced with 1.5 mm width has recorded the highest rates of tensile strength, followed by inlay tape produced with 1mm width and then inlay tape produced with 20 Mic. thickness, which achieved the lowest rates, and it was found that the difference between both of them was infixed. We can report that the decrease in stress on inlay tape during manufacture cause the increase in the consistence between yarns in inlay tape which increases the cutoff durability leading to the increase in inlay tape tensile strength.

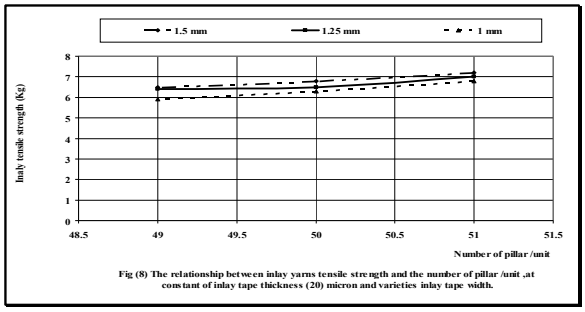

Fig (8) The relationship between inlay yarns tensile strength and the number of pillar /unit ,at constant of inlay tape thickness (20) micron and varieties inlay tape width.

Table (13) regression equation and correlation coefficient for the effect of number of pillar on inlay tape tensile strength, at inlay tape thickness 20 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =4.766667X + 1.2	0.9333254
50	Y = 5.283333X +1	0.99333399
51	Y =6 X +0.8	1

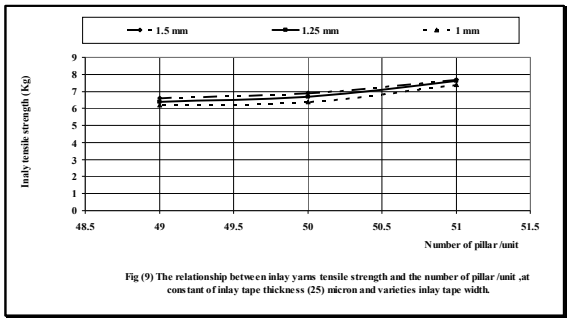

Fig (9) The relationship between inlay yarns tensile strength and the number of pillar /unit ,at constant of inlay tape thickness (25) micron and varieties inlay tape width.

Table (14) regression equation and correlation coefficient for the effect of number of pillar on inlay tape tensile strength, at inlay tape thickness 25 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =4.5X + 0.8	1
50	Y = 5.416667X +1	0.9933399
51	Y =6.816667 X +0.6	0.981981

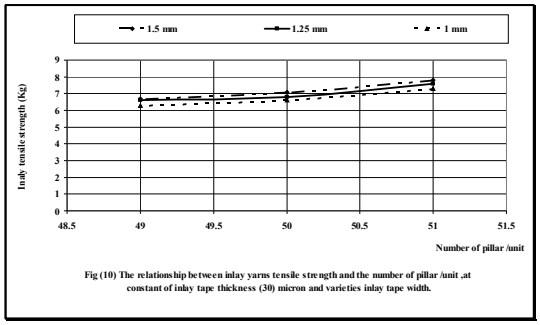

Fig (10) The relationship between inlay yarns tensile strength and the number of pillar /unit ,at constant of inlay tape thickness (30) micron and varieties inlay tape width.

Table (15) regression equation and correlation coefficient for the effect of number of pillar on inlay tape tensile strength, at inlay tape thickness 30 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =5.533333X + 0.8	1
50	Y = 5.5833333X +1	0.9933399
51	Y =6.316667 X +1	0.993399

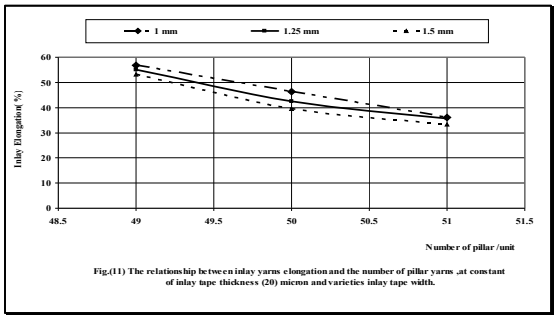

Fig.(11) The relationship between inlay yarns elongation and the number of pillar yarns ,at constant of inlay tape thickness (20) micron and varieties inlay tape width.

Inlay Elongation %

It can be seen from tables and figures that the more inlay tape width, lower elongation the samples become. We can report that increase in this fabrics compact increase the consistence between the yarns which cause decrease in elongation. It is also clear from figures that, there is an inverse relationship between inlay tape thickness and elongation. Increase in inlay tape thickness increases its density, thus the contact areas between fibers will be increased leading to decrease in its elongation break.

Table (16) regression equation and correlation coefficient for the effect of number of pillar on inlay tape elongation, at inlay tape thickness 20 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =64.31667X - 7.4	-0.999878
50	Y = 59.76667X - 3.6	-0.997701
51	Y =41.81667 X - 5.5	-0.926456

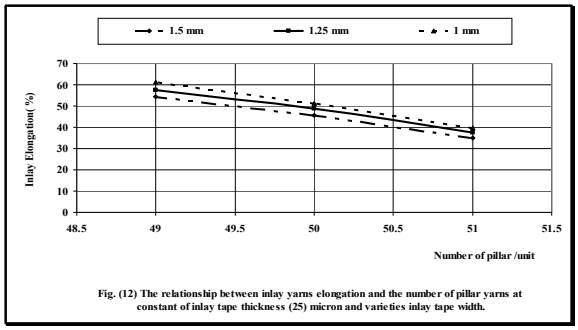

Fig. (12) The relationship between inlay yarns elongation and the number of pillar yarns at constant of inlay tape thickness (25) micron and varieties inlay tape width.

Table (17) regression equation and correlation coefficient for the effect of number of pillar on inlay tape elongation, at inlay tape thickness 25 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =71.4X - 10.3	-0.87439
50	Y = 59.1X -7.9	-0.910182
51	Y =46.8 X -7	-0.8409996

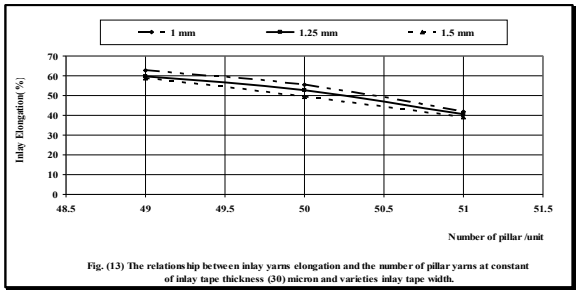

Fig. (13) The relationship between inlay yarns elongation and the number of pillar yarns at constant of inlay tape thickness (30) micron and varieties inlay tape width.

Table (18) regression equation and correlation coefficient for the effect of number of pillar on inlay tape elongation, at inlay tape thickness 30 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =49.46667X - 9.6	-0.998845
50	Y = 62.56667X - 11.2	-0.994727
51	Y =74.66667 X - 13.6	-0.999656

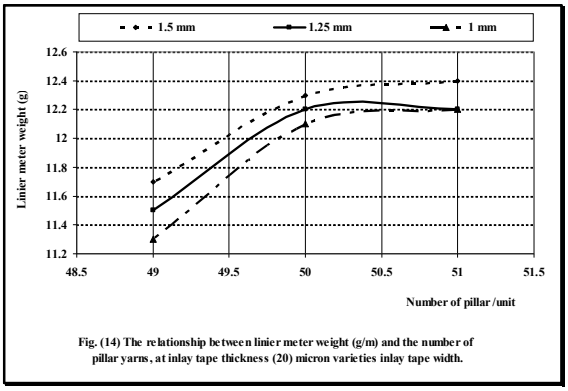

Fig. (14) The relationship between linier meter weight (g/m) and the number of pillar yarns, at inlay tape thickness (20) micron varieties inlay tape width.

Linear meter weight:

It is clear from the diagrams that samples produced of inlay width tape 1.5 mm have recorded the highest linier meter weight, followed by samples produced of with of 1.25. and then produced of 1 mm .This is due to that tape of 1.5 mm have a lot of weight, causing the produced samples causes an increase in weight, but the differences are insignificant.

It is obvious from tables that there is a direct relationship between inlay tape thickness and linier meter weight. So samples produced with 30 micron thickness have recorded the highest rates of linier meter weight .We can report that, this is because of the fact that the increase in inlay tape width, means an increase in tapes per unit area which leads to the increase in linier meter weight of inlay tape. But the differences are insignificant.

It was also found that the more pillar yarns per unit area the more linear meter weight the samples become, so samples with 51 pillar yarns per unit area have recorded the highest linier meter weight, whereas samples with 49 pillar yarns per unit area have recorded the lowest linier meter weight. This is due to that an increase in fabric weight means an increase in number of pillar yarns tapes per unit area, which cause increasing in final linier meter weight.

Table (19) regression equation and correlation coefficient for the effect of number of pillar on linier meter weight, at inlay tape thickness 20 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =10.5X + 0.8	1
50	Y = 11.7X +0.4	1
51	Y =11.766 X +0.4	1

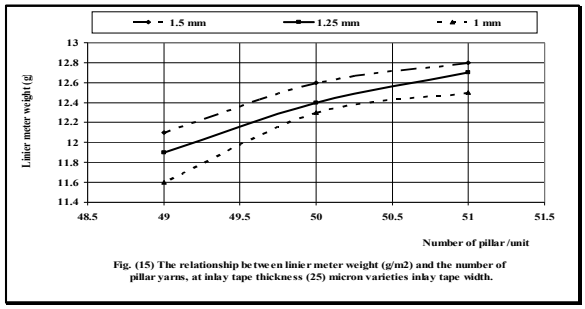

Fig. (15) The relationship between linier meter weight (g/m2) and the number of pillar yarns, at inlay tape thickness (25) micron varieties inlay tape width.

Table (20) regression equation and correlation coefficient for the effect of number of pillar on linier meter weight, at inlay tape thickness 25 micron and varieties inlay tape width.

Number of pillar	Regression equation	Correlation coefficient
49	Y =10.61667X + 1	0.9933999
50	Y = 11.683333X +0.6	0.981981
51	Y =11.91667 X +0.6	0.981981

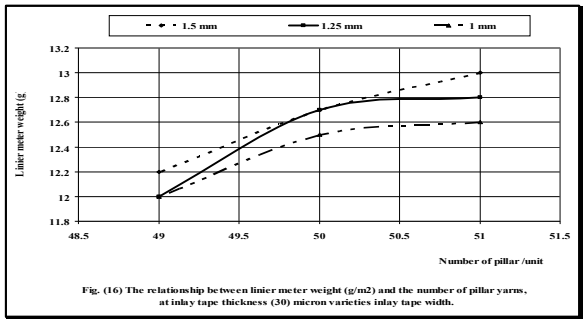

Fig. (16) The relationship between linier meter weight (g/m2) and the number of pillar yarns, at inlay tape thickness (30) micron varieties inlay tape width.

Table (21) regression equation and correlation coefficient for the effect of number of pillar on linier meter weight, at inlay tape thickness 30 micron and varieties inlay tape width

Number of pillar	Regression equation	Correlation coefficient
49	Y =11.56667X + 0.4	0.886025
50	Y = 12.13333X +0.4	0.866025
51	Y =11.8 X +0.8	1

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