

**The Investigation of Effects of Greenhouse Cultivation Modern Methods on its Productions Productivity**

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**Abstract:** Agricultural sector has an important position in terms of job creating and value added in the global and domestic economy. Thereby this sector can be very important in regards of job creating in industry sector (complementary and conversionary) and in producing of foods; and also can have great effects on our country's economy. The expanding of Greenhouse planting has created good opportunities for agents and brokers of agricultural sector. In this regard, this study tries to investigate the impact of new methods of greenhouse cultivation on its production productivity. **Method:** This study has applied descriptive method and for data collecting library study methods applied. Our statistical population consisted of all greenhouse owner s in Varamin; considering its low volume, all these people were participated in the study; in fact in sampling, statistical method was used. The research tool is a questionnaire consisted of 39 questions, which is developed by researcher, and answered by greenhouse owners in Varamin. **Results:** Data were analyzed using SPSS software. Results showed a significant relevance between applying greenhouse cultivation and the productivity of harvests variables. Also, regarding the positive value of the correlation coefficient, we can conclude that with the increase of using greenhouse cultivation, production level will increase. There was also a significant relevance between greenhouse cultivations and efficient use of available resources variables; and by increasing greenhouse cultivation, efficient use of available resources also increases. **Discussion and conclusions:** the results show that the new methods of greenhouse cultivation result in increasing of harvest productivity; in this regard, agricultural sector and specially greenhouse cultivation need to be considered by who are in charge.

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**1. Introduction**

Agricultural sector has some major tasks in economic growth and development; among them food supply and food security for a growing population, providing foreign exchange for importing of capital goods through export increasing, supplying of raw materials needed by industry and contribute to the development of relative productive activities can be mentioned. Agricultural development result in increasing agricultural and livestock production, fishery and forestry growth; and the growth of mentioned sectors while helping to create jobs and economic growth result in food security and nutrition improvement in the Third World countries (Esmaeily et all, 2009).

Agricultural development shows changes in the agricultural sector, and these changes require appropriate conditions through which farmers should be given a reasonable opportunity; and creating economic and social construction adjustments, developing of appropriate physical infrastructure, establishment of social infrastructure needed to boost agriculture and determine appropriate prices for agricultural products are such as these conditions (Hasan dukht, 2008),

Agricultural sector has an important position in terms of employment and value added in the global and domestic economy. This sector regarding both necessary foods providing and job creating in related industries (processing and complementary) can be a very important and has significant impact on the economy of our country (Gramy, 2006).

One of the main challenges of agricultural sector is the limitation of water and soil which are two basic production factors. Removing of these two limitations has undeniable role in agricultural production growth. The expanding of greenhouse cultivation created appropriate opportunities for agents and brokers in the agricultural sector. Some models of modern cultivation shows that the agricultural sector by applying greenhouse cultivation has tenfold increase in performance over conventional cultivation in the open air (Abdolkarim zadeh Morsel, 2009). The quality increasing of products, the ability of pests, diseases and weeds control biologically and storage capability are the other advantages of greenhouse cultivation. The greenhouse owners' attitude to develop these cultivations with regard their economic advantages, increasing in quantity and quality of production, is very positive. Water

consumption in these cultivations is a tenth of water consumption in irrigations; and also harvests of 34 hectares of outdoor products will increase as 350 tons in greenhouse cultivations. Cultivation in under controlled conditions result in reduces pests and diseases, quality improvement of products; and also products would be more markets friendly. Regarding this applying greenhouse cultivation technology will increases productivity of limited water and soil resources; and its importance concerning the dry climate and low rainfall in most parts of our country is undeniable. Caring a greenhouse requires more knowledge than traditional methods. Paying attention to soil moisture, humidity of greenhouse, temperature, the air ventilation of greenhouse, proper temperature setting according to the season and the availability of proper light for plants growing all show the importance of greenhouse (Hasandukht, 2008).

Population growth and increasing per capita consumption which has correlation with the people's level of income are two important issues in foods preparation in developing countries including Iran; and to do so the effective exploit and optimum of limited resources of water and soil and existed workforce in our country are very important. Successful efforts to increase GDP and achieving self-sufficiency in food production needed by growing population, like any other activity require a deep understanding of economic processes and applying the latest knowledge and technology in the world; In this regard researcher addresses these questions; how mechanization indexes in greenhouse cultivation result in production growth? And how soil and water resources are optimal operated by development of greenhouse cultivation (vegetables and fruits)?

#### **Statistical Population and sampling**

Our statistical population consisted of all greenhouse owners in Varamin city. Due to the

small sample size, census method was used for filling out the questionnaire, so the sample is equal with population.

#### **Research hypotheses:**

1. Applying the greenhouse cultivation will result in production growth rather the traditional methods.
2. Greenhouse cultivation increases the efficiency of existed resource utilizing.

#### **Research methods and materials:**

The study applied descriptive method and for data collection library study was used. Articles, available books in libraries and internet websites were used for theoretical discussions; and after research variables determination related data and information collected from greenhouse owner cooperation, agricultural organization and self-prepared questionnaires consist of 39 questions completed by greenhouse owners. The following objectives are considered in relation to the research process:

1. To identify efficiency and effectiveness in the use of production factors in glasshouse cultivation patterns.
2. To study increasing production operation of modern greenhouse cultivations.
3. Reducing the use of agricultural pesticides and inputs in modern methods of production.
4. The association between productivity growth and modern methods of crops cultivations.

The data in this study which collected through questionnaires completed by greenhouse owners in Varamin were analyzed by using SPSS software.

#### **Hypothesis 1: Applying of greenhouse cultivation result in production growth rather traditional cultivation.**

Table 1: Frequency of society in terms of greenhouse cultivation and production efficiency

Sum	Production efficiency			Using greenhouse cultivation
	50%	30%	20%	
3	1	0	2	Very low
2	0	2	0	Low
5	5	0	0	High
10	6	2	2	Sum

Table 2: Spearman correlation coefficient test

Significance level(p)	correlation coefficient (r)	Type of test
0.013	0.747	Spearman correlation coefficient

As the table shows information, P value associated With these two variables against With 0.013 and R value equal is .747. Given that the p value was calculated is Smaller than the significance level of 5%, In conclusion one can say with 95% confidence Between greenhouse cultivation and production of a significant relationship exists.

Because the correlation coefficient is the correlation between the two variables, with the increase of greenhouse cultivation, production levels have increased.

**Hypothesis 2: Greenhouse cultivations increase the efficiency of existed resource use.**

Table 3: The frequency of community greenhouse cultivation in terms of performance and use of resources

Sum	Efficient use of existing resources			Greenhouse cultivation
	50%	30%	20%	
2	0	2	0	Very low
6	4	0	2	Medium
2	2	0	0	High
10	6	2	2	sum

Table 4: Spearman correlation coefficient test

Significance level (p)	correlation coefficient (r)	Type of test
0.039	0.648	Spearman correlation coefficient

As the table shows information, P values associated with these two variables Equal to 0.039 and R value is equal to 0.468, Given that the p value was calculated Smaller Significance level of 5%, As a result, with 95 percent confidence Can be said Between greenhouse cultivation and efficient use of available resources, there is a significant relationship.

Because the correlation coefficient is the correlation between the two variables, by increasing greenhouse cultivation, efficient use of resources also increases.

### Discussion and Findings

Considering of foods security and increasing people's need to agricultural crops and high risks for agriculture existence in Iran due to less and irregular rainfall are important problems; and developing of modern methods to solve them are necessary. While in traditional agriculture big disorders happen in cultivation and production year regarding the low output of water; and farmers who own less water and territory have to quit their job and by immigrant to cities to find odd jobs or they change the application of their territories. The solution of this problem is considering the greenhouse cultivation for increasing agricultural crops with high quality in Iran and making it profitable for farmers. In this regards our study's finding shows a significant relevance between applying greenhouse cultivation and production

efficiency variables; it means that by increasing use of greenhouse cultivation production level increase too. The problem of agriculture in Iran is that people who work in this sector mostly use traditional methods; while population growth increases the necessity of foods and its variety.

Population growth and increasing per capita consumption which has correlation with the people's level of income are two important issues in foods preparation in developing countries including Iran; and to do so the effective exploit and optimum of limited resources of water and soil and existed workforce in our country are very important. The results also show a significant relevance between greenhouse cultivations and efficient use of available resources variables; and by increasing greenhouse cultivation, efficient use of available resources also increases. Considering issues mentioned above and regarding food's price increase in the world, work in agricultural sector can be profitable and create a good opportunity for Iran's economy. It is worth to mention that agricultural sector has an important position in global and domestic economy in terms of job creation and value addition; and This sector regarding in both necessary foods providing and job creating in related industries (complementary and conversionary) can be a very important and has a significant impact on the economy of our country.

Thereby to improve agricultural sector, management level and policy making in this sector

should be improved; because we have witnessed a qualitative reduction. This issue also should be considered through employing more talented specialists in management and policy making levels. Also there should be more correlation between agricultural policies and commercial policies especially foreign commercial. The third issue is related to educational investment; it means we should transfer investigations from agricultural study stations to farms by increasing these investments. And the last issue but not less important one is the development of marketing for agricultural crops through improvement of rural cooperation organization; as they should be able to enter the selling markets, storage and conversion the products and through this way much amount of

consumer costs transfer to producers and production motivation increase.

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