

## Medicinal Values of Kolanut in Nigeria: Implication for Extension Service Delivery

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**Abstract:** This paper reviews the medicinal values of Kolanut in Nigeria with a view of identifying the most common species in the country and discussing the problem and Prospects of Kolanut trees. Some of the values of kolanut discussed include traditional value, nutritional value, economic/industrial value and the medicinal value which is the focus of this paper. The paper recommends that retraining efforts need be focused on the forestry extension to ensure that indigenous fruit trees like Kolanut become part of the basket of livelihood options supported by extension agents.

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Kolanut occupies a unique place amongst West Africans where it is widely consumed by them. It is of particular importance in the social life and religious customs of people in the tropics of West Africa. In all types of traditional gatherings in these parts, kolanuts are highly esteemed channels of blessings. Kola nut belongs to the plant family *Sterculiaceae*, having about 125 species of trees native to the tropical rainforests of Africa. Of these species, the most common in Nigeria are *Cola nitida* (Gbanja) with two phenotypic varieties; the white and red cultivars, *Cola acuminata* (Abata) and *Garcinia kola* (Orogbo) and *Buchholzia coriacea* popularly known as wonderful kola. Nigeria accounts for about 70 percent of the total world production of kolanuts (Quarco, 1969, 1973; Jacob, 1973). About 90% of the kola produced in Nigeria is consumed within the country while 10% is exported (Quarco, 1973). The cultivation of kola in Nigeria is ecologically limited to the rain forest zones of the South and riverine areas of the Savannah region. Kola is an important economic cash crop to a significant proportion of Nigerian population who are involved in kola farming, trading and industrial utilization. It is highly valued for its perceived medicinal attributes which make it a highly desired product (Adebisi 2004). The objectives of this paper include the analysis of the problem and prospect of Kolanut trees and identifying the values of kolanut( traditional, nutritional, economic/industrial and the medicinal value of kolanut.

### Prospects and Problem of Kolanut Trees

Several opportunities for improved rural development are linked to non-timber forest products, one of which is kolanut. In many areas, rural populations are traditionally dependent on local forest resources to provide additional income through

collection and marketing (Arnold 1995). Where employment opportunities from traditional industries are declining, workers looking for alternative sources of income often turn to the collection of these products from the nearby forest (Adepoju & Salau 2007). In his cursory survey of people involved in the trade of Bitter kola in the J4 area of Omo Forest Reserve (south-west Nigeria), Adebisi (2004) observed that the production-to-consumption system of *Garcinia* nuts has an obvious positive impact on households of the J4 communities, its commercialization contributing to improving the standard of living of the villagers. Furthermore, the trade of kolanut is more profitable than trade in other non-timber forest products because of its high amenability to storage, both fresh and dried. The economic importance of kolanut cannot be underestimated, especially in the area of poverty alleviation among rural people. However, while the demand is rising, the production remains low because many of the trees in Nigeria are unfruitful or have very low yield due to self and cross incompatibility among trees, partial and total sterility, inefficient natural pollination, old age, field and storage pests and diseases (Odegbaro, 1973; Daramola, 1978; Jacob, 1971, 1973). Also, *kolanut* trees are currently on the decrease as a result of deforestation. Many of the farmers who have the trees on their farms indicated that they spared them during land preparation for farming, rather than planting them themselves. The swiftly decline fruit trees pose threats not only to food security, but also to wild life, environment, traditional medicine and human beings. Indigenous fruit trees which provide cheap source of proteins, vitamins, oils are also values for their medicinal properties ( Ayuk et al, 1999). Various parts of the trees have been used in treating many ailments, such as skin disease (*Dacryodes edulis*),

black coated tongue (*Chrysophyllum albidum*), cough and fibroid (*Garcinia kola*) etc. (Anegheh et al, 2004). Besides, in spite of farmers' obvious interest in indigenous fruits for cash income and the range of food and medicinal products they provide, these species do not receive much attention from policy-makers, foresters or agriculturalists (Tchiegang-Megueni et al. 2001). Increasingly, there is intense competition and imperatives for vertical integration in the major markets for conventional plantation-grown tropical tree fruit and commodity/cash crops. As yet, these pressures are less evident in the expanding markets for indigenous fruit and derived products, making indigenous fruits more suitable for smallholder farmers in developing countries (Poole 2004). Furthermore, the restricted number of usually exotic species promoted by extension services cannot meet the full range of farmers' needs. The wide range of indigenous fruit trees available in many areas can enable farmers to meet their varied household needs for food, nutrition, medicines, etc. This therefore calls for urgent attention to the establishment of Kolanut plantations. Diversification of the products should be encouraged to create more market opportunities and accrued benefits.

#### Traditional Values of Kolanut

Kolanut is used as a masticatory stimulant by Africans and has numerous uses in social, religious, ritual and ceremonial functions by the natives in the forest region of Africa. It is used during ceremonies related to marriage, child naming, installation of Chiefs, funeral and sacrifices made to the various gods of African mythology (Nzekwu, 1961; Daramola, 1978a; Opeke, 1982). Kola nut, bitter kola and alligator pepper are traditional plants which are often eaten as snacks especially among the elderly in Nigeria. Traditionally, these nuts were chewed as a masticatory substance, to stimulate the flow of saliva (Leakey, 2001) but are now widely consumed as snack in West and Central Africa. In folk medicine, bitter kola is dried, ground and mixed with honey to make a traditional cough mixture. Traditional treatment of circumcision wounds, other wounds and chronic skin ulcers with locally prepared herbs and other natural occurring substances has been known for generations. Mboto (2000) provided evidence of accelerated healing in a combined therapy of *Garcinia kola*, *Vernonia amygdalina* and honey for the treatment of fresh wounds, including wounds resulting from male circumcision and chronic ulcers.

#### Nutritional value of Kolanut

Agro-industrial by-products and crop wastes/residues such as wheat offals, maize offals, maize wastes, palm kernel cake, cassava peels, rice bran,

cocoa pod husk, kolanut husk, kola testa, etc. have proved to be valuable in replacing a certain proportion of maize in monogastric nutrition (Ogbonna and Adebawale, 1993). Olubamiwa et al. (2000) reported that kolanut husk meal (KHM) shared similarity with cocoa pod husk (CPH) but had higher crude protein and lower crude fibre contents than CPH. The kola pod husk has been used in the manufacture of poultry feeds, snail feed (KOLA-T). 10 to 15 percent dietary inclusions of KPH reduced feed cost while not sacrificing bird performance (Olubamiwa et al. 2002). Feeding KOLA-T solely to snails was found to be better than other common snail feedstuffs. (Asogwa et al, 2006)

#### Economic/ industrial value of Kolanut

*Buchholzia coriacea* popularly known as wonderful kola possesses an invaluable but yet to be tapped potentials which, if exploited, will benefit the food industry. The fresh kola (*B. coriacea*) found to be more active on the test food borne pathogens than the hexane and methanol extracts (Ezekiel and Onyeoziri, 2008). Kolanut could be utilized in the producing countries to produce value added products such as the kola drink and thereby create and increase the income of farmers and industrialists in the country (Jayeola, 2001). It is also used in the manufacture of dyes and cola group of beverage drinks (Ajiboye and Afolayan, 2009). The kola pod husk has been used in the manufacture liquid detergent and organic fertilizer (Asogwa et al, 2006). There is also increasing demand for its usage in pharmaceutical industries and for production of soft drinks, wines and candles (Beattie, 1970; Ogotuga, 1975). Its uses have inevitably created a high demand in excess of its production (Oladokun, 1985).

#### Medicinal value of Kolanut

Kola nuts contain large amounts of caffeine and theobromine and are therefore used as a stimulant (Jaiyeola, 2001; Leakey, 2001; Omode et al., 1995). They produce a strong state of euphoria and well being, enhance alertness and physical energy, elevate mood, increase tactile sensitivity, suppress appetite and hunger. and are used as an aphrodisiac (<http://en.wikipedia.org/wiki/kolanut>; Attfeld, 1865). The caffeine in the nuts also acts as a bronchodilator, expanding the bronchial air passages, hence kola nuts are often used to treat whooping cough and asthma (<http://en.wikipedia.org/wiki/kolanut>; Blades, 2000). Unlike other kola nuts however, bitter kola is believed to clean the digestive system, without side effects such as abdominal problems, even when a lot of nuts are eaten (Onochie and Stanfield, 1960). Atolaiye et al., (2009) observed that the extract of Eugenol, *G. kola*, Vitamin A, Vitamins A+D,

Vitamin D, *C. acuminata* (white), *C. nitida* (pink) and *C. nitida* (red) are effective as antioxidants in red cell survival and viability. Furthermore, Ibikunle et al, (2011) concluded that kola nut extracts are sufficiently trichomonocidal and therefore potentially useful as therapeutic agents in the control of trichomoniasis. The result of the experiment carried out by Esimone et al, (2007) confirmed the adaptogenic property of *G. kola* seeds (GKS). It is possible that the anti-oxidant, anti-inflammatory, and

immunostimulatory properties of the flavonoids constituents of this herb are responsible for the adaptogenic effects. The findings of Okoko, (2009) show that the presence of four compounds namely garcinia biflavonoids GB1 and GB2, garcinal and garcinoic acid are partly responsible for the great antioxidant potential of *G. kola* seeds. This gives further evidence to the nutraceutical and pharmaceutical potential of *G. kola*.

Table 1: Distribution of Kolanut by traditional, nutritional, economic and medicinal Values

Traditional value of Kolanut	Nutritional value of Kolanut	Economic/ industrial value of Kolanut	Medicinal value of Kolanut
Ceremonies Fetish recipes Symbol of love, unity and welcome Chewing stick Believed to expel snake Local snacks Treatment of fresh wound/circumcision Masticatory substance( to stimulate the flow of saliva)	Layer mash Snail feed	Soft drinks Chocolates Dyes Kola wine Liquid detergent Organic fertilizer Candles Food industry Pharmaceutical industry	Stimulant Enhance Alertness Physical energy Elevate mood Suppress appetite and Hunger Increases tactile sensitivity Use for whooping cough Treatment of Asthma Clean digestive system Remedy against poison Treatment of fresh wound/circumcision Aphrodisiac Bronchodilator Jaundice(fruit pulp) Bronchitis and throat infection Catarrh, abdominal colicky pain Anti-diabetic and antihepatotoxic activities Anti-inflammatory, antimicrobial, antiviral properties Adaptogenic property Antioxidants in red cell survival and viability Antitrichomonal activity

## Conclusion

This paper has been reviewed to show the attributes of Kolanut trees on how they can improve farmers' livelihood as source of food, medicine and income. Apart from this product being a good source of foreign exchange if well managed and conserved, the food and the pharmaceutical industries have a lot of benefits to tap from this forest product. Therefore, the strategies developed by local communities to protect these species, need to be improved through application of sound scientific principles in order to help local farmers to properly manage, conserve and sustainably use this forest product well. Furthermore, retraining efforts need be focused on the forestry extension to ensure that indigenous fruit trees like

Kolanut become part of the basket of livelihood options supported by extension agents.

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