



THE CHALLENGES OF KOLANUTS PROCESSING, TRADE AND EXPORT FROM NIGERIA AND OTHER SUB-SAHARAN AFRICAN COUNTRIES

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ABSTRACT

Kolanuts have been an important trade item in the West African region for many centuries. There is dearth of recent and accurate information on the production figures of kolanuts and the volume of traded nuts and prices of produce exported from various sub-Saharan African countries. Information on kolanut production and marketing is scattered and not considered reliable. There are few statistics kept by government agencies as kola is not as important a national crop as coffee, cocoa, or other export crops. In Nigeria, the few literatures available are very old and not coherent. The issues of storage pests and diseases attack, pre-processing of nuts, storage and preservation and smuggling across boarder from producing countries especially Nigeria are major factors affecting the industry. Kola farmers need to be adequately enlightened on the judicious use of alternative pesticides in controlling the effects of weevils, moulds and rots. This will help increase the quantity and quality of kolanut for sale in local and international markets. The Government of producing countries should intensify effort through relevant stakeholders to bring kolanut into the mainstream of commodities in the global market. The study seeks to assess the challenges facing kolanut processing, trade and export from Nigeria and other sub-Saharan African countries.

KEYWORDS: Kolanut, processing, storage, grading, trade, export.

INTRODUCTION

Kolanut (*Cola*) is the nut of the kola tree, a genus of trees native to the tropical rainforests of Africa, classified in the family Sterculiaceae (Hutchinson and Dalziel, 1958). Kola is represented by over 40 species in West Africa alone, however, only two species *Cola acuminata* (P. Beav) Schott and Endl., and *Cola nitida* (Vent) Schott and Endl., are of major economic importance (Oladokun, 1982).

Kolanuts have been an important trade item in the West African region for many years. The kolanut is valued in many cultures as a sign of friendship and peace and is consumed (“broken”) at reunions, during meetings, ceremonies and festivals. It is also the only stimulant allowed to Muslims. For this reason there is a heavy trade of kola from the humid Southern regions to the Northern arid parts of West Africa. In kola producing regions there are markets which specialize in the bulk trade of kolanuts and which are geared to long distance wholesale traders. The long distance traders of kolanuts earn the highest profits, but this is usually controlled by merchants from the North who have access to transport and capital resources. However, most kolanut sellers are involved in small-scale trade.

The vast majority of African Kolanut production is utilized within the African continent, particularly in sub-Saharan regions, which may explain why the introduction of the crop to the tropical Americas, West Indies, Sri Lanka and Malaya has never caused severe competition with African production (McIlroy, 1963; Tindall, 1998). Kola is an important economic cash crop to a significant proportion of Nigerian population who are involved in

kola farming, trading and industrial utilization. Nigeria currently produces 70% of world’s kolanut with an annual production of 200,000 metric tones of fresh nuts, mostly from the South West Nigeria, which accounts for about 88% of the produce. However, only about 10% of the produce is exported, while the rest are consumed locally (Quarco 1969; 1973; Jacob, 1973; Pala, 1976; Agboola, 1979; Oluokun and Oladokun, 1999; CBN, 2002; Okunade, 2003).

The use of the kolanut, like the coffee berry and tea leaf, appears to have ancient origins. It is chewed in many West African cultures, individually or in a social setting, to restore vitality and ease hunger pangs. Kolanuts are an important part of the traditional spiritual practice of culture and religion in West Africa, particularly Nigeria (FAMA, 2004). Kolanuts are used as a religious object and sacred offering during prayers, ancestor veneration, and significant life events, such as naming ceremonies, weddings, and funerals. They are also used in a traditional divination system called “Obi divination” or “Igba Afa”. For this use, only kolanuts that are divided into four lobes are suitable. The kolanut lobes are cast upon a special wooden board and the resulting patterns are read by a trained diviner (Epega, 2003). This ancient practice is currently enjoying increased growth within the United States and Caribbean. According to various research reports, kolanuts and kola by-products have been utilized locally and industrially for the production of various kola drinks, wines, chocolates, medicinal and animal feed products (Beattie, 1970; Ogotuga, 1975a; 1975b; Famuyiwa, 1987; Yahaya *et al.*, 2002; Hamzat, 2004;

Hamzat and Babatunde, 2001; Hamzat and Longe, 2002; Hamzat *et al.*, 2002; 2007).

There is dearth of recent and accurate information on the production figures of kolanuts and the quantity and prices of produce exported out from various African countries. However, the very few scanty literature on its production and export are very old and not coherent. The main objective of this paper is to review kola production, trade and the challenges facing kola produce export from Nigeria and other sub-Saharan African region.

Kola nut processing

Cola acuminata: The seed coat or testa of the nuts from pods are removed by soaking the nuts in water for 24 hours to enhance rotting, after which the nuts are skinned and rinsed in fresh water. The rinsed nuts are collected in wide flat baskets through which excess water drains off before they are kept inside the room where they are maintained under ambient room temperature for a period of 72 hours to dry out. Defective/infested nuts are picked out within this period, which is regarded as the "curing process". A considerable "sweating" that reduces the moisture content of the nuts takes place during the curing process.

Cola nitida: Rotting of the testa is achieved by keeping the nuts on bare ground (with occasional moistening) and covering with jute bags for 72 - 96 hours. The nuts wret and turn black. The premature nut also matures in this process. The nuts are then soaked in water for 24 hours after which they are skinned, rinsed and collected in baskets to drain off. Defective and infested nuts are sorted out before curing the nuts in flat baskets for 72 hours.

Kola nut storage

The kolanuts are usually stored in baskets or jute bags. The storage baskets are first lined up with thin black polythene sheet followed by a layer of fresh leaf materials like *Musa* spp, *Newbouldia laevis*, *Tectonia grandis*, *Marantochola* spp, *Terminalia catapa* or a host of others depending on which one is readily available in the locality. The nuts are carefully placed inside, layer by layer. The chosen leaf material is used to cover up the last layer of the nuts, before finally sealing-off the whole thing with the first layer of polythene sheet. The baskets are then kept inside the room under normal room temperature and relative humidity. The leaves and the polythene sheets keep the nuts in an air tight condition and prevent desiccation of the nuts. Alternatively the nuts may be stored in jute bags lined with thin black polythene sheet, which is in turn lined with a layer of paper and fresh leaves.

During the first few months of storage, the nuts are inspected every eight days (8 days). The top leaves are removed and the nuts spread out gently on a mat. Kolanut is noted for its characteristics of quick shoot emergence without necessarily coming in contact with any growth medium. Each nut is carefully examined and any emerged shoot is removed with a pin and coated with a thin film of palm oil to slow down the emergence rate and prevent the splitting of the nuts. Any defective or infested nuts are sorted out during the inspection period. This periodical inspection also helps to prevent the over heating of the nuts. During inspection, the top leaves that are over dried

and shrunk, are changed. After three months, the inspection period can be extended to between 2 to 3 weeks depending on the quality and condition of the nuts at the last inspection. Fresh whole nuts could be well preserved in this way for a very longtime at 20°C and relative humidity of 75 -100% (Oludemokun, 1976).

Kola nut storage problems

It has been observed that kola farmers are faced mainly with the problem of pests and diseases, which have adversely affected their rate of kola storability for export. In most cases, the farmers are forced to sell their produce at very low prices immediately after harvest to avoid total loss of the whole harvested nuts.

1. Pests: The kola weevils *Balanogastriis kolae* and *Sophrorhinus* spp (Coleoptera: Curculionidae) are the most destructive field-to-store pests of kolanuts in West Africa (Daramola, 1973; 1978). All trees in Africa are believed to be infested (Alibert and Mallamire, 1955) and the percentage infestation ranges from 30-100% (Daramola, 1973). The beetle reduces the shelf life of kolanuts. The curculionids initiate their attack mainly from the field to storage and are therefore referred to as field-to-store pests. In Nigeria, high levels of infestation have been reported both in the plantations and in storage depending on the sanitary condition of the farm at the time of harvest (Daramola, 1973). The high significant level of weevil damage on stored kolanuts have been attributed to the favourable storage conditions, which encourage continuous development of various instar stages of the kola weevil within field infested nuts (Daramola, 1973; Ivbijaro, 1977; Ojo, 1979). The *C. nitida* is more prone to weevil attack than the *C. acuminata*.

2. Diseases: The kolanuts are often destroyed by diseases. The kolanuts are infected with moulds and rots. Some of the infected nuts are observed to be covered with grayish fungal mycelia, which cause them to become decayed, or have a grayish brown rot on the inner surface of the cotyledons. The outer surface appears healthy or sometimes has a moist and light brown rot, which latter becomes dark-brown and dry even still in storage. The major fungi causing mould and rots of the nuts are *Botrytis* spp; *Botryodiplodia theobromae*; *Paecilomyces variotii*; *Mucor* spp and *Fusarium* spp, which are all known to be favored by high relative humidity (Adebayo, 1966; Olunloyo, 1979; Agbeniyi and Fawole, 1999; Agbeniyi *et al.*, 2000).

Internal local trade on kolanuts

According to Opeke (1992), kola is traded in three stages: unprocessed wet nuts; the bulk sale of processed nuts; and the retail trade in both unprocessed and processed nuts. *Cola nitida* is the main commercial species traded world wide, whereas *C. acuminata* is of local trading importance. The activities involved in harvesting, collection, processing and sales of kolanuts in Nigeria starts with farmers harvesting mature ripe pods or picking of fallen mature pods. Such pods are sold to retailers, who buy directly from door-to-door or in village markets. The retailers in turn process, sort and package the nuts in large baskets or bags and sell to wholesalers, who export the produce to neighbouring African countries, Europe, America etc.

The marketing of kolanuts in Nigeria dates back to ancient times especially in the eras of the Ghana, the Shanghai, the Benin and the Kanem Borno Empires (Webster *et al.*, 1967). Kolanuts are produced mainly in the Southern part of Nigeria and largely marketed and consumed in the Northern parts (Akinbode, 1982). Usually, the marketing of kolanuts has its fixed days in the South Western part of Nigeria where kolanuts is mainly produced. Big merchants from the Northern part of the country come with their vehicles, (trailers and big lorries) to buy kolanuts from the secondary buyers/middle men who buy directly from farmers (Sanusi and Ndubuaku, 2001). In Nigeria, kola is also distributed along the railway line linking Lagos and Kassa Marire market in Kane in the North. A feature of most villages in parts of the Yoruba country is a group of huts outside the village, occupied by Hausa traders from the North who are engaged in buying kolanuts from the farmers, packaging and sending them to the North (Tachie-Obeng and Brown, 2006). A typical example is the Hausa settlements in Ogunmakin and Manmu kola markets (Ogun State, South West Nigeria) and Ariam market (Abia State, South East Nigeria).

It was estimated that the internal kolanut market in Nigeria is worth about Thirty Million naira (N30,000,000.00) (Pala, 1976). But subsequently the market became so unorganized and has been hijacked by a cabal that now smuggles the nuts through the porous Nigerian borders to neighbouring countries from where they formerly export the commodity. In Cameroon there are several different species of kola which are traded. In Southern regions, the most commonly consumed species is *Cola acuminata*. However, *Cola nitida* is preferred in Northern parts, thus *C. nitida* is more important in the long distance and export trade. *Cola acuminata* is the preferred species in Western Cameroon, and its trade is limited to this region. *Cola nitida*, however, is produced though generally not consumed in this region; what is collected is traded to the North.

Kolanut production and trade, though largely ignored by national statistics, appears to provide an important source of income for many rural people. In Cameroon, the Northwest region produces the greatest quantities for commerce. Soup Nguifo (1982) estimates, for example, that 3,000 tonnes of *Cola nitida* are traded from Kumba to the North each year. More than half the kola produced in this region is purchased on-farm. Detailed information on the prices received for kola at different stages show that on average the selling price by retail traders for kola is three and a half times that received by farmers.

Trans-Saharan trade on Kola nuts

The kolanut has been a major commodity in West African markets for many centuries, beginning long before its distinct taste provided inspiration for several soft drinks (Gebissa, 2006). Kolanut has for some hundreds of years served as an important article of trade in Nigeria and other parts of Africa (Nzekwu, 1961). It has been an item of trade in West Africa and in the Trans-saharan trade routes for many centuries (Egbe and Sobamiwa, 1989). Kolanuts have long served as an important crop for Nigeria, Ghana, Sierra Leone, Burkina Faso, Cote d'Ivoire and Sudan in the Trans-Saharan Trade. Large quantities of kolanuts have been traded both among the countries of West and

Central Africa and the Sub-Saharan Africa for centuries. The Hausa kola traders have followed fixed caravan routes through West Africa for many centuries to Timbuktu, Sokoto, Kane and elsewhere (Tachie-Obeng and Brown, 2006). Extensive trade was then made to Burkina Faso, one of the old routes, where kolanuts from Ghana and Sierra Leone are conveyed first by lorry and then by donkey to the frontiers of Sudan and further travel to North or East (Purseglove, 1968).

Large quantities of kolanuts are shipped from Sierra Leone and Ghana to Lagos where they are then conveyed by rail linking Lagos and Kane and further North to Sokoto and Congo. The railway carries between 50,000 and 60,000 tons of kolanuts annually to the markets of the Northern Nigeria (Tachie-Obeng and Brown, 2006). However, depending on size and quality, a kolanut costs between 200 Guinea francs (4 US cents) to 500 Guinea francs (11 US cents) (Sillah, 2006). Nkongmeneck (1985) reported that approximately 22,500 tonnes of kolanuts were produced in Cameroon in 1981 (of which, 20,400 tonnes entered commerce). An estimated 1,100 tonnes were exported in 1980 (worth approximately 182.6 million FCFA), primarily to Nigeria and Chad. He also noted that government data are replete with gaps, and thus are, at best, only indicative. In Ghana, the Forestry Department estimated the value of cola exports to be 3.4 million cedis in 1975, the majority (83%) of which was sold to Nigeria (Forestry Department Annual Report 1983).

International trade on Kola nuts

Kolanuts have been an item of domestic and international trade for over eight centuries now. The crop made initial appearance in Nigeria about 1900 (Opeke, 1992; Shobowale, 2010). Exportation of the crop from African explorers introduced the nuts into Europe as a means of taking advantage of the local uses of the nuts (Nzekwu, 1961). *Cola nitida* is preferred in international trade because of its high caffeine content and the white strain is most valued. In recent years, kolanuts are exported to Europe and North America for flavouring kola drinks and for use in the manufacture of pharmaceuticals. According to Oyedade (1973) a few hundred tons of kola nuts are exported annually for industrial exploitation in area of caffeine, wine, chocolates and assorted medicinal products production. However, off-continent exports appear to absorb only a minor part of the world production estimated at 180,000 tonnes of which 120,000 tonnes are produced by Nigeria and used either internally or in neighbouring countries (FAO, 1982; Lovejoy, 1980; Rosengarten, 1984).

Kolanut is exported in substantial quantity to other African countries as well as to Europe and North America, which generate the necessary foreign exchange earnings to Nigerian government (Akinbode, 1982). Exports from Lagos to Brazil were valued at £2,949 in 1878 and £3,560 in 1882 (Moloney, 1887). Exports to Western Europe were very small. In 1887 exports to Britain and France were valued at £20 and £40 compared with a total value of local consumption of £32,400.00 (Moloney, 1887). In 1970, kolanut export fetched USD \$157,500 to Nigerian government (Pala, 1976). However, the United Nations' Food and Agriculture Organization (FAO, 1982) estimated that from a total West and Central African production of

kolanuts of 180,000 tons only 60,000 are exported; the rest are consumed internally. Thus, it is clear that the crop and its products remain virtually unknown in other part of the world (FAO, 1995).

Kola nut post-harvest processing for export

Kolanuts usually do not undergo further processing before consumption as they are consumed raw and fresh. However, the nuts for exports are usually packaged as fresh nuts, dry nuts or kola powder depending on the "Purchase Order" or "Import Terms" from the importing companies or countries. The lack of local granaries and electricity supply to oven dry the nuts and power the granaries are major challenges to the export processing of the produce. There is therefore an urgent need for the development of new processing technologies for kolanuts and kolanuts products for export.

Grading and price of kola nuts

Grading of the nuts into standard sizes and colour is usually for the purpose of proper storage, pricing and packaging for export. However, there is no standard grading or pricing system for kolanuts in Nigeria and other African countries. The only information on market transaction, especially with reference to price determination, measurements, sizes of nuts as well as quality of nuts/grading are based on mutual knowledge and understanding of the buyers and sellers (Sanusi and Ndubuaku, 2001). Most of the retailers/farmers sell their products in smaller units such as cups and bowls and only through verbal agreements. The price therefore varies with the size, keeping quality and the colour of the nuts. In Nigeria, the Owode and Labozhi crops contain a high proportion of the more valuable pink nuts, while in Ghana and Sierra Leone kola maintains a high price partly on account of its good keeping quality (Voelcker, 1935). The white and bright coloured nuts attract more premium than the red and dull coloured nuts. There is therefore the need for the formulation of standard grading system for kolanuts, as it was done for cocoa for both in the local and international markets.

DISCUSSION

Kola is yet to be granted a full export status by the Federal Government of Nigeria, unlike cocoa, coffee, cashew, palm kernel, palm oil, mango, oranges, e.t.c, which enjoy favorable market prices in the International markets. The government both at the centre and at local levels should give the desired support and officially promote kolanuts within and outside Nigeria. This will help motivate the farmers and other stakeholders to invest in kola production and processing, just as cocoa, cashew, coffee, citrus etc, which enjoys full export status in the international market. All the necessary government agencies, such as the Nigerian Export Promotion Council (NEPC), Central Bank of Nigeria (CBN), Cocoa Research Institute of Nigeria (CRIN), Integrated Kolanut Producers, Marketers and Exporters Association of Nigeria (IKPMEAN), Nigerian Customs (NC) and Nigerian Plant Quarantine Services (NPQS), Raw Materials Research and Development Council (RMRDC), Federal Produce Inspection (FPI) etc should all come together to ensure that kolanut is properly projected as internally traded commodity. This will create

good multiplier effect on the producers and help alleviate poverty and increase their income.

Despite the fact that Nigeria produces 70% of the global kolanuts produce, there is really no adequate export data on kolanuts. There is therefore an urgent need to determine the volume of traded kolanuts from Nigeria and other sub-Saharan African countries through the collaboration and cooperation of all the relevant stakeholders and agencies in the producing countries. This will help to obtain proper National and International statistical data on kolanut exports in terms of quantity, quality, percentage and prices of traded produce.

The trading pattern of kola in Nigeria and other sub-Saharan African countries needs to be completely restructured and overhauled. Currently, there are no coherent reports at the seaports, airports, Nigerian Export Promotion Council (NEPC), Central Bank of Nigeria (CBN), Cocoa Research Institute of Nigeria (CRIN), Integrated Kolanut Producers, Marketers and Exporters Association of Nigeria (IKPMEAN), Nigerian Customs (NC) and Nigerian Plant Quarantine Services (NPQS), Raw Materials Research and Development Council (RMRDC), Federal Produce Inspection (FPI) and Food and Agricultural Organization (FAO) on the quantity, quality, percentage and prices of kolanuts that leaves the Nigerian shores annually. The production figures and prices of this crop produce for sometime now have been just a mere forecast.

RECOMMENDATIONS

The following research recommendations are been advanced to overcome the challenges of trade and export of kola produce:

1. The farmers should improve the level of sanitation in their farm practices. They should process harvested and fallen nuts differently and use good, clean water, as a sanitary measure, for skinning and rinsing nuts so as to produce good quality nuts free from microbial and weevil infestation.
2. The use of 1% Milton solution to rinse kolanuts during processing and curing has been recommended as a safe processing technique which minimizes microbial infestation of kolanuts.
3. The use of alternative safe pesticides (Natural botanicals or biocides) to control storage pests and diseases of kolanuts has also been advocated since kolanuts need no further processing before consumption.
4. The judicious use of pesticides can only be introduced to control the kola pests and diseases in the field, while moribund kola trees should be coppiced and allowed to regenerate.
5. Kola nuts should be granted full export status with necessary government support.
6. There should be an introduction of standard grading and pricing system for each grade of kolanuts just as have been done for cocoa, cashew and coffee.
7. There should be harmonization of the kolanut markets. The abolished marketing boards should be reintroduced in any form to help regulate kolanut trading activities along the value chain in Nigeria.

8. A National kola production and trade survey should be carried out by the government of Nigeria and other producing countries in Africa to generate reliable statistical data for sustainable development.

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