

**EXAMINING THE UNDER EXPLOITED
VALUES OF COCOYAM FOR ENHANCED
HOUSEHOLD FOOD SECURITY,
NUTRITION AND ECONOMY IN NIGERIA.**

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Introduction:

- Nigeria is the world's largest producer of Cassava, Yam and Cocoyam.
- Where as the potentials of cassava and yam have been intensively explored, cocoyam on the contrary has been long abandoned at the backstage and shadowed by several unsavoury socio-cultural perceptions and unfavourable comparative economic considerations.
- For instance, while cassava has grown rapidly in annual national output cocoyam has only crawled sluggishly behind from 1.43mmt in 1969 to 4.02 mmt 2005.

There are two main edible types of cocoyam in Nigeria viz *colocasia exculenta* (taro) and *Xanthosoma sagittifolium* (tannia).



•Taro (*colocasia* spp) is for its edible corms, cornels and leaves as well as for its traditional ceremonial uses.

- Originated from India and other parts of South east Asia (FAO 1988).
- It is a herb of about 1-2m tall with a cylindrical corm which bears a whorl of large shield shaped leaves on erect petioles.
- Taro requires heavy fertile upland soil and plentiful rainfall for good yield. It does well too in a fertile low land environment



•On the otherhand, Tannia (*Xanthosoma sagittifolium*) is popularly grown in the for its cormel

- Tannia is also observed as an important under crop of expanse cocoa, kola and plantain plantations in southwestern Nigeria.
- It originated from tropical South America and West indies
- Tannia is also a shrub but more vigorous than taro about 1-3m tall, possessing a large oblong corm which bears a whorl of large shield-shaped dark green leaves suspended upon long erect petioles.

Reasons for Under Utilization of Cocoyam.

- A long time in history, cocoyam and yam were enmeshed in the traditional lives of the people of Nigeria as they had been used for food, ceremonies and remotely for sacrifices.
- But after the civil war, the desperate fight for survival from hunger and starvation opened a door way for introduction other crops like cassava, maize, rice and plantain as staples into the farming and food systems of local farmers

- Considering carefully, the reasons for under exploitation of the values of the cocoyams in Nigeria, the following become so apparent.
- introduction and popularization of cassava, maize, rice and other new crops into the farming and food systems of Nigerians led to a rapid decline in relevance of Cocoyam as food for even the peasant farmers.
- Thus, the preference of these other crops to cocoyam in household production and consumption decisions became a fundamental reason for its neglect and under utilization.

- An estimated 40% of the harvested cocoyam is lost to post harvest rot. This magnitude of loss is discouraging to any meaningful investment in cocoyam production.
- As a result of spoilage, cocoyams are usually consumed shortly after harvest. Long storage of the products is usually not attempted or not successful.
- Again, the technical difficulties involved in managing cocoyam especially the post harvest losses have made cocoyam comparatively less attractive.

- Traditionally, cocoyam are consumed by the low income earners and avoided by the high income and upper social classes.
- This distinctive attitude earned cocoyam certain socio-cultural prejudices and untoward perceptions which discourage its production, consumption and choice as a farm business enterprise.
- Nutritionally, the edible corms and cornels of cocoyams contain raphides which are minute bundles of crystals of calcium oxalate which cause irritation to the skin if not well cooked.
- Cocoyams also have unattractive mucilage which could discourage consumptions.

Cocoyam as Food Security Crop in Nigeria



- Cocoyams are early maturing (9 – 10 months after planting) crops.

- Although yields under peasant culture range between 6 to 10 tonnes per hectare, a yield of 30-60 tonnes per hectare is attainable if clean, healthy and good sized planting materials are used and cultural practices optimally maintained (Eleje, 1987).

- Again, as earlier indicated, cocoyam was enmeshed in the socio-cultural lives of many Nigerian households, especially in the Southeastern zone where the crop is seriously grown as a source of livelihood.
- In this zone, cocoyam ranks third, after cassava and yam as a staple food crop and ranked 5th in the nation's food system after, rice, cassava, yam, maize.
- Cocoyam is readily consumed without much processing procedures being usually cooked over right to remove the irritants. Thus, it is readily available as a wedge against hunger.
- Also, since cocoyam do not store long in fresh form, a rather processed form is employed in storing its product- "Achicha" as a food commodity among the Ibos in Southeastern Nigeria.

- This achicha is suitably used to fill up the “hunger period gap” when other crops might have been planted up during the peak of farming season and hunger is in the increase.
- Also, because of its unique attribute of thriving in flooded or hydromorphic areas, cocoyam can be made available in fresh form all year round through on and off season production systems.
- Again, by so doing, this food commodity can be readily available in the barns and markets for consumption even when the rival crops are still in the farm.

- Its two major species are equally very important sources of protein comparatively higher than cassava, yam and sweet potato tubers (Arene *et al*, 1987).
- Thus cultivation of the crop for home consumption and market can indeed be beneficial and lucrative.
- They can also be pounded with yam or sole and eaten with vegetable soups of different types according to organoleptic preference.

Nutritional Values of Cocoyam in Nigeria



•Nutritionally, taro and tannia are very similar. Their corms and cormels are composed of 77-86% edible materials and 14-23% scaly peels.

- These corms and cormels are in calcium phosphate and vitamin A, B and C.
- Their leaves are very nutritious as they contain upto 20% protein on a dry weight basis as well as appreciable amounts of vitamins and minerals.
- Moreover, cocoyam compare favourably with these rival crops and in some aspects excel in content of such nutrients like protein, vitamin and minerals.

- Inconsideration of these attributes, cocoyam can be fully exploited as a specialist food resource for the invalid, babies & nursing mothers.
- Cocoyams have relatively small sized starch grains which are easily digestible and therefore acclaimed to be very good carbohydrate source for persons that may be diabetic.
- This rare attribute is indeed a great value which can be utilized in management of sugar-related diseases that severally occur even among the high income individuals who ordinarily may not consume cocoyams.

- Similarly, Colocasia leaves are rich sources of folic acid, riboflavin, vitamin A and C, calcium and phosphorus, thus making them particularly useful for blood and bone build up in the body.
- Thus cocoyam leaves menu have a great values for the nutritional care of pregnant and nursing mother.

- The cocoyams can also play very important roles in animal nutritions.
- Considering the high costs of conventional feeds, use of cocoyam by-products in local feed formulation could significantly reduce cost of livestock production in Nigeria.
- With substantial content of protein, vitamin and minerals in cocoyam leaves, silages could be made from cocoyam leaves and petioles after harvests for use in livestock feeding.

Economic Values of Cocoyam in Nigeria:



In Southeastern Nigeria, cocoyam production and marketing are twin enterprises sustaining the livelihoods of many rural households.

- Specifically, in Southeastern States, rural women invest their resources intensively for cocoyam production.
- This trend also earned the crop a perception as 'a women crop'. Incomes from such sales are used by the women for the household up keep

- There also exist retailers in city markets who in turn buy from the itinerant middlemen and sell to the urban consumers.
- Thus enduring cocoyam production - market chains and linkages have been developed and sustained between rural producers and urban consumers over the years.
- By these arrangements, many rural and urban households earn incomes and enhance their livelihoods through cocoyam production and marketing enterprises.
- Cocoyam corms and cornels have good manageable sizes which make for easy crating and export.

- Although, Nigeria is not yet known for cocoyam exports, there are unofficial reports that Nigerian cocoyams are available at African shops in United States of America and Europe.
- It is believed that such markets serve the dietary interest and quest of Nigerians and other Africans there.

- It has been shown that cocoyam starch can be efficiently converted into alcohol which is an essential raw material for the manufacture of myriads of products like, perfume, fire extinguishers, soaps, hydraulic fluids, deodorants etc.
- Also, cocoyam starch can be used as a composite in the manufacture of infant and invalid meals.
- For a population of 140 million people, the huge domestic market for cocoyam starch based consumables is quite exciting; yet these economic values from cocoyam elude the nation simply because there are other source of national income.

Conclusion and Recommendations:

- Cocoyams apart from the cultural bias which plagues them, suffer very stiff competition for relevance in the farming and food systems of Nigerian households against stronger rival crops like cassava, yam, rice.
- Also, the declining yields, low storability, limited food forms of cocoyams among others have contributed to a declining trend in production and a general disposition of casualness towards the crop. The consequence is the abject neglect of the rich values of the crop.

- It is therefore recommended that concerted research programme should be hoisted and sustained for the development of the crop;
- Appropriate technologies urgently required to be developed
- Development of various domestic and export market frontiers for the commodity should be put in place.
- Rapid dissemination of the improved technologies as well as advocacy supports for overall development of cocoyam.
- These be employed as effective strategies for optimizing utilization of the abundant potentials associated with cocoyam in Southeastern Nigeria.

Thank you