

## PRODUCTION PROCESS OF HIGH QUALITY YAM FLOUR (HQYF)

- Sorting/ washing / weighing of yam tubers
- Peeling/washing
- Slicing/dipping in 0.5% Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub> for 3 minutes
- Rinse in clean water
- Blanching for 5minutes
- Spread thinly on drying trays and place in a pre-heated oven at 60°C for about 6hrs
- Allow to cool and mill
- Package in appropriate primary (air tight) package.

## METHODOLOGY

Five popular local Yam varieties were selected for setting the parameters for processing yam into High Quality Yam Flour (HQYF). The varieties selected were *Pona, Ponjo, Lariboko, Afaase and Asana*.

The *Asana* variety was randomly selected and processed using five (5) different processing methods. The results indicated that the best of the five methods was the one which involved the dipping of the Yams in metabisulphite solution followed by blanching and drying. This method was found to be suitable for preparing HQYF from all

five varieties of yams assessed, since it did not impact negatively on the quality of the flour. It was also found out that drying yams at temperatures of 55°C - 70°C and drying times of 4.5 – 6.5 hours produced flour for which the physico-chemical, pasting and nutritional characteristics were not compromised. After six months storage of the flour in two types of packaging material, the physico-chemical characteristics of HQYF were not significantly different from the freshly prepared flour. However the transparent plastic containers were found to preserve the quality of the product better than the polyethylene pouches. The sensory quality of products made from the HQYF was also found to be very acceptable. HQYF from *Pona* and *Ponjo* were however much preferred for preparation of fufu than *Afaase, Lariboko* and *Asana*. HQYF from all the varieties were equally liked for the preparation of biscuits.

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**GRATITUDE PROJECT**

## High Quality Yam Flour (HQYF)

*Reducing Post-Harvest Losses In Fresh Yam*



CSIR-FRI



Co-funded by the European Union



**GRATITUDE**, an EU funded project in collaboration with CSIR-Food Research Institute (FRI) and NRI of University of Greenwich focuses on gains from losses of roots and tubers along the value chain.

## YAM IN FOOD SECURITY

**Y**am is one of the important food security crops for approximately 700 million people in the world. Sixty per cent (60%) of fresh yams are currently considered to be lost after harvesting and this is significant. Changing food habits in West Africa as a result of urbanization has brought about a change in demand patterns of food. This offers an opportunity for adding value through the conversion of some of the yam, that would otherwise have gone waste, into processed products such as composite flours, in the form of high quality yam flour (HQYF) and other more convenient forms of traditional products. Post-harvest losses in yam come in three forms: (a) Physical; (b) Economic and © Bio-wastes.

The GRATITUDE project aims at reducing these losses to enhance the role the crop plays in food and income security through **VALUE ADDED PROCESSING** which aims at reducing physical and economic losses in yam through development of viable new processed products for yam that provide options of households to sell their produce for reasonable prices and result in reduced physical or economic losses. Although there is some yam flour on the market in West Africa, there are issues with quality and quantity at the SME level.

## YAM PRODUCTS

Yam chips, yam-legume flour and pre-cooked vacuum packaged yam can be seen as alternative ways of utilizing the crop and reducing post-harvest losses.

To introduce the products for commercial uptake and establish high economic values for them, they should be branded with unique packages and priced competitively.



*High Quality  
Yam Flour  
(HQYF)*

## POSSIBLE USES OF HQYF

1. It could be used exclusively or blended with cassava starch for instant *fufu* preparation
2. It could be used as a composite flour (with wheat flour) for baking bread
3. It could be used for production of all sorts of pastry products
4. It could also be used as replacement for starch in some applications, for the manufacture of confectionery, expanded use in food processing and also within certain industrial processes
5. Besides strengthening food stability, utilization of yam on a large scale may also support the sustainable agricultural development in Ghana and Nigeria.

## FLOW DIAGRAM FOR HQYF PRODUCTION

