

## **SUMMARY/ FEEDBACK OF GROUP DISCUSSION ON FOOD NUTRITION AND PROCESSING OF BAMBARAGROUNDNUT (*Vigna Subterranea*)**

Researchable project / Centre of discussion:

### **APPROPRIATE PROCESSING TECHNOLOGIES TO INCREASE THE FOOD VALUE OF BAMBARAGROUNDNUT WITH RESPECT TO NUTRITION**

The value chain of a crop is not complete without an appropriate end-use (table value) of the crop. Evaluation of processing technologies of Bambara groundnut is a very important research area. This helps to achieve improved technology that will also enhance nutritional qualities of Bambara groundnut products, support food security and sustainable development in the household.

#### **Identified Problem Statements**

1. Bambara groundnut like many other legumes has the hard to cook (HTC) effect.
2. The attached seedcoat is hard to remove, hence it has poor de-hulling characteristics
3. There is presence of anti-nutritional factor
4. Bambara groundnut has a very strong beany flavour
5. Bioavailability of protein

#### **Objective**

To improve food value of Bambara groundnut through appropriate process technologies that would add value to Bambara products

To promote utilization and nutritional profile of Bambara groundnut products with high bio-available nutrients through good research and effective information dissemination

#### **Conception /Possible solution**

1. Addition of potassium bicarbonate would soften the bean and make it easier to cook. What effect will this have on bioavailability of the nutrients in Bambara groundnut?
2. Steeping or micronization process could make de-hulling easier. This could also reduce the contents of some water soluble anti- nutritional factors?
3. High temperature processing and roasting can reduce the beany flavour, makes the bean the easier to cook and removes volatile anti nutrient such as oxalic acid. It is however important to consider the effect of different temperature gradient on nutrients.
4. Malting is an important process technology that can reduce oligosaccharide content of Bambara groundnut associated with flatulence and also reduce the phytic acid in Bambara groundnut.
5. Fermentation is another process technology that can reduce oligosaccharide associated with flatulence, enhance bioavailability of protein content and possibly synthesize some vitamins. How can one prevent leaching of essential micronutrient?
6. Irradiation is a possible process to enhance post harvest shelf life of Bambara by destruction of pest and their larvae and also modify starch for food and non food uses.
7. Exploration of utilization of Bambara wastes in production of bio-fuels.

**Important factors to consider to achieve effective utilization through appropriate process technologies:**

1. Sensory acceptability by the consumers
2. Nutritional value
3. Shelf-life (defatting and packaging)
4. Physicochemical properties
5. Rheological properties
6. Nutritional profiles of different landraces
7. Selection criteria
8. Water absorption capacity

**Question1: Who are the target audience end users and what are the effective extension services and platform to disseminate research results and prevent information overlaps?**

**It is important to identify your target audience**

Smallholder; Farmer ; Food Industries; Non- food uses

**Question2: Survey ethno-botanical practises and food uses of Bambara groundnut in different continents and regions:**

What do they process?

For example

- In Indonesia Bambara groundnut is deep-fried and consumed,
- In Nigeria it was fermented with *rhizopusoligosporus* to process condiment.

**Question 3: What are the possible products?**

1. Bambara flour
2. Breakfast cereal

**What are the foods uses of Bambara leaves known in literature or ethno-botanical research?**

### **Expected outputs**

It is expected that:

1. To create publishable data on the effect of different process technologies of Bambara groundnut products on their nutritional quality, shelf life and nutrient availability.
2. Resolve process challenges and ensure wholesome and nutritionally acceptable Bambara products with affordable process technology and enhanced shelf life.
3. Enhance effective information dissemination on Bambara and promote food security

**Other information discussed:**

Three months for harvesting Bambara groundnut after planting and yields four tonnes per hectare. What is the cost effectiveness over planting other crop?

## GROOUP MEMBERS

- |                          |           |
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