

**A half-day international workshop on Bambara groundnut (*Vigna subterranea* (L.) Verdc.) co-hosted by the CSIR-Crops Research Institute of Ghana and Crops for the Future Research Centre (CFFRC).**

- **24<sup>th</sup> September, 2013**

**BRIEF OVERVIEW OF BAMBARA  
GROUNDNUT (*Vigna subterranea* (L.) Verdc.)  
RESEARCH IN GHANA**

**Joseph Nketiah Berchie  
CSIR-Crops Research Institute  
Kumasi, Ghana.**

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- Guert (1959) has undertaken a study on bambara groundnut titled “leguminous food crops other than groundnut in Ghana”. The faculty of Agriculture of the University of Ghana Legon has become a major centre for bambara groundnut research in Ghana.
  - Doku, E.V. also from the University of Ghana described as the Apostle of bambara groundnut in Ghana did extensive work on bambara groundnut coming out with several publications. A few of them include;
  - Doku E.V. (1968) Flowering, pollination and pod formation in bambara groundnut (*Voandzeia subterranea*) in Ghana. The author reported limited and conflicting information on flowering and mode of pollination of bambara groundnut .

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- He observed that both cross pollination and self pollination take place in varying degrees on the crop and that the extent of cross pollination may be greater in landraces with a more open habit whereas the bunch types are more likely to be self pollinating.
  - Doku and Karikari (1971) reported that the cultivated bambara groundnut originated from *Vigna subterranea var spontanea* which evolved from a series of gradual changes among them being the switch from open to bunched growth habit and outbreeding to inbreeding with a reduction in shell thickness.

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- Doku in a country report on bambara groundnut production in Ghana reported that inadequate research on the crop has resulted in the decline of bambara groundnut which used to be canned in Ghana relative to soybean which has received considerable material and financial support. Despite this bambara he observed remains the 3<sup>rd</sup> largest food legume in Ghana.



Karikari S.K. a student of Doku who also did extensive work on the crop within and outside Ghana in a paper titled “Correlation studies between yield and some agronomic characteristics in bambara groundnut (*Voandzeia subterranea* Thouars)” Ghana Journal of Agriculture, 1972) observed that bambara groundnut yield was highly significant and positively correlated with days to first germination and maturity, number of pods/plant, number of seeds/pod and 100 seed weight.

Karikari (1969) used petiole: internode ratio to group landraces collected from local farmers.

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- Doku and Karikari (1971) observed that bambara groundnut could be canned in Ghana and over 40,000 cans of various sizes were produced annually and they tasted like baked beans.

- The Food Research Institute of the Council for Scientific and Industrial Research (CSIR) (CSIR-FRI) in a study on Marketing and processing of bambara groundnut with the support of DFID reported that cooking time in bambara groundnut can be reduced by half by pre-soaking and cooking the seed with a locally available rock salt “kawe” ( $\text{Na}_3\text{CO}_3 \cdot \text{Na}_3\text{HCO}_3 \cdot 2\text{H}_2\text{O}$ ). Plahar et al.

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- Kumaga *et al.* (2002) reported that minor season cultivation of bambara groundnut in Ghana yields higher than the major season.

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- H.K.Adu-Dapaah and R.S. Sangwan (2004) improving bambara groundnut productivity using gamma irradiation and in vitro techniques at the CSIR-Crops Research Institute reported that radiation and and mutagens may be used to generate new genetic combinations or increase variability in even closed populations and that genetic variance increased in all the characters they studied with increase of more than four times over the unirradiated.
  - Joseph Nketiah Berchie also of the CSIR-Crops Research Institute has also undertaken a number of research on bambara in Ghana. These include:
    - Practices and constraints in bambara groundnut production, marketing and consumption in Ghana (Journal of Agronomy, 2010)

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- Effect of seed priming on seedling emergence and establishment of four bambara groundnut landraces (*Journal of Agronomy*, 9 (4) 2010)
  - Evaluation of five bambara groundnut landraces to heat and drought stress in the Upper East Region of Ghana (*African Journal of Agric Science* 7(2) 2012)
  - Effect of sowing date on the performance of bambara groundnut *Acta Horticulture*, 979, 2013
  - Yield evaluation of three early maturing bambara groundnut landraces (*Journal of Agronomy* 9(4), 2010.

- Larry J.K. *et al.* working on the effect of soil moisture status on seed quality of bambara groundnut observed that moisture content 50- 60 % favoured good size and protein content than 30- 40 % and >70 %.
- Afoakwa and Mensah reported that the optimal pre-processing conditions required to achieve the optimum quality of canned bambara groundnut were blanching time of 5 minutes, soaking time of 12 hrs and soaking in sodium hexametaphosphate  $(\text{NaPO}_3)_6$  of 0.5 concentration

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- The Kwame Nkrumah University of Science and Technology (Faculty of Agriculture) is also involved in research on bambara groundnut.
  - CSIR- Savannah Agricultural Research Institute (CSIR-SARI) is undertaking research on bambara groundnut in the savannah agroecology.
  - The CSIR-Crops Research Institute is also undertaking research in the Transition, Savannah and Coastal agroecologies of the country.