Enhancing the Peanut Value Chain, from Processing to Marketing of Peanuts and Peanut Products in East Africa (Uganda) and West Africa (Ghana)

UGA-GP3MT – University of Georgia Global Peanut Product, Processing and Marketing Team

Project 127-M.S. Chinnan; Project 165-W.J. Florkowski; Project 166-A.V.A. Resurreccion

Quality improvement of peanut products at Makerere University, Uganda

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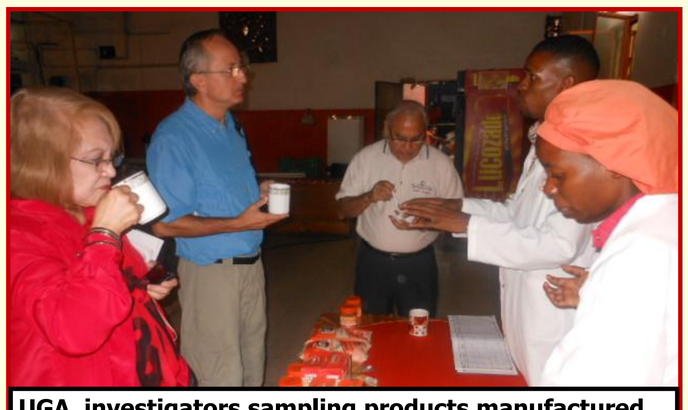
Products exhibited at Makerere University Booth, Uganda International Trade Fair, Kampala, Uganda.

UGA investigators with industry partner (SESACO, Ltd.) at the Uganda International Trade Fair, Kampala, Uganda.

UGA and Makerere University investigators with the Managing Director of industry partner at SESACO Ltd. manufacturing facility, Kampala, Uganda.



UGA investigators sampling products manufactured by industry partner (SESACO, Ltd. Kampala, Uganda) at the conclusion of the plant visit.

STABILIZATION OF PEANUT BUTTER FROM SMALL-SCALE PROCESSORS IN UGANDA:

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Background

One of the major problems faced by small-scale processors of peanut butter is oil separation after packaging. This greatly reduces shelf life and market acceptability of the product. Commercial peanut butter stabilizers are expensive and not readily available on the Ugandan market. Thus, the objective of this study was to develop and standardize a method for production of a stable and smooth peanut butter at pilot level.

Methodology

Peanut butter was processed from local peanut varieties in the Food Technology Pilot Plant, Makerere University, following the methods used by PAGRIENT (U) Ltd, and Food Engravers, both which are small-scale industries that process peanut butter.

Fig. Small Scale Peanut butter processing equipment

During processing, stabilization studies were conducted using the following treatments:

- Addition of shortening/hydrogenated fat (Kimbo, Margarine or Tamu)
- Addition of lecithin
- Conditioning of peanut butter at 4^0C for 22 hrs, immediately after processing
- Various combinations of the above treatments
- Oil separation was visually ranked as very low, low, medium and high
- Samples were observed every week for oil separation for 5 months

Conclusions and recommendations

Oil separation in peanut butter can be prevented (stabilized) using locally available hydrogenated fat and lecithin which can be used by small-scale processors. However, it is important to establish the sensory attributes and acceptability of the peanut butter stabilized using these materials.

Peanut butter with oil separation

Stabilized peanut butter

Results and Discussion

Table 1. Treatments used during the study and the status of peanut butter stability after 5 months

Treatment	Peanut butter status
No fat, no lecithin, no conditioning	Oil separation seen, high
No fat, no lecithin, conditioning	Oil separation seen, low
3% Tamu, no lecithin, no conditioning	Oil separation seen, high
10% Kimbo, no lecithin, no conditioning	Oil separation seen, medium
3% Kimbo, no lecithin, no conditioning	Oil separation seen, low
3% Kimbo, 1.5% lecithin, no conditioning	Oil separation seen, very low
3% Kimbo, 1.5% lecithin, conditioning	No oil separation seen
3% Margarine, no lecithin, no conditioning	Oil separation seen, medium
3% Margarine, 1.5% lecithin, no conditioning	Oil separation seen, very low
3% Margarine, 1.5% lecithin, conditioning	Oil separation seen, very low
5% Tamu, 5% Kimbo, no lecithin, no conditioning	Oil separation seen, medium
5% Tamu, 5% Kimbo, 1.5% lecithin, conditioning	No oil separation seen
20% Margarine, no lecithin, no conditioning	Oil separation seen, very low
20% Margarine, 0.8% lecithin, no conditioning	No oil separation seen
20% Margarine, 0.8% lecithin, conditioning	No oil separation seen

- Results indicate that most stable and perhaps economic peanut butter is the one produced using 5% Kimbo, 1.5% lecithin and conditioned at 4^oC for 22 hours.
- Elevated levels of margarine stabilized the butter but affected its smooth texture

Acknowledgment

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