

Presented at AAUN meeting – 16 November 2016

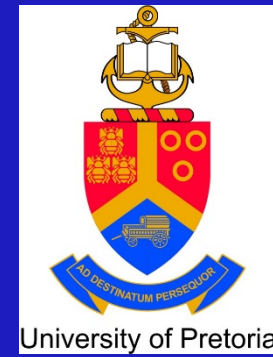


Prof. K. Falade (PI)

Dr. O. Ezekiel



Dr. Daniel N. Sila



Prof. KG Duodu
Prof. JRN Taylor
Prof. A Minnaar (Late)
Prof. HL de Kock
Dr. N Emmambux



Dr. S. Johnson
Prof. V. Jayasena
Dr. R. Coorey

2014 (Year 1) - PRDF 2013/14

Objectives

- **Projects:** Development and execution of research projects
- **Capacity development:** Mentoring and training of early career scientists and post graduate students
- **Networking:** Establishment and strengthening of networks
- **Funding sourcing:** Alternative funding for continued research development
- **Knowledge dissemination:** Professional meetings and publications

Project:

Value chain analysis: improved nutrition & health of children under 5 years and pregnant & lactating others through the production of high quality extruded foods supplemented with leaf and legume proteins



2014 Outcomes – Planning and Capacity development



Planning meetings



Capacity development

Project and publication plans and establishment of networks


Mentorship for early career scientists and research funding for students

Networking resulted in access to


- 2013-2014: Curtin University Hadyn Williams Fellowship to Pretoria
- Curtin University PhD International Scholarship
- South African NRF Mobility Grant, Technical Visit to Curtin, ZAR12 000,

2014 Publications and Professional meetings


Publications



Falade, A.T., Emmambux, M.N., Buys, E.M. and Taylor, J.R.N. (2014). Improvement of maize bread quality through modification of dough rheological properties by lactic acid bacteria fermentation. *Journal of Cereal Science* (in press). (20%)




Falade, K. O. and Christopher, A. S. (2015). Physical, functional, pasting and thermal properties of flours and starches of six Nigerian rice cultivars. *Food Hydrocolloids*, 44, 478-490. (20%)



Falade, K. O. and Nwajei, C. P. (2014). Physical, proximate, functional and pasting properties of four non - and γ -irradiated bambara groundnut (*Vigna subterranean*) cultivars. *International Journal of Food Science and Technology*, 50, 640–651. (20%)

Professional meetings



SAAFoST chapter meeting at Dept. of Food Science, University of Pretoria in Jan 2014. Presentations made by Profs Falade, Taylor and Jayasena

SAAFoST chapter meeting at University of Pretoria in April 2014. Presentation made by Dr. Stuart Johnson

AAUN Forum, University of Pretoria in June 2014.

2014 – Other outputs



- Pretoria and Curtin Memorandum of Understanding on **Development of Research Collaboration** in the Field of Food Security relevant to Australia and sub-Saharan Africa, April 2014 (100%)



- **Joint Pretoria-Curtin Training Workshop**, *Natural gluten-free bread and baked goods technologies using traditional non-wheat grains*, -6 Sept 2013, 1-day workshop at Curtin for 12 Graduate students and Staff of Curtin. (50%)



- **Free attendance of Extrusion Africa Training Seminar and Conference Week for University of Pretoria post-graduate students** Kara Muller, Ope Ogundele, Helen Zewdie, Nosihle Dhadla and Dolapo Olidiran **and staff members** Prof. A Minnaar, Dr. MN Emmambux, Mr. B Dlamini. 5-8 August 2014 at North-West University, Potchefstroom



- **Installation of extruder resulting in optimization of extrusion cooking** Extruder was designed by CFAM, North-West University and commissioned at University of Pretoria in April 2014

2015 (Year 2) - PRDF 2014/15

Integrated design of highly palatable extruded and other foods for nutrition



PhD Students

2015-2017: Chidinma Okafor **Ph. D student**. Research on “*Chemical, adsorption, sensory and microbial characteristics of extruded bambara groundnut-based ready-to-eat breakfast cereal*” (70%) Supervised by Prof. Falade at University of Ibadan

2015-2017: Ms KAP Dovi **Ph. D student**. Research on “*Gluten-free composite dough products from sorghum and lupin*” (75%). Jointly supervised by Dr. Johnson of Curtin University and Prof Taylor of University of Pretoria

Other funding

Dr Ezekiel : Submission of proposal to the Tertiary Education Funding Agency in Nigeria- \$5,000 (100%)

Prof Falade: Submission of proposal to the Tertiary Education Funding Agency in Nigeria-\$20,000 (100%)

2015 Manuscripts under preparation



Johnson, S., Chatur, P., Coorey, R., Licata, R. and Falade, K. Effects of extrusion cooking on some nutritional and health attributes of sorghum and sorghum-composite foods. *Plant Foods for Human Nutrition*. Manuscript under preparation (98%)



Falade, K. O. and Gabari Characterisation of flour, starch and protein isolates of lima beans. Manuscript under prep. (40%)



Lahja Ndeshipanda, A., Chatur, P., Coorey, R. and Johnson, S. Effect of sugar and salt addition on instrumental texture and consumer acceptability of extruded sorghum-maize snack food. (20%)



Falade, K. O and Okoronwo. Characterisation of flour, starch and protein isolates of pinto bean cultivars. (40%)

Umwungerimwiza, D., Solah, V. and Johnson, S. Changes in sorghum (*Sorghum bicolor*) protein due to germination and fermentation during an injera making process. (20%)

Margaret Mbugua, M., Jayasena, V., Coorey, R. and Johnson, S. Effect of Australian sweet lupin variety on water-binding capacity and viscosity of kernel fibre under conditions simulating the human gastrointestinal tract. (20%)



Integrated whole-of-grain utilisation of cereal-legume composite for extruded and other foods targeted at specific consumers' nutrition, health and wellbeing needs

2016 (Year 3) – Capacity devtpt and funding sources



Capacity development

- **PhD students:** Chidinma Okafor Ph. D student (Univ of Ibadan) and Dolapo Oladiran (Univ. of Pretoria)
- **MSc students:** (Univ. of Pretoria) research on gluten free pasta from cowpea flour AND nutrient compositional aspects of a sorghum-lupin protein composite protein-enriched instantised porridges made using extrusion cooking.
- **Visiting Endeavour fellow** to Curtin, Dr. Zafar Iqbal: Manuscript completion for planned for submission to the Journal Plant Food or Humans Nutrition.
- **Post-Doc:** Research on production of starch based fat replacer via extrusion process (Pretoria).

Other funding

- Funding sourced for **purchase of extruder and planned installation of extruder** (University of Ibadan). Intended for future collaborative projects.
- **Collaborative research and product development** with Promasidor Nig Ltd
- Industry **collaborative proposal with Paediatric Food Services** (Curtin University) on design and clinical substation of benefits of new supplementary extruded foods from sorghum and lupin.

Summary and Conclusion

Objectives being met

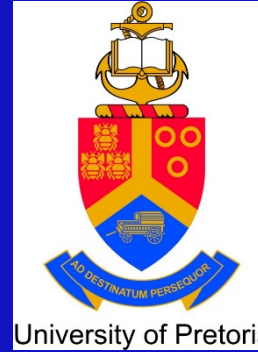
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Acknowledgements



University of Ibadan



University of Pretoria



Curtin University

Research Students and Colleagues

AAUN AUSTRALIA AFRICA
UNIVERSITIES NETWORK



Thank you