



UNIVERSITY OF BENIN,
BENIN CITY

3rd

University of Benin

Annual Research Day (UBARD) Conference



BOOK OF PROCEEDINGS

TABLE OF CONTENTS

<i>Behavioural Changes in Children with Sickle Cell Disease in Benin City, Nigeria</i> Israel-Aina, Y.T. and Okunola, P.O.	1
<i>Social Support and Self-Management of Type 2 Diabetes in Edo State</i> Afemikhe, J.A.	4
<i>Antithrombin Levels in Newly Diagnosed Type 2 Diabetics seen at the University of Benin Teaching Hospital, Benin City.</i> Nwogoh, B. and Akaba, K.	7
<i>Knowledge and Practice of Breast Self-Examination among Female Undergraduates in a Tertiary Institution, South-South Nigeria: Its Implications for Early Detection of Breast Cancer</i> Obarisiagbon, O.E. and Adeleye, O.A.	10
<i>Do Health Care Workers practice what they say? A Case Study of Breastfeeding among Medical Women</i> Sadoh, A.E., Sadoh, W.E. and Oniyelu, P.	13
<i>Anaesthetic Management of a Parturient with Pulmonary Oedema Complicating Severe Pre-Eclampsia: A Case Report.</i> Imarengiaye, C.A., Edomwonyi, N.P., Ochukpue, C.J. and Osakue, J.E.	16
<i>Free Maternal and Child Health Services in Delta State: How free is it?</i> Enuku, C.A. and Onwujekwe O.E.	19
<i>Pioneering Haematopoietic Stem Cell Research and Transplantation for the Cure of Sickle Cell Disease in Sub-Sahara Africa: A Ten Months Report of a Collaboration with a Private Healthcare Centre in Benin City Nigeria</i> Bazuaye, G.N., Nwogoh, B. and Isreal-Aina Y.T.	23
<i>Assessment of the Knowledge and Features of Post-Traumatic Stress Disorder among Patient who Newly Recovered from Trauma at the University of Benin Teaching Hospital, Benin City</i> Aina, I.O. and Omoregbee, C.O.	26
<i>Awareness of Childhood Epilepsy – A Study of Traders in Benin City, Nigeria</i> Okunola, P.O. and Nwaneri, D.U.	29
<i>Evaluation of Undergraduate Training in Emergency Psychiatry in a Nigerian University</i> Aina, I.O. and Israel-Aina, Y.T.	33
<i>A Review of Primary Malignant Cutaneous Soft Tissue Tumours Seen in a Tertiary Institution</i> Imasogie, D.E. and Azeke, A.T.	37
<i>Perception of End of Life Care among Nursing Students in a Tertiary Institution in Edo State, Nigeria</i> Esewe, R.E. and Duru, O.B.	40
<i>Evaluation of Pathological Effect of Bisphenol A and Di(2-Ethylhexyl)Phthalate on Weight, Liver and Liver Function Parameters of Albino Wistar Rats</i> Omorodion, N.T., Achukwu, P.U. and Ogbuabor, A.O.	43

Feeding Disorders in Children Attending the Neurology Clinic in a Tertiary Hospital in Southern Nigeria Atimati, A.O. and Okunola, P.O.	46
Thermoregulatory Outcome of Chinchilla Rabbits Fed on Extract of <i>Prosopis africana</i> Odozi, E.B. and Odozi, I.P.	48
Rheumatic Heart Disease amongst Children in Benin City, Nigeria Sadoh, W.E. and Oguejiofor, C.	50
Bullying among In-School Adolescents in Benin City: An Assessment of Prevalence and Pattern Ogboghodo, E.O., Omosigho, E.F. and Omuemu, V.O.	53
Benign Prostatic Hyperplasia and Prostatitis amongst Monks aged 45-70 in Enugu State, Nigeria between 2008-2013 Achukwu, P.U. and Omorodion, N.T.	57
Micronutrient depletion in Malaria parasite infected subjects in Ekpoma and environs Dic-Jiewere, O.E., Osadolor, H.B., Elekhebor, J.E., Airhomwanbor, K.O., Ehimare, R.I., Idehen, I.C. and Osarobo, E.	60
Genotoxins in Buccal smear and Peripheral blood film of Saw-millers in Benin City, Nigeria Erameh, T.O. and Odigie, B.E.	63
Unilateral Transversus Abdominis plane block after Spinal Anaesthesia for Appendicectomy does not cause significant Haemodynamic Perturbations Imarengiaye, C.A., Idehen, H.O., Edomwonyi, N.P. and Imarengiaye, C.O.	66
Intracranial Septic Complications of Rhinosinusitis Onyeagwara, N.C. and Okhakhu, A.L.	69
Preliminary Investigation on the Effects of Atrazine on the Liver and Kidney of Wistar Rats Momodu, O.I. and Chidozie, P.	73
Functional Motor Recovery in Stroke Survivors-Determinants in a Sub-Saharan African Stroke Unit Imarhiagbe, FA. and Abidakun, O.A.	76
A Simple Periodontal Pocket Reduction Treatment Technique- AZODO Suture Azodo, C.C.	79
High Prevalence of Selenium Deficiency in Children with Sickle Cell Anaemia in Benin City Osueni, G.O., Odunvbun, M.E. and Atimati, A.O.	82
Regulation of Serum Lipid Profiles in Albino Male Wistar Rats Treated with <i>Phoenix dactylifera</i> Fruit Extract Atoigwe, B.E. and Achukwu, P.U.	84
Differential Expression of Alpha-Smooth Muscle Actin (α -SMA) in Salivary Gland Tumours: Any Diagnostic Benefit? Osayande, O. and Omoregie, O.F.	87

Benin Stroke Score in The Diagnosis of Cerebral Infarct: A Pilot Study in Senegalese Africans Imarhiagbe, F.A., Okaka, E.I., Ugiagbe, R.A., Ogunrin, A.O. and Ndiaye, M.M.	90
Transactional Street Sex Workers Serve as a Reservoir for Viral Infections in Benin City Erameh, T.O. and Odigie, B.E.	93
Risk Factors Associated with Head and Neck Cancers in Benin-City, Nigeria Onyeagwara, C.N. and Odai, E.D.	97
Changes in Haemopoietic Growth Markers in HIV Positive Pregnant Women Osime, E. and Osagie, E.	100
Effect of Submucosal Dexamethasone versus Intramuscular Dexamethasone Following Mandibular Third Molar Surgery on Pain, Swelling and Trismus Ukpebor, G.O., Obuekwe, O.N. and Arotiba, J.T.	102
Coconut Milk Maintains Histology of Renal and Hepatic Tissues and Functions including Weight Loss in Animal Models Atoigwe, B.E. and Erameh, O.T.	105
Adult Stroke Registry in West Africa: Profile of 334 In-Patients in the University of Benin Teaching Hospital, Benin City Nigeria Imarhiagbe, F.A., Ogbeide, E. and Ogunrin, A.O.	109
Knowledge of Ludwig's Angina among Final Year Clinical Students in University of Benin Izevbigie, F.A. and Odai, E.D.	112
Post Caesarean Section Pain Management: A Survey of Current Practice at the University of Benin Teaching Hospital Imarengiaye, C.A. and Edomwonyi, N.P.	116
Knowledge and Attitude of Parents Concerning Children with Cleft Lip and Palate Ogordi, P.U., Igben, O.O., Mohammed, B.I. and Ize-Iyamu, I.N.	118
Reproductive Health Status of Adolescents in Benin City, Edo State Ogboghodo, E.O., Omuemu, V.O. and Okojie, O.H.	122
Effect of Oral Intubated <i>Prosopis africana</i> Extract on the Body Weight of <i>Oryctolagus cuniculus</i> Odozi, E.B., Odozi, I.P. and Osadolor, H.B.	126
Assessment of the Nutritional Status of Pre-School Children in Ikpoba – Okha LGA, Benin City, Edo State, Nigeria Obarisiagbon, O.E. and Okojie, O.H.	128
A 7-Year Review of Endodontic Therapy Procedures Carried out on Paediatric Patients. Assessing Our Reality and Which Way Forward Mohammed, B.I. and Chukwumah, N.M.	131
Incidence, Spectrum and Outcome of Congenital Anomalies seen in a Neonatal Intensive Care Unit in southern Nigeria Oluwafemi, R.O. and Abiodun, M.T.	134

Maxillary Lesions: Histopathologic Analysis of Biopsied Cases in an Oral and Maxillofacial Tertiary Care Centre, South- South Nigerian Population Osayande, O. and Egbor, P.E.	137
Knowledge and Attitude towards Vasectomy among Married Men [24-54 Years] in Umunede Kingdom, Ika North-East Local Government Area, Delta State Okafor, F.U. and Omorogbe, C.E.	140
Factors Influencing Journal Publication Choice among University of Benin Lecturers Edetanlen, B.E. and Azodo, C.C.	144
Effects of Mixed Diet Containing <i>Pausinystalia Yohimbe</i> Stem Bark on the Gonad of Male Wistar Rats Momodu, O.I., Uwejigboeguo, R., Shehu, U.B., Sakpa, C.L. and Odiase, E.D	147
Hepatitis B Virus Infection and Prevention: Assessment of Knowledge and Practice among Graduating Dental Nursing Students in Southern Nigeria Okoh, M. and Okoh. D.S.	151
Correlative Studies between Finger Prints of Parents and their Offspring amongst Families attending Clinic at New World Research Hospital Eyaen Benin City, Edo State Ighalo, E.E., Nwanchi, U. and Oriasotie, M.	154
Clinical Profile of Optic Neuropathy in a Tertiary Centre in Benin City Osaguona, V.B. and Ese-Onakewhor, J.N.	158
Influence of Socio-economic Status and Nutritional Knowledge on Haematocrit Status of Pregnant Women in a Tertiary Health Institution in Lagos State: A Cross Sectional Study Seriki-Mosadolurun, J.S., Emanghe, U.E. and Uko-Aviomoh, E.E.	162
Teacher's Awareness of Their Responsibilities to Students in Egor L.G.A Secondary Schools Abolagba, T.K. and Aghenta, J.A.	167
Assessment of Personal Protective Equipment Utilization among Sawmills Workers in Ondo City, Ondo State, Nigeria Owombo, H.O., Akinyemi, O., Owombo, P.T. and Jimoh, K.A.	171
Academic Performance of Inter-Faculty Transfer Students in University of Benin, Benin City Abolagba, T.K. and Nwadiani, M.	174
The Impact of Age, Efficacy of Solution Focused Brief Therapy and Systematic Desensitization on Academic Boredom among Adolescents Egbochuku, E.O. and Adeleke, I.O.	179
Towards Effective Literature Review in Postgraduate Business Education Research: Issues on the Use of Internet Browsers and Search Engines Egbri, J.N.	182
The Effect of the Metacognitive Strategy-Based Method and the Direct Method of Teaching English Listening Comprehension at the Junior Secondary Schools Level Osa-Omoregie, O.D.	185

An Assessment of the Level of Usage of Rehearsal Learning Strategy by Senior Secondary School Students to Enhance Mathematics Performance Osarumwense, J.H.	189
Assessment of Level Of Utilization of Soybean (<i>Glycine Max</i>) among Home Economics Teachers and Students in Edo State, Nigeria Obuh, J.I., Uko-Aviomoh, E. E. and Igbinaduwa, O.	192
Prevalence of Teenage Pregnancy in Nigeria Society Implications for Home Economics Education Otunuga, F.O. and Nwabah, N.I.	196
Assessment of the Level of Skill Acquisition by Post Graduate Students in a Nigerian University for Employment and Entrepreneurship Osaigbovo, L.	199
Effects of Varying Doses of Caffeine Intake on Physical Responses among University Hockey Players in Edo State, Nigeria Efe-Aigbovo, A.	203
 Acceptability and Nutrient Composition of Amala Using Yam and Cocoyam Flours Opaleke, D.O., Hussein, A.A. and Nmon, I.O	207
The Role of Women Education in Political Participation: Implication on Family Stability Adeniji, O.T., Akande, M.A., Gbadebo, C.T. and Imatitikua, O.	210
University Matriculation Examinations as Correlate of First Year Academic Performance of Students of Public Universities in Edo State Osunde, A.U. and Egberha, F.	215
Les Defis Que Constituent les Faux Amis Dans L'apprentissage de Français a Université of Benin Awanbor, J.E.	220
Legitimizing Violence: Official Pronouncements and Police Response to Student Protests in Nigeria Uzebu, E. and Nwaka, J.C.	223
Commodification and Objectification of Women in Hip Hop Music in Nigeria: Implications for Gender Equality Yakubu, M.J.	226
Localising the International Human Rights to Water and Sanitation: A Case Study of Benin City Obani, P. and Olong, M.A.	230
University Security Management: A Case Study of the University of Benin, Nigeria, 1999-2015 Osiki, O.M. and Osarumwense, C.O	234

EDE 012

Acceptability And Nutrient Composition Of Amala Using Yam And Cocoyam Flours

Opaleke, D.O., Hussein, A.A. and Nmon, I.O

Department of Home Economics and Food Science, Faculty of Agriculture, University of Ilorin, Ilorin, Nigeria

Introduction: *Àmàlà* is a Nigerian food made out of yam and/or cassava flour (Ferris *et al*, 1995). Yams are peeled, sliced, turn brown when dried; this gives *àmàlà* its colour (Balogh, 1989). *Àmàlà* is from Western Africa and eaten mostly by the Yoruba people in Nigeria (FAO, 1990). It could be served cleaned, dried and then blended into a flour, also called *elubo*. Yams are white in colour but with a variety of *obe* (soups), such as *efo*, *ilá*, *ewédú*, *ogbono* or *gbegiri* (black-eyed beans soup).

Cocoyam, as a traditional crop, is consumed in all the 36 States of Nigeria, especially the Southeast States like Anambra State, though it is generally regarded as poor man's food. It is consumed in various forms, boiled, fried, pounded or roasted. It can also be processed into chips (*achicha*) which has long shelf life and provides food all year round, especially during lean planting season. Cocoyam leaves are also used as vegetable for preparing soup in various parts of the world (Nwabuor, 2001; Asadu 2006 as cited in Onwubuya and Ajani, 2012). Cocoyam corms are of great economic, social and nutritional importance to the people. The corms supply easily digestible starch and are known to contain substantial amounts of protein, vitamin C, thiamine, riboflavin, niacin and significant amount of dietary fiber (Enwelu, Asogwa, Nwaleji and Ezeano, 2014).

The study was conducted to determine the proximate and sensory qualities of *amala* prepared from yam flour, cocoyam flour and yam fortified with cocoyam flour.

Statement of the Problem: Yam has become very expensive and almost out of reach of the masses. Cocoyam appears cheaper and readily available and under exploited and could be a substitute for yam for production of *amala*.

The findings of this study will be a source of information to the general public on the organoleptic and nutritional components of Cocoyam *amala* and its yam blends part of a balanced diet or serve therapeutic purpose thereby reducing its underutilization.

Materials and Methods: Dried yam (*Elubo Igbodo*) was bought at Ago Market Ilorin and cocoyam was bought from a subsistence farmer at Sawmill area, Ilorin, Kwara State. The yams were shed and sundried during the dry season and made into flour.

The cocoyam cormels were cleaned, pilled and cut into small size. They were then put immediately inside water to avoid discolouration/browning. The cormels were then parboiled and steeped overnight for about 12hours, drained, sundried and made into flour. The yam ad cocoyam flour were package in an air tight polythene for storage.

The cocoyam flour were mixed into yam flour in different proportions and subsequently used to prepare *amala*. *Amala* was prepared in different ratios.

Table 1: Formulation of Flour for Cocoyam + Yam *Amala*

Formulation	Cocoyam flour%	Yam flour %
YO (A)	100	100
CO (B)	100	0
CY1 (C)	80	20
CY2 (D)	60	40
CY3 (E)	50	50
CY4 (F)	40	60
CY5 (G)	20	80

Key: YO (A)= 100% Yam flour only; CO (B)= 100% Cocoyam flour only; CY₁ (C)= 80% Cocoyam flour and 20% Yam flour; CY₂ (D)= 60% Cocoyam flour and 40% Yam flour; CY₃ (E)= 50% Cocoyam flour and 50% Yam flour ; CY₄ (F)= 40% Cocoyam flour and 60% Yam flour; CY₅ (G)= 20% Cocoyam flour and 80% Yam flour

Table 2: Proximate composition of *amala* made from (i) yam flour (ii) cocoyam flour and (iii) yam + cocoyam flour

Sample	Moisture (%)	Ash (%)	Crude Protein (%)	Fat & Oil (%)	Fibre (%)	Carbohydrate (%)
YO (A)	70.48	2.23	3.46	1.87	1.04	20.92
CO (B)	70.49	2.22	4.12	2.05	1.13	19.99
CY ₁ (C)	70.68	2.40	4.32	1.96	1.12	19.52
CY ₂ (D)	72.19	2.32	4.50	2.10	1.14	17.75
CY ₃ (E)	71.52	2.30	4.66	2.15	1.25	18.12
CY ₄ (F)	70.77	2.32	4.42	2.14	1.25	19.10
CY ₅ (G)	71.52	2.31	4.38	2.14	1.15	18.48

Key: YO (A)= 100% Yam flour only; CO (B)= 100% Cocoyam flour only; CY₁ (C)= 80% Cocoyam flour and 20% Yam flour; CY₂ (D)= 60% Cocoyam flour and 40% Yam flour; CY₃ (E)= 50% Cocoyam flour and 50% Yam flour; CY₄ (F)= 40% Cocoyam flour and 60% Yam flour; CY₅ (G)= 20% Cocoyam flour and 80% Yam flour

Table 2 revealed the nutritional composition of *amala* made from (i) yam flour (ii) cocoyam flour and (iii) yam + cocoyam flour. The results showed the values of Moisture, Ash, Protein, Fat & oil, fibre, and Carbohydrate contents in percentages (%).

The table revealed that Moisture contents of the samples ranged from 70.48% to 72.19%. Sample CY₂ (D)= 60% Cocoyam flour and 40% Yam flour has the highest moisture content (72.19%) while the sample YO (A)= 100% Yam flour only has the least moisture content (70.48%).

Ash contents ranged from 2.22 % to 2.40 %, Sample CY₁ (C) = 80% Cocoyam flour and 20% Yam flour has the highest ash content (2.40%) while CO (B) = 100% Cocoyam flour only has the least ash content (2.22 %).

Crude Protein contents of the samples ranged from 3.46 % to 4.66 % .Sample CY₃ (E)= 50% Cocoyam flour and 50% Yam flour has the highest protein content (4.66%) while YO (A)= 100% Yam flour only has the least protein content (3.46%).

Fat & Oil contents of the samples ranged from 1.87% to 2.15%. Sample CY₃ (E)= 50% Cocoyam flour and 50% Yam flour has the highest Fat & Oil content (2.15%) while YO (A)= 100% Yam flour only has the least Fat & Oil content (1.87%).

Fiber contents of the samples ranged from 1.04% to 1.25%. Sample CY₃ (E) = 50% Cocoyam flour and 50% Yam flour and CY₄ (F) = 40% Cocoyam flour and 60% Yam flour has the highest Fibre content (1.25%) while YO (A) = 100% Yam flour only has the least Fibre content (1.04%).

Carbohydrate contents ranged from 17.75% to 20.92 %. Sample YO (A) = 100% Yam flour only has the highest Carbohydrate content (20.92%) while CY₂ (D) = 60% Cocoyam flour and 40% Yam flour has the least Carbohydrate content (17.75%).

Findings

The following were the major findings.

1. The demographic characteristics shows that 08(27.70%) male subjects and 22(73.30%) female subjects participated in the study.
2. The result of nutritive composition of *amala* made from (i) yam flour (ii) cocoyam flour and (iii) yam + cocoyam flour in research question one showed that the Sample CY₂ (D) has the highest moisture content (72.19%) but low in carbohydrate (17.75%), while the sample YO (A)= 100% Yam flour only has the least moisture (70.48%), protein (3.46%), fiber (1.04), and fat and oil (1.87) content but high in carbohydrate (20.92). Sample CY₁ (C) has the highest ash content (2.40%) while CO (B)= 100% Cocoyam flour only has the least ash content (2.22 %). Sample CY₃ (E)= 50% Cocoyam flour and 50% Yam flour has the highest protein (4.66), Fat & Oil (2.15) and fiber content (1.25).
3. The result of organoleptic properties in research question two revealed that the sample YO was the most preferred in appearance while the sample CY₁ was the most preferred in aroma, taste, texture, and acceptability and the sample CY₂ was least preferred in appearance, texture, and acceptability. CO (B)= 100% Cocoyam flour only was the least preferred in taste.
4. Result of research question three on level of acceptability of *amala* made from (i) yam flour (ii) cocoyam flour and (iii) yam + cocoyam flour showed that sample CY₁ (C)= 80% Cocoyam flour and 20% Yam flour only was the most preferred while the sample CY₂ (D)= 60% Cocoyam flour and 40% Yam flour only was the least preferred

5. Result of hypothesis one revealed a significant difference ($P < 0.05$) in the acceptability of *amala* made from (i) yam flour only and (iii) yam + cocoyam flour of varying proportions.
6. The Result of hypothesis two also revealed a significant difference ($P < 0.05$) in the acceptability of *amala* made from (i) cocoyam flour only and (iii) yam + cocoyam flour of varying proportions.

Conclusion: Based on the findings, the study concludes that *amala* made from yam flour and cocoyam flour shows great potential for use as an ingredient in the food consumption and in food industry based on its nutritional value, and sensory properties. It is well accepted and combining the two flours increase its nutritive contents cocoyam flour and yam flour is a good source of protein, fat & oil and fiber content and in combination provides all other nutrients such as carbohydrate, moisture and ash. Both also prove useful to impart desirable organoleptic properties to foods as sample CY₁ (C)= 80% Cocoyam flour and 20% Yam flour *only* was the most preferred while the sample CY₂ (D)= 60% Cocoyam flour and 40% Yam flour *only* was the least preferred.

Recommendations: Based on the findings of this study, the following recommendations are made

1. *Amala* made from yam flour and cocoyam flour should be incorporated into products to increase the intake of balanced diet by the consumers
2. Flour expansion from yam flour and cocoyam flour would represent a value-added alternative for the cocoyam and yam crop harvested with possible increased profitability for the farmer,
3. Yam flour and cocoyam flour is recommended for consumption to expanding the available options of starchy foods for local consumers.

References

- Asadu, A. (2006) Causes of decline in cocoyam production among farmers in Enugu state. Department of agricultural extension, University of Nigeria Nsukka, 2.
- Enwelu, I., Asogwa, N., Nwalieji, H. & Ezeano, C. (2014) Assessment of constraints to cocoyam consumption in selected communities of Enugu State, Nigeria. *International Journal of Research in Applied Natural and Social Sciences*, **2**(3): 31-40.
- Ferris, R., Uwaegbute A., Osho S., & Obatolu, V. (1995) "Acceptability and chemical evaluation of fortified yam (*Discorea spp.*) products". *Postharvest technology and commodity marketing: proceedings of a postharvest conference 2 Nov. to 1 Dec. 1995. Accra, Ghana*: 172. ISBN 978-978-131-111-6.
- Nwagbo, C. (2011). Cocoyam life magazine food and wine. Chineloeby@yahoo.com. Last accessed 9th August 2012.
- Onwubuya, E. & Ajani, E. (2012) Strategies for improving production and processing of cocoyam among women farmers in Anambra State, Nigeria. *Universal Journal of Education and General Studies*, **1**(6): 169-173.