ScienceQuest
CONNECTING MINDS, SHAPING TOMORROW

ABSTRACT BOOK

Global Summit on

Food Innovation and Nutritional Science

MARCH 16-18

Barcelona, Spain

2026

Mail: FoodMeet-2026@science-quest.com
Website: https://www.nutritionalscience.thesciencequest.org/

Table Of Contents

6 Title: Determination Of The Optimal Wall Material Mixture For The Encapsulation Of Cocoa Pod Husk Polyphenols By Spray Drying Using Response Surface Methodology

Liliana Esther Sotelo-Coronado, *Universidad de CórdobaColombia.*

7 Title: Community-Based Production and Acceptability of Fortified RUF Biscuits in Rural Indonesia

Fetriyuna Fetriyuna, *Department of Food Industrial Technology, Padjadjaran University, Indonesia*

8 Title: Central obesity and its associated factors among adults in Southwest Ethiopia

Asresash Sebeta Afework, *Southwest Ethiopia Regional Multisectoral Nutrition Advisor, Ethiopia*

9 Title: Towards Sustainable Packaging: Industry Perspectives on Biobased Transitions Across Global Economies

Seun Obasa, *London South Bank University, London, UK*

10 Title:Phytochemical and nutraceutical effects of Ipomoea asarifolia on the blood lipid profile and oxidative stress biomarkers of broiler chicken

Oluwafemi A. Agbetuyi, *Federal University, Oye Ekiti, Nigeria*

FEATURED TALKS

11 Title: Lactobacillus paracasei N1115 Alleviates Glucocorticoid-Induced Osteoporosis via the Gut-Bone Axis by Modulating Butyrate Production

WANG Da, *Northwest A&F University, China*

12	Title:Lime seed Improved Meat quality of Cobb 500 broiler chickens
	KPOSSOU Romario Florent, *University of Lome*
13	Title: Smart processing of chickpea flours: integration of germination, selenium biofortification, extrusion, and sifting to enhance nutritional and techno-functional quality
	Frineth de la Luz Limón Aguilera, *Tecnologico de Monterrey, School of Engineering and Sciences, México*
14	Title: Establishing national food priority in Saudi Arabia: developing a priority matrix for food
	Ghadir Fallata, *Saudi Food and drug athourity, Riyadh, Saudi Arabia*
15	Title: Safeguarding Public Health from Industry Interference: The Role of Policy, Advocacy, and Institutional Communication in Cancer Prevention
	Pablo Campins Bover, *Spanish Association Against Cancer (AECC), Spain*
16	Title: Anticancer Activity Investigation of Areka ya Makgoma Herbal Concoction.
	Kamogelo Millicent Mmereke, *PhD Candidate, University of South Africa*
17	Title: Development of Preformulation Forms of C14 and P8 Compounds and Evaluation of Their Antineoplastic Activity in PDAC Cell Lines
	Aylin Ivette Leon Chacon, *the Center for Research and Advanced Studies of the National Polytechnic Institute (CINVESTAV), Mexico.*

Elena Del Rocío Coyago Cruz
Universidad Politécnica Salesiana, Ecuador

Variation in the content of carotenoids and total phenolic compounds in red fruits at different stages of ripeness

Abstract

Red fruits have gained significant importance in recent years due to their high concentration of bioactive compounds that could potentially benefit health. However, limited research has analysed how the degree of ripeness influences the accumulation of these metabolites. Against this backdrop, this study aimed to quantify the levels of carotenoids and phenolic compounds in various red fruit varieties at different ripeness stages (M0%, M50%, M80% and M100%). The species studied were Castilian blackberries (Rubus glaucus), mortiños (Vaccinium meridionale), 'Tayberry Buckingham' raspberries (Rubus × hybrid), 'Heritage' raspberries (Rubus idaeus) and blueberries (Vaccinium corymbosum). Extraction was performed using microextraction, and the compounds were quantified using a spectrophotometer with a microplate reader. Phenols were quantified using the Folin-Ciocalteu method. The results showed significant variation between species and ripeness stages. The highest concentrations of total carotenoids were recorded in mortiño at M0% (435.78 mg/100 g DW), 'Heritage' raspberry at M80% (187.6 mg/100 g DW), 'Tayberry Buckingham' raspberry at M0% (329.9 mg/100 g DW), blueberries at M100% (571.4 mg/100 g DW) and blackberries at M0% (190.4 mg/100 g DW). The behaviour of total phenols, on the other hand, was different, thus mortiño had the highest value in M80% (8.83 mg GAE/100 g DW); Heritage raspberries had the highest value in M0% (47.5 mg GAE/100 g DW); Tayberry had the highest value in M50% (12.78 mg GAE/100 g DW); blueberries had the highest value in M80% (8.8 mg GAE/100 g DW); and blackberries had the highest value in M0% (12.08 mg GAE/100 g DW). These results highlight the importance of determining the optimal harvest time to maximise the bioactive potential of these fruits for nutritional

and functional applications, as both species and ripeness level are decisive factors in the accumulation of total carotenoids and phenols.

Biography

Elena Coyago Cruz holds a PhD in Agricultural, Food, Forestry and Sustainable Rural Development Engineering from the University of Seville, a Master's degree in Nutrition and Dietetics from the International Ibero-American University of Mexico and a diploma in Nutrition for Ageing from the University of Antioquia. She is a representative of the Department of Life Sciences' management at the Salesian Polytechnic University. She has published more than 50 articles in renowned journals and has served on the editorial boards of prestigious publications.

Dayawatee Goburdhun
Department of Agricultural and Food Science, Faculty of Agriculture, University of Mauritius

Unveiling Added sugars and non-nutritive sweeteners in processed food products

Abstract

Non-communicable diseases, particularly diabetes, is a significant health challenge in the Republic of Mauriius and around the globe. There is a growing interest in using non-nutritive sweeteners (NNS) in food products, as they provide low/zero calories. This studyexplored the presence of non-nutritive sweeteners (NNS) and added sugars in processed foods on the Mauritian market and to explore knowledge, attitudes, and practices among the consumers regarding non-nutritive sweeteners (NNS) and added sugars.

The labels of 525 processed food products were examined and information on the list of ingreadients was retrieved to determine presence of added sugars and NNS. A consumer survey was conducted with 300 university students to explore knowledge, attitudes, and practices, through face-to-face interview. Data were analysed by using Excel and Statistical Package for the Social Sciences (SPSS).

73.9% of the food products contained added sugar, 2.3% contained only NNS, 4.0% contained both added sugar and NNS, and 19.8% contained neither component out of 525 products. 19 distinct types of added sugars were present, with sugar (sucrose) being the most prevalent. Additionally, six distinct types of NNS were found with acesulfame potassium being most common. From the consumer survey, the mean (±SD) scores were 46.8% (±14.2%) for knowledge and 40.1% (±28.9%) for practices for the 300 respondents. The responses relating to attitudinal statements reflected unawareness of natural NNS and a lack of confidence in identifying added sugars and NNS on food package and revealed concerns about the effects of non-nutritive sweeteners on the health. 63.3% reported that they read labels and 60.7 % respondents indicated

their intentiona to limit their sugar intake. One way ANOVA test revealed a significant relationship between gender and both knowledge and attitude scores ($p<0.05$). There was no significant relationship between gender and practice scores ($p=0.557$) using Kruskal-Wallis test. Spearman's rank correlation test resulted a significant positive correlation between knowledge and both attitude and practice scores ($p < 0.05$), but no correlation between attitude and practice scores ($p = 0.628$).

There is a need to develop educational strategies to increase consumers' awareness and to provide clear information about NNS and added sugars, therefore striving to enhance the health and well-being of individuals by empowering them to make informed choices.

Biography

D. Goburdhun is Associate Professor in the Faculty of Agriculture at the University. She has extensively carried wotk on food labelling, healthy eating and food waste.

Uma Kamboj
Lovely Professional University, Phagwara, India

Assessment of Extra Virgin Oils Authenticity Using Spectroscopic And Chemometric Techniques

Abstract

Olive oil is widely recognized for its health benefits and culinary uses. However, the high commercial value and demand for olive oil have led to an increase in adulteration practices. To combat this issue, researchers have utilized FTIR spectroscopy as a fast and reliable technique to determine the purity of olive oil and extra virgin olive oil by detecting the presence of adulterants such as refined sunflower oil, mustard oil, and coconut oil. In the present work extra virgin olive oil was adulterated with mustard oil and coconut oil in concentrations of 0% to 100% with increment of 5%. The prepared samples were analysed using Fourier Transform Infrared Spectroscopy. Principal component analysis (PCA) was used to access the pure and adulterated sample. It was observed that PCA can classify the samples on the basis of adulteration. Further the peaks in FTIR spectra were analysed to access the differences in spectra for the pure and adulterated extra virgin olive oils. The results showed that FTIR spectra can be used as a non-destructive technique to authenticate the extra virgin olive oils.

Keywords: classification, Principal component analysis, extra virgin olive oil, authentication, infrared spectroscopy

Melaku Tafese Awulachew
Ethiopian Institute of Agricultural Research (EIAR)

Enhancing Bread Functionality through Partial Substitution with Germinated Fava Bean and Black Cumin Flours: A Strategy for Nutritional Fortification and Sensory Optimization

Abstract

Bread is a globally consumed staple food, yet conventional wheat-based formulations often lack sufficient micronutrients, dietary fiber, and functional bioactive compounds. This study investigates the potential of enhancing the nutritional and sensory quality of bread through partial substitution of refined wheat flour with germinated fava bean (Vicia faba L.) and black cumin (Nigella sativa L.) flours. A D-optimal mixture design was employed to develop sixteen composite flour blends, which were evaluated for proximate composition, mineral content (Fe, Zn, Ca), antioxidant activity, and sensory acceptability. The optimized formulation (72.5% wheat, 25.6% germinated fava bean, and 1.9% black cumin) significantly increased protein, fiber, and mineral concentrations while maintaining desirable texture, volume, and consumer acceptance. Germination of fava beans enhanced nutrient bioavailability, while black cumin contributed antioxidant capacity and distinctive aroma. This formulation presents a low-cost, scalable strategy to combat hidden hunger and improve the health value of widely consumed bakery products. The findings demonstrate a promising pathway for nutrition-sensitive food innovation using indigenous and underutilized crops. Integration of such formulations into local food systems could support dietary diversification, address micronutrient deficiencies, and promote sustainable food solutions in developing regions.

Mario Franco
MADRID PARIS

Food safety in a slaughterhouse and a cold storage facility

Abstract

Explaining food safety in a slaughterhouse and cold storage facility involves connecting every physical and operational factor with the reduction of biological, chemical, and physical risks. Below is a clear framework explaining why each aspect is important and how it contributes to food safety, with practical examples.

Practical Summary

Objective: To prevent food contamination and guarantee product quality and safety throughout the entire cold chain.

Approach: Hygienic design (facilities), process control (water, temperature, and ventilation requirements), and maintenance (renovations/cleaning).
Smooth and easy-to-clean surfaces (floors and walls)
Why it's key: Facilitates cleaning and disinfection, reduces niches and folds where microorganisms (bacteria, mold) can hide.
Effects on food safety: Less accumulation of dirt and biofilm.
Reduced points of cross-contamination between raw and cooked areas.
Lower risk of contamination from food residue that promotes microorganism growth.

Practical recommendations:
Non-porous materials, resistant to cleaning products and wear.
Corners and joints with smooth radii, covers and grilles accessible for cleaning.
Seamless, continuous linings, certified for food environments.

Drains with adequate slope towards the drain and traps to prevent sludge buildup.
Air renewal and ventilation
Why it's key: controls the accumulation of aerosols, steam, odors, and heat; prevents condensation and microbial growth.

Effects on food safety:
Maintains stable and appropriate temperatures in critical areas.
Prevents condensation on surfaces that promotes mold and bacteria.
Reduces the spread of contaminants between clean and unclean areas.

Practical recommendations:
Design unidirectional airflow whenever possible (from clean to dirty areas).
Adequate filtration and filter maintenance; air exchange rates appropriate for the room size.
Temperature and humidity monitoring, with alarms for deviations. Odor control and differential ventilation between processing and storage areas.
Water quality
Why it's key: Water is a potential vector of contamination; its quality determines whether it is added to processes, product washing, or equipment.

Effects on food safety:
Contaminated water can introduce pathogens (e.g., E. coli, Salmonella) or chemicals.
Incorrect hot or cold water can promote microbial growth if not managed properly.

Practical recommendations:
Potable water approved for food use; regular microbiological and chemical testing.
Treatment and maintenance system (disinfection, residual chlorine, filtration) appropriate for each use.
Clear limits and protocols for hand, utensil, and surface washing.
Water supplier traceability and quality monitoring.
Importance of refrigeration (cold chain)
Why it's key: Many pathogens grow at temperatures between 5°C and 60°C; keeping products below 5°C (or as per regulations) minimizes growth. Food safety effects:
Delays or inactivates microbial growth.
Prevents changes in the quality and safety of meat, dairy products, and other products.

Practical recommendations:
Receiving, cutting, and storage areas with appropriate and constant temperatures.
Continuous temperature monitoring in cold storage rooms and recording equipment.
Maintenance plan for refrigeration equipment (refrigerators, freezers, cold storage rooms).

Handling protocols to minimize repeated thawing and cold loss.
Definition of maximum exposure times to ambient temperature for sensitive products.
Hygienic design and process flow
Why it's key: A design that minimizes the spread of contaminants between areas helps reduce risks.

Food safety effects:
Clear separation between raw, cooked, packaging, and storage areas.
Controlled movement of personnel and materials to prevent cross-contamination.

Practical recommendations:
Linear processing flow and one-way traffic. Clothing and handwashing stations at strategic points. Equipment surfaces designed for disassembly and cleaning. Maintenance, cleaning, and validation

Why it's key: Even with good design, irregular cleaning or equipment failures can create risks.

Effects on food safety:
Elimination of biofilms, residues, and microorganisms.
Early detection of deviations and rapid correction.

Practical recommendations:
Documented cleaning and disinfection plans (What, How, When, with assigned responsibilities). Records of cleanings, failures, and preventive maintenance. Validation of critical processes (equipment cleaning, surface disinfection). Pest and environmental contamination control
Why it's key: Pests and contaminated environments can introduce pathogens.

Practical recommendations:
Sealing of access points, traps, and regular monitoring.
Maintaining clean and pest-free external areas.

Liliana Esther Sotelo-Coronado
Universidad de Córdoba Colombia

Determination Of The Optimal Wall Material Mixture For The Encapsulation Of Cocoa Pod Husk Polyphenols By Spray Drying Using Response Surface Methodology

Abstract

The present study aimed to optimize the formulation of encapsulating materials for the microencapsulation of a polyphenol-rich extract obtained from cocoa pod husk (CPH), within the framework of a circular economy approach that promotes the integral utilization of the fruit. CPH, which represents approximately 69% of the total cocoa weight, is an agro-industrial residue with a high polyphenol content. In addition, cocoa mucilage (CM), accounting for about 9% of the fruit, was evaluated due to its high pectin content and technological potential as a wall material.

The CPH extract was obtained by ultrasound-assisted hydroalcoholic extraction, yielding 37.53 ± 2.13 mg GAE/g of total polyphenols and 12.28 ± 0.56 mg TE/g of antioxidant capacity. For encapsulation, inulin, polydextrose, alginate, and cocoa mucilage were used under an L-optimal mixture design with response surface methodology. The response variables included yield, encapsulation efficiency, polyphenol recovery, and antioxidant activity; among them, yield showed a statistically significant fit and was defined as the key optimization variable.

Model results indicated that optimal formulations were achieved without alginate, due to its negative effect on yield, and with a high contribution of polydextrose. The selected condition comprised 20% mucilage, 0.65% inulin, and 79.34% polydextrose, achieving a yield of 80.48%, polyphenol recovery of 71.90%, and an overall desirability of 0.813. The technological performance of the microencapsulates was robust, with a yield of 79.93 ± 4.63%, recovery of 72.45 ± 4.72%, and encapsulation efficiency of

87.95 ± 6.26%. Physicochemical stability was supported by low moisture content (3.21 ± 0.28%) and low water activity (0.225 ± 0.021).
FE-SEM morphological analysis revealed spherical particles without structural collapse, while size distribution by Mastersizer 3000 was unimodal and narrow (D10 = 2.531 ± 0.104 µm; D50 = 7.664 ± 0.195 µm; D90 = 19.483 ± 0.307 µm), consistent with efficient atomization. Furthermore, the microencapsulates retained bioactive functionality, with total polyphenols of 4.13 ± 0.12 mg GAE/g and antioxidant capacity of 7.94 ± 0.64 µg TE/g dry matter.
These findings demonstrate the feasibility of valorizing the main cocoa by-products—pod husk and mucilage—as sources of functional compounds and wall materials for microencapsulation, adding value and promoting the implementation of a circular economy model with direct applications in the functional food and nutraceutical industries.

Biography

Liliana Esther Sotelo Coronado is a Food Engineer from the Universidad de Córdoba (Colombia) and a seventh-semester Ph.D. student in Food Science and Technology at the same institution. Her passion for research began in childhood through the ONDAS program of MinCiencias, an experience that marked the start of a career dedicated to science. During her academic training, she was a leader in research seedbeds and a Young Researcher (MinCiencias – Universidad de Córdoba), consolidating her scientific vocation.

She has published approximately eight articles in national and international journals and has participated in innovation and consulting projects with institutions such as FAO and the Ministry of Agriculture and Rural Development. Currently, she serves as an instructor for SENNOVA at SENA – Regional Córdoba, where for more than eight years she has guided young people in research and innovation processes. A mother of twins, she combines her family life with her strong commitment to food research and circular economy approaches.

Fetriyuna Fetriyuna
Padjadjaran University, Indonesia

Community-Based Production and Acceptability of Fortified RUF Biscuits in Rural Indonesia

Abstract

Enriched with macro and micronutrient formulations, Ready-to-Use Food (RUF) biscuits offer a practical means of enhancing young children's nutritional status in environments with limited resources. The study's goals were to ascertain whether it is possible to produce RUF biscuits in a community setting, to assess acceptance among children under five, and to examine the immediate impacts on nutritional status. During field testing, caregivers selected two of the five RUF formulations that were initially developed using locally available food sources for further evaluation. Twice a week, trained health cadres performed community production at midwives' homes using gas ovens and standardized hygienic procedures.

Between June and July 2025, 70 healthy children aged 15 months to 5 years were collected from three sub-villages (Pabuaran, Kopeng, and Cijeruk) in Kadomas Village, Pandeglang District, Banten Province. Random assignment was used to divide participants into two groups: Group A received RUF recipe 4 for two weeks, while Group B received recipe 4 in week one and recipe 11 in week two. Each child was advised to consume 100 g of biscuits (or roughly 525.9 kcal) per day. Anthropometric measurements of height and weight were taken at baseline and two weeks later.

The measurements were converted to Z-scores using WHO Anthro 2007 and analyzed using IBM SPSS v25. Community cadres were able to create consistent, sanitary biscuits using local resources. The two formulations' (taro-peanut and taro-peanut/mungbean) nutrient compositions were similar.

Regular distribution and consumption monitoring showed high levels of acceptance by caregivers and children. The initial nutritional status of the groups was comparable.

This study showed that local production and distribution of fortified RUF biscuits is both feasible and acceptable. Using local resources and health cadres encourages sustainability, even though short-term feeding trials provide valuable data to guide future scale-up for improving child nutrition in rural communities.

Biography

Fetriyuna Fetriyuna (born 23 August 1982) is a lecturer and researcher at the Department of Food Industrial Technology, Padjadjaran University, Indonesia. Her expertise covers food science and nutrition, food engineering, community development, and entrepreneurship. She earned her Ph.D. in Natural Sciences from Hohenheim University, Germany (DAAD–IGSP scholarship), and both her M.Sc. and B.Sc. from Andalas University, Indonesia. Since 2008, she has been actively involved in teaching, research, and leadership roles at Padjadjaran University, including as Director of the Center for Agricultural Technology Development Studies (2022–2024) and Assessor of Competencies for the Indonesian Professional Certification Authority. Internationally, she has contributed to the Humboldt Reloaded Project at the University of Hohenheim and served as a Diaspora Expert for GIZ Germany. She can be reached at fetriyuna@unpad.ac.id.

Asresash Sebeta
Southwest Ethiopia Regional Multisectoral Nutrition Advisor, Ethiopia

Central obesity and its associated factors among adults in Southwest Ethiopia

Abstract

Background
The rise of abnormal fat accumulation in the body's adipose tissue, termed obesity, poses a growing global public health concern. This study aimed to assess the prevalence of and associated factors of central obesity among adults in southwest Ethiopia.

Methods
From May 23 to June 30, 2021, a community-based cross-sectional study involving 651 adults residing in Mizan-Aman Town was conducted. Central obesity was evaluated using the waist-to-hip ratio. Data was entered into Epi-Data version 3.1 and then exported to SPSS 22.0 for analysis. Logistic regression analysis was performed, with a significance level set at a p-value less than 0.05.

Results
The prevalence of central obesity was 19.7 %. The study identified several factors associated with central obesity, including being male [adjusted odds ratio (AOR) = 0.28, 95 % CI: 0.18, 0.44], having a high wealth index [AOR = 1.77, 95 % CI: 1.07, 2.94], liquid oil consumption [AOR = 1.68, 95 % CI: 1.09, 2.58], and belonging to food-secured households [AOR = 0.27, 95 % CI: 0.18, 0.42].

Conclusion
The study's findings highlight a concerning prevalence of central obesity, affecting nearly one-fifth of the respondents. Sex, food security, wealth index, and liquid oil

consumption were identified as factors associated with central obesity. These results emphasize the importance of implementing intervention programs aimed at preventing central obesity among adults, as this can also help prevent the development of other chronic diseases.

Biography

Asresah Sebeta, 42 years old, diploma in clinical nursing, BSC Public health officer, BSC in environmental health, MSC in Human nutrition. She is a health care professional with over 16 years. She is an educator, trainer and training facilitator, academician, researcher, she has experience of nursing care provider for patients, emergency Management severe and moderate acute malnutrition, management of emergencies, Nutrition program coordinator at regional health bureau, and currently working in regional multisectoral nutrition advisor at Southwest Ethiopia president office with Fhi-360, Alive and Thrive project. She had a lovely family including two sons.

Seun Obasa
London South Bank University, London, UK

Towards Sustainable Packaging: Industry Perspectives on Biobased Transitions Across Global Economies

Abstract

Food packaging has evolved from a tool of preservation to a central focus of global sustainability debates. While plant- and bio-based materials are emerging as alternatives to plastic, the industry's readiness to adopt them remains unclear. This study investigates how food sector leaders in low-, middle-, and high-income countries perceive and prepare for bio-based packaging and the broader implications for recycling systems, operational practices, costs, and Environmental, Social, and Governance (ESG) frameworks. Using semi-structured interviews with 14 senior executives, this study explored views on sustainable packaging, criteria shaping material choices, and expectations for system-wide impacts. Thematic analysis identified four overarching themes. First, sustainable packaging is framed differently across contexts: in high-income countries it is often a brand strategy, while in lower-income countries it is perceived as a societal asset. Second, adoption of bio-based packaging is constrained by performance limitations, cost barriers, and infrastructural deficits. Third, recycling systems are generally unprepared for new materials, raising risks of greenwashing when packaging is marketed as "sustainable" or "recyclable" without supporting infrastructure. Fourth, although environmental awareness is increasing, cost sensitivity and competitive pressures mean eco-friendly packaging remains a luxury in many markets. Overall, the findings highlight both the promise and fragility of bio-based packaging transitions. Scalable progress requires coherent policy frameworks, cultural alignment, infrastructural investment, and economically viable solutions. This study contributes practical and conceptual insights into the interplay of policy, business strategy, and consumer behaviour in advancing sustainable packaging globally.

Biography

Seun Obasa is a PhD researcher at the National Bakery School, London South Bank University. His research explores how plant-based packaging can reduce waste and drive sustainability in food systems. He holds degrees in Plant Biology (Bowen University, Nigeria) and Food Safety and Quality Management (University of Greenwich, Medway). With over ten years of industry experience in food safety, quality, and specification writing, Seun also brings professional expertise as a HACCP Level 4 practitioner and ISO 22000:2005 Lead Auditor.

ORCID: https://orcid.org/0009-0002-0269-0677

Oluwafemi A. Agbetuyi (PhD)
Department of Animal Production and Health, Federal University, Oye Ekiti, Nigeria

Phytochemical and nutraceutical effects of Ipomoea asarifolia on the blood lipid profile and oxidative stress biomarkers of broiler chicken

Abstract

The gastrointestinal tracts (GITs) of poultry are home to pathogenic microorganisms that compete with their hosts for nutrition and can lead to subclinical infections that lower production. Researchers observed that using synthetic products in combating these challenges has led to an increase in bacteria drug resistance, drug residue, and alteration of the natural GIT microbes in chickens. Research into the ability of various phytogenic plants has proven effective in inhibiting these harmful bacteria in the chicken gut for improved productivity, since they contained bioactive substances that are potent in increasing both the amount and quality of poultry output. The purpose of this study was to ascertain the phytochemical and nutraceutical effects of one of the most common, but less considered phytogenic plants known as Ipomoea asarifolia on blood lipid profile and oxidative stress biomarkers of broiler chicken. A total of n=200, 8-day old (Ross 308) broiler chickens were randomly allotted into 4 dietary treatments in a completely randomized design. Four experimental diets were formulated with Ipomoea asarifolia leaf powder included at the rate of 0.0%, 0.8%, 1.6%, and 2.4%. The diets were designated as T1, T2, T3, and T4 respectively. Data collected were subjected to analysis of variance using the General Linear Model Procedure of SAS (2020). The treatment's means were distinguished using Tukey's Honestly Significant Difference {HDS} at 5% level of probability. The results revealed that tannin (578.93 mg/100g) is the most abundant when compared with phenol (7.52 mg GAE/g), flavonoid (6.74 mg QE/g), alkanoid (4.84 mg/g), and saponin (3.02 mg/g). The α-amylase inhibition and

α-glucosidase inhibition at 50, 100, and 200 concentrations were (24.80%, 30.03%, 50.08%) and (22.84%, 32.98%, 57.10%) respectively. There was no significant effect ($p>0.05$) on total cholesterol and triglycerides, but had significant impact ($p<0.05$) on high density lipoprotein cholesterol (HDLC) and low density lipoprotein cholesterol (LDLC). HDLC (41.16 mg/dl) was lower and LDLC (42.84mg/dl) was higher in T1 than those in dietary treatments [T2, T3, T4]. Oxidative stress biomarkers were significantly different ($p<0.05$) across the dietary treatments. Practically, adding Ipomoea asarifolia to broiler diets can be advantageous because it can improve lipid metabolism, which in turn improves fat utilization and decreases fat deposition. By scavenging free radicals, its antioxidants can lessen oxidative damage and improve the health and productivity of broiler chickens. Therefore, it is advised that the diet composition for broiler should include Ipomoea asarifolia, especially at the rate of 2.4% inclusion level..

Biography

Oluwafemi Abel Agbetuyi has been a seasoned, young, and vibrant researcher. Having spent his early years in a household involved in livestock production, Oluwafemi developed a keen interest in the field of animal nutrition. His key areas of research focus on improving animal health through better nutritional development that guarantees a stable life for the final consumers (humans). He is a lecturer at the Department of Animal Production and Health, Federal University, Oye Ekiti, Nigeria. He just completed his research on the impacts of phytochemical and nutraceutical properties of Ipomoea asarifolia on various biomarkers in broiler production. He is posed to initiate another research once he has the funds. Oluwafemi Abel Agbetuyi has been a speaker in some local trainings and seminars on animal development. His academic doggedness has earned him several awards, and he is presently having ten published articles to his credit in both local and international journals.

WANG Da
Northwest A&F University, China

Lactobacillus paracasei N1115 Alleviates Glucocorticoid-Induced Osteoporosis via the Gut-Bone Axis by Modulating Butyrate Production

Abstract

Glucocorticoid-induced osteoporosis (GIOP) is a prevalent secondary bone disease with limited safe therapeutic options. The "gut-bone axis" presents a novel nutritional intervention strategy. This study investigates the protective effects and mechanisms of Lactobacillus paracasei N1115 (Lp N1115) in a dexamethasone-induced GIOP mouse model.Mice were treated with Lp N1115 for 12 weeks. Bone health was assessed via biomechanics, micro-CT, and histology. Gut microbiota and metabolic profiles were analyzed using 16S rRNA sequencing and non-targeted metabolomics. Lp N1115 intervention significantly restored bone biomechanical strength, bone mineral density (BMD), and trabecular microarchitecture. It enhanced osteogenesis (increased serum ALP) while inhibiting osteoclastogenesis (decreased TRAP+ cells). Microbiome analysis revealed that Lp N1115 restored gut homeostasis by increasing α -diversity and the abundance of beneficial genera, including
Lactobacillus and Duncaniella, while suppressing pathogenic Muribaculum. Metabolomics indicated regulation of tryptophan, purine, and lipid metabolism. Crucially, Lp N1115 significantly elevated intestinal butyrate levels. Validation experiments confirmed that supplementation with tributyrin (a butyrate prodrug) and fermentation metabolites replicated the osteoprotective effects.Conclusion: Lp N1115 effectively alleviates GIOP by reshaping the gut microbiota and metabolic network, specifically through the upregulation of butyrate. These findings provide a theoretical basis for developing Lp N1115 and its metabolites as functional foods for bone health.

Biography

Wang Da is a third-year Master's candidate in Food Science and Engineering at the College of Food Science and Engineering, Northwest A&F University. He is a member of the "Food Molecular Nutrition and Health" research team, supervised by Professor Zhigang Liu and Associate Professor Mengge Zhao. His research primarily focuses on the "gut-bone axis" mechanism, conducting systematic studies on probiotic interventions for osteoporosis.

KPOSSOU Romario Florent
University of Lome

Lime seed Improved Meat quality of Cobb 500 broiler chickens

Abstract

In this study, the possibility of using Citrus aurantiifolia seed powder (CASP) as a growth promoter to produce high quality meat of the birds was explored. A total of 600 one-day-old Cobb 500 broiler chickens were randomly allocated to 6 dietary treatments with 5 replicates each and 20 birds per replicate. The treatments comprised negative control (standard diet), positive control (standard diet + oxytetracycline 50% twice a week according to the prescription of the manufactures) and a standard diet supplemented with 2.5 g/kg, 5 g/kg, 7.5 g/kg, and 10 g/kg of CASP respectively. The results show that the crude fat content in the meat decreased significantly as the CASP dose in the feed increased ($P < 0.001$). Birds that received a CASP supplement of 5 g/kg upwards had a higher ash content in the breast muscles. The fillets from broilers diet supplemented with 10 g/kg of CASP were lighter in colour (greater L* values, $P < 0.05$) than fillets from the birds in the control groups. This study demonstrates that the addition of CASP as a growth promoter in broiler diets can yield good quality meat.

Biography

Romario KPOSSOU is currently pursuing his PhD in Poultry Science at the Regional Center of Excellence in Avian Sciences (University of Lomé, Togo), focusing on gut health, biostatistics, and bioinformatics applications in poultry production. He has published four scientific papers in reputable journals and has contributed to various research projects related to sustainable animal production and the valorization of agro-industrial by-products. Romario is also the co-founder of Research Assist Partner, where he supports data collection, statistical analysis, and scientific writing services

for young researchers in Africa. His ambition is to contribute to sustainable livestock systems by integrating advanced data analysis and innovative feed strategies to reduce antibiotic use in animal production.

Frineth de la Luz Limón Aguilera
Tecnologico de Monterrey, School of Engineering and Sciences, Av. Eugenio Garza Sada 2501, 64849, Monterrey, Nuevo León, México

Smart processing of chickpea flours: integration of germination, selenium biofortification, extrusion, and sifting to enhance nutritional and techno-functional quality

Abstract

The development of legume-based functional ingredients represents a sustainable strategy to improve protein intake and meet the growing global demand for plant-based foods. Chickpea (Cicer arietinum L.) is a valuable source of macronutrients and bioactive compounds; however, its technological performance is often limited by the presence of antinutritional factors and low solubility. This study aimed to evaluate the combined effect of germination, selenium biofortification, extrusion, and sifting on the nutritional composition, techno-functional behavior, and microstructural modifications of chickpea flours, with emphasis on their potential application in ready-to-consume supplements.

Chickpea seeds were subjected to controlled germination with and without selenium (Na_2SeO_3), followed by extrusion and particle size separation into coarse and fine fractions. The resulting flours were characterized in terms of proximate composition, amino acid and fatty acid profiles, and resistant starch content (RS-V). Techno-functional parameters such as water absorption index (WAI), oil absorption capacity (OAC), and water solubility index (WSI) were evaluated. Structural and molecular changes were analyzed using FTIR, UV-VIS, and FE-SEM.

Germination and selenium biofortification increased the protein content (23.63 g/100 g DW) and improved the amino acid profile, particularly in fine fractions rich in glutamic acid, aspartic acid, and arginine. The lipid fraction showed a significant increase in polyunsaturated fatty acids linoleic (10–50%) and oleic (10–20%) especially in

germinated and selenium-enriched samples. Extrusion and sifting enhanced solubility (16.36–37.71%) and oil absorption capacity (2.0–2.55 g/g DW), while the resistant starch content ranged between 2.13–3.75 g/100 g DW. FE-SEM micrographs revealed partial starch gelatinization and protein network reorganization, correlating with improved dispersion and techno-functional performance.

The combination of germination, selenium biofortification, extrusion, and particle size reduction constitutes an effective and scalable strategy to obtain chickpea flours with greater nutritional density, functional stability, and bioactive potential. These findings establish a technological foundation for the development of novel plant-based supplements and functional foods, integrating sustainable innovation and health-oriented food design.

Biography

She holds a Bachelor's degree in Nutrition and a Master's degree in Food Science from the Universidad Veracruzana. Her main lines of research focus on the characterization of antioxidant compounds and the evaluation of their bioavailability, the study of the impact of post-harvest processes on the nutritional properties of plant matrices, and the analysis of the effect of emerging technologies such as extrusion and germination on the nutritional and techno-functional properties of legumes. She is currently pursuing a PhD in Science at the School of Engineering and Sciences of the Monterrey Institute of Technology, working on a project to develop a selenium-fortified chickpea-based functional beverage.

Ghadir Fallata
Saudi Food and drug athourity, Riyadh, Saudi Arabia

Establishing national food priority in Saudi Arabia: developing a priority matrix for food

Abstract

Food security is achieved when individuals have consistent and reliable physical, social, and economic access to adequate, safe, and nutritious food that meets their dietary requirements and supports a healthy life. Food security encompasses a broad range of factors that influence national food policies and other functional aspects of a country. Developing a food priority list by factoring in the various influencing factors is important and requires the identification of foods consumed at the national level, using tools such as food composition tables or 24-h recall surveys. Currently, Saudi Arabia lacks a national food composition table. The country needs a food security and nutrition program to build resilient livelihoods and identify food threats and crises. This study aimed to develop a priority matrix for food (PMIXF) and establish a priority food list that accounts for various influencing factors at the national level by utilizing a food balance sheet, a food commodity list, supply utilization accounts from the Food and Agriculture Organization, and consumption frequency data from household surveys.

The study developed PMIXF to prioritize food items according to 11 food groups based on consumption frequency from household surveys (a total of 34 households) and national food supply. Most food items with a high national food supply were highly consumed by household participants. In addition, 100 foods were classified as low priority, 37 were classified as medium priority, and only seven were classified as high priority.

This matrix is expected to serve as a vital national instrument for enhancing food

security by identifying essential food items for domestic production, thereby supporting the nation's economic diversification objectives. Additionally, it will provide a crucial resource for research in agriculture, nutrition, and public health. Further research to validate and implement this matrix tool at the national level is needed.

Biography

Ghadir Fallata is a Senior Research Expert at the Saudi Food and Drug Authority (SFDA) in Riyadh, specializing in public health, nutrition, and food science. She holds a Master of Science degree in Nutrition and has contributed extensively to national research initiatives aimed at improving dietary guidelines, food literacy, and public health strategies in Saudi Arabia.

She co-authored over 10 publications in reputable journals, addressing topics such as food consumption patterns across Saudi regions, nutrient adequacy assessments, caffeine exposure, and the development of the Saudi Healthy Plate framework. Her research informs evidence-based decision-making and policy development, bridging scientific insights with practical public health applications.

Through her work at SFDA, Ghadir plays a pivotal role in shaping nutrition-related strategies, advancing public health research, and promoting sustainable dietary practices. She is recognized for her dedication to scientific excellence, collaboration, and translating research into actionable health initiatives that benefit communities across Saudi Arabia.

Pablo Campins Bover
Spanish Association Against Cancer (AECC)

Safeguarding Public Health from Industry Interference: The Role of Policy, Advocacy, and Institutional Communication in Cancer Prevention

Abstract

Tobacco remains one of the leading preventable causes of cancer and continues to claim more than eight million lives annually worldwide. Despite clear scientific evidence, the tobacco industry exerts substantial influence over public health policy, deploying strategies such as lobbying, political financing, corporate social responsibility campaigns, and manipulation of scientific research. These practices represent a fundamental conflict of interest that threatens the integrity of cancer prevention policies. The presentation can examine the role of public affairs, policy advocacy, and institutional communication in countering industry interference and safeguarding public health. Drawing on the experience of the Spanish Association Against Cancer and recent global debates, it can highlight how governments and civil society can collaborate to implement the WHO Framework Convention on Tobacco Control, particularly Article 5.3, which calls for protecting health policies from commercial interests.

The discussion can also emphasize the importance of transparency mechanisms, youth engagement, and international cooperation as key drivers of sustainable progress in cancer prevention. Special attention can be given to the role of institutional communication in bridging scientific knowledge with policy action, ensuring that prevention measures are effectively translated into legislative and social change.

Ultimately, advancing global cancer control requires not only scientific innovation but also robust political will and clear communication strategies to prevent industry interference. By reinforcing the principles of transparency, accountability, and advocacy,

governments and civil society organizations can create a policy environment that prioritizes health, protects young generations, and contributes to the broader goals of cancer prevention and public health equity.

Biography

Pablo Campins Bover is a Public Affairs Specialist at the Spanish Association Against Cancer. He holds a degree in International Studies and a Master's degree in International Solidarity Action and Social Inclusion from the Carlos III University of Madrid. He has also pursued postgraduate studies in International Relations, Geopolitics, and Global Governance, with a specialization in the European Union.

Before joining the AECC, he worked at the European Parliament and in several non-governmental organizations, assuming different roles in institutional relations and policy advocacy. His professional expertise focuses on public affairs, policy development, and institutional communication, with particular attention to public health and cancer prevention. He is co-author of a scientific publication on conflicts of interest and the role of governments in tobacco control.

Kamogelo Millicent Mmereke
PhD Candidate, University of South Africa

Anticancer Activity Investigation of Areka ya Makgoma Herbal Concoction

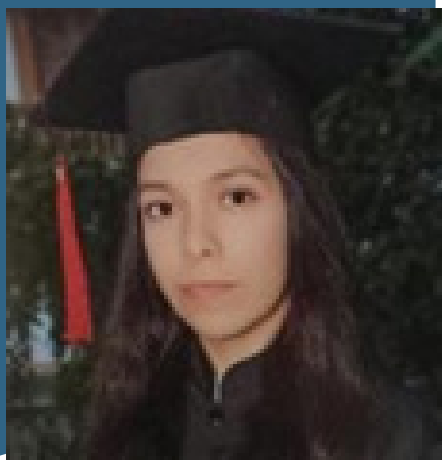
Abstract

Cancer related death has sobering statistics world-wide, with lack of access to affordable health care being a leading contributing factor to cancer mortalities. Southern Africa is enriched with medicinal plants whose healing capacity is anecdotal. The Areka ya Makgoma herbal Concoction is developed by a South African herbalist has shown anecdotal evidence of anticancer properties, particularly against breast and colorectal cancer. However, the scientific validation of these claims is essential for its potential integration into mainstream cancer therapies. This study seeks to evaluate the anticancer activity of Areka ya makgoma herbal concoction investigate the cytotoxic effects of the concoction on breast and colorectal cancer. It was revealed in the results that the herbal concoction is an effective anti-cancer therapy as the cytotoxicity was specific towards the cancer cell lines. Through total reactive oxygen and lactate dehydrogenase analysis it was revealed that the concoction has the capacity to induce inflammation cause cancer cell lysis. The cell death cell death showed that the herbal concoction induces early apoptosis on the cancer. The results from this study are showing that the herbal concoction indeed has anticancer activity.

Keywords: Anticancer therapy, Herbal medicine, Areka ya Makgoma, Phytochemicals.

Biography

A PhD candidate with the Department of Mechanical, Bioresources and Biomedical Engineering from University of South Africa. I hold BSc and MSc in Biological Sciences and Biotechnology from Botswana International University of South Africa obtained in 2018 and 2022 respectively. Research is focused on exploring medicinal palnts for their anticancer activity and identifying the active compounds.



Aylin Ivette Leon Chacon
Department of Molecular Biomedicine at CINVESTAV

Development of Preformulation Forms of C14 and P8 Compounds and Evaluation of Their Antineoplastic Activity in PDAC Cell Lines

Abstract

Pancreatic ductal adenocarcinoma (PDAC) represents one of the most aggressive and lethal neoplasms worldwide, with a five-year survival rate of less than 10%, due to its late detection, high metastatic capacity and resistance to conventional chemotherapeutic treatments. Faced with this unfavorable clinical picture, targeted therapies have taken a crucial role in recent years, by focusing on the specific blockade of key molecular pathways for the survival, proliferation and dissemination of tumor cells.

In this context, our research group has developed compounds C14 and P8, which have demonstrated specific antitumor activity by stabilizing mutated KRAS4B/PDE6δ complexes (KRAS4B-G12C, G12V and G12D), which prevents the translocation of oncogenic KRAS4B to the plasma membrane. This disruption blocks the activation of PI3K/AKT/mTOR and MAPK/ERK signaling pathways critical for tumor growth. In preclinical murine models, both compounds have shown significant tumor growth inhibition activity, consolidating them as promising therapeutic candidates against PDAC.

Therefore, in this work we managed to advance towards a new stage of pre-pharmaceutical development of C14 and P8 compounds for their clinical application in PDAC, obtaining solid pre- pharmaceutical forms of C14 and P8 soluble in a vehicle approved by the FDA for their administration, by means of a molecular rearrangement with the use of hydrophilic coformers such as amino acids and organic acids, preserving their antineoplastic properties previously reported against PDAC cell lines. These

advances represent a fundamental step towards the clinical translation of C14 and P8, by combining an optimization of their physicochemical properties with the conservation of their selectivity against specific PDAC molecular targets

.

Biography

Aylin Ivette León Chacón is a first-year Ph.D. student in the Department of Molecular Biomedicine at CINVESTAV (Center for Research and Advanced Studies of the National Polytechnic Institute) in Mexico. Her research focuses on the design and preformulation of novel small molecules with targeted antineoplastic activity against pancreatic cancer. She has experience in solid-state characterization, pharmaceutical formulation strategies, and in vitro biological assays using cancer cell lines. Her current project involves the development of preformulation strategies to improve the solubility and bioavailability of two experimental compounds, C14 and P8, while preserving their specificity for oncogenic KRAS mutations in pancreatic ductal adenocarcinoma (PDAC).


Thank You