

7th World Congress on

FOOD SCIENCE & REGULATORY MEASURES



14-15 MARCH, 2025

LONDON, UK

Venue:

Renaissance London Heathrow Hotel
Bath Rd, Hounslow TW6 2AQ, United Kingdom

09:00–09:15: Registrations

09:15–09:30: Opening Ceremony

DAY 1

MARCH 14, 2025

Keynote Presentation

09:30–10:10

Nate Blum

Chief Executive Officer at Sorghum United,
United States of America

Title: The Role of Sorghum and Millets in Reshaping Global Food
and Agriculture Paradigms

Session Introduction

Tracks

Food science & technology | Food safety, quality control and management systems | Food bioscience, biotechnology& biophysics | Technology of meat,fish,poultry &their products | Food chemistry and biochemistry| Advanced research and trends in food sciences | Food Laws

Session Chair: Nate Blum, Chief Executive Officer at Sorghum United,United States of America

Oral Presentations

10:10–10:35

Mario Perez Won

Universidad del Blo Blo, Chile

Title: Ultrasonic agglomeration applied to mixtures of macro and microalgae flours and its effect on microstructural properties, conformational changes and in vitro protein

10:35–11:00

Nchumbeni Humtsoe

University Of Mumbai, India

Title: Some of the important medicinal wild plants and herbs available in Northeast India and their health benefits

Group Photo | Coffee Break 11:00–11:20 @ Foyer

11:20–11:45

Ciaran Crowley

University College Cork, Ireland

Title: Evaluation of Two Novel Commercial Starter Cultures for Utilization Within Industrial Pepperoni Production

11:45-12:10

Priscilla Ollennu-Chuasam
University of Turku, Finland

Title: Effect of varying coffee roast levels on the profile of lipophilic and hydrophilic bioactive compounds in ready-to-drink coffee beverages

12:10-12:35

Tokuma Negisho Bayissa
Ghent University, Belgium

Title: Impact of species and their edible parts on the macronutrient and mineral composition of fish from the same aquatic environment, the Gilgel Gibe Reservoir, Ethiopia

Lunch Break 12:35-13:35

13:35-14:00

Milena Terzic
University of Novi Sad, Faculty of Technology
Novi Sad, Novi Sad, Serbia

Title: New Insight into the Valorization of Lemon Peel Employing Modern Extraction Techniques

14:00-14:25

Safae Skennndri
Innovation and Research– Mohammed VI
Polytechnic University Ben Guerir, Morocco

Title: Rapid Salmonella Detection: Ensuring Food Safety Through Innovation

14:25-14:50

Sandra Ramirez Montes
Universidad Autonoma del Estado de Hidalgo,
Mexico

Title: Prediction of acrylamide concentration in potato crisps from impedance data and chemometric analysis of tubercle raw material

14:50-15:15

Marie Willeke
University of West London, London ,
United Kingdom

Title: Perception and acceptance of insect-based products by GenZ and Millennials using a sensory tasting and quantitative questionnaire

15:15-15:40

Gerard beralus
The Marley Ferme Agricole and Jabo Services

Title: Construction d'une zone franche agro-industrielle sur une superficie de 1000 carreaux de terre, soit 1290 hectares dans la localité de Savane Diane (Artibonite)

Panel Discussion & Certificate Felicitation
Day -1 Ends

DAY 2

MARCH 15, 2025

Zoom Meeting (GMT+1) Time in London

09:00-09:20

Gianfranco Pannella

Università Campus Bio-Medico di Roma,
Rome, Italy

Title: Exploring the microbial community of malting barley from different Italian geographical areas

09:20-09:40

Maryam Mohammed Al-Ghazali

Food Science specialist /TopOne Spa, Oman

Title: Functionality Of Edible Coating in food product

09:40-10:00

Serena Santonicola

University of Molise, via F. de Sanctis, 86100
Campobasso, Italy

Title: Microfibers in the food chains: food safety and environmental issues

10:00-10:20

Brajesh Kumar

Indian Agricultural research Institute, New
Delhi, India,

Title: Partial application of Nano-fertilizers as a sustainable strategy for enhancing rice productivity in reclaimed sodic soils

10:20-10:40

Kam-Chun Chan

School of Chinese Medicine, Hong Kong Baptist
University, Hong Kong

Title: Tryptophan sulfonate: A new chemical marker for accurate and efficient inspection of sulfur-treated food and herbal medicinal products

10:40-11:00

Mohammad Washiq Faisal

Research Associate International Maize and
Wheat Improvement Center (CIMMYT), Dhaka,
Bangladesh

Title: Enhancing crop productivity and nutritional yields through efficient crop diversification: A comparative study of rice-rice system in Bangladesh

11:00-11:20

Maria Athanasopoulou

Chairwoman of the World Food Travel
Association and as ambassador of Green
Destinations in Greece

Title: Tryptophan sulfonate: A new chemical marker for accurate and efficient inspection of sulfur-treated food and herbal medicinal products

11:20-11:40

Renata Adriana Labanca

University of Minas Gerais (UFMG), Minas
Gerais, Brazil

Title: Case Study: Specialty Coffee in Sweden

11:40-12:00

Melusi Mponiseng Nondo

Midlands State University, Zimbabwe

Title: Encyclopedia of Food Preservation Techniques

12:00-12:20

Md.Ashrafur Islam

National livestock research institute of
Bangladesh, Bangladesh

Title: Assessing the Performance of Native Chickens: A Community
Level Study

12:00-12:20

Nur Ain Hannani Binti Hamid

Prefectural University of Hiroshima Shobara
Campus, Nanatsukacho, Shobara-shi,
Hiroshima, Japan

Title: yet to be finalize

12:20-12:40

Moomal Bharadwaj

Indian Agricultural research Institute,
New Delhi, India

Title: yet to be finalize

Panel Discussion





7th World Congress on

Food Science & Regulatory Measures

March 14-15, 2025 | London, UK

HYBRID EVENT

KEYNOTE PRESENTATION

DAY 1

**Nate Blum**

Sorghum United, Nebraska USA

The Role of Sorghum and Millets in Reshaping Global Food and Agriculture Paradigms

Recently published peer-reviewed research from academic institutions around the world concur in regard to previously unrecognized health and nutritional benefits of sorghum and millets in human and animal diets. Further scientific papers have also been published which detail environmentally sustainable attributes of sorghum and millets as they pertain to water, wildlife, and soil health, as well as being an optimal tool for carbon sequestration. This research, coupled with increasing consumer demand and awareness through the 2023 International Year of Millets, has created the conditions by which existing food and agricultural paradigms might be challenged to better address food security, climate change, and access to value-added markets for small-holder and conventional farmers around the world.

Biography:

Nate Blum serves as the Chief Executive Officer of BlüMilo and Sorghum United. Sorghum United is an international NGO serving to advance education and markets development for sorghum and adjacent small grains. Mr. Blum is passionate about the mission of Sorghum United due to the solutions for food security, nutrition, environmental sustainability, and rural economic disparity that these ancient grains represent. He is an expert on grain sorghum production and marketing, with a focus on value-added agriculture processing for sorghum-based products.

Mr. Blum has represented the sorghum and millets industry in thirty-two countries, spanning every habitable continent, as well as at the United Nations FAO. He has also worked with international stakeholders in regard to the United Nations' Sustainable Development Goals, hosting an Independent Food Systems Summit (August 2021). Mr. Blum served as the Executive Director of the Nebraska Grain Sorghum Board and the Nebraska Sorghum Producers Association from 2019 to 2023.

Mr. Blum serves on the USDA Grains, Feed, and Oilseeds Ag Trade Advisory Committee (ATAC). The ATAC advised trade policy to the office of the US Trade Representative. He also serves on the Private Sector Mechanism (PSM) advising the United Nations Committee on Food Security (CFS). He is an Alumnus of the University of Nebraska (Class of 2019), the Nebraska Leadership, Education, Agriculture, Development (LEAD) Program (Class XXXVI), and also served as the Vice president of the Nebraska LEAD Alumni Association.

Mr. Blum received a bachelor's degree in psychology from the University of Nebraska. He also enjoys volunteering, mentoring, and organizing community events.



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HYBRID EVENT

SPEAKER PRESENTATIONS

DAY 1



Mario Perez Won
Universidad del Bio Bio, Chile

Ultrasonic agglomeration applied to mixtures of macro and microalgae flours and its effect on microstructural properties, conformational changes and in vitro protein digestion

Ultrasonic agglomeration (UA) technology was used to develop protein matrices from macroalgae (*Durvillaea antarctica*) and microalgae (*Arthrospira platensis*), creating a novel agglomerated food system. This process combines physical compression with ultrasonic vibration, solidifying the particle surfaces to permanently agglomerate them. The microstructural properties, textural parameter (Young's modulus) and in vitro static digestion model of the protein matrices subjected to UA were evaluated. The UA process conditions were optimized using response surface methodology, considering amplitude (70-90%), time (20-30 s) and cycles (3-5) as factors, while Young's modulus was the response variable. Different scanning electron microscopies (SEM), confocal (CLMS), optical and X-ray computed microtomography were performed. Secondary structural changes in the proteins were evaluated using Fourier transform infrared spectroscopy (FTIR). The optimal conditions were 90% amplitude, 30 seconds and 5 cycles, achieving an 80% increase in strength and elasticity in Young's modulus. The application of UA induced the unfolding of the protein secondary structure, decreasing the β -sheet content while increasing the α -helix and parallel β -sheet structures. In the microstructure images, the agglomerated matrices subjected to higher amplitudes (90%) showed more homogeneous and less porous surfaces in the microtomography images. An increase in protein hydrolysis using an in vitro static digestion model. In conclusion, the most significant factors in the UA process were the amplitude and the ultrasound cycles, improving the mechanical and microstructural stability of the matrices. UA represents a promising tool for designing new food systems with improved functional properties.

Biography:

Mario Osvaldo Pérez Won is a full professor at the Universidad del Bío-Bío, Chillán, Chile. He is a Food Engineer with a master's degree in Fisheries Science from Kagoshima University, Japan and a PhD in Agriculture from Kyushu University. Dr. Pérez-Won works in the food, emerging technologies, seafood process engineering, physical properties of food, biotechnology and functional properties of proteins. Dr. Pérez-Won has been awarded for around 18 research projects. His career includes a hundred scientific publications, one of the latest published in Food Chemistry and Journal of Food Engineering.



Nchumbeni Humtsoe
University Of Mumbai, India

Some of the important medicinal wild plants and herbs available in Northeast India and their health benefits

The Northeastern states of India that comprises of eight sister states viz. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Northeast India has a wealth of medicinal plants that make their way to Indian and foreign markets. Medicinal plants are an important bio-resource of Northeast India. For the detail study of these medicinal plants, interaction with local people involved either in collection or having knowledge about the collection in and adjoining areas. Important medicinal plants such as *Aconitum feorx* (Indian Aconite), *Aconitum heterophyllum* (Indian Atees), *Swertia chirayata* (Chirayita), *Coptis teeta* (Mishmi teeta/Gold thread), *Podophyllum hexandrum* (May Apple), *Illicium griffithii* (Star Anise), *Berginia ciliate* (Winter Begonia), *Paris polyphylla* (Himalayan Paris), *Homalomena aromatica* (Scented Arum), *Garcinia spp.* (Sap tree), *Oroxylum indicum* (Broken bones), *Smilax glabra* (Sarsa Parilla) etc. are all available in the forests of Northeast India. Some of the common medicinal plants found in Nagaland are *Paris polyphylla*, *Valeriana wallichii*, *Hypericum perforatum*, *Taxus baccata*, *Cephalotaxus griffithii*, *Aconitum napellus*, *Curcuma caesia*, *Aplinia galangal*, *Homalomena aromatica*, *Cephalotaxus griffithii* and *Emblica officinalis*. The study reveals that there is destruction on natural habitat of these medicinal plants due to excessive collection. Most of the important medicinal plants which are used in the formulations are being threatened in North-East India. Therefore, there should be conservation measures like establishment of Medicinal Plants Conservation Areas (MPCAs) in potential habitat and species specific of such important and endemic medicinal plants of the region. Moreover, local inhabitants need to be aware of conservation and cultivation activities for their socio-economic upliftment. The phytochemical investigation including alkaloid extraction and isolation along with few clinical trials could help in creating mass awareness regarding the need for conservation of these medicinal plants besides contributing to the preservation and enrichment of the gene bank of such economically important species before they become extinct.

Keywords: Medicinal plants of Northeast India, Health benefits, MPCAs, Alkaloids extraction and Isolation

Biography:

Dr. Nchumbeni Humtsoe obtained her Ph.D. Degree from University of Mumbai, India on the topic "Growth performance and biochemical composition of *Labeo rohita* to feed containing *Katylisia opima* and *Nerita species*," and completed an additional course on "Professional planning and development programme in fisheries" from CIFE, Kolkatta, India. She had represented scientist team from India and attended 7th Indo-Pacific fish Conference at Taiwan and presented a paper on topic, "Effect of arsenic on the enzymes of freshwater fish *Labeo Rohita*" which was published in reputed international journal. She had presented several research papers on various topics related to fisheries and aquaculture, nutrition and food technologies at national and international levels held at India, Osaka Japan, Rome Italy, San Antonio Texas, Chicago Illinois. She is a competent researcher and can work well in team with good communication skill and

tackle any challenges positively. She is specialized in fish nutrition and feeding technologies. She also has a strong zeal to study more on the medicinal plants and its health benefits available in the wild. She is a life member of Indian Fisheries Association since 2008 and currently working as a Sr. Fishery Inspector in the Department of Fisheries and Aquatic Resources, Government of Nagaland, India.



C.H. Crowley* , G. Duffy and J.P. Kerry,

¹ The Food Packaging and Material Sciences Group, School of Food and Nutritional Sciences, University College Cork, College Road, Cork, Ireland

² Teagasc Ashtown Research Centre, Ashtown, Dublin 14, Dublin, Ireland

Evaluation of Two Novel Commercial Starter Cultures for Utilization Within Industrial Pepperoni Production

The study objective was to assess two novel commercial starter cultures use in the production of industrial pepperoni. The cultures had been engineered to (i) inhibit the growth of *Listeria* via sequestering of vital nutrients (SC1), and (ii) facilitate meat curing (SC2). To assess both cultures, a series of recipe adaptations of an original industrial pepperoni recipe were generated whereby these cultures were assessed independently and simultaneously to determine their effects on fermentation and to investigate the limit to which NaCl and nitrite concentrations could be reduced without compromising the microbiological and physicochemical quality of the final pepperoni products. Throughout manufacture, pepperoni samples were evaluated for microbial and physicochemical parameters. Microbiological assessments included Total Viable Count, Lactic Acid Bacteria, *Staphylococci*, *E. coli*, Coliforms, *Pseudomonas*, *Listeria*, Yeasts and Moulds. Physicochemical tests included; water activity (aW), pH, Total Titratable Lactic Acid (TTLA%), NaCl%, Nitrite, Nitrate, Thiobarbituric Acid Reactive Substances (TBARS), colour and texture. It was established that NaCl and Nitrite contents for pepperoni could be reduced to zero, without affecting the microbial quality of the pepperoni samples produced. Zero levels of pathogenic or spoilage species were detected upon drying. Cured colour development was maintained in all samples and was comparable to colour development of the original control recipe.

Biography:

Ciaran Crowley is a final year PhD candidate, studying novel innovations in producing fermented meat products. He began his PhD in 2020 under the supervision of Prof. Joseph Kerry in The Food Packaging and Material Sciences Group, School of Food and Nutritional Sciences, University College Cork, Ireland. He graduated with a BSc in Microbiology in 2020, from the Department of Microbiology, University College Cork.



Priscilla Ollennu-Chuasam
University of Turku, Turku, Finland

Effect of varying coffee roast levels on the profile of lipophilic and hydrophilic bioactive compounds in ready-to-drink coffee beverages

Effect of varying coffee roast levels on the profile of lipophilic and hydrophilic bioactive compounds in ready-to-drink coffee beverages: Coffee is a popular beverage with bioactive compounds beneficial to human nutrition. The choice of coffee beverage and roast type depends on availability and consumer preference. Coffee roasting and brewing methods are postharvest processes that affect the nutrients and sensory properties of coffee. This study comprehensively investigated the effect of roast level on the profiles of lipo- and hydrophilic compounds in ready- to-drink pot and filter coffee beverages prepared from light, medium, medium-dark, and dark roasted coffee beans. The results revealed the similarities and differences in the coffee beverages using LC-MS metabolomics (QTOF/MS) and statistical methods. The findings show that the content of main bioactive compounds in coffee beverages e.g. chlorogenic acid, trigonelline and diterpenes decrease with increased coffee roast level while caffeine, theobromine and quinic acid contents increase with increased roast level. Principal Component Analysis revealed that roasting affects the hydrophilic compounds in the beverages, hence, coffee beverages of the same roast level clustered together irrespective of the brewing method. Contrary, brewing method affected the lipophilic compounds in the coffee beverages more than roast level. The results highlight possible differences in the health benefits of different coffee beverages and roast levels, and provides information for the future optimization of the coffee roasting process to attain coffee beverages of maximal nutritional benefits.

Biography:

Priscilla Ollennu-Chuasam has completed her Master's degree in Food Development at the University of Turku, Finland in 2018. She is currently a doctoral researcher at the University of Turku, Food Sciences unit, Finland. She has published 3 articles in reputable journals with her as the first author in a recent coffee research paper (2024) published in the Journal of Agricultural and Food Chemistry.



Tokuma Negisho Bayissa

Ghent University Faculty of Veterinary Medicine, Department of Veterinary and Biosciences, Belgium

Impact of species and their edible parts on the macronutrient and mineral composition of fish from the same aquatic environment, the Gilgel Gibe Reservoir, Ethiopia

Fish is an important source of easily digestible animal protein and other essential nutrients. It plays a pivotal role in food security and poverty alleviation in developing countries. However, the nations of the global South consume a limited number of fish species. This study aimed to evaluate the macronutrient and mineral composition of Whole fish (*Labeobarbus intermedius*, *Garra quadrimaculata*) and fillet (*Oreochromis niloticus*, *Labeobarbus intermedius*). A total of

64 fish samples were collected from Gilgel Gibe reservoir, Ethiopia, and analysed for its macronutrient and mineral composition. The proximate composition and mineral contents of fillets and whole body samples were determined. The whole fish showed a much higher fat and ash percentage than the fillets ($p < 0.05$). The fillets contained a much higher protein concentration than the whole fish ($p < 0.05$). The higher Ca:P ratios in whole fish compared to fillet in our study confirm the importance for a healthy human skeletal development, especially in diets where Ca is typically lacking. Whole Garra appeared to be containing important trace elements such as zinc and iron, a feature that was not found to the same extent in the whole Labeobarbus. These differences may find its origin in the feeding pattern of these fish species in the reservoir. The advantage of benthic species such as Garra to enrich the human diet with essential minerals may, however, coincide with the accumulation of toxic heavy metals as a potential result of soil erosion.

Biography:

Tokuma Negisho Bayissa has completed his PhD at the age of 35 years from Ghent University Belgium, and currently a research fellow at the same university. He is an assistant professor of Aquaculture and scientific communication chair at Jimma University, Ethiopia. He has published more than 10 papers in reputed journals.



Milena Terzić^{1*}, Biljana Lončar¹, Mirjana Petronijević¹, Aleksandra Cvetanović Kljakić¹, Jelena Arsenijević², Slavica Ražić²

¹ University of Novi Sad, Faculty of Technology Novi Sad, Novi Sad, Serbia

² University of Belgrade, Faculty of Pharmacy, Belgrade, Serbia

New Insight into the Valorization of Lemon Peel Employing Modern Extraction Techniques

The lemon (*Citrus limon* Burm. F.) is the third most popular citrus fruit after the orange and the mandarin, with an estimated production of 21.5 million tons annually. The processing of lemons into products destined for various industries generates large quantities of waste characterized by low costs, large volumes, and inconvenience in final disposal. Considering the content of phytochemicals in lemon peel, especially phenolic compounds, vitamins, minerals, dietary fiber, and essential oils, waste processing is of utmost importance. Therefore, in this study, extracts were prepared using various modern extraction techniques and solvents to valorize lemon peels and optimize the extraction of bioactive compounds. Water extracts were prepared by ultrasound (UAE) at 40 kHz and microwave-assisted extraction (MAE) at 600 Hz, while NADES extracts were prepared by maceration with a mixture of fructose-glycerol 1:4 (MAC₁) and choline chloride-glycerol 1:2 (MAC₂), with an extraction time of 30 min for all techniques.

Total phenols (TPC) and total flavonoids (TFC) were analyzed and antioxidant activity was investigated by *in vitro* assays. The UAE extract has the highest TPC content (0.053 mg CAE/g), while MAC₁ has the lowest phenolic content (0.018 mg CAE/g). As for total flavonoid content, the same trend was observed for TPC content, and the UAE extract is the richest source of total flavonoids (0.012 mg RE/g). UAE, MAE, and MAC showed significant activity against DPPH radicals, with IC₅₀ values between 3.46 and 6.03 mg/g. Using the reducing power assay, lemon peel extracts showed remarkable activity, with EC₅₀ values ranging from 3.66 to 10.84 mg/g. The research results indicate that the choice of extraction technology, the method of extract preparation, and the choice of solvent, influence the biological potential of lemon peels.

Keywords: modern extraction technologies, antioxidants, lemon peel

Acknowledgments: This research was supported by the Science Fund of the Republic of Serbia, #GRANT No 7464, Novel Bio-linked Magnetite/geopolymer Composites in Phenol-containing Wastewater Treatment: Toward Zero-waste Technology - BioCompWaterClean.

Biography:

Milena Terzić completed her PhD at the 2020 on Technology Engineering and is employed as a research associate at the Faculty of Technology, University of Novi Sad, Serbia. The main focus of her research is the optimization of modern extraction techniques for obtaining new functional food products from wild plants and the use of HPLC methods with the idea of characterizing new food products. In addition, she works on the development and formulation of dietary supplements intended for children and adults to strengthen immunity. She participated as a researcher in five national scientific projects in multidisciplinary fields. She is very active in actions of knowledge transfer from science to industry through cooperation with various companies.



Safae Skennndri

Avian Pathology Unit, Department of Veterinary Pathology and Public Health,
Hassan II Institute of Agronomy and Veterinary Medicine, Rabat, Morocco-
Moroccan Foundation for Advanced Science, Innovation and Research-
Mohammed VI Polytechnic University Ben Guerir, Morocco

Rapid *Salmonella* Detection: Ensuring Food Safety Through Innovation

S*almonella* remains a critical threat to food safety and public health, causing 93 million cases of gastroenteritis and 155,000 deaths annually, with 85% linked to contaminated food. This pathogen poses significant economic and public health challenges, particularly in developing regions where outbreaks in poultry production and the agri-food industry are frequent. Ensuring food safety and compliance with quality control standards requires rapid and reliable pathogen detection methods. Conventional techniques, while accurate, are often expensive, time-consuming, and dependent on sophisticated equipment, limiting their use in resource-constrained settings.

This study presents a novel, cost-effective colorimetric detection method for *Salmonella*, focusing on field applicability and food safety. The assay utilizes Isothermal Loop-Mediated Amplification (LAMP) targeting the *hlyA* gene. To streamline the process, a simple heat treatment was introduced for DNA extraction, eliminating reliance on commercial kits, while a prior pretreatment step with NaOH stabilized sample pH. Amplification was performed using a phenol red-based colorimetric buffer, enabling visual detection of amplification through a color change from pink to yellow at 65°C within 40 minutes.

The assay demonstrated a sensitivity of 3.9 CFU/μl and could be applicable across diverse sample matrices, offering a robust and adaptable tool for foodborne pathogen screening. By simplifying DNA extraction and visual detection, this method reduces costs and enhances accessibility. Its practical design supports implementation in resource-limited regions, addressing critical gaps in food safety management systems. This innovative approach contributes to reducing foodborne risks, improving public health, and supporting global food safety standards.

Biography:

Dr. Safae Skennndri is a veterinary doctor and Ph.D. candidate specializing in innovative diagnostic methods for foodborne pathogens, particularly *Salmonella*. With a background in veterinary medicine and microbiology, she focuses on advancing molecular techniques to improve food safety and public health. Safae has contributed to peer-reviewed journals and received scholarships recognizing her dedication to research. A finalist for the Morocco Youth Research Prize, she is recognized for her academic and research achievements. Her efforts aim to address challenges in food quality management and pathogen detection, contributing to safer and more sustainable food systems worldwide.



Sandra Ramirez Montes*, Eva M. Santos, Jose A. Rodriguez
Universidad Autonoma del Estado de Hidalgo, Mexico

Prediction of acrylamide concentration in potato crisps from impedance data and chemometric analysis of tubercle raw material

Acrylamide (AA) is produced in thermal food processing through two principal pathways, Maillard reactions and lipid oxidative degradation by acrolein formation. The interest in AA is its cytotoxic, carcinogenic, and mutagenic effect. Potato crisps are one of the foods with major content of AA due to the concentration of reducing sugars and asparagine into the potatoes which change during storage of tubercle raw material. In this sense, the present communication proposes to predict AA content in potato crisps from electrochemical data obtained from electrochemical impedance spectrometry in raw potato followed by multivariate analysis. For this, a training set of 86 tubercle raw material were analyzed by impedance spectrometry and the corresponding AA content in potato crisp sample were determined by HPLC-DAD. The occurrence of AA in the potato crisps was in the range of 210-2495 $\mu\text{g kg}^{-1}$. In general, a decrease in charge transfer resistance while AA concentration increases with longer storage time. This dependence was used to generate a prediction model. The better fit was obtained by partial least squares, in which correlation between AA experimental and AA estimated concentration was $R^2 = 0.917$ with RMSE of 14.7 within the AA interval of 327-581 $\mu\text{g kg}^{-1}$. The analysis of tubercle raw material lead the opportunity to prevent high levels of AA in potato crisps.

Biography:

Sandra Ramirez Montes is studying her PhD at Autonomous University of Hidalgo State in Mexico, at Department of Chemistry. Its experience is associated with Food Analytical Chemistry using electrochemical, chromatography, theoretical and big data analysis.



Marie Willeke

University of West London, London, United Kingdom

Perception and acceptance of insect-based products by GenZ and Millennials using a sensory tasting and quantitative questionnaire

Insect proteins represent a sustainable alternative to conventional meat and offer great potential for the food service industry, especially in the context of the growing demand for environmentally friendly nutrition. This study investigated the perception and acceptance of insect-based products among young adults in Europe. A mixed-methods approach was applied, including a close-ended questionnaire and a sensory evaluation of insect-based and commercial products.

The results show a clear discrepancy between awareness and consumer behaviour: Although 82.2% of participants are aware of insect products, only 18.6% have consumed them. Appearance is a decisive factor in acceptance: 93.2% of respondents find products more appealing if the natural appearance of the insects is hidden. The study also shows that neophobia is a key inhibiting factor. People with higher neophobia scores are less willing to consume insect products, while previous consumption is positively correlated with future willingness to consume.

The sensory evaluation showed mixed results: While the appearance of insect-based products such as granola and puffs were rated favourably, traditional alternatives performed better in other categories such as taste and texture. For hazelnut spreads, the insect-free variant was significantly favoured, especially in the mouthfeel category. Familiarity plays a central role in acceptance, as familiar flavours and texture profiles were generally preferred by the participants.

Despite barriers, 86% of participants recognise the high protein content of insects and 58% see consumption as environmentally friendly. The results suggest that social normalisation, education and sensory improvements are crucial to promote the acceptance of insect-based products. By creating innovative and familiar dishes chefs can play a key role in overcoming cultural resistance and integrating these products into everyday diets.

Key words: (1) edible insects, (2) entomophagy, (3) consumer acceptance, (4) sensory evaluation, (5) insect-based products, (6) sustainable alternative

Biography:

Marie Willeke is a postgraduate who completed an MSc in Food Business Management at the University of West London in late 2024, where her research focuses on innovative solutions for sustainable food systems. With a BSc in Ecotrophology from Justus Liebig University Giessen in Germany, her academic path combines nutritional science

with business acumen. Marie's current research, published with MDPI, explores insect-based proteins as sustainable alternatives and reflects her commitment to tackling global food issues. She combines intellectual curiosity with a results-orientated approach to advance the field of food science and business.

Gerard beralus

The Marley Ferme Agricole and Jabo Services

Construction of an agro-industrial free zone over an area of 1000 acres of land, or 1290 hectares

A company is an economic organization whose purpose is to produce goods and services intended for consumption. Its objective is to maximize profit – that is to say, it must sell its products at a price higher than its production costs. Companies are distinguished in this regard from public administrations, which have the mission of seeking the general interest, and from associations, which bring together people for a non-profit common goal. They belong to the market sector of the economy.

Marley Agricultural Farm is a non-collective agricultural company created in 2022 with the objectives of increasing the country's production capacity, creating wealth, generating jobs, and contributing to food self-sufficiency.

The agro-industrial free zone of Marley Agricultural Farm will allow for a mass production agricultural in the country while inviting other agricultural companies to come and produce in our agro-industrial free zone in order to achieve food self-sufficiency in the country. The agro-industrial free zone of Marley Farm was established to respond to the major problem of agricultural development in the country. Every year our beloved Haiti imports millions of US dollars worth of agri-food products while we are better positioned to produce because we have fertile land, we have the sun, we have water; it is up to us to combine them in order to cultivate. To address these issues, the agro-industrial free zone of Marley Farm is determined to implement a strategy to solve the problem of food insecurity in the coming years. Marley Agricultural Farm is committed to acting, promoting national production, and raising awareness among young agronomists and others to give body and soul to the agro-industry that can help us develop the country.

Let's cultivate, let's produce for the development of Haiti, yes we can do it.

The agro-industrial project of Marley agricultural farm, which will intervene in various areas related to agriculture, livestock, and related fields, and finally processing, by working and encouraging the agricultural sector for its full development, large crops for rice, corn, beans, market gardening for the cultivation of potatoes; and arboriculture for the cultivation of bananas. Regarding livestock, the project will aim to encourage the development of:

- fish farming
- Poultry farming
- Cattle and others.

For processing, let's take a look at the different factories of the company:

1. Factory for rice
2. Factory for corn

3. Factory for the production of organic fertilizer
4. Factory for the production of egg cartons
5. Factory for making poultry and livestock feed
6. Factory for processing the tree of life into flour
7. Factory for processing potatoes into flour
8. Factory for making sausages
9. Industrial incubator and hatcher of large capacities (high tech)
10. Slaughterhouse
11. Veterinary pharmacy
12. Laboratory
13. Cold room

All of these will result in an architectural arrangement of spaces and infrastructures for agriculture, livestock, and processing within the free zone, including supply chain structures for the commercial distribution of products and services aimed at increasing profit. This is to contribute to achieving the general objectives of the State, which is the increase of GDP through the contributions of this sector to the development of agriculture for the growth of the economy of the said zone, in a perspective of local and sustainable development of the region.

The agro-industrial free zone of Marley Agricultural Farm and Marley Agricultural Farmplans a partnership with certain schools in the region, meaning that the management intends to supply schools with food for the preparation of hot meals for the benefit of the students.

The project will directly impact approximately **200,000 inhabitants** at the departmental level, including its positive impacts in the Artibonite department and the national economy. We would like to establish other sites **MARLEY AGRICULTURAL FARM** in other departments to achieve food self-sufficiency.



7th World Congress on

Food Science & Regulatory Measures

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HYBRID EVENT

Zoom Meeting (GMT+1) Time in London, UK

VIRTUAL PRESENTATIONS

DAY 2



Gianfranco Pannella

Università Campus Bio-Medico di Roma, Rome, Italy

Exploring the microbial community of malting barley from different Italian geographical areas

Malt quality is generally associated with the technological process, but the microbial composition of the barley and its evolution during the malting process can be decisive for the characteristics of the final product. Barley microbial communities may originate from the field and evolve during the malting process; therefore, the origin of barley may play a primary role on the composition of the grain's microbiota. In this study, a preliminary analysis was conducted to investigate the microbiota of barley, harvested in different geographical areas of Italy, and its relationship with the agroclimatic indices (temperature, radiation, precipitation and evapotranspiration) of the explored geographical areas. Principal component analysis of the agroclimatic indices showed that the geographical areas were divided into 3 clusters, mainly according to the characteristics of evapotranspiration and temperature. Regarding the microbiological analysis of barley, it was observed that in all samples, there was a prevalence of bacteria (~ 7 Log CFU/g) and a lower concentration of eumycetes (5.5-6 Log CFU/g), regardless of the geographical area. *Enterobacteriaceae* and lactic acid bacteria showed a microbial load of 6 and 2 Log CFU/g, respectively. Barley samples from the Umbria region were characterized by a high total bacterial count compared to samples from the other two areas. Furthermore, the value of the total bacterial load was negatively correlated with the temperature and evapotranspiration values of the area. The study, although preliminary and in the process of being further investigated with meta-taxonomy approaches, suggests the importance of agroclimatic conditions on the composition of barley microbial communities.

Biography:

Since 2023, he has been University Researcher in Agricultural Microbiology at the Departmental Faculty of Science and Technology for Sustainable Development and One Health at the Università Campus Bio-Medico di Roma. His scientific research activity is mainly focused on food microbiology and in particular on the study of the technological and functional characteristics of microorganisms involved in food production and preservation. He is co- author of more than 30 scientific articles published in international journals and of several abstracts published in proceedings of national and international conferences.



Maryam Mohammed Al-Ghazali
Food Science specialist /TopOne Spa, Oman

Functionality Of Edible Coating in food product

The edible coating is a solution to improve the quality and shelf life of fresh produce ranging from meat, poultry, fish, and dairy products to post-harvest fresh fruits and vegetables. Edible coating/s and film/s reduce packaging waste, prevent the incorporation of chemical preservatives, and result in a minimally-processed natural fresh product with an extended shelf life. The aim of this study is to check the quality of different type of coating in food product, fruits and vegetables, by novel method, samples were collected fruit, vegetables Result showed that gum Arabic and chistone the best type to be coated in fruit and vegetables because its help to improve the color Reduction of weight loss ,Maintenance of quality during distribution and storage condition, Reduction of storage condition Improvement of consumer demand, Extension of shelf life and Reduction of artificial packaging

Key words: Coating, Sheilf life

Biography:

Maryam has completed her Master Degree at the age of 26 years from Sultan Qaboos University, Oman. she is the head of Microbiology lab at Al Joudah Food Tech Lab, Oman and asset manager at TopOne Spashe has over 5publications that have been cited over 2000 times, she has been participated in many conference, journal and others workshops 2013-2024



S. Santonicola*, M. Volgare, M. Cocca and G. Colavita

¹ Department of Medicine and Health Sciences "V. Tiberio", University of Molise, Italy.

² Institute of Polymers, Composites and Biomaterials, National Research Council of Italy, Italy.

³ Department of Chemical Engineering, Materials, and Industrial Production, University of Naples Federico III Italy.

Microfibers in the food chains: food safety and environmental issues

In recent years, microplastics have received considerable attention from governments, non-governmental organizations, the scientific community, and the media as emerging environmental pollutants. These particles have been widely found in the marine environment and many edible fish and shellfish with microfibers being the predominant forms. In the aquatic ecosystem, microfibers have been shown to be transferred along the food chain from algae to zooplankton and then to fish, leading to human exposure. However, these particles may also accumulate in the soil with a potential risk of transfer also along the terrestrial food chain.

Because of their high nutritional value, fishery and milk products play a key role in human nutrition. The evaluation of microfiber contamination in fish, shellfish, and commercial milk from Italy revealed the prevalence of natural and artificial microfibers (above >80%) in the analyzed samples. However, despite the increased evidence of microfiber pollution in the environment, only a few studies refer to natural/artificial microfiber contamination in food products, and more data is needed to make a safety risk assessment. Moreover, the impact of all activities during food production, from the farm to the industry, was never questioned, despite microfibers having become an important issue in food processing. Further studies are needed to evaluate the levels of microfiber contamination along the entire supply chain to identify the sources of contamination and implement control strategies and mitigation measures.

Biography:

Graduated in Veterinary Medicine (2013), and Ph.D. in Veterinary Science at the University of Naples Federico II (2017), Dr. Serena Santonicola has experience in Food Safety, focusing on food contaminants. She is working at the Department of Medicine and Health Sciences "V. Tiberio" University of Molise, as a researcher in the field of microplastic and microfiber contamination in food products.



**Brajesh Kumar*, Kapila Shekhawat¹, Gajender Yadav²,
Ashwani Kumar²**

Division of Agronomy, ICAR – Indian Agricultural research Institute, India.

Partial application of Nano-fertilizers as a sustainable strategy for enhancing rice productivity in reclaimed sodic soils

Rice (*Oryza sativa* L.), a staple crop cultivated extensively across ~11 million hectares in India, plays a crucial role in ensuring food security. In this study, we have evaluated the effect of Nano-nitrogen and phosphorus fertilizers on agronomical traits, and yield performance of rice variety CSR-30 in reclaimed sodic soils. Key parameters assessed were plant height, leaf area index, relative water content, chlorophyll content, and nutrient accumulation (N and P in grain and straw). Yield-contributing factors such as the number of plants per square meter, effective tillers per plant, seeds per panicle, and harvest index were analyzed alongside grain, straw, and total biological yields (Mg ha^{-1}). Results demonstrated that the application of Nano-fertilizers significantly improved growth and yield attributes, with CSR-30 exhibiting enhanced adaptability and productivity in sodic soil conditions. Grain and straw yields were strongly influenced by effective tiller count, nutrient status, and optimized Nano-fertilizer applications, underscoring their role in improving nutrient use efficiency and soil health. This research highlights the potential of Nano-nitrogen and phosphorus fertilizers as sustainable alternatives to conventional inputs, offering a pathway to enhance rice productivity and resilience in reclaimed sodic soils.

Biography:

Brajesh Kumar has pursuing his PhD (In-Service) from Division of Agronomy, ICAR – Indian Agricultural research Institute, New Delhi -110012, India and He is working as a Senior Technical Assistant in the Central Laboratory, Soil and Crop Management Division, ICAR – Central Soil Salinity research Institute, Karnal -132001, Haryana, India. He has collaborator in three popular of chickpea varieties: RKG 13-380 (Kota Desi Chana 4), RKG 13-515-1 (Kota Kabuli Chana 5) and RKG 19-1 (Kota Kabuli Chana 6) for Rajasthan State of India with Dr. Preeti Verma, Associate Professor (PBG) & PI AICRP on Chickpea, Agriculture University Kota, Rajasthan India. He has published more than 05 papers in reputed journals.



**Kam-Chun Chan^{1*}, Wei-Hao Zhang¹, Yui-Man Chan¹,
Hiu-Lam Li¹, Jing Fang¹, Han- Yan Luo¹, and Jun Xu¹**

¹School of Chinese Medicine, Hong Kong Baptist University, Hong Kong

Tryptophan sulfonate: A new chemical marker for accurate and efficient inspection of sulfur-treated food and herbal medicinal products

Sulfur treatment, including sulfur fumigation and the sulfite addition, is a common preservation method employed in the food and herbal medicinal industries. However, excessive consumption of preservative sulfites in these products can lead to respiratory symptoms. Therefore, inspection of sulfur-treated products is necessary to regulate sulfur treatment. Currently, the sulfite test is a commonly used method for detecting residual sulfites in sulfur-treated food and herbal medicinal products. However, sulfites are chemically unstable, which can lead to inaccurate results. The sulfite test is also labor-intensive and time-consuming, capable of analyzing only one sample at a time, which makes high-throughput analysis challenging. Moreover, the sulfite test may yield false-positive results for foods rich in endogenous sulfur-containing components such as garlic and onion.

In response to these challenges, we report a new chemical marker, tryptophan sulfonate, for the accurate and efficient inspection of sulfur-treated herbal medicine products. This marker was first discovered in sulfur-fumigated ginger, yam, and ginseng through untargeted metabolomics. Its identity was confirmed using chromatographic separation, nuclear magnetic resonance analysis, and chemical synthesis. To demonstrate its applicability, a tryptophan sulfonate assay was developed and tested on 50 commercial samples. The results indicated that this assay outperforms the sulfite assay in terms of both accuracy and efficiency. We believe the tryptophan sulfonate assay offers a more cost-effective alternative to the existing test protocol used in industry. This study represents a potential advancement in safety and quality assurance, providing the industry with a robust tool for inspecting sulfur-treated food and herbal medicine.

Biography:

Mr. Kam-Chun CHAN is a PhD student at the School of Chinese Medicine, Hong Kong Baptist University. His research interests are centered on the processing of herbal medicine, particularly sulfur treatment. He focuses on the chemical transformations and toxicity that occur following sulfur treatment of herbal medicines.



Mohammad Washiq Faisal

International Maize and Wheat Improvement Center (CIMMYT), Dhaka, Bangladesh

Enhancing crop productivity and nutritional yields through efficient crop diversification: A comparative study of rice-rice system in Bangladesh

Rice-based cropping systems have significant role in attaining self-sufficiency in food production in Bangladesh. In recent times, the sustainability of rice-rice cropping systems has been threatened by a yield plateau, high input cost and labor availability. Hence, the rice-based cropping systems seek more attention in relation to ensure future food security. This research study focuses to accelerate the transformation of our agrifood systems through introducing diversified cropping options especially for enhancing profits and nutritional yields.

An experiment was set up in RCBD, with 9 scenarios and 3 replications. The scenarios were nine alternative cropping systems varying in intensification and integration of non-rice crops (cereals, legumes, oilseed, fiber, fodder and leafy vegetables) during winter and spring seasons to evaluate the nutritional yield and profitability. All costs of all inputs and outputs incl. labor and irrigation water, major nutrients (protein, fat, carbohydrates), Iron and Zinc as well as Vitamin A and C were calculated.

Diversified alternative cropping systems contribute to the availability of vitamins (A & C) and micronutrients (Zn & Fe). Comparing the traditional rice-fallow-rice cropping pattern to inclusion of leafy vegetables in rotation noted a clear increase in nutritional yields, especially for vitamins and iron. Biofortification of staple crops like rice can contribute to nutritional security throughout the year. During Kharif-1 growing sweetcorn or groundnut instead of maize increases REY because of higher market value of sweetcorn and groundnut. The selection of competitive leafy vegetable affects maize performance and without a good leafy vegetable establishment the loss can't be compensated.

Biography:

Mohammad Washiq Faisal currently working as a Research Associate at International Maize and Wheat Improvement Center (CIMMYT) based in Dhaka, Bangladesh. He has experienced more than 15 years of agricultural research and extension activities with different CGIAR organizations in Bangladesh. Faisal has been contributed and associated for technical association and coordination for CIMMYT portfolio projects with Nepal, India Bhutan and Pakistan. Faisal completed his Master of Science in Agronomy and published several papers in the reputed journals.



Maria Athanasopoulou

Chairwoman of the World Food Travel Association, Greece.

Rural Flavors: Enhancing Tourist Experiences Through Gastro-Agrotourism

Summary: The speech introduces Gastro-Agrotourism, a growing tourism trend that combines gastronomy and agrotourism, offering travelers immersive experiences centered around local food and drink production in rural settings. In response to post-Covid shifts in tourist preferences, Gastro-Agrotourism appeals to those seeking authentic, sustainable, and intimate travel experiences. Tourists participate in activities like visiting vineyards, olive groves, and apiaries, connecting with nature and local producers. The speech emphasizes the role of community involvement, the economic benefits for local businesses, and the importance of clear promotion strategies to make Gastro-Agrotourism a year-round, global draw.

Biography:

Maria Athanasopoulou is the founder of the tourism marketing company Respond OnDemand, which for fifteen years has been organizing professional meetings for Greek tourism entrepreneurs and travel agents from abroad, with the aim of strengthening incoming tourism in Greece. She is a graduate of the Law School of the Aristotle University of Thessaloniki. She serves as the Chairwoman of the World Food Travel Association and as ambassador of WFTA in Greece. She is a sustainable tourism marketing expert. She has held sales, marketing and culinary tourism seminars for tourism professionals and tourist destinations, as well as many speeches and presentations on topics related to tourism and culture, at events in Greece and abroad.



Renata Adriana Labanca

Associate Professor, Department of Food, Faculty of Pharmacy, Federal University of Minas Gerais (UFMG), Minas Gerais, Brazil

Case Study: Specialty Coffee in Sweden

Specialty coffee has gained significant popularity globally, known for its unique flavors, superior quality, and ethical sourcing practices. In Sweden, a country with a deep-rooted coffee culture, the demand for specialty coffee has been rising steadily. This work explores the demographic and psychographic profile of specialty coffee consumers in Sweden and evaluates whether the unique attributes of specialty coffee justify its higher cost compared to regular coffee. The audience for specialty coffee is generally more discerning and willing to pay a premium for quality. In Sweden, the typical specialty coffee consumer can be characterized by several traits: a. Demographics: Specialty coffee consumers are often young adults, ranging from 25 to 40 years old, with a higher level of education and disposable income. They are typically urban dwellers living in cities like Stockholm, Gothenburg, and Malmö. b. Psychographics: These consumers value sustainability, ethical sourcing, and quality. They are willing to invest in coffee that aligns with their values of environmental consciousness and social responsibility. They often have a strong interest in the origin of the coffee beans, the farming practices, and the overall production process. c. Behavioral Characteristics: Specialty coffee consumers are more likely to engage in coffee-related activities such as visiting coffee shops, attending coffee tastings, and even brewing their own coffee at home with advanced methods like pour-over, AeroPress, or espresso machines. They tend to be part of a community that appreciates the nuances of coffee flavors and the craftsmanship involved in producing it. In conclusion, the specialty coffee market in Sweden is shaped by a unique blend of demographics, values, and behaviors. The willingness of Swedish consumers to invest in premium coffee that emphasizes quality, sustainability, and ethical sourcing reflects a broader societal trend towards mindful consumption. As these consumers continue to seek out unique coffee experiences and deepen their knowledge of coffee origins and production processes, the demand for specialty coffee is likely to keep growing. Ultimately, the higher cost of specialty coffee in Sweden is justified by its superior quality and the values it represents, making it an appealing choice for a discerning and socially conscious audience.

Biography:

Renata Labanca holds a degree in Pharmacy and Food from the Federal University of Minas Gerais (1999), a master's and doctorate in Food Sciences, both from the Federal University of Minas Gerais (2004, 2009), and a postdoctoral degree in Food Sciences from Chalmers University based in Gothenburg, Sweden (2016 and 2023). She is currently an associate professor at the Federal University of Minas Gerais. She has published more than 30 papers in reputed journals and has been serving as an editorial board member of repute.



Melusi Mponiseng Nondo
Midlands State University, Zimbabwe

Encyclopedia of Food Preservation Techniques

The Encyclopedia of Food Preservation techniques serves as a comprehensive resource detailing various methodologies employed to extend the shelf life and safety of food products. This reference compiles an extensive array of preservation methods, including (e.g. pasteurization, canning, sterilization, use of chemicals, use of high pressure and ultra sound and other methods. Each entry provides critical information on the mechanisms, efficacy and application of these methods, alongside their impact on nutritional quality, and safety. Literature from diverse sources, including peer-reviewed journals and industry reports, has been meticulously curated to support method selection and optimization. Essential parameters such as microbial inactivation rates and regulatory considerations are included, ensuring applicability in both research and industrial contexts. The encyclopedia addresses the growing need for reliable information in food preservation, catering to food scientists, technologists and industry professionals. The encyclopedia will be updated to reflect advancements and consumer trends.

Biography:

Melusi Mponiseng Nondo has completed his Bsc at the 24 years from Midlands State University. Currently open for work, looking for graduate internship



Md. Ashraful Islam, Sydul Islam, Sharmin Sultana, Razia Khatun*

National livestock research institute of Bangladesh, Bangladesh

Assessing the Performance of Native Chickens: A Community Level Study

A comprehensive study was designed to assess the performance of native chicken (NC) at the community level. After administering scheduled vaccines for a 5-week brooding period, 800 NC were distributed across Faridpur, Rajshahi, Sirajganj and Jashore in an 8:2 ratio of females to males, with each farmer receiving 20 chickens for rearing under semi-intensive systems. Following the 21-day post-vaccination period against Newcastle Disease indicating the presence of positive antibodies in 80% (n=24/30) and 100% (n=20/20) of chickens for two times scheduled vaccination administered respectively. At 20 weeks of age, antibody titers against avian influenza (H5N1) demonstrated a 100% protective level in all study areas. Male chickens in Rajshahi showed a consistent weight increase, reaching 1256.67gm by the 20th week, with Sirajganj and Jashore following at 1316.01gm and 1210.9gm, respectively. A similar growth pattern was observed in female chickens, with Rajshahi achieving the highest weight of 1278.17gm, surpassing Sirajganj at 1131.1gm and Jashore at 1041.6gm. Regional variations in the age of first laying, with Jashore native chickens starting lowest at 22.89 ± 0.42 weeks and those in Faridpur highest at 26.50 ± 0.21 weeks. Hen day egg production was highest in Rajshahi at 56.36%, compared to 35.12% in Sirajganj. The average egg weight at first laying ranged from 28.22 ± 0.52 grams in Jashore to 35.22 ± 0.75 grams in Rajshahi, and they produced the heaviest eggs at peak period (40-week) 53.5 ± 1.14 grams. Mortality rates up to the peak period of production varied considerably, with Rajshahi experiencing the highest mortality rate at 32.5%, while Jashore had the lowest at 19.54%. This study highlights significant regional differences in growth and production.

Biography:

Razia Khatun has completed his PhD at the age of 35 years from Bangladesh Agricultural University. She is head of farming system research division of Bangladesh Livestock Research Institute, an only one national livestock research institute of Bangladesh. He has published more than 20 papers in reputed journals and has been serving as an editorial board member of repute.



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