



Joint Conference on

# AGRICULTURE AND HORTICULTURE & FOOD SCIENCE AND AQUACULTURE

28-29 July, 2022



## AVANI ATRIUM BANGKOK HOTEL





# Scientific Program

Joint Conference on  
**Agriculture and Horticulture**  
&  
**Food Science and Aquaculture**

**Thursday**  
**July 28 , 2022**

Avani Atrium Bangkok Hotel

Day 1 - July 28, 2022

09:00 - 09:15 Onsite Registrations

Day 1 | July 28, 2022

9:00 - 17:35

Hall Name: Avani Atrium Bangkok Hotel

## Opening Ceremony

09:15 - 09:30 **Mr. John Surendran**, International Scientific Coordinator, United Research Forum, UK  
**Juliette Alemany**, International Scientific Coordinator, Thailand

## Keynote Speaker

09:30 - 10:15 High-throughput phenotyping of postharvest storage performance of navel oranges for implementation of intelligent logistic management systems  
**Ron Porat**, Volcani Institute, Israel

10:15 - 11:00 Spices in the Prevention and Treatment of Oral Submucosal Fibrosis  
**Ajaikumar B. Kunnumakkra**, Professor, Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, India

(11:00 - 11:15) Coffee Break

## Speaker Presentations

11:15 - 11:40 Establishment of the Medicinal Plants Garden and Nursery in the Faculty of Science at Aleppo University  
**Bayan Tiba**, Dept. of Plant Biology-Faculty of Science- University of Aleppo, Syria

11:40 - 12:05 LC-MS analysis of Pipecolic Acid, N-Hydroxypipicolic Acid and Salicylic Acid in one resistant and susceptible variety of tomato (*Solanum Lycopersicum L.*)  
**Usha K. Sabharwal**, Sardar Patel University, India

12:05 - 12:20 Effects of red-pink pigmented bacteria as a dietary supplement for rockfish (*Sebastes schlegeli*)  
**Soohwan Kim**, Kunsan National University, Republic of Korea

12:20 - 12:35 Improving Physicochemical Properties of Lactose hydrolyzed Milk Powder by the Prebiotic Carrier  
**Chanunya Fahwa**, Faculty of Public Health, Mahidol University, Bangkok, Thailand

12:35 - 13:00 Replacement of fishmeal with Sesame meal for improvement of Performance in Common Carp (*Cyprinus carpio*) fingerlings  
**Muhammad Mudassar Shahzad**, Department of Zoology, Division of Science and Technology, University of Education, Township, Lahore, Pakistan

13:00 - 13:10 Group Photo

13:10 - 14:00 Lunch Break

14:00- 14:25 Camel Milk; an adjunct superfood for diabetes cases  
**Taherah Mohammadabadi**, Professor, Agricultural Sciences and Natural Resources University, Iran

14:25 - 14:50 Efficacy of nano-Cr particles supplementation on mineral absorption and carcass composition of *labeo rohita* fingerlings fed sunflower meal based diets  
**NISAR AHMAD**, Department of Zoology, University of Jhang, Punjab, Pakistan

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14:50 - 15:15 Role of Sesame meal in improvement of Body Composition, Mineral Absorption and Immunological indices of Common Carp (*Cyprinus carpio*)  
**Kainat Basharat**, Assistant Professor at Department of Zoology, Division of Science and Technology, University of Education, Pakistan

15:15 - 15:40 Bio-Preservation of Yoghurt Quality and Safety by Nisin Nanoparticles Prepared by acetic acid Precipitation Method  
**Walaa M. Elsherif**, Agriculture Research Center (ARC), Egypt

15:40 - 16:05 Efficacy of Substituted Barley Meal Based Diet for Improvement in Performance of Common Carp (*Cyprinus carpio*)  
**Kashifa Jalil**, Department of Zoology, Government College University, Lahore, Pakistan

16:30 - 16:45 Coffee Break

16:45 - 17:10 The insect pests and disease's of mango (*mangifera indica* L.) Plants and fruits: Importance and management strategies  
**Ahasan Ullah Khan, UCL**, Faculty of Agriculture, Sylhet Agricultural University, Sylhet 3100, Bangladesh

17:10 - 17:35 Phycobiliproteins from the cyanobacterium *Anabaena minutissima* for the *Rhizoctonia solani* control and tomato growth-promotion  
**Hillary Righini**, Department of Agricultural and Food Sciences, University of Bologna, Italy

Closing Ceremony and Certificate Distribution

# Scientific Program

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&  
**Food Science and Aquaculture**

**Friday**  
**July 29 , 2022**

Avani Atrium Bangkok Hotel

Day 2 - July 29, 2022

## Speaker Presentations

09:30 - 09:50	Deficit irrigation and its implications in vegetable crops <b>Dushyant Diapkuamr Champaneri</b> , Navsari Agricultural University, Navsari, Gujarat, India
09:50 - 10:10	Fish Diversity and Conservation Status in the Freshwater Ecosystem of Dharla River at Kurigram, Bangladesh <b>Md. Ashrafal Alam</b> , Rural Development Academy (RDA), Bogura, Bangladesh
10:10 - 10:30	SMilk lactoferrin against viral infections <b>Taherah Mohammadabadi</b> , Professor, Agricultural Sciences and Natural Resources University, Iran
10:30 - 10:50	Effect of indigenous Buckwheat extract on serum glucose and lipid metabolism of streptozotocin- Diabetic rats <b>Muhammad Mazahir</b> , Institute of Food and Nutritional Sciences, PMAS-Arid Agriculture University, Pakistan
10:50 - 11:10	Diversification of Fish and Fisheries Resource Management and its Challenge in Bangladesh <b>Binay Kumar Chakraborty</b> , Former P. Director, Department of Fisheries, Bangladesh

11:10 - 11:30 Coffee Break

## Speaker Presentations

11:30- 11:50	camel Milk; an adjunct superfood for diabetes cases <b>MUHAMMAD UMAIR ARSHAD</b> , Department of Food Science, Government College University Faisalabad, Pakistan
11:50 - 12:10	Evaluation of potassium phosphate salts for controlling squash powdery mildew <b>SHEREEN EL-SAYED EL-NAHAS</b> , Plant Pathology Research Institute/ARC, Egypt
12:10 - 12:30	Role of Nano-Cr particles supplemented sunflower meal based diets on growth performance, nutrient digestibility and hematology of cirrhinus mrigala Fingerlings <b>NISAR AHMAD</b> , Department of Zoology, University of Jhang, Pakistan
12:30 - 12:50	EFFECT OF AFRICAN BASIL ( <i>Ocimum gratissimum</i> ) ON OREXIGENIC FACTORS AND ZOOTECHNICAL PERFORMANCE OF AFRICAN CATFISH ( <i>Clarias gariepinus</i> ) <b>OKE OJO PELUMI</b> , Federal University of Technology , Nigeria
12:50 - 13:10	Food allergy/intolerance: immunomodulation responses and health hazards <b>MUHAMMAD SUHAIL IBRAHIM</b> , Institute of Food and Nutritional Sciences PMAS Arid Agriculture University, Pakistan

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## 13:10-14:00 Lunch Break

- 14:00 - 14:20 Adequacy of Succedaneous Barley meal on Carcass Composition, Immunity and Minerals Absorption in Common Carp (*Cyprinus carpio*) fingerlings  
**Tehreem Shabbir**, Department of Zoology, Division of Science and Technology, University of Education, Pakistan
- 14:20 - 14:40 Some biotic and abiotic factors which influence the distribution of monogeneans in gills of *Brycinus kingsleyae* Günther, 1986 (Osteichthyes - Alestidea) from the Nyong River at Akonolinga (Centre-Cameroon)  
**Ndongo Ivan**, Faculty of science, University of Yaoundé, Cameroon
- 14:40 - 15:10 Status of bovine tuberculosis and its zoonotic implications in Borana zone, Southern Ethiopia  
**Ararsa Duguma Benti**, College of Veterinary Medicine, Haramaya University, P.O.box. 138, Dire Dawa, Ethiopia
- 15:10 - 15:30 Mining of favorable alleles for seed reserve utilization efficiency in *Oryza sativa* by means of association mapping  
**Nour Ali**, Laboratory of Crop Production and Multiplication, Field Crops Research Department, Agricultural Faculty, Damascus University, Damascus, Syria
- 15:30 - 15:50 Vibration control strategies to avoid berry falling during transportation phase of robotic handling of cluster fruit  
**Muhammad Faheem**, Department of Farm Machinery and Power, Faculty of Agricultural Engineering and Technology, University of Agriculture, Faisalabad 38000, Pakistan
- 15:50 - 16:10 Translating open-source remote sensing data to crop water productivity improvement actions  
**Abdur Rahim Safi**, IHE Delft Institute for Water Education, The Netherlands

## 16:10 - 16:25 Coffee Break

- 16:25 - 16:45 Prediction of environmental indicators in land leveling using artificial intelligence techniques  
**Isham Alzoubi**, Department of Surveying and Geomatics Engineering, Syria
- 16:45 - 17:05 The comparison between Tanzanian indigenous (Ufipa breed) and commercial broiler (Ross chicken) meat on the physicochemical characteristics, collagen and nucleic acid contents  
**Ngassa Julius Mussa Challya**, Rukwa Regional Commissioners Office, Tanzania

Closing Ceremony

# LETTER FROM THE ORGANIZING COMMITTEE

To all attendees and participants,

I wish to bless all of you for participating in this important international agricultural conference. After more than two years of closures due to the Corona pandemic and the very recent opening of Thailand to foreign visitors, we are hereby blessed to have this opportunity to meet together, share scientific knowledge, and discuss important agricultural issues. The agriculture and horticulture sectors are currently facing remarkable global challenges, including closures and disruptions of the food supply chains, rising food and energy prices, shortage of resources, increasing global warming, and altogether we have an urgent need to turn agriculture production to become more productive and sustainable. I hope that sharing our knowledge and data will assist in receiving new ideas for the benefit of all of us. Waiting forward to meet you all at July 28-29 in Thailand. Sincerely,

Dr. Ron Porat  
Head of Institute of Postharvest and Food Science ARO, The Volani Institute,  
Rishon LeZion, Israel

## URF Conference Committee



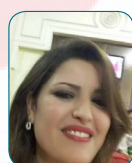
Dr. Erica Edfort, Chamberlain University, USA



Mrs. Susan Kitching, Northern Area Armed Forces Hospital, Saudi Arabia



Dr. Vineet Datta, Datar Cancer Genetics, India



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Dr. Jansi Natarajan, Sultan Qaboos University Oman



Dr. Ron Porat, Volcani Institute, Israel



Dr. David Pastor-Escuredo, UCL, UNICEF and LifeD Lab, Spain



Dr. Ahmad Nawafleh, Health care leader and Management Specialist, Mutah University, Jordan



Prof. Ekatherina Charvalos, INVITROLABS, Greece



# **Keynote Forum**

## **DAY 1**



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**Ron Porat**

*ARO, the Volcani Institute, Isra el*

**High-throughput phenotyping of postharvest storage performance of navel oranges for implementation of intelligent logistic management systems**

Fruit and vegetables are usually stored according to the First In First Out (FIFO) method, thus the marketing decisions are based on storage duration alone. The objective of the current study was to examine the effects of various pre-harvest and postharvest factors on the quality of late-season ‘Rustenburg’ navel oranges in order to develop shelf-life prediction models that may allow the implementation of the more efficient First Expired First Out (FEFO) logistic method, that is based on the potential shelf life of each particular batch of produce. The experiments were conducted with 12,000 navel oranges (~4 tons) harvested from six different orchards and treated in a commercial citrus packinghouse. The pre-harvest factors included different harvesting periods and yields, and the postharvest factors included different storage temperatures, humidity’s and durations. Fruit quality evaluations were conducted at harvest and at weekly intervals during a 20 week prolong storage period, and included measurements of fruit weight loss, firmness, color, decay and peel damage, TSS, acidity, vitamin C, flavor acceptance, ethanol accumulation, and overall acceptance scores. The achieved results served as a large database for development of accurate shelf-life prediction models. In the future, we intend to adopt these models in order to develop a novel marketing decision support system for intelligent logistic management of oranges.

**Biography**

Dr. Ron Porat is a researcher at the Dept. of Postharvest Science, ARO, The Volcani Institute, Israel. He previously served as the Head of the Dept. of Postharvest Science, and currently serves as the Head of the Institute of Postharvest and Food Sciences, ARO, the Volcani Institute. Dr. Ron Porat is an expert on postharvest physiology and quality of fruit and vegetables, and his main research interest is in improving quality and reducing postharvest losses of fruit and vegetables. His research involves usage of packagings, coatings, enhancement of chilling stress tolerance, improvement of flavor perception and development of storage systems.

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&  
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## ***Ajaikumar B. Kunnumakkra***

*Professor, Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, India*

### **Spices in the Prevention and Treatment of Oral Submucosal Fibrosis**

Oral submucous fibrosis (OSMF) is a chronic, fibrotic disorder of the mouth which generally afflicts the oral mucosa of the patients in the age group of the 20s to 40s. OSMF is more common in South Asian population majorly due to the habit of areca nut chewing. Eventhough many treatments are available for the treatment of this diseases, majority of them are not efficacious and causes serious adverse side effects. Moreover, these treatments mainly focus on palliative care and not the complete cure. It is now well-established that oxidative stress and inflammation play major role in the development of OSMF. Therefore, anti-oxidant and anti-inflammatory agents have significant potential in the prevention and treatment of this disease. A plethora of evidence suggests that spices and their active components have remarkable anti-oxidant and anti-inflammatory properties and can be used for the management of OSMF. For example, Turmeric and its active component curcumin have shown significant anti-oxidant and anti-inflammatory properties and many preclinical and clinical studies proved that these agents are safe and affordable for most of the population worldwide. Besides, these agents are known to scavenge free radicals and modulate the expression of various pro-inflammatory cytokines and inflammatory signaling pathways. Further, several preclinical and clinical studies showcased their role in the management of OSMF. In addition to Turmeric, several other spices are also shown to have anti-OSMF properties. Therefore, the current talk elaborates the potential of spices in the management of OSMF and their mechanism of action.

**Keywords:** OSMF, Spices, Inflammation, Turmeric, curcumin

#### **Biography**

Dr. Ajaikumar B. Kunnumakkara, is currently working as a Professor in the Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, Assam, India (IIT Guwahati). He is also an Honorary Chair Professor in Nanoscience and Nanotechnology and Visiting Scientist at BioMedical Research Institute (AIST), Tsukuba, Japan. He was elected as Fellow of Royal Society of Medicine, United Kingdom in 2008. He earned his doctorate in 2006 from Amala Cancer Research Center, Thrissur, affiliated with University of Calicut, Kerala, India. Dr. Kunnumakkara did his first postdoctoral work at the University of Texas MD Anderson Cancer Center, Houston, Texas, USA (2005–2008) and his second postdoctoral work at the National Cancer Institute of National Institutes of Health (NCI/NIH), Bethesda, Maryland, USA (2008–2010); where he was subsequently employed as a NIH Scientist from 2010 to 2012. Dr. Kunnumakkara's research interests include the role of inflammatory pathways in cancer development, Cancer cell signalling, identification of novel biomarkers for cancer diagnosis and prognosis and cancer drug development. He is credited with the publication of more than 280 articles including original research articles, reviews and book chapters. Currently, he has over 38,000 citations and an h-index of >65. Presently, his work is cited over 5000 times in the literature annually. Dr. Kunnumakkara has also edited nine monographs including "Molecular targets and therapeutic uses of spices: Modern uses for ancient medicine"; "Anticancer properties of fruits and vegetables: A scientific review", "Fusion Genes and Cancer" and Cancer Cell Chemosensitivity and Chemosensitization. Currently, he is the Executive Secretary of Society for Nutraceuticals and Chronic Diseases and Joint Secretary of Society for Translational Cancer Research. He is the editor of Phytomedicine, Exploration of Targeted Anti-tumor Therapy, Current Research in Pharmacology and Drug Discovery, Journal of Ayurveda and Integrative Medicine etc. He is also the recipient of many awards including the Faculty Award from Kfr El-Sheik University, Egypt for his outstanding contribution in science and best scientific presentation award from National University of Singapore. He has also delivered many Key Note lectures and invited lectures.



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# **Speaker Presentations**

## **DAY 1**

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July 28-29 , 2022 / Avani Atrium Bangkok Hotel



**Bayan Tiba**

*Dept. of Plant Biology-Faculty of Science- University of Aleppo, SyriaIndia*

**Establishment of the Medicinal Plants Garden and Nursery in the Faculty of Science at Aleppo University**

Medicinal plants today are widely recognized in terms of their effectiveness and safety. They can be used to treat many infections and chronic diseases, and they are less expensive than chemical drugs with fewer side effects. Since most universities in the world follow gardens of medicinal plants, the need has arisen to establish a garden and nursery of medicinal plants in the College of Science for teaching, research and decorative purposes, as well as the accompanying activities and programs, including making safe medicinal plants accessible to interested specialists and amateurs, and spreading the culture of herbal medicine in the community surrounding the university.

During the past years, the land was cleaned and its soil prepared for cultivation, a number of agricultural pots and tools were provided, and quantities of seeds and cuttings of medicinal plants were brought. Some medicinal plants began to be planted and propagated, both vegetatively and seedly, in the pots and in the garden soil. The number of medicinal plants species available and planted in the garden, permanently or temporarily, has reached more than 75 species, providing them with introductory plates that include its scientific names, the plant families, and its most important uses and medicinal benefits. Work is currently underway on vegetative and seed propagation of about 20 species of medicinal plants, and a large number of seedlings are being provided that are used to supplement the neighboring gardens in the college by planting them in permanent land. Dried and preserved herbal samples of medicinal plants growing in the garden were also prepared. More than 15 published researches on the plants of the garden have been carried out as follows: two researches on the three species of *Mentha*, three researches on *Artemisia annua*, a research on *Melissa officinalis*, a research on *Cynara scolymus*, a research on the *Vinca major*, two researches on *Lantana camara*, and a research on *Lavandula angustifolia*. And two researches on the *Origanum syriacum*, and two researches on *Glycyrrhiza glabra* and *Ceratonia ciliqua*. Aspirations relate to training courses and professional work, as the University Council issued a decision to approve the establishment of training courses and programs in medicinal plants and their uses among the activities accompanying the garden, and a large number of seedlings of medicinal plants can be produced with an indication of their benefits and made available for sale to those interested, after the approval of the work unit Professional Work in the Faculty of Science and the issuance of the decisions of the Aleppo University Council in this regard.

**Keywords :** Medicinal Plants Garden, Seed Propagation, Vegetative Propagation

Joint International Conference on  
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July 28-29 , 2022 / Avani Atrium Bangkok Hotel



***Usha K. Sabharwal***

*Sardar Patel University, India*

**LC-MS analysis of Pipecolic Acid, N-Hydroxypipicolic Acid and Salicylic Acid in one resistant and susceptible variety of tomato (*Solanum Lycopersicum L.*).**

Pipicolic is an amino acid which primes the plants for defense amplification and biosynthesis of salicylic acid (SA) in plants. Pipicolic acid (Pip) and SA help in activating systemic acquired resistance (SAR) in plants against many pathogens. We investigated the chemical profile by LC-MS/MS in tomato plants for the presence of (Pip), (SA) and N-hydroxypipicolic acid (NHP) in different leaf samples of plants inoculated with *Ralstonia solanaceum* and Pip treated. Here, we show comparative accumulation of Pip, NHP and SA in two different plant varieties of tomato, one susceptible (GT-2) and the other resistant (GAT-5). Among all treatments studied by LC-MS, SA was found to be the most abundant compound in methanol extract of Pip-treated samples of both resistant and susceptible varieties, whereas Pip and NHP were prominently present in plants inoculated with *Ralstonia* and treated with Pip. Hence, exogenous application of Pip to tomato plants provides defense against bacterial wilt caused by *Ralstonia solanaceum*. Thus, we conclude that exogenous application of Pip causes significant accumulation of Pip, NHP, and SA in tomato plants, which indicates Pip may act as an elicitor to activate the defense priming response in plants against bacterial wilt in tomato plants.

**Biography**

Miss Usha K. Sabharwal studied B. Sc (H) Biomedical Sciences from the University of Delhi and she completed her M. Sc in Plant Molecular Biology and Biotechnology from the University of Delhi South Campus. She has joined the Lab of Prof. R.B. Subramanian from the P.G. Department of Biosciences, Sardar Patel University to pursue her Ph.D. degree in Biotechnology in 2018 to work in the field of molecular biology to understand the complex system and an advantageous approach made to understand systemic acquired resistance in plants. Using bacteria and elicitors to yield information about basic biological processes in plants. From the very beginning, her education has been strongly associated with pathogens and with particular emphasis on molecular biology, especially gene regulation. She has a deep interest in the structures of biological molecules as well as their interactions and how these interactions explain observations of classical biology. As a Ph.D. student, she is working on the role of pipicolic acid in plant pathogen interaction.

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***Soohwan Kim***

*Kunsan National University, Republic of Korea*

**Effects of red-pink pigmented bacteria as a dietary supplement for rockfish (*Sebastes schlegeli*)**

The red-pink pigments produced by microorganisms reportedly possess antioxidant and antibiotic properties, in addition to serving as food colorants and providing nutritional benefits. We determined the effects of dietary supplement for red-pink pigmented bacteria in juvenile rockfish *Sebastes schlegeli*. Bacteria samples were collected from the Saemangeum Reservoir (35°52'07.3"N, 126°30'29.8"E) located in Jeonbuk Province, Republic of Korea. Red-pink pigmented bacteria discovered in this study was deposited into the Korean Collection for Type Culture (KCTC) (Accession No.: KCTC18981P). The control diet (Control) did not contain probiotics. The experimental diets contained 104 cfu/g and 107 cfu/g level each *Arthrobacter bussei* (A1 and A2), respectively. The feeding trial was carried out in an indoor fish farming facility at Kunsan National University (Gunsan, Republic of Korea). In total, 180 rockfishes of  $1.00 \pm 0.01$  g (average  $\pm$  SD) were randomly distributed in 9 acrylic tanks (50 L) (20 fishes per tank) for triplicate experiments performed over 6 weeks. The results of improvement of growth performance of rockfish will be further discussed in detail.

**Keywords:** carotenoids, bacterioruberin, probiotics, aquaculture, dietary supplement, *Sebastes schlegeli*

**Biography**

He plans to start a postdoctoral fellowship at the University of Guelph, Canada (September, 2022). He obtained his Ph.D degree in Nutrition of Fish and Shrimp from Kunsan National University, South Korea (2019 – 2022). His expertise area includes in Nutrition of Fish and Shrimp, Aquaculture.

Joint International Conference on  
**Agriculture and Horticulture  
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Food Science and Aquaculture**  
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***Chanuya Fahwa***

*Faculty of Public Health, Mahidol University, Bangkok, Thailand*

**Improving Physicochemical Properties of Lactose hydrolyzed Milk Powder by the Prebiotic Carrier**

The main problems of Lactose hydrolyzed milk powder during production were the adhesion in the drying chamber and low-yield and low-quality powder. This study investigates the physicochemical properties of drying Lactose Hydrolyzed Milk Powder (LHMP) using a five-carbohydrate carrier such as Maltodextrin (MD), Resistant Maltodextrin (RMD), Resistant Starch (RS), Polydextrose (PDX), and Cellobiose (CB), as co-particles in the spray drying process. Lactose hydrolyzed milk and the carbohydrate carrier mix with levels (maximum, medium and minimum level) of carrier using experiment 5x3 Completely Randomized Design. The mixture was filtered before spray drying with a spray dryer two-fluid nozzle size of 2 - 25  $\mu\text{m}$ ., Determine the inlet-outlet hot air temperature of 130-140 oC and 90-100oC respectively. Stir the mixture constantly while feeding and set the sample's injection speed. The binding of carbohydrate carrier and milk composition gives LHMP higher quality, reduces adhesion during drying, and increases powder yield. All carbohydrate carriers have improved solubility, wettability, and moisture content, except RS shows a high insolubility index caused by the insoluble properties. The four-carbohydrate carrier (PDX, CB, RMD, and RS) was prebiotic, thereby increasing the benefit of functional Lactose hydrolyzed milk powder as dietary fiber and maybe effectively lowering the estimate Glycemic Index (eGI) in LHMP than MD carrier's add-on spray drying probably affects glucose in the blood vessel. Conversely, another carrier effects the eGI value unchanged compared to the control.

**Keywords:** lactose hydrolyzed milk powder, co-particle, prebiotic carrier, estimate glycemic index

**Biography**

chanunya completed bachelor's degree in Bachelor of Science (Food Science and Technology) from Thammasat University and researched milk powder for thesis of Masters of Science (Public Health) Nutrition Program at Mahidol University. The career about milk product research and development section of Dairy farming promotion organization of Thailand.

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### **Muhammad Mudassar Shahzad**

*Department of Zoology, Division of Science and Technology, University of Education,  
Township, Lahore, Pakistan*

#### **Replacement of fishmeal with Sesame meal for improvement of Performance in Common Carp (*Cyprinus carpio*) fingerlings**

With an ever-increasing demand for fishmeal (FM) in all kinds of animal feeds, the supply chain is barely coping in keeping up with the needs. To reduce the burden and to make the feed cost effective there is a new emerging trend of partial replacement of FM with locally sourced ingredients. Pakistan being an agricultural country has lowest costs of oil seed by-products. The motive of this study was to find the impact of partial replacement of FM with sesame meal (SM) on the growth performance, nutrient digestibility and hematological indices of *Cyprinus carpio* fingerlings. By partially replacing at inclusion levels (0%, 10%, 20%, 30%, 40%, and 50%) of FM with SM six diets were prepared. Each group of average weight (8g) was divided into three replicates and were fed their respective feeds two times a day. Their feces samples were dried after collection, and stored for future chemical analysis. Current results showed maximum improvement in growth parameters (initial weight, weight gain %, weight gain fish-1 day-1, feed intake, SGR, and FCR) of the fingerlings fed on Sesame Meal Test Diet-III (SMTD-III), the blood indices (RBC, PLT, Hb, PCV) and the nutrient digestibility (crude protein and crude fat digestibility) were found to be the best in fingerlings fed on SMTD-III. However, the gross energy digestibility was found to be the best in fingerlings fed on SMTD-II. The findings of this study showed that if FM is replaced with SM up to 20%, it improves the growth parameters, nutrient digestibility, and hematological indices without compromising water quality and decreasing cost of feed without any supplementation.

**Keywords:** Partial replacement, FM, growth parameters, Crude Protein Digestibility, Crude Fat Digestibility.

#### **Biography**

Dr Majid Hussain is Lecturer in Department of Fisheries and Aquaculture, University of Okara. He is the first PhD graduate of University of Gujrat. He has more than 50 research publications and supervised 14 MPhil students.



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## *Taherah Mohammadabadi*

*Professor, Agricultural Sciences and Natural Resources University, Iran*

### **Camel Milk; an adjunct superfood for diabetes cases**

Defects in insulin secretion by the pancreas and due to the cells may not respond properly to insulin, hyperglycemia or diabetes will be occurred and cause to the failure in the eyes, heart, kidneys and liver function. Nowadays, researchers looking for natural adjunct treatments to control diabetes. Camel milk is having anti-diabetic activity possibly because of insulin like protein (about 52 units/liter), that covered by fat micelles and can be an effective alternative for insulin to treat type 1 and 2 and gestational diabetes. It is proved that camel milk is safe and effective in improving long-term glycemic in the human patients and animal's models. In one study, daily consumption of 500 mL raw camel milk for 16 week in type 1 diabetic patients (average age 20 years) decreased daily insulin dose and blood sugar. Also raw camel milk in type 1 diabetic cases for 52 week and 3 months caused to significant reduction in HbA1c, mean blood glucose and 30% reduction in required insulin dose. Type 2 diabetics cases consumed 500 mL pasteurized camel milk for two months, that mean insulin concentration was significantly increased by the camel milk, but fasting blood sugar, lipid profile, blood pressure and insulin resistance did not influence. Therefore, according to the studies, raw camel milk in type 1 diabetes patients caused to increase insulin secretion, reduce required insulin and insulin resistance. Camel milk has immune-modulatory effects on the pancreas  $\beta$ -cells. Camel milk influences insulin secretion via the proper activity of the pancreatic cells and insulin receptors. Also this special milk improves diabetes complications such as dysfunction in the kidney and liver function and diabetic wounds. In general, although according to the clinical trials, the raw camel milk by 500 mL/day improved risk factors in diabetic patients. But it appears that more scientific studies are needed to confirm the effectiveness of processing's methods of camel milk on diabetes cases.

**Keywords:** Camel Milk; Diabetes, Insulin like protein

### **Biography**

Taherah Mohammadabadi has been as a researcher at Australia; she has attended and presented her works in different conferences in some countries. She has been as supervisor for 11 PhD students and more than 25 Msc students and also guided more than 45 Msc and PhD thesis. She has over 200 published publications, conferences presentations, and scientific projects; many presentations in international workshops and webinars, also 6 books. She is member of the editorial board and reviewer of some international and national Journals.

**Field:** Dairy and Animal Products, Milk Quality, Camel Milk and Health Complications, Food Technology, Herbalist

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July 28-29 , 2022 / Avani Atrium Bangkok Hotel



***Nisar Ahmad***

*Department of Zoology, University of Jhang, Punjab, Pakistan*

**Efficacy Of Nano-Cr Particles Supplementation on Mineral Absorption And Carcass Composition Of Labeo Rohita Fingerlings Fed Sunflower Meal Based Diets**

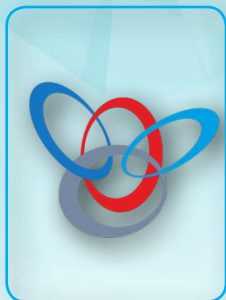
This research aimed to see how effective Chromium nanoparticles are at improving minerals absorption and carcass composition in *L. rohita* fingerlings given sunflower meal feeds. Seven test diets were supplemented with graded levels of nano Cr (0, 0.5, 1, 1.5, 2, 2.5, and 3 mg/kg). As an inert marker, chromic oxide was used. Feed was provided to fingerlings at the rate of 5% of their wet weight. The highest effectiveness in minerals absorption (P, Mn, Na, Al, Cu, Fe, Cr, Ca, Mg, Zn and K) was observed at 2 mg/kg Cr nanoparticle supplementation. These levels were statistically more significant ( $p < 0.05$ ) than the control and other experimental diets. The most optimum results in term of carcass (CP; 61%) and energy expenditure (EE; 13%) were observed in fingerlings given 2 and 1 mg/kg doses. In the current study, it was observed that feeding *L. rohita* fingerlings sunflower meal supplemented with 2 mg/kg of Cr nanoparticles improved minerals absorption and body composition.

**Keywords:** *L. rohita*, minerals absorption, nano- Cr particles, carcass composition

**Biography**

Dr Nisar Ahmad Completed PhD Zoology 2019. He Joined University of Education as an assistant professor in March 2021. Now working as Assistant professor/ HOD Zoology at University of Jhang.

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***Kainat Basharat***

*Assistant Professor at Department of Zoology, Division of Science and Technology, University of Education, Pakistan*

**Role of Sesame meal in improvement of Body Composition, Mineral Absorption and Immunological indices of Common Carp (*Cyprinus carpio*)**

Fish meal (FM) is the principal component in fish feeding, but the FM prices have increased in the past decade and are expected to increase further to meet the sustained growth. Therefore, plant protein sources are being considered as an alternative source for protein in diet formulation for inexpensive cost and more easily available sustainable source. The present research work was conducted to evaluate the effect of sesame meal based diet on body composition, mineral absorption and immunological indices in *Cyprinus carpio* fingerlings. Six test diets (0%, 10%, 20%, 30%, 40% and 50%) were prepared using alternative plant protein (sesame meal) with fish meal by adding chromic oxide (1%) as an in-digestible marker. Triplicate tanks were used for all treatments and fish were feed at 4% of live body weight. Feces were collected twice a day from each tank to find the mineral absorption. After 70 days trial, blood and whole body samples were collected for analysis. Results manifested that fingerlings fed with test diet III (20% replacement of sesame meal) showed best result in the carcass composition (crude protein; 17% fat; 7% gross energy; 2kcal/g and ash; 6%), immunological indices (WBCs;  $8 \times 10^3 \text{mm}^{-3}$  and monocytes; 4%) and mineral (Ca; 67%, Na; 70%, K; 72% and P; 69%) absorption in the fish body. From results it was observed that, if further increase the replacement levels it may negatively affects the fish performance. So, it was concluded from the results that 20% replacement of fish meal with sesame meal making cost-effective and eco-friendly fish feed as compared to other test diets

**Keywords:** *Cyprinus carpio* fingerlings, Sesame meal, minerals, immunological indices, carcass.

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**Walaa M. Elsherif**

*Agriculture Research Center (ARC), Egypt*

**Bio-Preservation of Yoghurt Quality and Safety by Nisin Nanoparticles Prepared by acetic acid Precipitation Method**

This study aimed to prepare nano-nisin using new, natural, safe nanoprecipitation method by acetic acid for food application. The fabricated nano-nisin stability was investigated freshly and after 6th months by zeta-sizer (the PDI was 0.227; 0.431 with dynamic nm 26.55; 86.50 nm) and TEM (9.35 and 12.4 nm with spherical, separate shape), respectively by addition organic component during preparation. Also, the FTIR for detection the active functional groups was determined. The nano-nisin exhibited a higher antibacterial activity against methicillin resistant *Staphylococcus aureus* (MRSA) and *E.coli* O157:H7 in vitro by using agar well diffusion method (the MIC of nano-nisin for both organisms was 0.125 mg/ml). The cytotoxicity assay of used concentration was safe on VERO cells. In vivo, inoculation of nano-nisin in yoghurt at 0.25 and 0.125 mg/ml concentrations, it could be complete eradication of MRSA and *E.coli* O157:H7 after 24hrs and at 5th day, respectively at 0.25mg/ml. Effect of nano-nisin on pH and organoleptic properties of inoculated yoghurt at different concentrations were assessed during refrigerator storage. The organoleptic properties were revealed high acceptance of yogurt containing different concentrations of nano-nisin with good pH up tell 5th day. The shelf life of inoculated yoghurt with nano-nisin (0.25%) was exceeded than negative control group that could suggested nano-nisin by this method as a safe for food preservative. It has been observed that health-conscious consumers have a stronger preference for yoghurt due to its wide range of nutritional and therapeutic benefits. Due to a few technical issues, such as high post acidification, manufacturers were unable to satisfy their customers. The use of nisin in yoghurt will solve all of the technological issues while also broadening the market.

**Keywords:** MRSA ; *E.coli* O157:H7; Yoghurt; FTIR; Cytotoxicity; Food preservative.

**Biography**

Walaa M. Elsherif, a deputy of technical manager at food hygiene department (certified by ISO 17025:2017 and ISO 9001:2018), and consultant of nanotechnology research unit at animal health research institute, Certified as a reviewer in different international journal and have many international publicities (in English and Arabic languages) also I had share in three books. Member of OWSD and certified from AUC and DAAD Kairo Akademia. Supervisor on many thesis. Have many scientific lectures in many fields and get many prizes from different international conferences. Also, share in many social services.

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**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



***Kashifa Jalil***

*Department of Zoology, Government College University, Lahore, Pakistan*

**Efficacy of Substituted Barley Meal Based Diet for Improvement in Performance of Common Carp (*Cyprinus carpio*)**

With continuous expansion of human population, fish is a rich protein source used as food all over the world but high cost of fish meal (FM) and its inconsistent supply has entailed researchers to find its substitute. In present experimental work, plant based protein source was used as an alternative of fish meal as it is available at comparably low-cost and effectively accessible. The present research work was conducted to evaluate the effects of barley seed meal by replacing FM on the growth performance, nutrients digestibility and hematological indices in *Cyprinus carpio*. Six test diets (replacing FM at 0, 10, 20, 30, 40 and 50% level) were prepared using barley meal (BM) as an alternative protein source. Three replicates were used for each treatment consisting of 15 fingerlings (of average weight 8.13g) per tank. Fish was fed at the rate of 4% live wet body weight two times a day for 70 days. The results revealed that fingerlings fed Barley seed meal based diets (BSMD) II (having 20% FM replacement) showed best results in growth parameter (weight gain%; 249%, weight gain; 20g, SGR; 1.39 and FCR; 1.31), hematological indices (RBCs;  $2.83 \times 10^6 \text{mm}^{-3}$ , PLT; 68.54 and Hb; 8.15g/100ml) and nutrient digestibility (crude protein; 72% and gross energy; 67%). It was noticed that further increase in BM level decreases the fish performance as compared to above mentioned diet. From results, it was concluded that we can replace FM up to 20% to improve growth performance, nutrients digestibility and hematological indices as well as making eco-friendly and cost effective feed.

**Keywords:** Barley seed meal diets, fish meal, fish performance, alternate protein source, cost effective feed.

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**Agriculture and Horticulture  
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July 28-29 , 2022 / Avani Atrium Bangkok Hotel



### **Majid Hussain**

*Department of Zoology, University of Okara, Okara, Pakistan*

#### **Effects of Acidified Moringa oleifera Seed Meal Based Diets on Growth Performance, Nutrient Digestibility and Hematology of Labeo rohita Fingerlings**

Overpopulation of human requiring food in form of proteins and aquaculture is the basic source of protein with lower price. However, increasing prices of fish meal and feed supply to the fish farmers are the major issues of aquaculture. Therefore, experiment was conducted to study the supplementation effect of citric acid (CA) to Moringa oleifera seed meal (MOSM) based diets on growth performance, nutrient digestibility and hematology of Labeo rohita fingerlings. MOSM based diet was sub-divided into one control diet (0% CA) and five test diets, each supplemented with 1%, 2%, 3%, 4% and 5% CA, respectively. Fingerlings were fed at the rate of 5% live wet body weight for 90 days. Significantly ( $p < 0.05$ ) improved weight gain percent (268.04 %), specific growth rate (1.45) and FCR (1.23) was observed at 3% CA level. Fingerlings showed significantly ( $p < 0.05$ ) higher crude protein digestibility (67.49 %) at 4% CA level. Whereas significantly ( $p < 0.05$ ) higher digestibility of crude fat (76.71 %) and gross energy (66.49 %) was observed in fingerlings at 3% CA level. Significantly ( $p < 0.05$ ) higher number of RBC ( $2.96 \times 10^6 \text{ mm}^{-3}$ ), WBC ( $7.96 \times 10^3 \text{ mm}^{-3}$ ), PLT (66.59), Hb (8.67 g/100ml), PCV (24.91%) and MCV (187.42 fl) were observed in blood of fish at 3% CA level. The study concludes that 3% CA supplemented MOSM based diet can improve overall growth performance, nutrients digestibility and hematological indices of L. rohita fingerlings.

**Keywords:** Moringa seed meal; citric acid; growth; nutrient digestibility; hematology

#### **Biography**

Dr Majid Hussain is Lecturer in Department of Fisheries and Aquaculture, University of Okara. He is the first PhD graduate of University of Gujrat. He has more than 50 research publications and supervised 14 MPhil students.

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



### *Ahasan Ullah Khanz*

*Faculty of Agriculture, Sylhet Agricultural University, Sylhet 3100, Bangladesh*

#### **The insect pests and diseases of mango (*Mangifera indica* L.) Plants and Fruits: Importance and management Strategies**

The mango (*Mangifera indica* L.) is a national fruit tree of Bangladesh that is a very important and popular fruit in the world. It promises to ameliorate fruit nutritional food demand and has an excellent possibility to develop the world market. But the production is hampered due to infection of several diseases in plants and fruits. This study was undertaken based on secondary data from existing literature from Bangladesh and other parts of the world. So far, much research works were done on this issue but it was not available to the policymakers, extension workers, and the public in a systematic manner to date. It is known as the ‘king of all fruits’ in the world and it contains some special characteristics viz pleasant aroma, eye-catching color, and wonderful taste with typical nutritive values, and these qualities make this fruit one of the unique items in the world market. Despite the importance, several insect pests and diseases attack mango plants and fruit. The major insects are thrips (*Frankliniella occidentalis* Pergande), fruit borer (*Citripestis eutraptera* Meyrick), stone weevil (*Sternochetus mangiferae* Fab.), scale insects (*Aspidiotus destructor* Signoret), fruit fly (*Bactrocera invadens* Drew, Tsuruta and White), mealybug (*Drosicha mangiferae*), leaf webbers (*Orthaga euadrusalis* Walker), gall midges (*Erosomyia indica* Grover), mango shoot gall psylla (*Apsylla cistellata* Buckton), mite (*Eriophyes mangiferae* Sayed) and so on. The major diseases are anthracnose (*Colletotrichum gloeosporioides*), stem end rot (*Botryodiplodia theobromae*), die back, gummosis (*Lasiodiplodia theobromae*), powdery mildew (*Oidium mangiferae*), bacterial canker (*Xanthomonas mangiferae*), malformation (*Fusarium mangiferae*), phoma blight (*Phoma glomerata*), sooty mould (*Meliola mangiferae*), red rust (*Cephaleuros virescens*), fruit cracking, black tip of mango and so on. Every year about 20-50% yield loss occurs due to these insects and diseases. The study focused on the pests of mango fruit based on biological and chemical approaches. It presents limited information on specific technologies in different agroecological zones. This study identified research gaps between Bangladesh and other countries. It also provides information to combat mango pests to the economic threshold level for ensuring sustainable fruit and wood yield.

**Keywords:** Mango, *Mangifera indica*, Insect, Pest, Disease, Manage, Fruit, Plant

#### **Biography**

He obtained his Bachelor of Science in Agriculture (Honours) from Sylhet Agricultural University, Sylhet in 2016. He received his Master of Science in Entomology from Sylhet Agricultural University, Sylhet, Bangladesh in 2018. Mr. Khan started his professional career in 2018 as a Research Assistant in the Department of Entomology, Sylhet Agricultural University. He has published twenty-four (26) peer-reviewed scientific papers in national journals and international journals. Mr. Khan has presented six (8) oral presentations at home and abroad conferences. He served as a reviewer of eleven (13) scientific papers in peer-reviewed journals at home and abroad. At present, he has been working on COVID-19, medicinal plants, and environmental factors that affect human life.

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**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



## *Hillary Righini*

*Department of Agricultural and Food Sciences, University of Bologna, Italy*

### **Phycobiliproteins from the cyanobacterium *Anabaena minutissima* for the *Rhizoctonia solani* control and tomato growth-promotion**

The principles of integrated pest management give priority to natural alternatives to ensure a high level of protection of human and animal health and the environment. Cyanobacteria are efficient producers of bioactive compounds such as phycobiliproteins that have shown multiple biological activities including antimicrobial, antiviral, anticancer, antioxidant, and anti-inflammatory activity in humans. Only in recent years, few studies have reported their use against fungal plant pathogens. The phycobiliproteins used in this study were extracted from the cyanobacterium *Anabaena minutissima* that was isolated from a coastal humid basaltic wall in Fuerteventura Island. They were firstly characterized by FT-IR and FT-Raman spectroscopies and then applied to tomato seeds for testing their activity against the soilborne pathogen *Rhizoctonia solani* and evaluating the biostimulant effect on tomato seedlings. Our results showed that seeds treatment with different PBPs doses increased seedling emergence over time in soil infected with *R. solani*, reduced the disease severity, and enhanced plant dry weight in comparison to the infected control, under greenhouse conditions. Additionally, a deeper investigation carried out in agar showed that seed treatment stimulated seed germination and epicotyl and hypocotyl seedling length. Proteins extracted from epicotyl and hypocotyl after PBPS seed treatment reduced *R. solani* mycelium growth and showed increased chitinase and glucanase enzymatic activities compared to untreated control. Biostimulant effects after seed treatment were observed for several vegetative parameters such as emergence, fresh and dry weight, leaf content of chlorophyll a and b, carotenoids, and micronutrients such as Fe, Mg, Mn, and Zn. PBPs also showed hormone auxin- and gibberellin-like activities. In conclusion, PBPs from *A. minutissima* are promising bioactive compounds useful for the control of fungal plant pathogens and biostimulant activity

**Keywords:** biocontrol, phycobiliproteins, antifungal activity, plant-induced resistance, FT-IR; *Rhizoctonia solani*

#### **Biography**

Hillary Righini, Post Doc at the Department of Agriculture and Food Sciences, University of Bologna. During studies, She gained the proper knowledge about plant protection and came out with an interest in alternative solutions to synthetic products for plant protection against fungal plant pathogens. During her Master's thesis, she started research on extracts from algae and cyanobacteria as new plant bio-protectants and deepened my knowledge during the Ph.D. at the Banco Español de Algas (Spain) where she spent one year. Actually, she is working on the main bioactive components from algae and cyanobacteria, such as phycobiliproteins, for plant pathogen management.





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# **Speaker Presentations**

## **DAY 2**

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### *Dushyant Dipakkumar Champaneri*

*Research Scholar, Ph.D. (Horticulture) Vegetable Science, Department of Vegetable Science, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari, Gujarat, India*

#### **Deficit irrigation and its implications in vegetable crops**

Water is becoming scarcer day by day and less than 1% of total 2.75% available fresh water on the Earth is potentially available to the plants as 60% of available fresh water to farming is wasted. Agriculture is going to face complex challenges between now and 2050 to satisfy an estimated population of 10 billion as more water will be needed to produce the estimated 70% of extra food. More emphasis needs to be given to fulfill the requirements of irrigated agriculture as it doubles crop yield in comparison to rain-fed agriculture. It is therefore necessary to increase irrigated agriculture by 20% to achieve targeted yield in crops which is only possible by maximizing WUE through optimum management of available irrigation water. Deficit irrigation (DI) is an optimization strategy in which crops are irrigated below the full evapotranspiration level which deliberately allows crops to sustain some degree of water deficit. This may lead to decrease in yield minimally, with a significant increase in WUE. Minimal yield decrease can be compensated by increasing cropping area with saved water. This technology requires careful consideration of various aspects of DI viz. types of DI, method of application, physiology of DI and crop sensitivity towards water stress.

**Keywords:** biocontrol, phycobiliproteins, antifungal activity, plant-induced resistance, FT-IR; *Rhizoctonia solani*

#### **Biography**

Dushyant Dipakkumar Champaneri is presently enrolled as a Ph.D. (Horti.) Research scholar at the Department of Vegetable Science, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari, Gujarat, India. He is also working as editorial board member at Just Agriculture - The Magazine and Acta Scientific Publications Private Limited and serving as reviewer at International Journal of Environment and Climate Change; International Journal of Applied Agricultural Sciences; Asian Journal of Research in Agriculture and Forestry; Asian Journal of Agricultural Extension, Economics and Sociology; and Current Journal of Applied Science and Technology. He has published 6 research papers, 2 review papers, 2 magazine articles, 2 book chapters and 1 manual chapter in various national and international titles. He was awarded "ASPEE Foundation Gold Plated Silver Medal" for M.Sc. (Horti.) in Vegetable Science for highest OGPA (8.39), best thesis work & scientific publications at ACHF, NAU, Navsari in February - 2022. He has qualified ASRB NET for Vegetable Science with 55.11% in the year 2021. He was designated with Bachelor of Science (Hons.) Horticulture degree with 8.77 OGPA at ACHF, NAU, Navsari in January - 2019. He was part of multifarious State, National and International level capacity building programmes including 1 NSS Camp, 1 ELP Programme, 1 National Summit, 1 Symposium, 4 Seminars, 4 Competitions, 5 Conferences, 6 Extra Curricular Courses, 6 Guest Lectures, 7 Workshops, 13 Trainings and 73 Webinars in offline as well as online mode throughout academic period. He has published 6 research papers, 2 review papers, 2 magazine articles, 2 book chapters and 1 manual chapter in various national and international titles. He was awarded "ASPEE Foundation Gold Plated Silver Medal" for M.Sc. (Horti.) in Vegetable Science for highest OGPA (8.39), best thesis work & scientific publications at ACHF, NAU, Navsari in February - 2022. He has qualified ASRB NET for Vegetable Science with 55.11% in the year 2021. He was designated with Bachelor of Science (Hons.) Horticulture degree with 8.77 OGPA at ACHF, NAU, Navsari in January - 2019. He was part of multifarious State, National and International level capacity building programmes including 1 NSS Camp, 1 ELP Programme, 1 National Summit, 1 Symposium, 4 Seminars, 4 Competitions, 5 Conferences, 6 Extra Curricular Courses, 6 Guest Lectures, 7 Workshops, 13 Trainings and 73 Webinars in offline as well as online mode throughout academic period.

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**Agriculture and Horticulture  
&  
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July 28-29 , 2022 / Avani Atrium Bangkok Hotel



***Ashraful Alam***

*Rural Development Academy (RDA), Bogura, Bangladesh*

**Fish Diversity and Conservation Status in the Freshwater Ecosystem of Dharla River at Kurigram, Bangladesh**

The conservation of biodiversity has become major issue of sustainable use of natural resources as well as for freshwater ecosystem. The fish diversity along with different indices diversity, richness and evenness indices and their threatened status (global and local) were explored. Fishes were collected from the three sampling sites Dharala River using different fishing gear. The study revealed the occurrence of 75 fish species of in Dharala River belonging to eight order, 25 families and 56 genera. Of the fishes, Cypriniformes (43%) was most dominated represented by 32 species followed by Siluriformes (27%) recorded by 20 species, Synbranchiformes (7%) of 5 species then Osteoglossiformes (3%) including 2 species. Subsequently, Belontiiformes and Tetraodontiformes both was 1% individually. Along with the indigenous species nine exotic fish were also recorded from study areas. Out of 75 indigenous species 28 species (37.33%) were considered as threatened in Bangladesh including 5% critically endangered (4), 20% endangered (15), 12% vulnerable (9). The Shannon-Weaver Diversity, Pielous Evenness and Margalef Richness indices were ranged from 2.73 to 3.79, 0.69 to 0.92 and 3.86 to 8.71, respectively. The studied river serves as a considerable support of threatened indigenous fishes. Establishment of perennial and permanent fish sanctuaries could be serving for the protection and restoration of threatened fish species in the Dharla River.

**Keywords:** t

**Biography**

Mr. Md. Ashraful Alam has been working as faculty in Rural Development Academy (RDA), Bogura, Bangladesh. His research of interests include aquaculture, hatchery management, fish breeding, nursery management, fish biodiversity, biofloc technology, etc. Mr. Alam was awarded the “Prime Minister Gold Medal” by honorable Prime minister as well as received International Union Conservation of Nature (IUCN) Bangladesh award to conserve indigenous threatened fishes in Northwest Bangladesh in 2014 from his research team.

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**Agriculture and Horticulture  
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***Taherah Mohammadabadi***

*Professor, Agricultural Sciences and Natural Resources University, Iran*

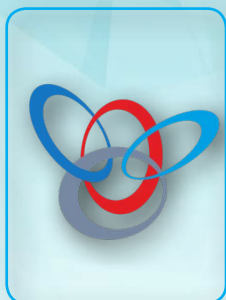
**Milk lactoferrin against viral infections**

Milk is containing protective proteins and enzymes like immunoglobulins, lactoferrin, lysozyme, lactoperoxidase and peptidoglycan recognition protein that led to anti-microbial and immunological properties against the bacterial and viral infections. Lactoferrin is one glycoproteins detected in milk of livestock such as cow, buffalo and camel, as camel milk containing highest amount and strongest activity in compared to the milk from other livestock species. Lactoferrin boosts the immune system by protecting the cells against bacterial and viral infections and inflammations. Activation, proliferation and regulation of the phagocytic action of immune cells are also facilitated by the lactoferrin. The boosting host immune system by nutritional supplements such as milk lactoferrin prevents microbial infections entry into the host cells. The antiviral actions of lactoferrin are against both DNA and RNA viruses and by binding viral particles, inhibit viral adhesion and entry into cells. Also, milk lactoferrin may directly interact with viral receptors such as heparan sulfate on the cell surfaces and prevent the virus attachment and infection. The boosting host immune system by nutritional supplements such as lactoferrin may be effective against viruses entry and infection into the host cells. Furthermore, lactoferrin also possesses anti-inflammatory efficacy and can inhibit the circulating inflammatory cytokines which are reported to be present in higher levels in COVID-19 patients. Milk lactoferrin as nutraceutical supplement in powder or tablets may be a novel promising candidate and preventative treatment for more severe cases of viral infectious. However, it needs more studies on dosage to verify its efficacy on viruses prevention and treatment.

**Keywords:** Milk, Lactoferrin, Anti-viral

**Biography**

Taherah Mohammadabadi has been as a researcher at Australia; she has attended and presented her works in different conferences in some countries. She has been as supervisor for 11 PhD students and more than 25 Msc students and also guided more than 45 Msc and phd thesis. She has over 200 published publications, conferences presentations, and scientific projects; many presentations in international workshops and webinars, also 6 books. She is member of the editorial board and reviewer of some international and national Journals.



## *Muhammad Mazahir*

*Institute of Food and Nutritional Sciences, PMAS-Arid Agriculture University, Pakistan*

### **Effect Of Indigenous Buckwheat Extract On Serum Glucose And Lipid Metabolism Of Streptozotocin-Diabetic Rats**

The study was conducted to assess the effect of buckwheat extract on serum glucose and lipid metabolism of streptozotocin-diabetic rats. In addition, the protein quality of buckwheat was also evaluated during the study period. The results regarding bioactive compounds indicated that the Tartary buckwheat contained higher quantity of bioactive compounds as compared to common buckwheat. Significantly highest rutin (32.98 mg/100g), D-Chiro inositol (DCI) (141.93mg/100g), and quercetin (1.64mg/100g) was observed in husk part of Tartary buckwheat while lowest rutin (10.94 mg/100g), DCI (14.66 mg/100g), and quercetin (0.52 mg/100g) was found in fine flour of Tartary buckwheat. Likewise highest Rutin (22.65 mg/100g), DCI (112.62 mg/100g), and quercetin (1.23 mg/100g) was noted in husk part while lowest rutin (6.71 mg/100g), DCI (12.39 mg/100g) and quercetin (0.34 mg/100g) was found in fine flour of common buckwheat, respectively. The results regarding the nutritional evaluation revealed that the supplementation of buckwheat flour significantly increased the food intake, weight gain, protein efficiency ratio, true digestibility, net protein utilization, and biological value. It is evidenced from the results that nutritional value was improved by the supplementation of buckwheat in experimental diet. The buckwheat extract significantly reduced the total cholesterol, triglycerides and low density lipoproteins while high density lipoproteins level increased. The fasting blood glucose level of group I increased while it decreased in group II and group IV over time. Group II and group IV had more glucose tolerance as compared to group I.

**Keywords:** Extraction, Nutritional evaluation, Hperlipidemia,Hyperglycemia

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**Agriculture and Horticulture  
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July 28-29 , 2022 / Avani Atrium Bangkok Hotel



## ***Binay Kumar Chakraborty***

*Former P. Director, Department of Fisheries, Bangladesh*

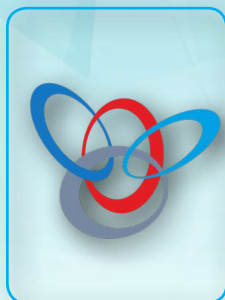
### **Diversification of Fish and Fisheries Resource Management and its Challenge in Bangladesh**

Ecosystem is an ecological unit consisting of a biotic community together with its abiotic environment. An ecosystem includes indicators of habitat, species and resources, such as water and its physicochemical characteristics. An aquatic resource of Bangladesh belongs to 1. Inland Open Water (Capture): River and Estuary, Sundarbans, floodplains, Beel, and Kaptai Lake 2. Inland Close Water (Culture): Pond, Seasonal cultured waterbody (Paddy Field/Floodplain and Boropit), Baor, Shrimp, Prawn and crab Farm, Pen Culture and Cage Culture 3. Marine Fisheries Industrial and Artisanal. Data and information sources are used from the direct interview with individual, publication of the Department of Fisheries, internet and related grey literature. The country has an inland water area of about 4.72 mill.ha and about 710 km long coastal belt. Fisheries sector contributes 3.57% to the national GDP, 25.30% to the agricultural GDP and more than 2.0% to the total export earnings. The fish production was crossed by producing 4.503 mil.mt in 2019-20, whereas, inland culture fisheries contribute 57.38% to total fish production. Bangladesh is enriched with an aquatic diversity, comprising almost 260 freshwater and 740 marine water fish species with other aquatic lives. In aquaculture, ecosystem of waterbody and biological management (live feed production and outlet of polluted substance) is necessary. In recent years, the fisheries resources have been facing with challenges posed by numerous natural and anthropogenic causes such as climate change, natural disaster, environmental pollution, industrialization, overfishing, using destructive fishing gears, pesticide and agrochemicals. So, more important national program and biological management technology would be developed for fish production and open water management to restrict the declination of resources and enhance production.

### **Biography**

Dr. Binay Kumar Chakraborty, a Fisheries Scientist and Consultant in the Department of Fisheries, Bangladesh has played an important key role as a researcher in the field of Aquaculture and fisheries management. He has been acting as a reviewer and Editorial Board member of more than 25 different international journals. He is also Life Member of the more than 15 national and international organizations. He has attended more than 108 national/international Seminars of different countries. He is awarded "Life Time Award Achievement 2021 and 2020 (4)" by four international organizations; "World Environment and Livelihood Award 2021"; "DR. APJ ABDUL KALAM GREEN ENVIRONMENT PROMOTION AWARD 2021" for commendable contribution in the field of Fisheries, environmental protection and social awareness; "Scientist of the Year 2018" from International Academy of Science and Research, India and "Guest of Honour" from different organizations and "Fellow Award" from Calcutta University and Bidhan Chandra Krishi Biswabidyaloya and other organizations. About 18 books, 07 book chapters, more than 74 abstracts and 68 scientific papers and other 38 articles are published by national and international publishers and organizations

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**Muhammad Umair Arshad**

*Department of Food Science, Government College University Faisalabad, Pakistan*

**Development and characterization of plant Based gelling agent as gelatin alternatives**

Gelatin is a food ingredient, with its wide applications in the food industry including gelatin of non-mammalian for the kosher and halal food markets, however, has gained much interest in gelatin substitutes from plant-based sources. The gelatin replacement is a key problem in current years. Potato starch and psyllium husk are mainly employed in formulation of thickeners, emulsifier, binding agents and as functional texturizer. Findings of target responses performed under the configuration of central composite design concerning, texture, pasting and thermal characteristics from experimental runs. Pasting temperature has revealed the most substantial impact on gel formation from starch of potato. The optimum recorded pasting viscosity from entire runs under configuration of composite central design was initiate to be 3058(cP). On the formulation of gel from potato starch pasting viscosity has significant effect. The highest value of pasting viscosity (3643 cP) was achieved from run No. 12 with subsequent variables; X1: time of extraction (46 min), X2: temperature of extraction (75 oC) and X3: conc. of potato starch. (37 %). The lowest pasting viscosity (2276 cP) of gel was perceived from run No. 5 at subsiding variables; X1: time of extraction (72 min), X2: temperature of extraction (95 oC) and X3: concentration of potato starch (30 %). From all experimental runs breakdown viscosity (BV) ranged from 783 (cP) to 9210(cP). For the entire run performed under the configuration, average breakdown viscosity measured was 1891 cP. The Break Down Viscosity (BV) implemented substantial effect on potato starch gel formulation, which displayed important differences with corresponding rises in time and temperature of extraction. The RSM analysis exhibited that the texture characteristics depending upon the concentration of starch, followed by time and temperature of extraction. The variation exhibited by top temperature was relatively minor while, maximum (119.78°C) and minimum (108.34°C) values perceived from experimental runs No.16 and 9, respectively. By increasing the potato starch and psyllium husk gels, aggregation density of gel network was increased. The constancy of yogurt improved by Psyllium husk powder gel, which is an ideal natural polymer. In sensory evaluation Psyllium Seed Husk Gel stabilized yogurt with better stability than the potato starch gel. Shear rate, shear stress and viscosity are interrelated. Potato starch and psyllium husk gels showed the natural alternative functional properties of commercial gel.

**Keywords:** Gelatin, Halal, Plant based, Potato Starch.

**Biography**

Dr. Muhammad Umair Arshad is currently working as Head of Food Science in Government College University Faisalabad, Pakistan. He has successfully completed some of the similar assignments with GAIN and other development partners in Pakistan as well as in Canada. The consultant is currently member of scientific panel of Punjab Food Authority as well as Sindh Food Authority, in addition to be the member of PSQCA scientific committees. It makes him quit fit for the capacity assessment study of Technical section on PFA. Moreover, the consultant is attached with teaching and research on food safety, specifically in small scale food processing operations, since 2006, which makes him potential candidate for the advertised consultancy. Dr. Arshad holds experience of 17 years on teaching and research for Food and Nutrition.

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**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



*shereen El-Sayed El-Nahas V*

*Plant Pathology Research Institute/ARC, Egypt*

**Evaluation of potassium phosphate salts for controlling squash powdery mildew**

*Sphaerotheca fuliginea*, the causal agent of powdery mildew, is responsible for devastating losses worldwide of squash and that affects squash yields. The minerals monobasic potassium phosphate, dibasic potassium phosphate, and tribasic potassium phosphate salts (used in three concentrations for each salt; 25, 12.5, and 6.25 mm) were tested in vivo for suppression of powdery mildew on squash compared with control. A study revealed that when salts were sprayed on squash plants in vivo trials, none of the salts tested resulted in phytotoxicity. All the salts caused significant reductions in the disease severity percentage after two sprays and increases in plant height and dry weight of plants and fruits compared with control. In comparison to controls, the incidence of disease was decreased by 81.48 and 88.14% on plants sprayed with monobasic potassium phosphate and dibasic potassium phosphate, respectively. Depending on the concentration used, salts' effects on polyphenol oxidase, peroxidase, and catalase enzymes, and biochemical compounds such as total and free phenolic compounds vary.

**Biography**

My post is senior researcher in department of integrated pest control, and joined one of the members of biotechnology unit at Plant Pathology Research Institute. Graduate of faculty agriculture, Ain Shams University, Egypt. M.Sc and PhD degree studies on plant protection and residual fungicides effects. I participat of trainers program for pesticide applicators in my country. Also i have research articles published in interntional and local <https://scholar.google.com/citations?user=qQywWSEAAAAJ&hl=ar>



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**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
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***Nisar Ahmad***

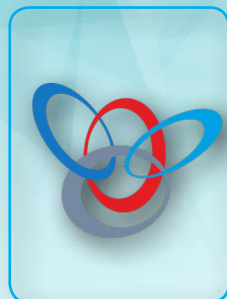
*Department of Zoology, University of Jhang, Pakistan*

**Role Of Nano-Cr Particles Supplemented Sunflower Meal Based Diets on Growth Performance, Nutrient Digestibility and Hematology of *Cirrhinus Mrigala* Fingerlings**

The following study was conducted to assess the effects of nanoparticles of Cr on growth rates, digestibility of nutrients and hematology of *Cirrhinus mrigala* fingerlings when fed on Cr nanoparticles mixed sunflower meal. The trial was comprised on seven test diets based on Cr nano supplementation with different Cr levels (0, 0.5, 1, 1.5, 2, 2.5 and 3 mg/kg). Inert maker like Chromic oxide was also added. Fingerlings were fed at the rate of five percent of body weight. Test diet 1.5 mg/kg supplemented with Cr nano showed the maximum growth in weight % (164) with highest FCR (1.73). Best hematological indices (RBCs 2.86 10<sup>6</sup> mm<sup>-3</sup>, WBCs 7.85 10<sup>3</sup> mm<sup>-3</sup>, PLT 65, Hb 8 g/100ml, PCV 25% and MCV 190fl) and maximum nutrient absorption (CP 67%, EE 69% and GE 65%) were also observed in the case of 1.5 mg/kg supplements of Cr nanoparticles. The obtained results revealed that sunflower meal based diet supplemented with Cr nanoparticles (1.5mg/kg) showed high growth performance, more digestibility of nutrients and improved hematology of fingerlings of *C. mrigala*.

**Keywords:** *C. mrigala*, Growth performance, Nano- Cr particles, Nutrient digestibility and Hematology

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



**Oke Ojo Pelumi V**

*Department of Fisheries and Aquaculture Technology, Nigeria.*

### **Effect of African Basil (*Ocimum Gratissimum*) on Orexigenic Factors and Zootechnical Performance of African Catfish (*Clarias Gariepinus*)**

The effects of African basil *Ocimum gratissimum* leafmeal on orexigenic factors and zootechnical performance in African catfish *Clarias gariepinus* diet was assessed in the present study for a period of 56 days. Six isonitrogenous diets were formulated at different inclusion levels of *Ocimum gratissimum* leaves at 0 mg/g, 10 mg/g, 20 mg/g, 30mg/g, 40 mg/g, 50 mg/g denoted as T1, T2, T3, T4, T5 and T6 respectively. *C. gariepinus* fingerlings (2.57±0.37g) were randomly divided into the replicates of six treatments group. The experimental fish were randomly distributed into eighteen plastic tanks of dimension 40×30×35(cm<sup>3</sup>) at a stocking density of ten fish per tank. After the feeding trials, orexigenic factors, growth performance and nutrient utilisation parameters were assessed. *C. gariepinus* fingerlings fed 30mg/g diet of *O. gratissimum* recorded the best growth performance in terms of feed intake, body weight gain, feed conversion ratio (FCR) and specific growth rate (SGR). There was a significant increase ( $p<0.05$ ) in growth and nutritional performance of *C. gariepinus* fingerlings with increasing inclusion of *O. gratissimum* leaves ( $P<0.05$ ). The best mean zootechnical parameters were recorded in T4 with 30mg/g dietary inclusion level *O. gratissimum*. The histology of the brain of fish in this study revealed the enhancement of glial, ghrelin and olfaction cells which improved gustation and nutrient utilisation in *C. gariepinus*. This study therefore confirmed the beneficial effects of *O. gratissimum* on the appetite and zootechnical performance of *C. gariepinus*.

**Keywords:** Aquafeed, fish farming, growth, appetite, physiology

#### **Biography**

Oke Ojo Pelumi, Student, Department of Fisheries and Aquaculture Technology, School of Agriculture and Agricultural Technology, Federal University of Technology, Akure, Ondo State, Since being admitted into the department of Fisheries and Aquaculture Technology, Oke has been passionate and driven. Striving for excellence at all time. Attaining academic and professional proficiency has been his priority.

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



***Muhammad Suhail Ibrahim***

*Institute of Food and Nutritional Sciences PMAS Arid Agriculture University, Pakistan*

**Food allergy/intolerance: immunomodulation responses and health hazards**

Food allergy is immune response as exposed to specific food stuff. Three types of immune responses are produced e.g. IgE-mediated, non-IgE-mediated (cell mediated) or mixed IgE-and non-IgE-mediated. Adverse effects include cutaneous infection, URTI, cardiovascular irregularities, gastrointestinal disorders and chronic behavioral symptoms. Rhinitis and asthma are not typically attributable to food allergy. Lactase intolerance involves the incidence of isolated or combined disaccharide malabsorption syndrome (CDMS), Irritable bowel syndrome (IBS) and celiac disease due to tissue transglutaminase antibodies (anti-tTG). Histamine intolerance is caused by diamine oxidase deficiency. Transference inability of carbohydrates produces defects in GLUT 5 or GLUT 2. Beta blockers intake and proton inhibitors are now a day is major cause of food intolerance. Intrinsic biological activity of salicylates, sultanas, serotonin, and tyramine may also lead to food intolerance. Similarly sulfites, MSG, benzoates, tartrazine, aspartame and cyclamate are the major sources of idiosyncratic intolerances. Intestinal diverticula or bacterial overgrowth causes systemic mastocytosis, degranulation, esophageal achalasia, chronic pancreatitis, colonic diverticula, and lympho-vascular abnormalities.

**Keywords:** Food intolerance, Malabsorption, Immunomodulation, Food allergy

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



**Tehreem Shabbir**

*Department of Zoology, Division of Science and Technology, University of Education, Pakistan*

**Adequacy of Succedaneous Barley meal on Carcass Composition, Immunity and Minerals Absorption in Common Carp (*Cyprinus carpio*) fingerlings**

The global exponential growth in the human population has resulted in a decline in food availability. Thus the production of protein-rich aquatic food is high on the agenda. Feed accounts for 60 % of total expenditure in aquaculture. This study was designed to examine the optimal inclusion level of barley meal (BM), competitive plant proteins, as a fishmeal replacer in the formulation of diets, to evaluate its effects on the carcass composition, immunity, and mineral absorption in common carp. Six experimental diets using BM as an alternative protein source containing different graded levels of BM (0%, 10%, 20%, 30%, 40%, and 50%) were prepared. Three replicates were used for each treatment having fifteen fingerlings per tank. Fingerlings were fed at the rate of 4% wet weight twice a day for 70 days. The results revealed that *C. carpio* fingerlings given 20% BM, as a protein source (BM-III) had the most improved carcass composition (crude protein; 17%, crude fat; 8%, gross energy; 3kcal/g, ash; 6% and crude fiber; 2%), immunological indices (WBCs;  $7.5 \times 10^3 \text{mm}^{-3}$ ) and minerals absorption (Ca; 72.5%, Na; 67%, K; 71% and P; 73%). Results indicated that 20% replacement level of BM with the fish meal is best suited to improve carcass composition, immunity, and mineral absorption and for the production of eco-friendly feed. Moreover, 30% inclusion rate of BM was also found to be useful in the diets of carp species.

**Keywords:** BM, partial replacement, carcass composition, immunity, mineral absorption, *Cyprinus carpio*.

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



***Ndongo Ivan***

*Faculty of science, University of Yaoundé, Cameroon*

**Some biotic and abiotic factors which influence the distribution of monogeneans in gills of *Brycinus kingsleyae* Günther, 1986 (Osteichthyes - Alestidae) from the Nyong River at Akonolinga (Centre-Cameroon)**

The Alestidae or African Characins form the most represented family among the Characidea. These fish play a very important role in the diet of the riverside populations. One difficulty that arises in their cultivation is their great parasitism coupled with their fragility in culture. Monogeneans are fish parasites that cause the most damage in the rearing environment by their direct and simple cycle and their nutrition mode. This work revealed some factors which influence the distribution of gill monogeneans. From december 2017 to december 2018, thirty specimens of *B. kingsleyae* were caught monthly with a gill net. Each fish was then preserved in 10% formalin. In the laboratory, after a determination of the sex and the standard length of the fish, each gill was placed in Petri dishes marked left or right and containing tap water. Using a stereomicroscope, the gill filaments were counted and each parasitic individual was mounted between slide and coverslip in a drop of water. The different species were identified under an optical microscope with the drawings made by Birgi (1988). *Annulotrema combesi* Birgi, 1988, *Annulotrema maillardi* Birgi, 1988, *Annulotrema nyongensis* Birgi, 1988, *Annulotrema bouixi* Birgi, 1988 and *Chracidotrema regia* Birgi, 1988 were colonized the gills of *B. kingsleyae*. All these parasites were core species (prevalence > 50%). The structuring of the infracommunities followed the same model as that of the gills filaments which is  $A_2 > A_1 = A_3 > A_4$ . The prevalence and mean intensity were higher during the rainy season. The female were most infected. This work is a good model for ecological studies and a first step for the implementation of cultivation and conservation measures for Alestidea.

**Keywords:** Gill filament, temperature, sex, season, ecology

**Biography**

NDONGO Ivan Master of Biology and Animals Physiology option Parasitology and Ecology at University of Yaoundé I in 2018. He is specialized in ichthyoparasitology since my Master works. My Ph.D. is on monogeneans of Alestidea of Cameroon. The main purpose is amelioration of life condition of poor populations by a development of cultivation and conservation of local fish. Two manuscripts issues of Ph.D. work are in press. The thesis is ending at 80% and actually we have described two new species and we are asking collaboration for molecular analyzes of parasites.

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



**Ararsa Duguma Benti**

*College of Veterinary Medicine, Haramaya University, P.O. box. 138, Dire Dawa, Ethiopia*

**Status of bovine tuberculosis and its zoonotic implications in Borana zone, Southern Ethiopia**

The objectives of this study was to estimate the status of bovine tuberculosis (BTB), assessment of community's current knowledge, and zoonotic importance on this disease in Borana zone, southern Ethiopia. In this study, comparative intradermal tuberculin (CIDT) test, structured questionnaires, and retrospective data were used, while the result indicated 3.8% prevalence at individual animal level with 5.6% (31/554) of doubtful reactors. Among related risk factors included, old animals were significantly infected by BTB than young one ( $\chi^2 = 32.005$ ,  $P = 0.001$ ). Parity number again showed significant difference ( $\chi^2 = 29.163$ ,  $P = 0.001$ ) where animals with many parity were more reactive to conducted test than few parity numbers. Animals born in the breeding center managed under semi-intensive production system were more infected ( $\chi^2 = 10.795$ ,  $P = 0.029$ ) than those brought from outside of the center. Questionnaire survey in this study indicated that out of 130 interviewed respondents, only 30% pastoralists knew what BTB mean. Milk drinking habit of pastoralist in the area showed about 79.2% drunk raw milk and the rest 20.8% used both raw and boiled milk. A retrospective data from Yabello Hospital indicated that current prevalence of human TB as 38.79% and showing the disease was highly increasing from year to year in the study area. This implies a great importance of human tuberculosis and its future concern in Borana zone. From this, there should be detail awareness of communities on BTB, its zoonotic importance, and the need of further investigation to develop control and prevention strategies according to the pastoral settings.

**Biography**

Dr. Ararsa Duguma is a veterinarian holding Master's Degree in Veterinary Obstetrics and Gynecology from Addis Ababa University, Ethiopia in 2018. He was graduated in DVM degree from Jimma University in 2010 and working at Yabello Regional Veterinary Laboratory from September, 2010 to December, 2014. From November, 2014 up to date he was working at Haramaya University, College of Veterinary Medicine at rank of assistant professor. He was published more than 17 articles on Animal Health and reproduction related issues. Currently, he is an associate dean of College of Veterinary and additionally a team leader of Center of Animal Reproductive Biotechnology in in Haramaya University.

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



### **Nour Ali**

*Laboratory of Crop Genetics and Germplasm Enhancement, Field Crops Research Department, Agricultural Faculty, Damascus University, Damascus, Syria*

#### **Mining of favorable alleles for seed reserve utilization efficiency in *Oryza sativa* by means of association mapping**

Improving seed reserve utilization efficiency (SRUE) is a key factor in facilitating the application of wet direct-seeded rice. However, the QTLs controlling this trait are poorly investigated. In this study, a genome-wide association study (GWAS) was conducted using a natural population composed of 542 accessions of rice (*Oryza sativa* L.) which were genotyped using 266 SSR markers. The average SRUE over 542 accessions across two years (2016 and 2017) was 0.52 mg.mg<sup>-1</sup>, ranging from 0.22 mg.mg<sup>-1</sup> to 0.93 mg.mg<sup>-1</sup>, with a coefficient of variation of 22.66%. Using general linear model method, 13 SSR marker loci associated with SRUE were detected and two (RM7309 and RM434) of the 13 loci, were also detected using mixed linear model analyses, with percentage of phenotypic variation explained (PVE) greater than 5% across two years. The 13 association loci ( $P < 0.01$ ) were located on all chromosomes except chromosome 11, with PVE ranging from 5.05% (RM5158 on chromosome 5) to 12% (RM297 on chromosome 1). Association loci RM7309 on chromosome 6 and RM434 on chromosome 9 revealed by both models were detected in both years. Twenty-three favorable alleles were identified with phenotypic effect values (PEV) ranging from 0.10 mg.mg<sup>-1</sup> (RM7309–135 bp on chromosome 9) to 0.45 mg.mg<sup>-1</sup> (RM297–180 bp on chromosome 2). RM297–180 bp showed the largest phenotypic effect value (0.44 mg.mg<sup>-1</sup> in 2016 and 0.45 mg.mg<sup>-1</sup> in 2017) with 6.72% of the accessions carrying this allele and the typical carrier accession was Manyedao, followed by RM297–175 bp (0.43 mg.mg<sup>-1</sup> in 2016 and 0.44 mg.mg<sup>-1</sup> in 2017). Nine novel association loci for SRUE were identified, compared with previous studies. The optimal parental combinations for pyramiding more favorable alleles for SRUE were selected and could be used for breeding rice accessions suitable for wet direct seeding in the future.

#### **Biography**

Proactive lecturer with a Ph.D. in Crop Genetics and Breeding, with almost 8 years of work experience. PH.D in Crop Genetics and Breeding, Seed sciences and Technology , obtained from Nanjing Agricultural university Nanjing, China , 2019 M.S. in Crop cultivation and farming system obtained from Huazhong agricultural university, Wuhan, China, 2015 B.S. in Feild crops obtained from Damascus university, faculty of agriculture Damascus, Syria, 2010 From 2011 till the present time, I am a lecturer at Damascus university, Teaching genetics and agronomy subjects to undergraduate and master degree students in both Arabic and English.

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



### **Muhammad Faheem**

*Department of Farm Machinery and Power, Faculty of Agricultural Engineering and Technology, University of Agriculture, Faisalabad 38000, Pakistan*

#### **Vibration control strategies to avoid berry falling during transportation phase of robotic handling of cluster fruit**

Most of the cluster fruits like cherry tomato, grapes, litchi, longan are harvested by gripping and cutting from the main rachis in the present robotic harvesting system and then transported into the basket by using a manipulator arm. However, serious cluster vibration and corresponding berry falling may occur during robotic transportation of hanging cluster fruit. These damages are caused by the accelerating and decelerating excitations from the manipulator arm motion to hanging cluster during robotic transportation. So it is necessary to discover the law of vibration and falling to achieve optimal control in robotic transportation of grape cluster fruit. Therefore this study was carried out to investigate the behavior of cluster fruit at different excitation loads i.e 0.4, 0.6, 0.8, 1.0m/s with accelerating speed of 6, 8, 10, 12m/s<sup>2</sup> of manipulator arm during transportation by using a force sensor signals that was attached in between manipulator arm and cluster. In this study hanging force means force required to carry cluster against gravity. Three different grape cluster was used to study the cluster vibration mechanism and damage degree due to multiple excitations of the manipulator arm. The state of the grape cluster were recorded with a high camera, the vibration amplitude of the hanging grape cluster was analyzed and explained from those videos, pictures, DAC (Data acquisition card) signals at different stages of transportation. Then a control strategy to reduce or remove cluster vibrations was made by controlling instructions in Ladder logic and PID parameter and suggest the safe zone at which vibration of the cluster will be low due to which bending load on main rachis decreases and corresponding berry falling will be low. It was observed from experiments that there is positive relation between cluster hanging force and cluster swing angle with  $R^2= 0.99$ . It was analyzed from the experimental and theoretical analysis that after stop of manipulator arm the cluster shows damping vibrations which verify vibration law and it's depend upon the natural frequency and physical parameters of the cluster. To conclude, optimal control of the hanging force of cluster fruit at various excitation loads during different transportation phases provides an excellent analytical and theoretical framework for robotic transportation of various cluster fruits with low vibration and anti-falling berries.

**Keywords:** Cluster fruit, vibration control, Robotic transportation, berry falling, excitation load, manipulator arm.

#### **Biography**

Dr. Muhammad Faheem was born in Punjab, Pakistan. He got his Ph.D. degree in Agricultural Engineering from School of Agricultural Equipment Engineering, Jiangsu University, Zhenjiang, China. He received the B.S. and M.S. degrees in agricultural Engineering from the University of Agriculture, Faisalabad, Pakistan, in 2010 and 2013. From 2013 to present, he is working as an Assistant Executive Engineer (Lab Engineer) in the department of Farm machinery and Power. Since 2013, he has been in charge of the thermodynamics, Manufacturing and high efficiency CAD CAM laboratory. His current research includes modeling, simulation, robotic harvesting and control engineering. He was awarded with the China Government Scholarship (2017GXZ026592) for 36 months studying in P.R. China.



Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



***Abdur Rahim Safi***

*IHE Delft Institute for Water Education, The Netherlands*

**Translating open-source remote sensing data to crop water productivity improvement actions.**

A widely promoted approach to tackle food insecurity and water shortage challenges is to enhance crop water productivity (WP). Therefore, multiple international organisations have featured WP improvements as their major policy goal, and substantial public and private investments have been made in this domain. Advances in remote sensing allow accurate, rapid, and cost-effective WP analysis for agricultural monitoring. However, translating the data to actionable information seems fraught with difficulties, as it only provides spatial and temporal variability in WP and no information on the causes of the variability. This paper introduces a standard approach using open-source remote sensing data for diagnosing the reasons behind WP variations, comparing high performing fields (bright spots) with low performing fields (hotspots). The framework is applied to a case study on the Bekaa Valley in Lebanon, considering wheat, potato and table grapes. Six factors (crop water stress, irrigation uniformity, soil salinity, nitrogen application, crop rotation and soil type) were analysed to identify their influence on WP and yield. This paper reveals that the growth of wheat and potatoes is negatively affected by water stress in the critical crop growth stages, non-uniform irrigation and nitrogen stress. Also, it was found that potatoes grown on clay-loam soil have better WP and yield than potatoes grown on loam soil. Such information assists practitioners to identify priority areas and actions aiming at crop-field level WP improvement. While acknowledging errors and uncertainties inherent to remote sensing data, this paper shows the feasibility and practical usefulness of the diagnostic framework.

**Biography**

Abdur Rahim Safi has MSc in Water Science and Engineering with distinction from IHE Delft Institute for Water Education, The Netherlands. For more than six years, he has been engaged in agricultural water management with diverse employers: government organisations, international NOGs, educational institute, and consultancy services for projects in Africa, Asia, Australia and Europe. Currently, he works as a researcher at eLEAF, where he transforms Remote Sensing data (pixels) into powerful insights to enhance agricultural water productivity, aiming to tackle the global water and food insecurity challenges. He is passionate about developing services that provide meaningful solutions to real-world problems.

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



***Isham Alzoubi***

*Department of Surveying and Geomatics Engineering Syria*

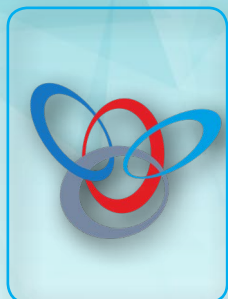
**Prediction of environmental indicators in land leveling using artificial intelligence techniques.**

The aim of this work was to determine best linear model Adaptive Neuro-Fuzzy Inference System (ANFIS) and Sensitivity Analysis in order to predict the energy consumption for land leveling. In this research effects of various soil properties such as Embankment Volume, Soil Compressibility Factor, Specific Gravity, Moisture Content, Slope, Sand Percent, and Soil Swelling Index in energy consumption were investigated. The study was consisted of 90 samples were collected from 3 different regions. The grid size was set 20 m in 20 m (20\*20) from a farmland in Karaj province of Iran. The values of RMSE and R2 derived by ICA-ANN model were, to Labor Energy (0.0146 and 0.9987), Fuel energy (0.0322 and 0.9975), Total Machinery Cost (0.0248 and 0.9963), Total Machinery Energy (0.0161 and 0.9987) respectively, while these parameters for multivariate regression model were, to Labor Energy (0.1394 and 0.9008), Fuel energy (0.1514 and 0.8913), Total Machinery Cost (TMC) (0.1492 and 0.9128), Total Machinery Energy (0.1378 and 0.9103). Respectively, while these parameters for ANN model were, to Labor Energy (0.0159 and 0.9990), Fuel energy (0.0206 and 0.9983), Total Machinery Cost (0.0287 and 0.9966), Total Machinery Energy (0.0157 and 0.9990) respectively, while these parameters for Sensitivity analysis model were, to Labor Energy (0.1899 and 0.8631), Fuel energy (0.8562 and 0.0206), Total Machinery Cost (0.1946 and 0.8581), Total Machinery Energy (0.1892 and 0.8437) respectively, respectively, while these parameters for ANFIS model were, to Labor Energy (0.0159 and 0.9990), Fuel energy (0.0206 and 0.9983), Total Machinery Cost (0.0287 and 0.9966), Total Machinery Energy (0.0157 and 0.9990) respectively, Results showed that ICA\_ANN with seven neurons in hidden layer had better. According to the results of Sensitivity Analysis, only three parameters; Density, Soil Compressibility Factor and, Embankment Volume Index had a significant effect on fuel consumption. According to the results of regression, only three parameters; Slope, Cut-Fill Volume (V) and, Soil Swelling Index (SSI) had significant effect on energy consumption. Using adaptive neuro-fuzzy inference system for prediction of labor energy, fuel energy, total machinery cost, and total machinery energy can be successfully demonstrated.

**Biography**

Alzoubi has completed his Ph.D. at the age of 40 years at Tehran University and postdoctoral studies from Tehran University School of Surveying Geospatial Engineering-Department of Surveying and Geomatics Engineering. He is the director at the Directorate of Engineering and Transportation, a premier service organization. He has published more than 15 papers in reputed journals and has been serving as an editorial board member of repute. He Opening and studying the financial offers and the organization of the fundamental record, supervising the efficiency of electrical generators at Nseeb border center, and Supervising the efficiency of agricultural machinery at the ministry of agriculture.

Joint International Conference on  
**Agriculture and Horticulture  
&  
Food Science and Aquaculture**  
July 28-29 , 2022 / Avani Atrium Bangkok Hotel



**Ngassa Julius Mussa Challya**

*Rukwa Regional Commissioners Office, Tanzania*

**The comparison between Tanzanian indigenous (Ufipa breed) and commercial broiler (Ross chicken) meat on the physicochemical characteristics, collagen and nucleic acid contents**

The objective of this study was to characterize the meat quality traits that affect the texture and savory taste of Ufipa indigenous chickens by comparing the proximate composition, physical characteristics, collagen, and nucleic acid contents with those of commercial broilers. It was found that Ufipa chicken breast and thigh meat had a higher protein content ( $p < 0.05$ ) than broiler chicken meat, whereas the fat content was lower ( $p < 0.01$ ). The moisture content of thigh meat was lower in Ufipa chicken meat than in broiler chicken meat ( $p < 0.05$ ). Regarding meat color, broiler chickens had considerably higher  $L^*$  and  $b^*$  values than Ufipa chickens in both the breast and the thigh meat, except for  $a^*$  ( $p < 0.01$ ). Regarding water holding capacity, Ufipa chicken breast exhibited higher drip loss but lower thawing and cooking losses than broiler chicken ( $p < 0.01$ ). In contrast, its thigh meat had a much lower drip and thawing losses but higher cooking losses ( $p < 0.01$ ). The shear force of Ufipa chickens' breasts and thighs was higher than that of broiler chickens ( $p < 0.05$ ), while the amount of total collagen in the thigh meat was higher than that of broiler chickens ( $p < 0.05$ ). Additionally, the IMP of Ufipa chicken breast and thigh meat was higher than that of broiler meat ( $p < 0.05$ ). The principal component analysis of meat quality traits provides a correlation between the proximate and physical-chemical properties of both breeds with some contrast. In conclusion, the present study provides information on healthy food with good-tasting Ufipa indigenous chickens, which offer a promising market due to consumers' preferences.

**Keywords:** Inosine 5' monophosphate, meat science, native chicken, PCA, shear force, WHC

# INDEX

<b>Ron Porat</b>	<b>09</b>
<b>Dushyant Dipakkumar Champaneri</b>	<b>26</b>
<b>Chanenya Fahawa</b>	<b>15</b>
<b>Nour Ali</b>	<b>39</b>
<b>Ajaikumar B. Kunnmakkra</b>	<b>10</b>
<b>Nisar Ahmad</b>	<b>18</b>
<b>Usha K. Sabharwal</b>	<b>13</b>
<b>Muhammed Faheem</b>	<b>40</b>
<b>Bayan Tiba</b>	<b>12</b>
<b>Hiliary Righini</b>	<b>24</b>
<b>Sohwan K i</b>	<b>14</b>

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 &  
 Food Science and Aquaculture**  
 July 28-29 , 2022 / Avani Atrium Bangkok Hotel



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2 <sup>nd</sup> International Conference on Waste Management and Recycling	August 25-26, 2022 Bangkok, Thailand	<a href="https://unitedresearchforum.com/wastemanagement-conference/">https://unitedresearchforum.com/wastemanagement-conference/</a>
3 <sup>rd</sup> International Conference on Pharmacology and Toxicology	August 29-30, 2022 Bangkok, Thailand	<a href="https://clinicalpharmaforum.com/">https://clinicalpharmaforum.com/</a>
4 <sup>th</sup> International Conference on Virology and Infectious Diseases	October 24-25, 2022 Dubai, UAE	<a href="https://virologyforum.com/">https://virologyforum.com/</a>
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