

Inauguration of

XXXVII Training Programme: Certificate Course on Basic Training on Science Communication and Media Practice 2024 of Indian Science News Association

The XXXVII Training Programme: Certificate Course on Basic Training on Science Communication and Media Practice 2024-2025 of the Indian Science News Association (ISNA) commenced online with an inaugural ceremony on July 24, 2024 at 5 p.m. The event was graced by the presence of the Office-bearers, Council Members and other Members of ISNA, distinguished Guests, Resource Persons and the past and present students. Shri Prasanta Kumar Bose, Chairman of the Training Course, delivered the Welcome Address, emphasizing the significance of science communication, as

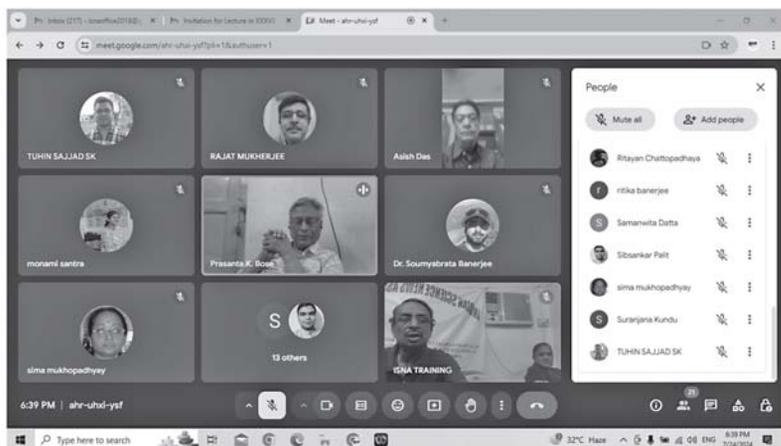
well as the history and benefits of joining the course. Professor Manas Chakrabarty, an Honorary Secretary of ISNA, shed light on the history of the Association and its inception in 1935 by Professor Meghnad Saha, Acharya Prafulla Chandra Ray, Sir U.N. Brahmachari, and other academicians. Dr. Amit Krishna De, the Convener of the Training Course and another Hony. Secretary of ISNA, outlined the benefits and certification of the course, highlighting the two sections of basic and advanced classes, each spanning 6 weeks, and the importance of writing articles to enhance skills.

Chief Guest Dr. Papiya Nandi, Former Director of JBNSTS and Emeritus Fellow of Jadavpur University, shared her insights on the benefits of the training and advised students to be regular and honest in classes to maximize their learning. Professor Dhrubajyoti Chattopadhyay, Vice-Chancellor, Sister Nivedita University and Vice-President of ISNA, discussed the importance of scientific communication. Professor Prabir Kumar Saha, the Hony. Treasurer of ISNA, delivered a Vote of Thanks. He expressed his gratitude to all the attendees and extended special thanks to the Chief Guest.

The session concluded with an Introductory Session, during which the present and past students of the course introduced themselves. Following the session, a few Members of the Faculty introduced themselves. Shri Prasanta K. Bose then highlighted the importance of providing scientific news in today's world, emphasizing its relevance to culture. Shri Bose shared insights on various scientific news types and their advantages, delivering a concise yet informative lecture. Finally, the meeting concluded with Dr. Amit Krishna De extending well wishes for the upcoming days and events of the training program. □

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Prof. Naresh Chandra Datta and Prof. Samir B. Bandyopadhyay Memorial Lectures

The Zoological Society, Kolkata in collaboration with Aquatic Ecology and Fisheries Laboratory, Department of Zoology, Calcutta University organized two lectures on Fishery and Aquaculture on 23rd August, 2024 at Hiralal Chaudhuri Seminar Hall of the Department. 'Prof. Naresh Chandra Datta Memorial Lecture' was delivered by Dr Ratna Ghoshal, Associate Professor, Department of Biological and Life Sciences, Ahmedabad University, and 'Prof. Samir B. Bandyopadhyay Memorial Lecture' delivered by Dr. Koushik Ghosh, Associate Professor, Department of Zoology, Burdwan University. Professor N. C. Datta was Honorary Secretary and Vice-President of Indian Science News Association.



Prof. Naresh Chandra Datta

Dr Ghoshal spoke on 'Application of multi-pronged approach in understanding behavioural ecology of fishes – a way towards improved conservation', focusing on behaviour of a species towards its immediate local environment (involving change in endocrine mechanism, hormones, its gene pool); studying behaviour in terms of immunological response, decision making, strategies for survival, sensitivity to local environment, adaptive value; potential disturbances (stressors) that alter ecosystem stability; problems that occur when exotic pisciculture species accidentally released in open waters.

She explained about how the invader Amazon sailfin catfish impacts Indian freshwater fish community; feeding competition between Rohu and catfish. To assess catfish's ecological impact, she set-up mesocosms that mimic Indian freshwaters within natural fish ponds, test ponds and control ponds. Indian major carps (IMC) Rohu, Catla, Mrigal used - small (fingerling) and large size. The catfish (both fingerling and large-sized) had negative impact on growth of small-sized Rohu, which had significant growth reduction in presence of catfish. Reduced growth of Rohu is due to sheer behavioural competition from catfish for food. She spoke on behaviour and understanding decision-making pattern of native fish *Etroplus suratensis* and *E. canarensis* – how it recognizes conspecifics, adapts to

altered light environment, sense colour. Dr. Ghoshal said integrated multi-pronged approach can help us to understand fish biology and save biodiversity in today's world.



Prof. Samir B. Bandyopadhyay

Dr. Ghosh spoke on 'Improved aquafeed technology with the evolution of functional feed additives (FFA)'. He described FFA as ingredients (phytobiotics, probiotics, prebiotics) added in fish feed formulation to improve health & growth, spoke about synbiotics; autochthonous bacteria adhering to fish mucus and intestinal epithelium, secreting inhibitory substances; autochthonous probiotic bacteria vs fish pathogenic bacteria; probiotic microorganisms selection criteria (should survive in fish GI tract, grow well in gut mucus, shouldn't be antibiotic resistant) for formulation; pathogen inhibitory potential (PIP) of probiotic in IMC gut; antagonistic activity of antimicrobial proteins (bacteriocin-like compound) produced by *Bacillus* sp and pathogen-inhibitory gut bacteria; application of probiotic formulation consisting compatible multi-strains in fish feeding trials.

Dr. Ghosh said prebiotics in fish feed stimulate growth of probiotics - then probiotics produce metabolites (short-chain fatty acids butyrate, acetate, propionate) or postbiotics, stimulating immune response. Thus probiotics benefit fish. He discussed growth of six *Bacillus* sp (probiotic) in presence of different prebiotics; PIP of probiotics in presence of prebiotics; autochthonous Bacilli and prebiotic Fructo-oligosaccharide (FOS) as FFA. Best combination found to be *B. licheniformis* + FOS, which improved weight gain, feed utilization and non-specific immune parameters in Rohu. Fish farmers may include natural prebiotics Moringa, banana, onion in formulated feed – which contain prebiotic fibres. He studied efficacy of probiotic, prebiotic and synbiotic mixed feed in IMC. Dietary supplementation of Moringa leaves (FOS present) and probiotic consortium could improve growth performance in Rohu – it was validated in trials in fish farmer's pisciculture ponds. He said application of FFA is better alternative to antibiotics, can improve IMC growth and counteract stress. □

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Insights from the "Plant Science and Molecular Biology World Conference (PMBWC - 2024)" at Barcelona, Spain

"Plant Science and Molecular Biology World Conference (PMBWC – 2024)" was successfully held in Sercotel, Sant Boi at Barcelona, Spain during August 17 and 18, organized by the team of 'Precision Global Conferences (PGC)'. The two-day conference was focused on advancing innovation and research by exploring the latest developments and discoveries covering the scientific sessions: Plant Biology; Crop Research and Seed Science Technology; Plant Biotechnology and Nano-technology; Soil Science and Molecular Biology. This academic event emphasized and reflected the distinguished works of eminent academicians through presentations (in-person and virtual participation through Zoom platform). The conference evidenced significant and active involvement of participants all over the world covering the countries like India, Spain, USA, Croatia, Morocco, Italy, Turkey, Poland, China, Chile, Malaysia, Ethiopia, Czech Republic, Portugal, Australia, United Kingdom, Russia, Cuba, Tunisia and many more.

Day-1 of the conference commenced with the opening ceremony followed by Introductory speech by the chairperson of the PGC team. The first Keynote Speaker of the day was Dr. Dilip M. Shah, the Principal Investigator of Donald Danforth Plant Science Centre, USA. His topic of deliberation was "Nodule-specific Cysteine-Rich

Peptides: Antifungal Activity, Modes of Action and Potential for Development as Bioinspired Fungicides". Dr. Shah explained the cysteine-rich plant antimicrobial peptides with potent antifungal activity which has emerged as promising candidates for developing novel peptide-based fungicides as increasing fungal resistance to many of the single-site chemical fungicides calls for the development of safe and sustainable fungicides with novel multi-site modes of action (MOA).

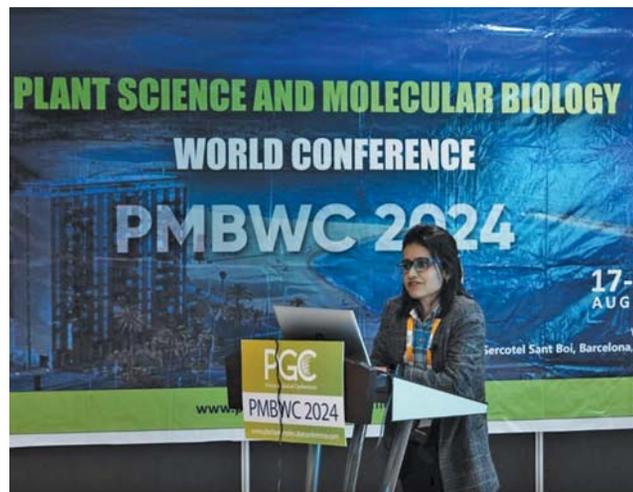


Fig.1. Dr. Sunandana Mandal delivering the Keynote Lecture

I, Dr. Sunandana Mandal, representing India delivered the talk entitled 'Improving Zinc Bioavailability in Rice (*Oryza sativa* L.) Grain grown in Red Acidic Soil of West Bengal, India' as the next invited Keynote Speaker of the



Fig.2. Some participants during PMBWC-2024

day. I addressed the issue of Zinc (Zn) deficiency, which poses a significant threat to the global population whose principal cereal crop is rice, leading to serious health and socio-economic challenges. Enhancing the nutritional content of rice through biofortification has emerged as a top priority in research efforts. The role of soil application of Zinc Sulphate and foliar application of nano-Zinc results the significant increase in grain Zn concentration enhancing yield.

Dr. Silvia Calderone of Centre for Research in Agricultural Genomics (CRAG), Spain was the next invited speaker of the day who delivered “Diverging Adaptive Strategies to Drought Stress and Stalk-lodging Resistance in Maize (*Zea mays* L.)”. Her research focused on the impact of drought on maize varieties and their lodging resistance, through molecular mechanisms to enhance crop resilience and agricultural sustainability. Dr. Dalila Trupiano, Department of Biosciences and Territory, University of Molise (Italy) delivered lecture on the topic entitled “The DRO1 Gene Under Spotlight of Functional Genomics for Improving Tomato Root Architecture”, mentioning the genetic determinant for improving root traits that increase plant water use efficiency and maintain their productivity under drought conditions. DRO1 was found to be a significant root quantitative trait loci (QTL) in rice and *Arabidopsis*. The next session of the day started with the enlightening lecture by Sara Laura Saranèiæ of University of Zagreb, Croatia who delivered on “Genomic Basis of Ecological Plasticity in *Chouardia litardierei* (Hyacinthaceae)”, a plant species with exceptional ecological plasticity. The next presenter was Dr. Margaret Mukami Gitau of Centre for Research in Agricultural Genomics (CRAG), Spain who delivered on “Exploring Microalgae-Plant Interactions: Insights from Plate Assays, Greenhouse Experiments, Auxin Biosynthesis and Microscopy Analysis” where she explained the importance of microalgae that have gained importance as promising bio-stimulants for sustainable agriculture.

“Study of the Effect of Controlled Deficit Irrigation, Age and Year of Harvest on the Physical and Chemical Characteristics of the Fruits of Two Varieties of Pomegranate Grown in Morocco” was the topic of deliberation of Dr. Assia Ejjilani of National Institute of Agricultural Research, Morocco. Kaddouri Kaoutar of Mohammed V University, Morocco was the next oral presenter of the day who delivered a lecture on “Molecular

diversity Analysis of *Retama* sp. using ISSR, REP-PCR, ITS, and Plastidic Genes”. Ilayda Goktepe Atilgan delivered on “Identification of the Symbiosome Secreted Host Proteins Involved in Symbiotic Nitrogen Fixation”, from Koc University, Turkey. Kinga Kania of University of Warsaw, Poland was the last presenter of the day who delivered on “Mechanisms of Temperature Acclimatization in the Psychrotolerant Green Alga *Coccomyxa subellipsoidea* C-169”.

Day-2 of the PMBWC-2024 started with the keynote lecture by Prof. Zhongsheng Guo of Northwestern A & F University, China who gave an illustrative lecture on the topic “Agriculture High Quality Development”, followed by the oral and poster presentations. Next talk was by Dr. Aparna Gunjal of Dr. D.Y. Patil, Arts, Commerce & Science College, India on “Study of Bioadsorption Kinetics for Heavy Metals”.

The oral presentations by the participants commenced once the Keynote Lectures had ended. A few of the topics covered were “Genetic Basis of High Photosynthetic Efficiency and High Yield in Wheat” presented by Prof. Jin Ying Gou of Beijing Key Laboratory of Crop Genetic Improvement, China; “Effect of Seed Sources and Poly Pot Sizes on Early Seedlings Growth and Development in *Jatropha curcas* L in Taraba State, Nigeria” presented by Prof. Peter Oni Idowu of Department of Forestry and Wildlife Management, Federal University Wukari, Nigeria; “Morphological and Molecular Variations of *Euryops prostratus* B. Nord. and *Euryops pinifolius* A. Rich. (Asteraceae) Based on ITS and trnL trnF Markers” presented by Prof. Hanny Lidetu Solomon of Addis Ababa University, Ethiopia; followed by various additional topics of notable importance.

The conference concluded with the valedictory address delivered by the conference organizer and it proved to be a valuable event, attracting around 150 participants. It fostered strong network collaborations and enhanced relationships between countries through the mutual exchange of knowledge and experiences. Attending such a conference, which provides global exposure, will definitely inspire the creativity, modify mindset and stimulate an educationist to start pursuing things in novel ways. □

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