Report on the 4th Botanical Congress 2026

The 4th Botanical Congress 2026 was successfully organized from 26th to 28th March 2026 by Raja Narendralal Khan Women's College (Autonomous), Gope Palace, Medinipur, in collaboration with the Botanical Society of Bengal. The Congress emerged as a vibrant academic congregation, bringing together eminent scientists, academicians, industry experts, research scholars, and students from diverse institutions. It served as a dynamic platform for exchanging ideas, presenting innovative research, and fostering collaborations across classical and modern domains of plant sciences. The event aimed to bridge foundational botanical knowledge with cutting-edge advancements such as plant biotechnology, computational biology, pharmacognosy, and drug discovery. With its multidisciplinary scope and inclusive participation, the Congress significantly contributed to strengthening the scientific community and promoting botanical research at regional, national, and international levels.

The Botanical Congress series began in 2023 with the vision of creating a dedicated platform for botanists, researchers, and students to interact and collaborate. The first Congress witnessed participation from over 300 delegates and laid a strong foundation for future editions. The second and third Congresses built upon this success by expanding thematic coverage and increasing participation. These events featured diverse scientific discussions, interdisciplinary sessions, and impactful presentations, thereby strengthening the academic network. The 4th Botanical Congress continued this legacy with enhanced scale, broader themes, and increased participation, reaffirming its importance as a recurring academic event in the field of plant sciences.

The primary objectives of the Congress were:

- To promote interdisciplinary research in plant sciences
- To provide a platform for the dissemination of recent scientific advancements
- To encourage the participation of students and young researchers
- To facilitate collaboration among academic and research institutions
- To integrate classical and modern approaches in botanical research

Major thematic areas

The Congress featured six major thematic areas encompassing a comprehensive range of botanical disciplines. Each theme was explored through dedicated technical sessions, including invited lectures, oral presentations, and interactive discussions.

- **Theme 1: Cryptogamic World, Systematics and Evolution:** This theme focused on lower plant groups, including algae, bryophytes, and pteridophytes, along with their evolutionary significance. Discussions emphasized modern systematics, phylogeny, and biodiversity documentation.

- **Theme 2: Medicinal Plants, Drug Discovery, and Biotechnology:** This session explored the role of plants as sources of bioactive compounds and their applications in modern drug discovery. Advances in plant biotechnology and pharmacognosy were highlighted.
- **Theme 3: Genetics, Embryology, and Tissue Culture:** The focus here was on plant developmental biology, genetic regulation, somatic embryogenesis, and in vitro propagation techniques.
- **Theme 4: Food Science and Human Nutrition:** This theme addressed the significance of plant-based nutrition, functional foods, and their impact on human health and well-being.
- **Theme 5: Plant–Microbe Interaction, Biogeography, and Climate Change:** Sessions explored ecological interactions, microbial associations, and distribution patterns of plants, along with environmental influences.
- **Theme 6: Plant Physiology, Biochemistry, and Plant-Based Innovations:** This theme highlighted biochemical pathways, physiological responses, and innovative applications of plant systems in science and technology.

Day One- 26th March, 2026

Inaugural session

The Congress commenced with a grand and dignified inaugural ceremony on 26th March 2026, marking the beginning of a vibrant three-day academic gathering. The event was graced by eminent dignitaries from the academic fraternity, lending both prestige and intellectual gravitas to the occasion. The Hon'ble Vice-Chancellor of Vidyasagar University, Prof. Dipak Kumar Kar, presided as the Inaugurator, while Prof. Arnab Sen, Hon'ble Vice-Chancellor of Raiganj University, attended as the Chief Guest, underscoring the importance of the Congress as a significant platform for scholarly exchange and advancement in plant sciences. The ceremony began on a traditional and auspicious note with the lighting of the ceremonial lamp, symbolizing the dispelling of ignorance and the pursuit of knowledge, thereby setting a reflective and inspiring tone for the proceedings. The welcome address was delivered by Dr. Swapna Ghorai, Principal of Raja Narendralal Khan Women's College (Autonomous), who warmly greeted the distinguished guests, delegates, and participants and highlighted the core objectives of the Congress, emphasizing its role in fostering academic dialogue, encouraging interdisciplinary research, and promoting innovation in botanical sciences. In his address, the Chief Guest, Prof. Arnab Sen, emphasized the critical role of plant sciences in addressing pressing global and local challenges such as sustainable development, environmental conservation, public health, and technological advancement, offering both inspiration and a call to action for researchers and students. The President of the Botanical Society of Bengal (BSB), Prof. Prabir Kumar Saha, provided a comprehensive overview of the organization's history, achievements, and ongoing initiatives, while the Secretary, Prof. Santanu Paul, stressed the urgent need to integrate traditional botanical knowledge with modern approaches, including computational biology and molecular techniques, identifying this integration as a central objective of such congresses. The Convener, Dr. Rashmi Mukherjee, delivered a heartfelt address acknowledging the invaluable contributions of collaborating institutions, delegates, participants, organizing members, and funding agencies, expressing sincere gratitude and highlighting the collaborative spirit behind the event. Overall, the inaugural session set an inspiring and forward-looking tone, reflecting a strong commitment to academic excellence, collaboration, and innovation, while celebrating the rich legacy of botanical

sciences and paving the way for meaningful discussions and advancements throughout the three-day Congress.

Inaugural Session: The Procession, Lighting of the Lamp

Inaugural Programme: Inaugural Address by the Hon'ble VC, Vidyasagar University, Prof. Dipak Kumar Kar; Chief Guest, Prof. Arnab Sen, Hon'ble VC, Raiganj University; Welcome Address by Dr. Swapna Ghorai, Principal, Raja Narendralal Khan Women's College (Autonomous); President of BSB, Prof. P. K. Saha; Secretary of BSB, Prof. Santanu Paul and Convener, Dr. Rashmi Mukherjee.

Inaugural Session: Participation; Releasing of Abstract Proceedings

Congress witnessed enthusiastic participation from undergraduate and postgraduate students, research scholars, and faculty members from various institutions. The event created a vibrant academic atmosphere, fostering collaboration and intellectual exchange. Participants actively

engaged in discussions, attended sessions, and interacted with experts, making the Congress a meaningful learning experience.

The first day of the Congress witnessed a series of high-impact technical sessions inaugurated by eminent speakers and dignitaries. Distinguished lectures were delivered by Prof. Arnab Sen, Hon'ble Vice-Chancellor of Raiganj University, Prof. (Dr.) Debprasad Chattopadhyay, Former Founder Director of ICMR-NITM, and Dr. Kalyan Rudra, Chairman of the West Bengal Pollution Control Board (WBPCB). Their talks highlighted the importance of integrating environmental awareness, biomedical research, and sustainable practices within botanical sciences. Prof. Sen's lecture focused on the growing threat of heavy metals, particularly arsenic, highlighting its severe impact on agriculture and human health in regions such as the Gangetic plains of West Bengal, and presenting biogenic zinc oxide nanoparticles (ZnONPs) as an innovative solution to mitigate toxicity in legume crops by enhancing growth, reducing oxidative stress, and improving yield, thereby reinforcing the crucial role of plant-based systems in environmental remediation and sustainable agriculture. Dr. Chattopadhyay addressed the global crisis of antimicrobial resistance (AMR), emphasizing the diminishing efficacy of conventional antibiotics against multi-drug resistant infections and advocating the scientific validation of plant-derived phytometabolites—such as allicin, gingerol, and thymol—as promising alternatives for combating resistant pathogens, thus highlighting the immense potential of botanicals in modern therapeutic development. Dr. Rudra, in his address, highlighted the pressing challenges of climate change driven by anthropogenic activities, elaborating on its far-reaching impacts on ecosystems, including altered climatic patterns, habitat degradation, biodiversity loss, and disruption of ecological balance, and emphasizing the pivotal role of plant sciences in understanding, conserving, and restoring ecological stability. Collectively, these sessions provided a comprehensive perspective on contemporary environmental and health challenges while showcasing innovative, interdisciplinary approaches rooted in botany to address them.

Technical Session 1: Keynote Lectures by Prof. Arnab Sen, Hon'ble Vice-Chancellor of Raiganj University, Prof. (Dr.) Debprasad Chattopadhyay, Former Founder Director of ICMR-NITM, and Dr. Kalyan Rudra, Chairman of the West Bengal Pollution Control Board (WBPCB)

The post-lunch session commenced with the Prof. N. D. Paria Memorial Lecture delivered by Dr. Sudhansu Sekhar Dash, Scientist – F, Additional Director and the Head of Technical Division, Botanical Survey of India. In his address, he emphasized the need to modernize taxonomy through interdisciplinary collaboration with geneticists, biotechnologists, and industry experts, transforming it into a predictive science based on phylogenetic relationships. He highlighted that such an approach can accelerate the discovery of valuable bio-resources, enhance conservation prioritization, and position taxonomy as a key driver of sustainable innovation and economic development.

Prof. N. D. Paria Memorial Lecture: Delivered by Dr. Sudhansu Sekhar Dash, Scientist – F, Additional Director and the Head of Technical Division, Botanical Survey of India.

It was followed by Keynote lectures of Prof. Samit Ray from the Department of Environmental Science, Netaji Subhas Open University for Theme I- Cryptogamic World, Systematics and Evolution and by Prof. Santanu Paul from the Department of Botany, University of Calcutta for Theme II- Medicinal Plants, Drug Discovery and Biotechnology.

Technical Session 2 & 3: Keynote Lectures by Prof. Samit Ray from the Department of Environmental Science, Netaji Subhas Open University and Prof. Santanu Paul, Department of Botany, University of Calcutta.

Prof. Ray presented an in-depth discussion on the phylogeny of green algae, highlighting recent advancements and their significance in understanding evolutionary relationships within cryptogams. Prof. Paul, in his lecture, emphasized the immense therapeutic potential of medicinal plants, particularly in cancer treatment, and elaborated on bioactivity- guided approaches for the isolation and characterization of novel anticancer compounds from traditional botanical sources,

thereby reinforcing the crucial role of plant sciences in modern drug discovery. The first day of the Congress also featured the inauguration of exhibition stalls, providing a vibrant platform for faculties, scholars, and students to showcase their innovative projects and products. Among these, the stall curated by undergraduate students, featuring mushroom-based products and handicrafts crafted from waste materials, drew particular attention and admiration from participants. The display highlighted both creativity and sustainability, offering a diverse range of items including handmade soaps, pickles, cookies, papads, paintings, and jewelry, all produced using eco-friendly and resource-efficient methods. This initiative not only demonstrated the practical applications of botanical knowledge and sustainable practices but also engaged the audience in appreciating the

Inauguration of stalls: Exhibition stall showcasing mushroom-based products and eco-friendly handicrafts created by undergraduate students, highlighting creativity and sustainable practices

intersection of science, innovation, and community-driven creativity.

The first day of the Congress concluded on a lively and colorful note with a cultural program that celebrated the rich heritage and artistic traditions of the region. The evening featured a variety of performances, offering participants an opportunity to engage in a more informal and interactive setting while appreciating diverse art forms. Highlights included soulful renditions of Rabindrasangeet, a captivating sarod recital, and energetic Jhumur songs and dances, showcasing folk traditions. Additionally, the program presented the elegance and precision of Bharatanatyam, a classical dance form, demonstrating the depth and sophistication of Indian classical arts. This cultural evening added a vibrant and immersive dimension to the Congress, creating a harmonious balance between intellectual engagement and cultural expression, while fostering camaraderie among delegates and enhancing the overall experience of the event.

Cultural Programme: Energetic Jhumur songs and dances; Rabindrasangeet; captivating sarod recital, Bharatanatyam

Day Two- 27th March, 2026

The Day Two began with a Thalessemia awareness session by Dr. Ramendu Hom Chaudhuri, Orthopedic Surgeon & District Governor Rotary International District:3291) The session aimed to dispel common myths surrounding thalassemia and provide participants with up-to-date knowledge on management strategies, preventive measures, and lifestyle considerations for

affected individuals. Dr. Chaudhuri emphasized the genetic basis of the disorder, its implications for public health, and the critical importance of early screening and intervention to prevent severe outcomes. The lecture also highlighted practical dos and don'ts, offering clear guidance. Overall, the session served as an essential platform for raising awareness, promoting informed decision-making, and fostering community engagement in the prevention and management of thalassemia.

Thalessemia Awareness Programme: Session by Dr. Ramendu Hom Chaudhuri, Orthopedic Surgeon & District Governor Rotary International District:3291)

The second day of the Congress was marked by a strong emphasis on outreach and inclusive academic engagement, reflecting the organizers' deep commitment to nurturing curiosity and interest in plant sciences among younger generations. A highlight of the day was the enthusiastic participation of approximately 50 school students from diverse institutions, who were invited to take part in specially curated outreach programs designed to make botanical science accessible, engaging, and inspiring. The participating schools included Vidyasagar Vidyapith, Garhbeta High School, Chuadanga High School (H.S.), Aligunj Rishi Rajnarayan Balika Vidyalaya, Salboni High School, Chanakya International School, Vidyasagar Shishu Niketan, and DAV Public School.

The outreach initiative created a vibrant learning environment where students could step beyond the boundaries of their classrooms and experience science in a more dynamic and applied context. A series of hands-on activities formed the core of this engagement. Students were introduced to fundamental and advanced concepts in plant sciences through live demonstrations, simple experimental setups, and interactive exhibits. These sessions allowed them to observe plant structures, understand physiological processes, and explore topics such as biodiversity, conservation, and sustainable agriculture. Faculty members and research scholars actively interacted with the students, encouraging questions and discussions, thereby fostering a spirit of scientific inquiry and critical thinking. Special attention was given to making the sessions relatable and stimulating, with real-life examples and practical applications highlighting the relevance of plant sciences in addressing global challenges such as food security, environmental sustainability, and climate change. This ensured that the Congress continued to serve as a platform for meaningful scholarly dialogue while effectively bridging the gap between formal education, advanced research, and community engagement. The seamless integration of outreach initiatives with academic programming underscored the Congress's dual commitment to knowledge dissemination and inspiring the next generation of plant scientists.

Two popular lectures were delivered by Prof. Alok Bhattacharya, Professor (Retd.), Department of Botany, University of Burdwan, and Prof. Debdulal Banerjee, Professor, Department of Botany & Forestry, Vidyasagar University, Midnapore. Prof. Bhattacharya spoke on "Conservation Strategies of Crop Seeds: A Journey from Traditional Knowledge to Modern Vault Systems," highlighting the evolution of seed preservation practices and its significance for future food security. Prof. Banerjee emphasized that the integration of microbiology and biotechnology with emerging fields such as artificial intelligence, systems biology, and nanotechnology is expected to open new frontiers in biological sciences. He noted that future prospects include personalized medicine, microbiome-based therapies, climate-resilient agriculture, and innovative biotechnological solutions to global challenges. These rapidly advancing areas not only deepen our understanding of life processes but also hold immense promise for developing sustainable technologies and enhancing the quality of life for future generations.

Special Session for School students: Popular lectures by Prof. Alok Bhattacharya, Professor (Retd.), Department of Botany, University of Burdwan, and Prof. Debdulal Banerjee, Professor, Department of Botany & Forestry, Vidyasagar University, Midnapore

At the same time, in alignment with the core objectives of the Botanical Congress, the day maintained its academic rigor through a series of ongoing technical sessions and invited lectures for faculty members, scholars, and researchers. Distinguished speakers included Prof. Gaurab Gangopadhyay from Bose Institute; Prof. Chowdhury Habibur Rahaman, Professor, Department of Botany, Visva-Bharati University; Dr. Bhaskar Singh, Associate Professor, Department of Environmental Sciences, Central University of Jharkhand; Prof. Sudip K. Ghosh, Professor, Department of Bioscience and Biotechnology, IIT Kharagpur; Prof. Ananda Sarkar, Professor, School of Life Sciences, Jawaharlal Nehru University; and Prof. Pranab Kumar Mondal, Associate Professor, Department of Mechanical Engineering, IIT Guwahati.

These invited lectures and technical sessions formed an integral part of the Botanical Congress, reflecting its commitment to advancing knowledge in plant sciences while fostering interdisciplinary dialogue. The speakers delivered insightful lectures spanning diverse areas such as plant physiology, medicinal plants, biodiversity assessment, environmental sustainability, plant biotechnology, computational biology, and applied plant sciences. Drawing from their research, they presented case studies and highlighted future directions and emerging opportunities in the field.

Importantly, these sessions complemented the outreach initiatives of the Congress by creating a continuum of learning—from foundational exposure for school students to advanced academic discourse for researchers. This integrated approach reinforced the Congress's role as a dynamic platform that not only disseminates scientific knowledge but also connects different levels of learners and researchers. The sessions proved particularly beneficial for students and early-career researchers, offering exposure to advanced methodologies, real-world applications, and fostering meaningful academic discussions, thereby enriching the overall impact of the Botanical Congress.


Technical Session 4: Keynote Lecture by Prof. Gaurab Gangopadhyay from Bose Institute

Technical Session 5: Keynote Lectures by Prof. Chowdhury Habibur Rahaman, Professor, Department of Botany, Visva-Bharati University

Technical Session 6: Keynote Lecture by Prof. Sudip K. Ghosh, Professor, Department of Bioscience and Biotechnology, IIT Kharagpur

Technical Session 7: Keynote Lectures by Prof. Ananda Sarkar, Professor, School of Life Sciences, Jawaharlal Nehru University and Prof. Pranab Kumar Mondal, Associate Professor, Department of Mechanical Engineering, IIT Guwahati

Oral Presentations

All the technical sessions of the Botanical Congress featured oral presentations by participants across the respective thematic areas on both the first and second days of the event. These sessions formed a vital component of the Congress, providing a dynamic platform for researchers, scholars,

Participants: Oral and poster presenters

and students to present and exchange their scientific findings. The Congress facilitated oral presentations, enabling participants to showcase their research in diverse formats. Scholars presented their work on a wide range of topics, including plant physiology, biotechnology, ecology, pharmacognosy, biodiversity conservation, and environmental sustainability. This diversity of themes reflected the interdisciplinary nature of plant sciences and highlighted the breadth of ongoing research in the field. The oral presentation sessions were systematically organized, ensuring smooth transitions between speakers and effective time management. Each presenter was given the opportunity to clearly articulate their research objectives, methodologies, results, and conclusions. These presentations were followed by interactive question-and-answer

Oral Presentations: 42 oral presentations across 6 themes

sessions, which encouraged constructive feedback, critical evaluation, and scholarly discussion among participants and experts. Importantly, these sessions played a significant role in nurturing the next generation of scientists. Young researchers gained valuable experience in communicating complex scientific ideas in a clear and concise manner, enhancing both their presentation and analytical skills. The supportive academic environment of the Congress helped build their confidence, encouraged intellectual curiosity, and provided exposure to diverse research perspectives. Overall, the presentation sessions not only enriched the academic quality of the

Botanical Congress but also strengthened its role as a collaborative platform for knowledge sharing, critical dialogue, and professional development in plant sciences. Based on their performances, young scientist awardees were selected.

Day Three 27th March, 2026

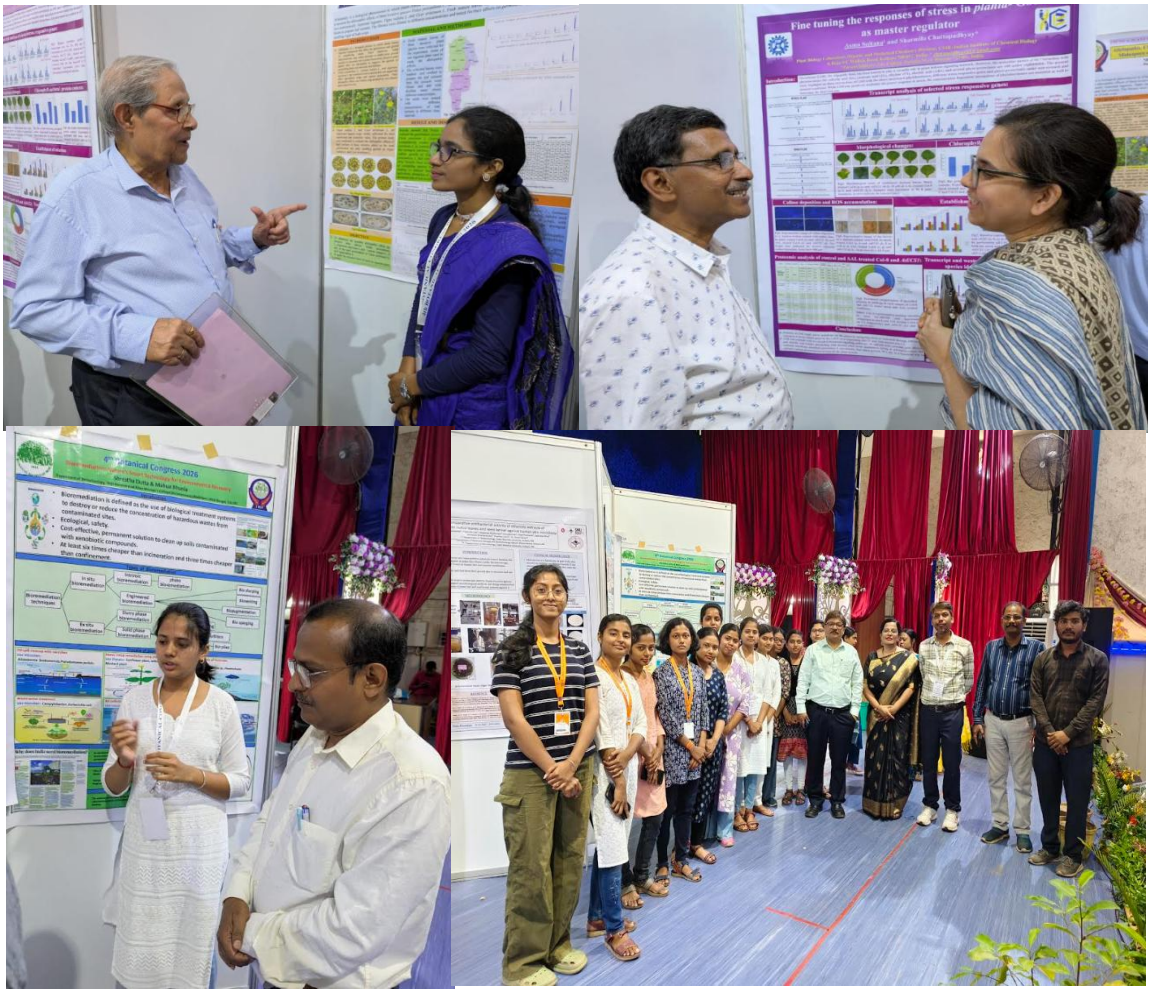
Poster Presentations

The Congress provided a dedicated platform for participants to present their research through poster presentations during the 9th technical session, highlighting its commitment to inclusive and participatory scientific engagement. The poster sessions served as an effective medium for detailed scientific communication, allowing presenters to visually showcase their research objectives, methodologies, results, and conclusions in a structured yet accessible format. A key strength of the poster presentations was the opportunity they created for one-to-one interaction between researchers and experts. This direct engagement facilitated constructive feedback, in-depth discussions, and meaningful knowledge exchange, enabling presenters to refine their ideas and gain new perspectives on their work. Such interactions proved especially valuable for young researchers, helping them improve their ability to communicate scientific concepts clearly and confidently.

A separate segment of poster presentations was dedicated to postgraduate students, specifically aimed at encouraging their morale and nurturing scientific temperament at an early stage of their academic journey. This initiative played a crucial role in building confidence among young minds, motivating them to actively participate in research and envision themselves as future contributors to the scientific community. The poster sessions also complemented the oral presentations by providing a more informal and interactive setting for academic exchange. Unlike structured oral sessions, these allowed for extended discussions, personalized feedback, and collaborative dialogue. Presenters—particularly students and early-career researchers—benefited from engaging closely with peers, faculty members, and subject experts, fostering deeper understanding, networking opportunities, and potential research collaborations. Overall, the poster presentation

Poster Session: Group Photograph after Poster Session

sessions significantly enriched the academic environment of the Congress by promoting active participation, encouraging emerging researchers, and strengthening the culture of open scientific dialogue.



Poster Session: 41 poster presentations across 6 themes

Valedictory session and prize distribution

The Botanical Congress concluded on a solemn and celebratory note with a formal valedictory session, marking the successful culmination of three days of intensive academic exchange and collaborative engagement. The session served as an occasion to reflect upon the key achievements, outcomes, and overall impact of the Congress, bringing together participants, organizers, and distinguished guests in a spirit of accomplishment and appreciation. During the session, eminent guests and members of the organizing committee shared their observations and experiences, highlighting the academic richness and intellectual diversity that characterized the Congress. They emphasized the high quality of scientific deliberations, the active participation of researchers and students, and the seamless organization of various sessions, including technical presentations, invited lectures, and outreach initiatives. Special mention was made of the Congress's inclusive

approach, which successfully integrated school-level outreach with advanced research discussions, thereby creating a comprehensive platform for learning and engagement.

Certificates were distributed to participants, presenters, and young scientists in recognition of their valuable contributions to the success of the Congress. Outstanding oral and poster presentations were specially acknowledged for their scientific merit, originality, and clarity of presentation. These recognitions served not only as an appreciation of excellence but also as a source of motivation for young researchers to continue pursuing innovative and impactful research in plant sciences. The valedictory address underscored the importance of sustaining such academic platforms that foster interdisciplinary dialogue, knowledge dissemination, and collaborative research. It emphasized that gatherings like this Botanical Congress play a crucial role in advancing plant sciences, addressing contemporary global challenges, and nurturing the next generation of scientists. The speakers also encouraged continued collaboration among academic institutions, research organizations, and students to further strengthen the scientific community.

Valedictory Session: Distribution of Prizes

The session concluded with a formal vote of thanks, wherein heartfelt gratitude was extended to all dignitaries, keynote speakers, invited experts, participants, funding agencies, and members of the organizing committee. Their collective efforts, support, and dedication were acknowledged as instrumental in ensuring the smooth conduct and overall success of the Congress. The valedictory session thus brought the event to a meaningful close, leaving participants inspired and enriched with new knowledge, ideas, and professional connections.

Funding and Support

The successful organization of the Congress was made possible through the generous support of funding agencies, including ANRF, BSI, and the Botanical Society of Bengal. Their financial and institutional support ensured the smooth execution of the event and enabled participation from a wide range of delegates. The organizing committee expressed gratitude to all sponsors and collaborators for their valuable contributions.

Organizational Efforts

The Congress was meticulously planned and executed by the organizing committee, faculty members, and student volunteers. Their coordinated efforts ensured the seamless conduct of all sessions, activities, and logistics. From registration to session management, hospitality, and technical support, every aspect of the event was handled efficiently. The dedication and teamwork of the organizers played a crucial role in the success of the Congress.

Outcomes and Impact

The 4th Botanical Congress achieved its objectives by promoting scientific dialogue, encouraging interdisciplinary research, and fostering collaboration. The event provided valuable insights into emerging areas of plant sciences and inspired participants to pursue innovative research. The Congress also strengthened academic networks and created opportunities for future collaborations. The exposure gained by students and young researchers will contribute to their academic and professional growth.

Conclusion

The 4th Botanical Congress 2026 concluded successfully, leaving a lasting impression on all participants. The event reinforced the importance of plant sciences in understanding and addressing contemporary challenges. The Congress not only celebrated the diversity of botanical research but also emphasized the need for continuous learning, collaboration, and innovation. It is expected that the knowledge and experiences gained during the event will contribute to future advancements in plant sciences.