INDIAN PHYTOPATHOLOGICAL SOCIETY

National Conference

"Women Scientist in Plant health Managemnt for sustainable Development Goals"

A National Conference of the Women, by the Women, for the Women Scientists

CERTIFICATE OF APPRECIATION

Proudly presented to

Dr. Suweditha S.

for delivering a **Keynote Lecture/Lead Talk/Invited Talk** during the National Conference on **"Women scientist in plant health management for sustainable development goals"** organized by Assam Agricultural University, Jorhat and Indian Phytopathological Society, New Delhi **December 22-23, 2023 at AAU, Jorhat-13, Assam**

Kajal. K. Biswas
Secretary, IPS

Daisy Senapoty
Organizing President

Popy Bora
Organising Secretary

Day 1 (22.12.23)

ORAL SESSION

Session –IV: Nematodes, arthropods, and insects in relation to crop and Forest health

Time: 14.30-17.00 hours

Venue: Room No. 5, IDA Building, AAU, Jorhat

Sl. No.		Title of abstract	Author(s)	Mode of Presentation
Chairman		**Dr. Kolla Sreedevi,** Principal Scientists, ICAR-NBAIR, Bengaluru		
Co-Chairman		**Dr. Aparajeeta Borah** Department of Nematology, AAU, Jorhat **Dr. K. Sankari Meena** ICAR-Indian Institute of Oilseeds Research, Hyderabad		
Session Coordinator		**Dr. Anjumoni Devee** AAU, Jorhat		
Rapporteurs		**Dr. Suveditha S.** MS Ramaiah College of Arts, Science and Commerce, Karnataka **Dr. Pranamika Sharma** Assam Agricultural University, Jorhat		
1.	**I-1 (Keynote Speaker)**	Insect resources for biological management of crop pests	**Dr. Kolla Sreedevi** Principal Scientists, ICAR-NBAIR, Bengaluru	**ORAL**
2.	**I-2 (Lead Speaker)**	Survival strategies of nematodes in environmental extremes	**Dr. Bina Gogoi** Professor, Department of Nematology, AAU, Jorhat-13	**ORAL**
3.	**I-3 (Invited Speaker)**	Impact of Plant Parasitic Nematodes in Crop plants and their Sustainable Management	**Dr. K. Sankari Meena** Scientist, Division of Crop Protection, ICAR-Indian Institute of Oilseeds Research Hyderabad-50030	**ORAL**
4.	**I-4 (Invited Speaker)**	Elevating Plant Defence: The Marvel of Induced Resistance	**Dr. Suveditha S.** MS Ramaiah College of Arts, Science and Commerce, Karnataka	**ORAL**
5	O-1	Emerging insect pests of Citrus in North-East India	Sikha Deka, K. Sindhura Bhairavi and Naseema Rahman	Oral

IPS-NWSC/TS-4/Invited Lecture -4

Elevating plant defence: The marvel of induced systemic acquired resistance

Suveditha S.[1,3]*, Shivashankar K.S.[2] and Krishna Reddy M.[1]

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Effective management of viral diseases in crops demands a comprehensive strategy due to the adaptable nature of viruses, allowing rapid evolution and overcoming resistance mechanisms. Plant viruses inflict substantial global economic damage, prompting plants to employ various defensive tactics. Systemic acquired resistance (SAR), an intrinsic protective mechanism in plants, provides enduring and broad-spectrum protection against pathogens.

Stimulating the host immune system through treatments with biotic or abiotic substances establishes resistance, inhibiting pathogen growth and reducing disease severity.

The study focused on assessing the efficacy of salicylic acid (SA) foliar spray in managing three major destructive viruses affecting the economically valuable vegetable crop, *Capsicum annuum* L. Capsicum, grown in polyhouse over an extended period, is highly susceptible to adverse effects on yield, quality, and market value. Cucumber mosaic virus, chilli veinal mottle virus, and chilli leaf curl virus are among the major devastating viruses causing significant yield losses ranging from 50% to 95%. The study's results revealed that optimal outcomes, characterized by minimal disease incidence and severity, were achieved when plants were sprayed with 100 ppm of SA 24 hours before virus exposure. SA treatment not only slowed virus symptom development but also reduced viral load, and promoted plant growth with increased yields. The observed increase in internal SA accumulation, a pivotal SAR pathway activator, correlated with the expression of SAR genes, including pathogenesis-related proteins and defence-related enzymes. SA treatment effectively reduced oxidative damage induced by viruses by activating antioxidant mechanisms and also triggered the JA-mediated pathway. Elevated biochemical component levels indicated enhanced plant health, resulting in improved growth and yield. The practical significance of salicylic acid for crop production is noteworthy. Applying SA at 10-day intervals during fruit formation and development under controlled conditions enhances growth, yield, and protection from virus infections, offering valuable insights for improved crop management.

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