

## Biopesticide international conference\*

Uninterrupted and indiscriminate use of synthetic pesticides has not only led to the development of resistant strains, but the presence of toxic residues on food-grains used for human consumption has led to health and environmental problems. There is increasing public concern over pesticide residue in food. To overcome such problems, bio-intensive integrated pest management (BIPM) has been suggested and practised by the farming community, where biological pesticides play an important role in agriculture. Biological pesticides include the use of plants, microbes, natural enemies (predators and parasites) and entomopathogenic nematodes. Though developing and developed countries use biopesticides for pest management, India has been utilizing only 1.5–2% of biopesticides. To establish India in a leading position in the global biopesticide usage, a holistic approach to the production and utilization of biopesticides is a must. To look at the advances in biopesticide knowledge, production methodology and practice methods, a biopesticide international conference was organized recently at Palayamkottai. There were 176 participants from India and abroad to deliberate upon the importance of various biopesticides such as microbial pesticides, natural enemies, and botanicals in pest management as well as crop protection. The recent development on various aspects of biopesticides was presented and discussed through 57 lectures and over 17 informative posters.

B. V. David described the biotechnological approach in IPM and its impact on the environment. K. C. Jhelum (National Plant Protection Training Institute, Hyderabad) highlighted the impact of synthetic pesticides and the importance of bio-pesticides in pest management. K. Sahayaraj (St Xavier's College, Palayamkottai) briefly described the history and dynamics of the conference.

Parallel to the IPM session, work on pest management in general and biomolecules

of plants and microbes in particular were presented. P. Jeyakumar (IARI, New Delhi), while chairing the session deliberated on performance of *Bt*-cotton under different soil conditions in the north zone. He highlighted that RCH134, RCH317, MRC6301, MRC6304, Ankur651 and Ankur2534 are the *Bt*-cottons mainly grown in Punjab, Haryana and Rajasthan. J. Joseph reported that anthronilic acid and acetoacetyl and their copper complexes have been utilized in *Spodoptera litura* Fab. management. Continuing the discussion on molecules in pest management, K. Kumar (Pandit Jawaharlal Nehru College of Agricultural Research Institute, Puduchery) concentrated on the toxicity of rh-2485(208) against *Helicoverpa armigera* (Hubner) control. Weedicidal compound from *Bregnia re-tusa* leaf; microbial compounds of *Saccharopolyspora spinosa*, *Metarhizium anizopliae* and *Verticillium lecanii*; insecticidal compounds from *Adathoda vasica*, *Cynodon dactylon*, *Eclipta alba*, *Morinda pubescens*, *Ocimum tenriflor-cens*, *Phyllanthus amarus*, *Sesbania grandiflora*, *Solanum surattense*, *S. trilobatum*, *Vinca rosea* and *Azadirachta indica*, etc. were discussed.

A part of the second technical session entitled 'Microbial insecticides against defoliators and sucking pests', was introduced and highlighted by Hem Saxena (IPR, Kanpur). In her lecture entitled 'Microbial management on crop pests', Saxena noted that microbial insecticides are eco-friendly, safe to mankind and animals, do not pollute the environment, and are not harmful to beneficial parasites and predators. Hristina Kutinkova (Fruit Growing Institute, Bulgaria) explained the utility of the new virus product, carpovirus in the control of codling moth. Y. G. Prasad (Central Institute for Dryland Agriculture, Hyderabad) spoke on the production and efficacy of *Achaea janata* granulovirus in another part of the second technical session entitled 'Microbes on borer and mass production of microbes'.

During the second day, Roman Pavela (Crop Research Institute, Czech Republic) explained the efficacy of plant products in mosquito control. Rohan Rajapakse

(University of Ruhuna, Sri Lanka), in his lecture entitled 'Pesticidal potential of tropical plants', talked about stored product pests and their management by oils obtained from nearly 20 tropical plants. Totally two lead papers, 20 oral and four posters were presented in this session. All the speakers invariably recommended the utility value of various locally available plants in cost-effective and environmental pest management.

The session on predators and parasites in pest management included five lectures. R. Sundararaj (IWST, Bangalore) spoke on distribution of predatory arthropods in selected sandal provenances of South India. He recorded 74 species of predatory insects and 24 species of spiders in different sandal provenances. Pathipati Usha Rani (Indian Institute of Chemical Technology, Hyderabad) highlighted the importance of labial and antennal tip organs of Hemiptera. In this session, host preference of *Trathala flavoorbitlis* on brinjal shoot and fruit borer and rice leaf borer were presented by M. A. Rahman (Bangladesh). The importance of reduviids, pentatomids, mirids, coccinellids, nematodes and spiders was also discussed in this session.

K. P. Sanjayan presented work on induction of specific biochemical pathways in plants for pest management. According to him, polyphenol oxidase, polyphenol peroxidase and lipoxygenase provide resistance against various insect pests belonging to the Orthoptera, Lepidoptera and Hemiptera. Pathipati Usha Rani spoke about her work on plant kairomones in host location by *Odontopus nigricornis* (Stall). In the panel discussion scientists stressed on the need for networking and also on the necessity of transferring and popularizing the technologies among farmers. S. Vincent (TNSCST, Chennai) pointed out the impact of synthetic pesticides and highlighted the importance and various avenues available in the field of biopesticides.

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