

Periodical seminar on
“Insect-Plant interaction and its potential role in forest insect pest management”
27 September 2017
IFGTB, Coimbatore

A periodical seminar was held at the Institute of Forest Genetics & Tree Breeding, Coimbatore on 27th September, 2017. Dr. S. Murugesan, Scientist- G and Group Coordinator Research, chaired the seminar and welcomed gathering. He highlighted the role of insect plant interaction in insect pest management. The scientists, officers and research staff including SRFs, JRFs, RAs and FAs of the Institute participated in the seminar. Dr John Prasanth Jacob, Scientist- F, Forest Protection Division of the institute spoke on the subject “*Insect-Plant interaction and its potential role in forest insect pest management*”.

In his talk, Dr. Jacob elaborated on the various aspects of insect-plant interactions like feeding habits and degree of feeding specialization in phytophagous insects, timeline of plant evolution and the beginning of different modes of insect herbivory, biochemical components in insect-plant co-evolution, biosynthetic pathways leading to secondary metabolites and plant volatiles, insect’s counter defenses against plant chemicals, signaling chemicals in plants that can affect the behavior of insects, host plant resistance against insects and its mechanisms and assessment. He highlighted the problems associated with domestication of agricultural and forest tree species through modern breeding techniques and the resulting genetic vulnerability to biotic agents. Dr. Jacob explained about the current major insect pests problems associated with tree species like Poplar, Gmelina, Sal, Teak, Mahogany, Melia, Eucalyptus, Casuarina and Ailanthus. Quoting the extensive work carried out by IFGTB in screening for insect pest resistance in various germplasm of Teak and Casuarina and particularly the successful management of invasive gall inducing insect of Eucalyptus by identifying the volatile chemicals which has resulted in the development of a volatile based product- *EuGalLure*.

Summing up the talk, Dr Jacob stressed the need for Identification of research needs, Formulation of future strategies / road map and Networking research options & opportunities for insect pest management based on insect-plant interactions. He suggested that research on forest health need to be directed based on **Biodiversity in agro and forest ecosystem for sustainable insect diversity**. He also felt that work on **Bio- signalling and semiochemical research for management of key insect pests of forest trees** is needed. He recalled that identification of pest resistant crop/tree variety, which forms the basis for an integrated pest management programme holds promise for effective suppression of tree pests. Dr. Jacob suggested that a network programme involving FRI, TFRI, RFRI, IFGTB, KFRI and NBAIR (ICAR), Bangalore can address *Clostera cupreata* on Poplar in north India, *Hoplocerambyx spinicornis* on Sal and

Eutectona machaeralis on Teak in central India, *Calopepla leayana* on Gmelina in north east India, *Hypsipyla robusta* on Mahagony in south India.

The lecture was followed by discussions related to plant-insect interaction. In his concluding remarks Dr. S. Murugesan, Group Coordinator Research said that the lecture was well structured incorporating all the aspects involved in insect-plant interactions besides the possible research leads in future for pest management in tree species as far as insect-plant interactions are involved. The seminar ended with a formal vote of thanks by Dr. N. Senthilkumar, Scientist E.



