

## **Proceedings of the Institutional Level Monthly Seminar**

**Topic of Seminar:** “ Ecofriendly management of teak defoliator/skeletonizer”

**Major Theme:**Development of biopesticides and biofertilizers for use in forestry

**Speaker:** Dr. N. Roychoudhury, Director, Tropical Forest Research Institute, Jabalpur

One day institute level monthly seminar was held under the theme of “Development of biopesticides and biofertilizers for use in forestry” on September 26, 2017. Dr. S.N. Mishra, Scientist-B, Forest Extension Division, TFRI, Jabalpur, while conducting the seminar, in his introductory remarks, informed the house about the vision and communication received from Indian Council of Forestry Research (ICFRE), Dehradun regarding monthly seminars. The lecture was delivered by Dr. N. Roychoudhury, Director, Tropical Forest Research Institute (TFRI), Jabalpur on “*Ecofriendly management of teak defoliator / skeletonizer*.” As per the requirement this seminar also covered issues like identification of research needs, formulation of future strategies/road map and networking, research options and opportunities and significance of the seminar.

The speaker covered the theme of the seminar through two presentations, emphasizing the teak entomology, research on major insect pests of teak, impact of defoliation/skeletonization, growth relation, economic loss, history of management and resistance in teak. The works carried out in the Forest Entomology Division on teak defoliator/skeletonizer and their management in an eco-friendly manner was discussed in length.

### **Lecture / Paper 1 : Screening of resistance teak against teak defoliator / skeletonizer**

Primarily, this lecture included discussion on existence of resistance in teak against major defoliators like teak skeletonizer and defoliator. Works carried out in the institute on identifications of such resistant teak clones was presented in length, supported by relevant data. He described the resistance, types, mechanism, benefits, sources, possibility of breeding and confirmation of genetic inheritability, and related example. The presenter also discussed methodology used for screening for resistant clones using damage scoring/indices, choice /non-choice test to teak clones. He highlighted need to continue identification of resistant clones and confirmation of their genetic inheritance by multi-locational trials

**Recommendation:**

- Search for resistant teak trees to its key insect pests needs to be continued further including clonal seed orchard (CSO) and seedling seed orchard (SSO).
- Evaluation of resistance needs to be studied against target pests by quantification of nutritional indices.
- Efforts should be made to develop quick screening technique for identification of insect resistant genotypes of teak through artificial diet bioassay.
- Resistant teak trees need to be tested through progeny and multi-locational trials in different ecozones.
- Efforts should be made to develop seeds by hybridization of insect resistant teak and better yielding tree crops for future plantations.
- AICRP should be formulated for screening insect resistance in teak.

**Lecture/Paper 2: Biological control of teak defoliator/skeletonizer**

The speaker defined the classical biological control of insect pests and discussed the research works carried out in the institute for last two decades starting from the World Bank Project in 1994. The main emphasis was on management of teak defoliator and skeletonizer by using native Hymenopteran egg parasitoid *Trichogramma raoi* in Integrated Insect Pest Management (IIPM) strategy. He described the mass multiplication technique being used in the Forest Entomology Division of the institute and related aspects like biology, life history, standardized method of egg cards, named as TFRITrichocard. He highlighted 50-60 % control of teak defoliator in teak plantations, natural forest areas and seed production areas. He concluded by advocating the use of native egg parasitoid, *T. raoi*, as a biocontrol agent for management of teak pests based on series of field experiments and requested introduction in the field.

**Recommendation:**

- Search for potential egg parasitoids of teak pests needs to be continued in teak forests to find out more effective native egg parasitoids.
- Climatic data needs to be considered for evaluating efficacy of biocontrol agent on the growth of teak trees.

- Efforts should be made to examine the period of existence of released egg parasitoids in the released sites.
- Potentiality of *T. raoi* needs to be determined in nurseries.
- AICRP should be formulated targeting multilocational trials of *TFRI-Trichocard* in different ecozones in all teak growing states of the country.
- He also emphasized systematic extension of this available method amongst different stakeholders for its popularization.

The presentation generated very good discussion on various entomological aspects related to the topic of lecture and teak clones, in general.

Lastly, Dr. N. Kulkarni, Scientist-G and Head, Forest Extension Division, TFRI, Jabalpur presented the formal Vote of Thanks.