

## PROCEEDING OF THE INSTITUTE LEVEL MONTHLY RESEARCH SEMINAR HELD ON 30.12.2019 IN THE CONFERENCE HALL OF HIMALAYAN FOREST RESEARCH INSTITUTE, SHIMLA

In the series of monthly seminar, a talk on “**Biological control of Insect-Pests by insect Parasitoids and Predators**” under the thrust area “**Managing forests and forest products for livelihood support and economic growth**” was delivered by **Sh. Subhash Chander**, Scientist-D, Forest Protection Division on **30<sup>th</sup> December, 2019**. All the scientists, forest officers, researchers and technical staff attended the seminar.



**Dr. S.S Samant**, Director, HFRI chaired the proceedings of monthly research seminar.

**Dr. Rajesh Sharma**, Group Coordinator Research (GCR) welcomed Director, HFRI and participant and briefed about of the seminar. He requested all to actively participate in the discussion and to give their valuable suggestions.



In his presentation, **Sh. Subhash Chander**, touched various issues of biological control and also elaborated the control of insect-pests by insect parasitoids and predators. He emphasized on the need for the conservation of natural enemies/predators of insect-pests. He also informed that the continuous use of chemical pesticides leads to development of resistance in insect-pests, beside

their harmful nature to the user as well as to the environment.

**Sh. Chander** also elaborated about the rearing techniques of *Trichogramma* sp. which is an egg parasitoid that helps in minimizing the population of the major insect-pests of the forest. Elaborating further the presenter added that *Trichogramma* sp. infests into the egg and kill the insect pest before emergence. The speaker also explained about the *Chrysoperla carnea*: a natural enemy of many lepidopteron insect larvae and aphids. He informed that the *Corcyra cephalonica*, is a pest of stored grains and used as host for mass multiplication of predator and parasitoid in laboratories. **Sh. Chander** also explained the concept of tricho cards and their application in insect pest infected forests and highlighted the safety measures that should be taken during the mass multiplication of parasitoids and predators in the laboratory. Deliberating upon the research carried out on the subject the speaker briefed about the research conducted by the institute in the field of biological control of insect pests.



**Sh. Chander** concluded his talk with emphasis on research needs in the field of insect pest management with the help of biological control agents and collaborative research with other organizations to develop effective and eco- friendly management of forest insect pests.



**Sh. Jagdish Singh**, Scientist F enquired about the natural enemies of *Trichogramma* sp. and in response presenter informed that little information is available on the natural enemies of *Trichogramma* sp. except few reptiles and birds.

In response to **Dr. Sandeep Sharma**, Scientist G regarding efficacy of tricho cards in field, Sh. Chander informed that there are approximately 25000 eggs in one tricho card and they have optimum efficacy in pest management during monsoon and spring season. Further **Dr. S.S Samant**, Director, HFRI queried about the work done in the field of biological control of insect-pests. **Sh. Subhash Chander** responded by mentioning the work of TFRI-Jabalpur, who have standardized the technique of mass multiplication and field application of *Trichogramma* sp., Director, HFRI advised to develop enhanced and effective technique of biological control in future for the benefit of stakeholders of Himachal Pradesh and Jammu & Kashmir and Ladakh. He was also of the opinion that only after proper identification and classification of the insect pest and predators, the suitable strategy for biological control can be established and standardized.

**Dr. Ashwani Tapwal**, Scientist-E & Head FPD said that all the suggestions and opinion given by all the participants will be taken into consideration and further action will be taken in the direction of cost effective and eco-friendly insect pest management.

## **Outcome of the seminar:**

### **A]. Identification of research needs:**

1. Identification of economically important species of predators and parasitoids of Himalayan region.
2. Screening of natural predators and parasitoids of insect pests to develop effective management strategies.
3. Prioritization of species specific IPM techniques on insect pest management and further efforts in the direction to improve the techniques
4. Standardization of mass multiplication techniques of important bio-control agents for field application.

### **B]. Formulation of future strategies/ road map:** The institute can formulate projects on:

1. Identification of important insect pests of forestry species in HP, J&K and Ladakh.
2. Screening of natural predators and parasitoids against key insect pests.
3. Development of IPM model for the management of economically important insect pests

**C]. Networking research options identified:** State Forest Department, HP University, Shimla, Dr. YSP UHF Nauri, Solan, GBPNIHESD, Almora, and HIMCOSTE, Shimla etc.

**D]. Future research directions discussed for implementation and opportunities for funding:**

With collaboration of the identified agencies, like the Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi and GB Pant National Institute of Himalayan Environment and Sustainable Development- Almora (UK), the institute can come with a project for eco-friendly management of various insect pests of forestry in Himachal Pradesh.

In the end, **Dr. Rajesh Sharma GCR** thanked **Dr. S.S Samant**, Director, HFRI and Chairman of the seminar, the presenters and all the researchers present for giving their inputs for making it successful.

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