

## Biological Control of Sugarcane Borers by *Trichogramma chilonis*



Sugar cane stem borer



*Trichogramma* parasitizing



Host rearing chambers



*Tricho* cards in field

### Contributors

Dr. Ehsan-ul-Haq and other IPMP scientists

### Challenge

- Sugarcane is damaged by stem borer, top borer, gurdaspur borer and root borers.
- Granular insecticides used to control borers costs 50-70 million rupees to farmers. Chemical control not only adversely affects environment and human health but also results in the development of resistance in insects
- Sugarcane borers have a wide range of natural enemies. *Trichogramma* spp. (egg parasitoids) is the most promising one that kills the young ones of the lepidopterous pests before their development in the eggs.
- The main challenge was to develop an economical mass rearing technique of *Trichogramma* spp. and its transfer to end users.

### Interventions

- During early **2000s**, Integrated Pest Management Program (IPMP) of NARC started work to develop the rearing technique of *Trichogramma* spp. for its mass production on factitious insect hosts (*Sitotroga* spp.).
- Since **2003**, the mass production technology has been continuously demonstrated successfully at different sugar mills and government institutions.
- Simultaneously, the developed technological packages have also been transferred to other end-users through capacity building initiatives.

### Outcomes

- The mass rearing protocols of host and parasite were developed up to the stage of successfully releasing parasitoid eggs on ivory cards in the fields.
- Mass rearing facilities established at 12 sugar mills are extending biological control of borers on more than 25,000 acres of sugarcane crop
- A cadre of trained professionals from agricultural universities and sugar industry, comprising 75 agriculturists and 40 technicians, has been developed for wider dissemination of technology

### Way Forward

- Sustained partnership with sugar industry for promotion of mass rearing technologies
- Initiation of short courses for promoting a cadre of young graduates/technicians to establish mass rearing laboratories in private sector