

Incidence and Management of *Tuta absoluta* in Tomato in Uttarakhand

The Challenge: Insect pests are always been a limiting factor for crop production. Besides many native insect pests affecting the crops, various exotic pests also cause serious damage time to time. The tomato pin worm, *Tuta absoluta* is one of the serious pests of tomato causing extensive damage in many countries. The larva mine between the epidermis of leaves and make irregular blotches. It also feeds on stem, buds, calyx and fruits. In fruits, they make pin holes and mine inside. It is reported in brinjal, potato, capsicum, etc. Adults are small brown moth (5-7 mm) with silvery and black spots and reportedly lay 250 eggs. The pest was first reported in India in 2014. It was noticed during May 2018 in Bhagartola in tomato crops grown under polyhouses.



Surveys undertaken



Damage caused by *Tuta absoluta*

The Solution: Owing to the importance of the pest, ADG (Plant Protection), ICAR, New Delhi was consulted, and the survey and management of the pest was carried out under his guidance. An awareness programme for the officials of the state department of Agriculture was conducted on the identification, biology and management of the pest at ICAR- VPKAS, Almora. The guidance of Director and scientists of ICAR-National Bureau of Agricultural Insect Resources, Bengaluru was also taken. Subsequently, pheromone traps and parasitoid, *Trichogramma achaea* were obtained from ICARNBAIR, Bengaluru for use against *T. absoluta* in Uttarakhand. The farmers of the affected area were made aware about the identification of the pest and the potential damage.

The Application: Training and awareness programmes were conducted both on farm and at farmer's fields. Jointed surveys were conducted along with state department of agriculture to combat the spread of the pest. Severely infested polyhouses were sprayed with the insecticide, chlorantraniliprole @ 0.3 ml/L. Since there is only one chemical insecticide available for the management, the pesticide shops were informed/ alerted to have the insecticide (Chlorantraniliprole) in stock, which was purchased by the institute, state department and farmers themselves for use in pest combat. Pheromone traps were brought from ICAR-NBAIR, Bengaluru and installed in polyhouses to capture male moths, thus minimizing the pest problem. Frequent visits were made to the affected area and pest problem was brought under control.

The Impact: Early detection coupled with immediate warfoot action taken with proper guidance from experts has averted a greater damage which would have otherwise caused by tomato pinworm infestation in the region. Pinworm reportedly caused up to 50% damage in tomato even causing complete crop failures in rare cases. The damage by this exotic pest was halted because of combine action of the institute and the district administration, especially the department of agriculture.



Interaction meet with agriculture department



Awareness campaign

Lessons Learned

- Time to time survey on pests and diseases in farmer's field is necessary along with contact of progressive farmers who can inform field situations/ abnormalities in time.
- Immediate actions are helpful in combating pest like *Tuta absoluta*, which are usually fast spreading/ infestation in nature.
- Combined action of research institute along with different stakeholders like line departments (agriculture/ horticulture etc), yields more benefit in times of urgent needs.