Potato: A New Host Plant of *Tuta absoluta* Povolny (Lepidoptera: Gelechiidae) in Turkey

Levent Unlu*

Department of Plant Protection, Faculty of Agriculture, Selcuk University, Konya, Turkey

Abstract.- Tomato moth (*Tuta absoluta* Povolny) damaging the tomato plant was first observed in Turkey in 2010. The population of *T. absoluta* was monitored weekly and the damage was assessed in the potato growing areas of Karapınar Station of Konya Source of Soil and Water Research Institute. The pheromone traps were also used to assess the population during the blooming period. The number of mature males trapped in one week rose up to 224.

Key words: *Tuta absoluta*, Potato, a new host plant.

* Corresponding author: ulevent@selcuk.edu.tr

Tomato moth (*Tuta absoluta* Povolny) is a serious pest which damages the vegetative and generative parts of the plant in Latin American countries such as Peru, Argentina and Brazil to many European, African and Asian countries. Its presence in tomato was reported in greenhouses in İzmir (Kılıç, 2010), in Antalya (Erler et al., 2010) and reported in tomato greenhouses of Mersin province with a maximum fruit infestation rate of 38.4% (Karut et al., 2011). Even though the main host of *T. absoluta* is tomato, some other solanaceous crops, weeds and potato have been reported as the hosts in several countries (Galarza, 1984; Notz, 1992; CIP, 1996; Pereyra and Sánchez, 2006).

Potato, a carbonhydrate source crop highly important as a human nutrition, has been mainly grown in Nigde and Nevsehir provinces of Turkey. Unfortunately, due to some diseases such as the potato wart disease especially the seeding material production has been shifting to other regions such as Konya where the leading location of these new growing areas.

The main objective of this study is to determine adult population of *T. absoluta* on potato using pheromone traps in Karapınar Research Station potato growing area, Konya, Turkey.

Materials and methods

To monitor adult populations of *T. absoluta*, three delta type pheromone traps were placed in two potato fields in Karapınar Research Station with 2 km distance from each other. One of the fields planted potato in previous year was a 7 hectares and the other one was a 0.1 hectare. There was no other host for *T. absoluta* in the research area.

Two pheromone traps (Production 1 and 2), obtained from TRECE Inc., were placed in production field and one (Experimental) was placed in research field at the flowering stage of the potato, and they were monitored weekly till the harvest season. The capsules and the sticky parts of the pheromone traps were replaced monthly.

Results and discussion

Population development and crop damage of *T. absoluta* were investigated on potato being a new host for the pest in Turkey. It was observed that
when in absence of tomato as host, *T. absoluta* fed on potato and caused damage in economical level.

Adult population development of the pest determined through the pheromone traps is shown in Figure 1.

To monitor *T. absoluta* populations on potato three pheromone traps were placed in two different potato production field, during the flowering time on July 7, 2011. The number of adults caught by traps indicated that there were three peaks, first one was the late July (28.07.2011), second one was at the beginning of the September (01.09.2011) and the last one was at mid-October (13.10.2011) (Figure 1). The variations in the number of captured moths between the traps could be related to the different sizes of the fields.

Results revealed that *T. absoluta* damages potato and has three generations in a year. It is assumed either they do not have diapauses thus they would move to the tomato growing greenhouses where, adjacent to the potato fields, or to the overwintering sites. This may be explained why they cause damage on potato in Karapinar district where adjacent to Cumra where district having tomato greenhouses and fields.

*Tuta absoluta*, an economically important pest of tomato, can feed and cause damage on potato during absence of tomato. After the ban of potato growing in Nigde and Nevsehir provinces due to the potato wart disease, *Synchytrium endobioticum* (Schilbersky) Percival), the demand for potato growing in Konya region is become very important. Possibility of economical losses of potato due to *T. absoluta* in Konya and the other regions concern growers. Therefore, control actions against *T. absoluta* must be taken before its spreading throughout the potato growing areas to preclude from its harm. Results shows that population level is substantial and has a capability to threaten the potato production. Moreover, the pest can also spread to the tomato greenhouses in Konya when the winter is not so harsh. Since the pest has been detected in Turkey recently, besides potato monitoring other possible hosts is crucially important to prevent its spreading and building large populations. Authorized governmental units should inform growers and have them take necessary actions against the pest.

**References**


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