HOST PLANTS PREFERRED BY *Tuta absoluta* (MEYRICK, 1917) LARVAE FOR PUPATION

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Abstract

Tuta absoluta also known as the leafminer of tomatoes is an invasive pest able to destroy an entire field or greenhouse with tomato plants in a few days. With this study we intend to prove the preference of larvae for pupation. For the study we have used leaves from five plant species: tomato, eggplant, pepper, fig, and *Solanum nigrum*. Three randomly chosen types of leaves were placed in Petri dish. The most prevalent preference of larvae was for the tomato leaves, followed by *Solanum nigrum* while the eggplant showed little attraction for the larvae and pepper leaves were untouched. From this study we can conclude that tomato leaves were the most preferred by *T. absoluta* larvae for their pupation.

Key words: larvae pupation, tomato leafminer, invasive pest

Tuta absoluta is an invasive pest being able to destroy entire tomato fields or greenhouses in several days if the infestation is not controlled (Filho *et al.,* 2000; Gomide *et al.,* 200l). Being originated from South America, this pest accidentally invaded Spain (Urbaneja *at al*., 2007) spreading very quickly in different countries of the western Palearctic Region (Desneux *et al.* 2010; EPPO 2008, 2009a, 2009b, 2009c, 2009d, 2009e, 2009f, 2010a, 2010b, 2010c, 2010d, 2010e, 2011a, 2011b, 2011c; Ostrauskas *et al.* 2010; Toševski *et al*. 2011).

MATERIAL AND METHOD

For our experiment we used 5 types of leaves from the following crops and spontaneous plant species: tomato, pepper, eggplant, *Solanum nigrum* and fig. The leaves were collected from the gardens and greenhouses of the Campus of University of Bari.

The larvae of *T. absoluta* used in the experiment came from eggs oviposited by adults reared on tomato plants in laboratory conditions at 23°C and 70% RH under natural photoperiod. *T. absoluta* parental generation came from Italian wild-collected adults. The tomato plants used for the rearing belonged to the variety Oxhearth. Each plant had 7-15 leaves and was singly potted. Five pots were put in each in three IKEA Fyllen Laundry baskets.

The experiment consisted of three treatments, each one with 6 repetitions. Each repetition consisted of a 9 cm diameter Petri dish containing three leaves chosen between the above mentioned 5 plant species. Among the leaves one 4th instar larva of *T. absoluta* was put observing which type of leaf it preferred to enter in and complete its pupation.

RESULTS AND DISCUSSION

From all 6 repetitions from the first experiment, where tomato, eggplant and pepper leaves were used, all of them being Solanaceae, 4 larvae preferred tomato leaves, 2 larvae preferred the eggplant leaves, whereas pepper leaves were left untouched.

For the second experiment we have modified a variable, we replaced the pepper leaves with *Solanum nigrum* leaves, and the results were considerable: 5 larvae preferred tomato leaves and one larva chose *S. nigrum*, whereas eggplant leaves remained untouched.

For the third experiment we modified another variable, replacing tomato leaves with fig leaves. The results showed that 4 larvae preferred *S. nigrum*, 2 larvae preferred eggplant leaves and the fig leaves were untouched.

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CONCLUSIONS

Basing on the results of the experiments we can conclude that *T. absoluta* larvae preferred tomato leaves for pupation, but in extreme conditions they can adapt to other plants belonging to the family Solanaceae. An interesting discovering was that pepper leaves, despite the fact the species belongs to Solanaceae, remained untouched by larvae.

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