



University of Zabol

Graduate Management

School of Agriculture

herbal medicine Group

Thesis for obtaining a doctorate degree in agricultural entomology

**Evaluation of susceptibility of different developmental stages of  
tomato leaf miner *Tuta absoluta* (Meyrick) to chlorantraniliprole  
compared to common insecticides of Sistan region in laboratory and  
greenhouse conditions**

**Supervisor:**

Dr. Sultan Ron

**Advisor:**

Dr. Ali Mirshkar

**By:**

Fatemeh Sanadgol

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## **Abstract**

The tomato moth *Tuta absoluta* is one of the new and important pests of tomatoes in Iran and every year it reduces the efficiency and quality of the product in terms of marketability. Therefore, in order to use more safe insecticides for the environment, consumers and natural enemies of this pest, in this research, the sensitivity of different growth stages of the tomato moth *Tuta absoluta* (Meyrick) to chlorantranilprole was evaluated in relation to the insect. The common strains of Sistan region were investigated in laboratory and greenhouse conditions. This experiment was conducted in the form of a completely randomized design with three repetitions and five treatments in the greenhouses of Siadak village near Zahedan. The initial population of insects was collected from tomato greenhouses by sampling the infected plants and using an insect net and transferred to the laboratory of the Zahedan Agricultural Training Center and then transferred to the breeding cages containing tomato pots. . For the implementation of the project, a greenhouse that has a significant infection with the tomato leaf Minose moth was selected, and poisons were sprayed on the foliage of the infected plants with a 20-liter sprayer on the back of a book. Sampling was done one day before spraying, 24 hours, 3, 7, 14 and 21 days after spraying. For this purpose, from each plant, two leaflets were taken from the semi-terminal leaves of the plant, which were collected in separate nylon bags and transported to the laboratory, and the number of live larvae and active corridors were counted in the laboratory. The effect of insecticides on the egg stage, the third larval stage and the pupa of the pest was evaluated. The results of analysis of variance showed that the sensitivity and percentage of larval losses before and after spraying, eggs and pupae of tomato Minose after spraying with chlorantranilprole compared to the common insecticides of Sistan region have significant differences in greenhouse and laboratory conditions. The available results comparing the averages showed that the highest sensitivity and percentage of larvae, egg and pupa losses before and after spraying, egg and pupa Minose of tomato related to Avant and Coragen 2 treatment and the lowest value related to the control treatment. And it was Mospilan that the treatment had a great reduction compared to the treatment of Avant and Corjan 2.

**Keywords:** tomato minnow moth, bioassay, chloranthranilyprole, indoxacarb, estamipride