

**INDUCING RESISTANCE AGAINST LEAF MINER
AND OTHER PESTS ATTACKING SOME
TOMATO VARIETIES IN EL-MINIA
GOVERNORATE**

By

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B.Sc. Agric. Sc. (General), Minia University, 1993

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**A thesis submitted in partial fulfillment
of
the requirements for the degree of**

DOCTOR OF PHILOSOPHY

**in
Agricultural Science
(Pesticides)**

**Department of Plant Protection
Faculty of Agriculture
Ain Shams University**

2014

Approval Sheet

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Date of Examination: 23/ 9 / 2014

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ABSTRACT

Nehal Mostafa Hussein Ahmed: Inducing Resistance Against Leaf Miner and Other Pests Attacking some Tomato Varieties in El-Minia Governorate. Unpublished Ph.D. Thesis, Department of Plant Protection, Faculty of Agriculture, Ain Shams University, 2014.

Plant defensive systems against herbivores such as leafminers and piercing-sucking insect pests can be induced by application of biotic and abiotic elicitors. In this study, we focused on induction of plant defense to induce resistance against some important economic insect pests as a new approach for controlling some pests to the tested plant, tomato (*Solanum lycopersicum*) cv. GoldStone Hybrid F₁. The presented study includes the following objectives:

- The first, is a survey of *Tuta absoluta* in tomato nursery and field.
- The second, investigates the effects of some elicitors on controlling *Tuta absoluta* and other major pests as well as effects on yield and some characteristics of tomato fruits.
- The third, is studying the effect of the elicitor treatments on some enzymes activities, total phenolic compounds and total flavonoids of tomato plants.
- The fourth investigates the effect of two local medicinal plant extracts and essential oils on *Tuta absoluta* population, plant growth and yield of tomato cv. Gold Stone.
- The fifth objective explores the effect of these two local medicinal plant extracts and the essential oils on total phenolic compounds and total flavonoids of tomato plants.

It can be concluded according to the results of the present study, that foliar application of elicitors can be used as a new approach of direct

or indirect defense against various herbivores and crop protection. However, inducing resistance of plants depends on many factors such as the type of plant, herbivore, elicitor, time of application, growth stage of plant and natural enemies or biological control. Also, according to these results, it can be concluded that foliar application of garlic extract, lemon grass extract and basil oil on tomato plants, at recommended rates, reduced *T. absoluta* population and improved the quality and quantity of tomato fruits yield. So, further studies should be done in the future to cover these new approaches for controlling tomato pests.

Key Words:

Tuta absoluta, Tomato pests, Elicitors, Essential oils, Plant extracts.

ACKNOWLEDGEMENT

Above all, thanks to **ALLAH** for everything I was able to do in this work.

My sincere gratitude and appreciation is to **Prof. Dr. Mohamed Ibrahim Hussein**, Professor of Chemistry of Pesticides and Toxicants who very kindly and generously gave me his keen supervision, valuable advices, and encouragement during the course of this work.

I would like also to express my deep regards to **Prof. Dr. Seif El-Nasr Hussein Gad El-Hak**, Professor of Vegetable Crops, Minia University for his supervision, revising the manuscript, guidance and cooperation during writing this dissertation, without his help I would not have achieved this work.

Thanks and gratitude are given to **Dr. Maher Abed Al-Aleem Hammad**, for his keen help in this work. Also, deep thanks to **Dr. Hisham Saleh Shaalan**, for his valuable suggestions.

Profound thanks to **Dr. Naser Sayed Youssef**, Horticulture Research Institute, for his unlimited support during the field experimental phase and providing many of materials needed to complete my laboratory work. I am deeply indebted to **Prof. Dr. Gamal Fakhry Abd El-Naeem**, Professor of Biochemistry in Minia University, for his excellent help in chemical analysis.

I would like to express my deep regards to the spirit of **Prof. Dr. Zidan Hendy Abd El-Hamid**, Professor of Pesticides Chemistry and Toxicology, owner of the idea of this work.

I am sincerely would like to thank my husband, **Dr. Hassan Sayed Hassan** for his patience, support and cooperation till this work was completed. My gratitude is also extended to the rest of my **parents**, my

brother, **Mohamed** and my children for their continuous support. Also, I would like to express my deep regards to the spirit of my brother, **Nezar**. I am also obliged to the members of Plant Protection Department in Faculty of Agriculture, Ain-Shams University, and Department of Horticulture (Vegetable Crops), Minia University, for their unlimited cooperation throughout all phase of this work.

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