سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

سامية محمد مصطفى

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

سامية محمد مصطفى

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

سامية محمد مصطفى

شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

سامية محمد مصطفى

بالرسالة صفحات لم ترد بالأصل

INTEGRATED CONTROL OF RED SPIDER MITE *TETRANYCHUS URTICAE* KOCH ON STRAWBERRY PLANTS

By

El-Sayed Mohamed Ahmad El-Saiedy

B. SC. Agric., Al-Azhar University, 1992

M. SC. Agric., Menoufia Universty,1999

Thesis

Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Doctor of Philosophy

In

Agricultural Zoology

(Acarology)

Agricultural Zoology and Nematology Department

Faculty of Agriculture

Cairo University

2003

Supervision Committee

Title of Thesis : Integrated Control of Red Spider Mite *Tetranychus urticae* koch on Strawberry Plants .

Name of Student : El-Sayed Mohamed Ahmad El-Saiedy

Degree : Ph.D. Agricultural Zoology (Acarology)

1- Prof. Dr. A. M. Afifi

Professor of Acarology, Agricultural Zoology and Nematology Department, Faculty of Agriculture, Cairo University

2- Prof. Dr. S. A. Shehata

Professor and head of Vegetable Crops Department, Faculty of Agriculture, Cairo University.

3- Prof. Dr. A. Y. M. El-Laithy

Professor of Acarology , Plant Protection Department, National Research Center.

Cairo University
Faculty of Agriculture
Department of Agricultural Zoology

Approval Sheet

Title of Thesis : Integrated Control of Red Spider Mite *Tetranychus urticae* koch on Strawberry plants.

Name of Student : El-Sayed Mohamed Ahmad El-Saiedy

Degree : Ph.D. Agricultural Zoology (Acarology)

Approved by:

1- **Prof Dr. Safaa Moustafa Abo-Taka**..S. M. Abo-Taka.....
Professor of Acarology, Economic Entomology and Agricultural Zoology Department, Faculty of Agriculture, Menoufia University.

2-**Prof. Dr. Morad Fahmy Hassan**..M. F. Hassan.....
Professor of Acarology, Agricultural Zoology and Nematology Department, Faculty of Agriculture, Cairo University.

3- **Prof. Dr. Said. Abd-Alla Shehata**...Said A. Shehata..
Professor and head of Vegetable Crops Department, Faculty of Agriculture, Cairo University.

4- **Prof. Dr. Abd-Alla. M. Afifi**.....A. M. Afifi.....
Professor of Acarology, Agricultural Zoology and Nematology Department, Faculty of Agriculture, Cairo University

(Committee in Charge)

Date: 27/ 8/ 2003

Name of Candidate : El-Sayed Mohamed Ahmed El-Saiedy **Degree** : Ph.D
Title of Thesis : Integrated control of red spider mite *Tetranychus urticae* koch on strawberry plants.
Supervisors : Prof. Dr. A. M. Afifi ,
Prof. Dr. S. A. Shehata,
Prof. Dr. A. Y. M. El-Lithy
Department : Agricultural Zoology (Acarology)
Branch : Acarology **Approval :** 2003

ABSTRACT

The present work aimed to study the population dynamics of both phytophagous and predatory mites associated with two strawberry cultivars (Sweet –Charlie and Comarosa), study the host plant resistance (chemical and physical factors) and effect of fertilization on mite infestation. Also, the efficiency of different control methods (chemical and biological) for controlling these phytophagous mite. The obtained results revealed that:

1- The rate of infestation was higher in Comarosa than on Sweet-Charlie cultivar, population density was so higher at Giza followed by Ismailia and Qalubia. The peak of population in all localities was occurred during February and March. Three predatory mites were recorded, *Amblyseius swirskii* (Athias-Henriot), *Amblyseius zaheri* (Yousif & El-Brolosy) and *Amblyseius barkeri* (Huges) at Ismailia, Qalubia and Giza, respectively. The predatory insect (*Oruis* sp.) was recorded at February, reaching its peak during March. The population of *T.urticae* stages had a positive correlation with air temperature, while it had negative correlation with relative humidity.

2- Sweet- Charlie cultivar was higher than Camarosa in total phenols and amino acids, while the opposite was recorded for total sugars. Trichomes of Sweet-Charlie are longer and have more sharply and pointed end. Population density of Sweet-Charlie trichomes was higher than those of Camarosa. Fertilization with $CaSo_4$ or K_2SO_4 reduced and laten infestation by spider mites to the first half of March, annd increased total phenols and amino acids in both cultivars compared with control.

3- Evaluation the efficiency of Vertemic, Plant-Guard, Micronised sulfure and Sumite during two seasons was studied. Vertemic revealed that it was the compound which had good reduction percentages in all mite stages, while Sumite and Plant-Guard were the lowest efficiency compounds. Micronised sulfur was moderate efficiency compound. The higher reduction percentages of Vertemic was occurred on immatures, followed by adults, while eggs had the lowest reduction percentages during two seasons.

4- The exotic predatory mites *Amblyseius californicus* (McGregor) and *Phytoseiulus persimilis* (Athias-Henriot) gave excellent biological control, while the indigenous species *Euseius scutalis* (El-Badry) and *A. barkeri* (Huges), gave medorate control.

5- The Vertemic was the best treatment in increasing of strawberry yield by the exotic predatory mite *A.californicus* and *P.persimilis*, while indigenous predators gave moderate increasing in yield. The other pesticides and both fertilization treatments gave lowest percentage of increasing in strawberry yield.

A.M.Afifi

(Cairo Univ. Press 1524-1984-5000 ex)

ACKNOWLEDGMENT

My thanks are submitted first and foremost to ALLAH who gave me the strength and ability to complete this work.

The author wishes to express his deep thanks to Prof. Dr. A.M. Afifi, Professor of Acarology, Agricultural Zoology and Nematology Department, Faculty of Agriculture, Cairo University, for his supervision, encouragement and for suggesting the problem and offering his help and guidance offered throughout this work.

The author wants to express his sincere appreciation to Prof. Dr. S. A. Shehata, Professor and head of Vegetable Crops Department, Faculty of Agriculture, Cairo University, for his keen interest, valuable suggestions, guidance, reviewing the manuscript and fruitful supervision. His indispensable efforts deserve my deep thanks.

Thanks are also to Prof. Dr. A.Y.M. El-Laithy, Professor of Acarology, Plant protection Department, National Research Center, for his keen interest, valuable suggestions, guidance, reviewing the manuscript and fruitful supervision. His indispensable efforts deserve my deep thanks.

The author would like to extend his deepest gratitude to Prof. Dr. S.M. Abo-Taka, Professor of Acarology, Economic Entomology and Agricultural Zoology Department, Faculty of Agriculture, Menoufia University, for her kind efforts in reviewing the statistical analysis and her help and encouragement providing during this work.

This work is dedicated to my wife and my kids for their patience, love and encouragement, gave me during this study.

CONTENTS

LIST OF TABLES