

**ECOLOGICAL AND BIOLOGICAL STUDIES
ON CERTAIN ERIOPHYOID MITES
IN LOWER EGYPT**

By
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THESIS

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COURSES ATTENDED IN PARTIAL FULFILMENT AND GRADES

<u>COURSES</u>	<u>Units</u>	<u>Grade</u>
1- Advanced Incest Ecology	4	Very good
2- Advanced Acarology	3	Excellent
3- English language	-	Good
4- Zoological Nomenclature	4	Pass
5- Advanced Incest Taxonomy	4	Good
6- Research	5	Excellent
7- Biological control	3	very good
8- Insect Genetics and statistical Analysis	3	Excellent

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I N T R O D U C T I O N

INTRODUCTION

The superfamily Eriophyoidea, includes several species which are generally monospecific and appearing to be the most important plant feeding mites. They severally attack their hosts, causing various types of symptoms such as leaf discoloration, curling, yellow mottling, stunting and silvery appearance. Their infestation are usually accompanied by crowded buds; grotesque, rusting and sun burn fruits, dry terminals and bulbs in storage. Some species are active vectors of some plant pathogens especially the viral diseases.

Researches on the eriophyoid mites in Egypt were initiated by Hassan (1934), Scattered work were done by Sayed (1946), Mohamed (1953), Attiah (1955), (1967) (1970) and Abou-Awad (1976).

The scope of this work aimed to give a complete picture on the distribution of eriophyoid mites through different parts of the tree and at several directions of the fields at Nile Delta together with the population dynamics of the tomato rust mite Aculops lycopersici (Massée). Also some notes on the biology of the previous mite together with the ovoviviparity of the grape bud mite and the mulberry bud mite.

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MATERIAL AND METHODS

A. Incidence of eriophyid mites in Lower Egypt:

Samples of different vegetative parts of the host plants including leaves, buds, twigs, inflorescences and fruits were collected at regular intervals of a month, during the period from 1977 to 1979. Collected samples were put in polyethylene bags, closed tightly and directly sent to the laboratory, where they were inspected with the aid of stereomicroscope. The eriophyids were singly mounted on glass slides in a drop of Keifer's medium (1952) and gently heated to stretch the individuals. Necessary data dealing with the mite shape, colour, site of occurrence, level of abundance and locality were recorded. Collected mites were identified according to the terminology of Jeppson et.al. (1975).

B. Biology :

Aculops lycopersici (Massée) was reared on small branches of tomato, Lycopersicon esculentum. 9 cm. Long. These branches, were carefully cleaned by a brush after removing their leaves, and being lined at about 3 cm.

below the apex with a barrier consisting of arabic gum and castor and citronella oils. These branches were put singly in glass vials of 5 cm. height and 2 cm. diameter, filled with water after covering their distal ends by paraffin wax to eliminate evaporation. Adult females were sexed and transferred to these branches for depositing eggs. Deposited eggs during a period of 12 hrs., were followed up during their incubation. Hatching nymphs were transferred singly to new branches and left to complete their life cycle. Experiments were undertaken during spring, summer and autumn. Inspection was carried out by the aid of the stereomicroscope at 6 hours intervals. Data concerning the mite colour, behaviour and duration of different stages were recorded.

During the present survey ovoviviparity was observed in the grape bud mite Colomerus vitis (Pgst.) and the mulberry bud mite Eriophyes mori keifer. Females containing a single nymph each, were photographed.

C. Population dynamics :

For studying the population growth of the tomato rust mite, Aculops lycopersici (Massée), an area of

$\frac{1}{8}$ feddan was chosen at Embaba-Gizathis area was cultivated with the tomato varieties pritchard, Ace and Northdakota. Each variety area was divided into three replicates. All plants received the normal agricultural practices including irrigation and fertilization. The summer and winter plantations were cultivated on March 3. 1978 and Oct. 10.1978 respectively.

Samples of 45 leaflets each, were collected from each experimented variety, at regular intervals of 10 days, put in polyetheylene bags and sent to the laboratory. Four units of 1 cm^2 each, two around the midrib and the others on blade, of both the upper and lower leaf surfaces, were inspected.

Therefore each sample for each tomato variety comprised 180 Cm.^2 units.

N.B.: Predaceous mites were in negligible numbers during the experimental period.

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