



Population density of *Tetranychus urticae* and *Aphis fabae* on eegplant for the spring season

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Received on 1/1/2024 Accepted on 20/03/2024 Published on 1/4/2024

Abstract:

A field experiment was carried out for the spring season 2020 in one of the fields of the University of Baghdad / Al-Jadriya to study the population densities of pests that infect **eegplant**, and it included the presence of some nymphs of the two-spotted mite and *aphis fabae*. The results showed that the average population density of the two-spotted mite nymphs was 20 nymphs/leaf on 25/4/2020, and the lowest was 2 nymphs/leaf on 15/3, while it gave the highest density of cotton aphids *aphis fabae* at 25 nymphs/leaf on 5/21/ 2020 The predator lion *chrysoperla carnea* and c.carneia flies (scientific name) coincided in abundance.

Keywords: Two-spot mite, of cotton, eegplant .

Introduction.

The plant *Solanum melongena* belongs to the *Solanaceae* family. It is a herbaceous perennial plant with a height of 28-70 cm. It has large and half woolly leaves and beige flowers. The genus of *Solanum* includes more than 1000 plant species (Al-

Mohammadi, 1990) And exposed to many insect pests, pathogens and mites, the most important of which are some types of aphids such as the green peach *Myzus persicae* and some *Aphis gossypii* and *Tetranychus urticae*. Cotton *A gossypii* is important because it is multi-familial, as it affects

watermelon, cucumber, cotton, okra, sesame, sugar beet, asparagus, garlic, yellow corn, and others (Imenes et al., 2002).

Cotton mite causes direct damage as a result of its feeding by absorbing plant juices, as well as its role in transmitting many economically important viral pathogens, as these insects of this type transmit more than 50 types of plant viruses (Blackman and Eastop, 2000). There are indirect damages as a result of absorbing protein and absorbing large amounts of plant sap, and the plant sap is secreted by aphids, and dirt and dust accumulate on it that hinder the photosynthesis process (Hillocks, 1992; Capinera, 2005) and the predators of aphids are chrysoperla carnea and coccinella septempunctata and c.undecimpunctata

(abdulrahman an alrubae, 2012; Al-Hamawndy and others 2021; Al-Hamawndy and others 2021)

As for the two-spot mite, *Tetranychus urticae*, it is important because it affects

many families, including the cotton crop, causing a significant decrease in the quantity of its production and the quality of the fibers and its impact on the vitality of its seeds (Wison, 1993). can be used to control of the two spotted spider mites *Tetranychus urticae* Koch three kinds of plant water extract were, *Citrullus colocynthis* (fruits) and *Dianthus carphyllus* (fruits).. the biological enemies on the two-spotted mite is *Scolothrips sexmaculatus* (Al-Dahwi and salih 2012; Al-Dahwi and atls, 2009). he research aimed to study the population density of cotton *Aphis gossypii* and *Tetranychus urticae* in the Jadriyah area / University of Baghdad.

Materials and methods:

Preparation and cultivation of the experimental field: This experiment was conducted in the experimental field of the College of Science for Girls / University of Baghdad / Al-Jadriya. The seeds of eggplant (Black beatus) of American origin were planted on 15/1/2020 in cork dishes inside the nursery and after they were ready for

planting (four real leaves)) It was transferred to the land on 15/3/2020 and the experiment ended on 30/7/2020 after the process of preparing the soil from plowing, smoothing and leveling, the land was divided into 3 sectors, each sector was three replications, and each replica was divided into three lanes, the distance between one lane and another 1 m in For each arboretum, 3 plants were planted, leaving a distance of 1 m between the experimental units.

The numerical density of the cotton mite roles was calculated through the weekly plant taking program, which starts from the second week of March until the end of the plant season in the first week of August, as 45 sheets were randomly taken and placed in polyethylene bags and transferred directly to the laboratory according to the numerical density To mite roles and from cotton.As for the collection of samples to study the vital enemies and study their presence, samples were collected from the leaves and brought to the

laboratory, and the incomplete roles of predators were counted.

Results and discussion :-

The results of Figure (1) show the average population densities of *Tetranychus urticae* eggs and nymphs and *Aphis gossypii* cotton on the eggplant plant, as it was superior to cotton in its density of 25 nymphs / leaf on 21/5/2021 and the lowest was 2 nymphs / cm² / leaf on 15/3 /2020 for mites, nymphs and two-spot mites. The average of two-spot mite eggs was recorded, so the two shapes were placed on a density for the month of March, and it was 8 eggs/cm² of a leaf on 28/3/2020, and the highest density of the two-spot mite reached 16 eggs/representative paper on 25/4/2020 As for the month of May, it reached the highest peak of 20 and 15 eggs / cm² / Parliament paper 21/5/2020 and the end of May and June, respectively.

At the end of the season, the number of eggs for the two-spot mite began to decrease until it reached 8 eggs / 1

cm² / sheet on 20/7/2020. As for the nymphs of the two-spot mite, it reached the highest density for the month of March, which amounted to 10 nymphs / 1 cm² / leaf, as the numbers started to be few and then increased. The numbers reached the highest density of 20 nymphs / 1 cm² / sheet on 21/5/2020 and continued to increase to reach 21 nymphs / 1 cm² / paper on 18/6/2020 and the numbers decreased to reach the lowest density of 7 nymphs / 1 cm² / paper on 30/7/2020.

The same figure shows the presence of a cotton bug. The highest density of cotton for the month of March reached 7 nymphs/sheet on 28/3/2020, as it started with small numbers and then the numbers started increasing to reach 22 nymphs/1 cm²/sheet on 21/5/2020 and decreased for a month June and raised to the second half of the month, amounting to 18 nymphs / 1 cm² / paper on 25/6/2020, and the numbers started decreasing, reaching the end of the season, amounting to 5 nymphs / 1 cm² / paper on .

From the foregoing, we conclude that the control in the early stages of the plant's life is necessary to maintain the integrity of the crop and bring it to the productive life and sustain it for the purpose of obtaining an economic crop and that the decrease in the numbers of cotton and two-spot mite eggs is due to the activity of vital numbers in the cultivation area during that period or due to the influence of Both temperature and relative humidity. Khudair et al. (2019) found that the highest density of cotton nymphs for the month of March was 20 nymphs/leaf, while the highest density of nymphs with two spots on potato crops was recorded as 5 nymphs/leaf on 1/5/2018. In this study, the presence of the predator, the aphid, *Chrysoperla carnea*, which belongs to the family *Chrysopidae*, and the *Neuroptera*, and the flies belonging to the family, was recorded. It is exposed to many insect or non-insect pests, including the red spider, aphid, eggplant stem borer, potato tubers 2017

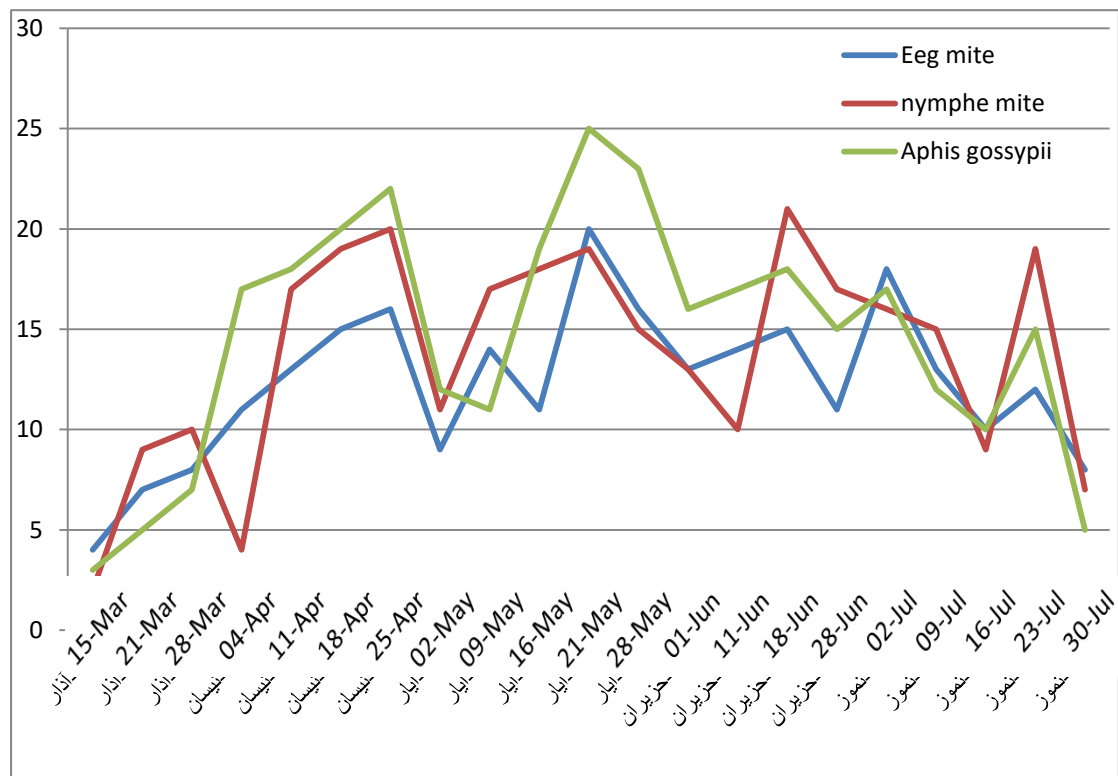


Figure 1. Average population densities of *Tetranychus urticae* and *Aphis gossypii* eggs and nymphs on eggplant.

Figure (2) showed the number of larvae of both the aphid and the *c.carneia* fly during the sampling period, where the presence of the larvae of the aphid on the larvae of the *c.carneia* fly had died, which amounted to 17 larvae/10 leaves on May 28, while the least amounted to 3 larvae/10 leaves on July 30. The *c.carneia* fly, it reached 14 larvae / 10 leaves on May 28, and the lowest was 3 larvae / 10 leaves on

May 2, while the figure showed a fluctuation in the population density of each species between high and low for the months of March and Nest, the highest density for each of them reached 12 caterpillars / 10 leaves on 4 April and for the month of May and June, the highest density of larvae of the aphid and the *c.carneia* fly reached 17 and 14 larvae/10 leaves respectively on June 11, In July, the highest density

reached 14 and 10 larvae/10 leaves, respectively, on July 9. The results of the study of Al-Rawi and Hind (2012) showed that the predator, the

aphid *c. carnea*, has a high efficiency in attacking and consuming the nymph and adult stages of insects.

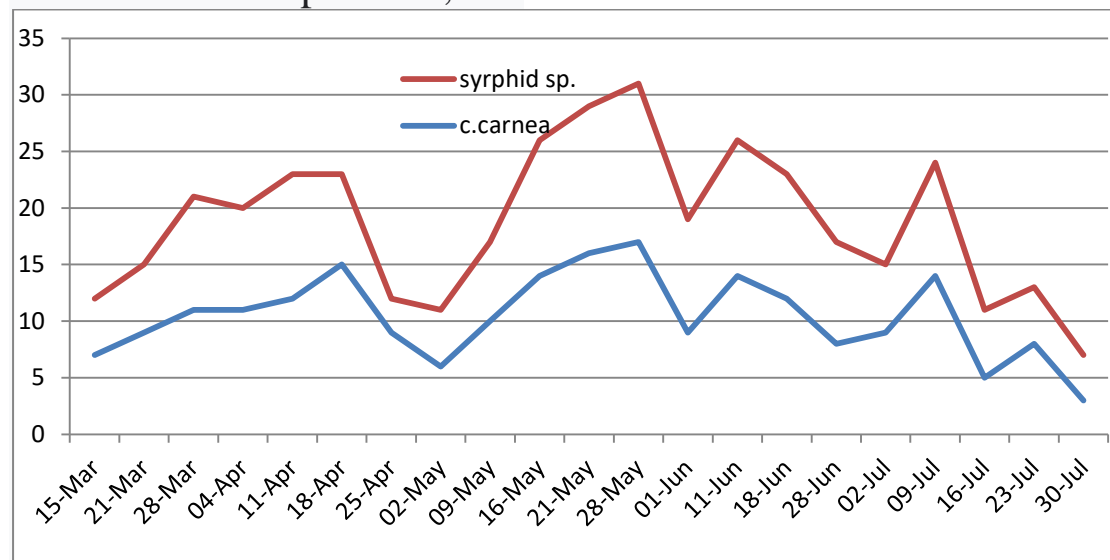


Figure (2) Average population densities of *C. carnea* and *syrphid sp* larvae on eggplant.

We conclude that the control in the early stages of the plant life is necessary to preserve the integrity of the crop and bring it to the productive life and sustain it for the purpose of obtaining an economic crop and that the decline in numbers is due to the activity of vital numbers in the cultivation area during that period or due to the effect of both temperature and relative humidity.

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