

A Survey of the Types of Insects Present on the *Medicago Sativa* Crop in Baghdad

Raghad Khalaf Ibraheem Aljoboory¹, Ahmed J. Saber²

¹Department of Biology, College of Education, University of Aliraqia. E-mail: raghad.khalaf@aliraqia.edu.iq

²Department of Biology, College of Education for Pure Sciences Ibn Al-Haitham, University of Baghdad. E-mail: ahme-djs1979@gmail.com, ORCID: 0000-0001-5853-7052

Abstract

A study was conducted to survey the insects present on the vegetative total of the alfalfa crop in two fields, one in the Taji area and the other in the Abu Ghraib area - Baghdad - Iraq, which were not previously treated with insecticides, for the period between December 2020 and March 2021, where many insect ranks were recorded. Which are considered as economic pests, others as natural enemies, and others as visiting insects, and they included the following ranks (Neuroptera and Coleoptera) and Hymenoptera, Orthoptera, Homoptera, Lepidoptera). Where the species Aphid *Besalia* of the order (Homoptera) in the Abu Ghraib field outperformed with different numbers, the highest rate was (20) individuals on (6/1/2020), followed by the insect alfalfa weevil affiliated with the order (Coleoptera) in the Taji field. (15) individuals on (9/1/2021), followed by lion aphid of the order (Neuroptera) in Taji field, which amounted to (8) individuals on (12/9/2021) Followed by the insect the butterfly belonging to the order (Lepidoptera) in the Taji field, which numbered (7) individuals on (16/12/2020), followed by the insect the locust of the order (Orthoptera), where it appeared in the two fields with the same number (6 individuals) on (December 23, 2020) followed by other insects with a small appearance in the two fields, which is the insect wild bee) of the order (Hymenoptera) with numbers of (5) individuals on (6/1/2021) And the insect (Honeybee) affiliated to the same order and number of (4) individuals on (1/12/2020), and the insect (The Seven Pointed Ladybug) of the order (Coleoptera) with a number of (2) and its appearance was on (1/3/2021) and an insect (Humaira Al-Qurayyat), affiliated to the rank (Coleoptera), numbered (4) individuals, and on (10/2/2021). And also, during the survey, we obtained a class of arachnids belonging to the Arthropods division during the experiment period, with numbers (51) individuals in the Taji field and (26) individuals in the Abu Ghraib field and their appearance from the beginning of the experiment (1/12/2020) to its end on (1/3/2021).

Keywords: *Medicago Sativa*, Aphid, Coleoptera, Homoptera, Abo Grabe, Altaji.

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INTRODUCTION

The alfalfa crop, whose scientific name is *Medicago sativa*, is one of the crops of the legume family Fabaceae. It is called the king of fodder because it is an excellent source of protein. In addition, it contains vitamins and minerals. It is important in improving the properties of Dragan, et al, 2014). (Rotz 1984) the soil.

It is one of the most important green fodder crops that are grown and is characterized by high productivity and high nutritional value, which led to an increase in the cultivated area (Fick and Miller, 1989) It is cultivated on a large scale in the world, with an estimated cultivated area of about 3,3015,000 hectares (Rashmi, et al, 1997).

Jenning and John (2002) clear up that The quantity of alfalfa seed suitable for cultivation in the soil ranges between 20-15 pounds per hectare, and the appropriate time for planting it is in the beginning of spring to mid-April in northern Arkansas and it remains in the soil after planting from five to six years, so the females that infect it during one year

follow, and that the ecosystem of the alfalfa contains 205 arthropod morphospecies and belongs to 92 families within 10 orders, as well as a class of spiders. Other arthropod ranks and the *Medicago* is affected by several insect pests, including the aphid *Aphis craccivora*, which infects the ends of small leaves, and the alfalfa weevil *Hypera postica* of its various types (AL- Ali, 1977).

A study was conducted in the state of California on the alfalfa crop, during which many arthropods were recorded, including them. *Empoasca sp.* They are leafhoppers. These insects caused the black summer stem disease and leaf spot (*Cercospora medicaginis*), as well as *Caliothrips fasciatus* bean thrips. Signs of infection were observed with yellowing leaves with red streaks and silvery areas at the tops of the plant as a result of the effect of chlorophyll and the presence of insect faeces on the end of leaves (2000, Rethwisch).

The alfalfa is affected by many pests, including the two-spot red spider, which began to constitute a problem in recent years on the crop in the southwestern region near the

Colorado River, where chemical control was required during the month of January (Rethwisch et al., 2004) The alfalfa is a balanced and good environment for arthropods, and thus it is a suitable environment for the spread of insects. Therefore, the study aimed to survey the jet fields in areas of Baghdad and collect and distribute insects according to the ranks and families they belong to.

MATERIAL AND METHODS

Two fields were selected from the alfalfa, one in Taji (Al-Bassam) and the second in Abu Ghraib (Khan Dhari), each area of 2 hectare, and sampling began on 1/12/2020 by cross-diameter and sweeping method, noting that the fields were not treated with chemical pesticides and samples are taken using The sweeping net, which has a diameter of 30 cm, leaves 5 meters from the edges of the field, and begins the process from one of the diameters of the field to its end, and then moves to the other diameter to its end, and so the samples were collected and then placed in polyethylene bags and brought to the laboratory and the bags of samples were unloaded in large dishes of glass and placed In the freezer of the refrigerator for (10-5) d. Where he examined them and then counted the insects present by using a small brush and recording the numbers Some small specimens were examined under a microscope at a power of 40 X. Different specimens of arthropods were taken and placed in a glass tube containing 70% alcohol. An insect group was prepared. For larger insects, they were crucified with a pin from the chest area. The models were placed inside a box to prepare an insect collection for the purpose of diagnosis. The process is repeated weekly for 3 spring months.

RESULTS AND DISCUSSION

The results showed the presence of different types of insects on the alfalfa crop from 12/1/2020 to 1/3/2021, and the rank Homoptera ranked first in terms of the number of its species in the Abu Ghraib field, while the Coleoptera rank came in the first rank in the Taji field, followed by the second rank of the Araneae rank and Lepidoptera in the Taji and Abu Ghraib fields, respectively, in terms of the number of species. The lowest number of species was recorded for the orders Orthoptera and Hymenoptera and in the Abu Ghraib and Taji fields, respectively.

The reason for the fluctuation in the number of insects between high, medium or low was due to the fact that the time of the experiment was accompanied by some weather conditions that may not be suitable for these insects, including rainfall, temperature fluctuations and other factors such as the presence of natural enemies. All of these reasons led to a difference in the number of insects.

Figure (1) shows the average number of insect orders in both fields. The highest number of similar-winged insects was (80) individuals in the Abu Ghraib field on (1/6/2021) and the lowest number for the same field was for straight-

winged insects with (8) individuals. On (23/12/2020), which is represented by the insect (Locust).

The results of the study showed through the weekly survey and the date of the highest appearance of the insect orders that were obtained in the two sites Al-Taji - Al-Bassam and Abu Ghraib - Khan Dhari, the occurrence of a number of arthropods.

Table No. (1) Results of preparing ranks in the two fields

Appearance date	The numbers in the ابو Ghraib field	The numbers in the Taji field	Orders
2020/12/9	16	26	Neuroptera
2020/12/9 2021/2/10	26	69	Coleoptera
2021/1/6	11	18	Hymenoptera
2020/12/23	8	13	Orthoptera
2021/1/6	80	28	Homoptera
2020/12/16	40	24	Lepidoptera
-2020/12/1 2021/3/1	26	51	Araneae

The types present on the crop varied between harmful and beneficial ones, according to the ranks and families to which they belong and their types, as shown in Table 2.

The most common ranks were the Coleoptera, where this rank was recorded in northern Iraq and infects the jet in the northern regions of Iraq. It also infects lentils in Syria. It also affects wild legumes, fodder hermaphrodites and others. Among the most harmful species present is the alfalfa Weevil, which is the most prevalent species in the jet fields globally *Hyper postica* (El Bassiony, et al, 2014).

Raphidopalpa foveicollis, belongs to the order Coleoptera. All of them feed on leaves, buds, and flowers. They cause severe damage to the plant, and their larvae burrow into the stem at the surface of the soil or the roots, which leads to plant wilt and death. This insect was widely distributed in Southeast Asia (Bhutani & Jotwani, 1975 and Dilip and Ray 2012).

As for the order similar to wings, it was counted from the legume *Acyrtosiphon pisum* (Harris). This type of aphid infects beans, cowpeas and peas. Nymphs and whole insects feed by sucking the plant sap and secreting toxic secretions inside them and transmitting viral diseases to them, This damage leads to yellowing and drying of the leaves. When the infection is severe, the plants are stunted and the yield is reduced (Metcalf, 1962).

Among the predators, the *Chrysopa carnea* of the newroptera order is abundant. The caterpillar preys on approximately 400 aphids during its lifespan. Then, when it is fully grown, it turns into a virgin inside a cocoon that always sticks to the bottom surface of the leaves (Tauber and Tauber, 2000).

The presence of alfalfa locusts in large numbers, where

adults and nymphs feed on vegetables and crops, where they feed on the green parts of them, and the female lays her eggs singly on the leaves and branches of plants. The first type (Alazzawi, 1980).

One of the distinguishing species of the squamous-winged order is the butterfly Al-Hananah, as it feeds on the leaves of the plant with holes perforated in them, which hinders the growth of the plant and thus causes a loss in crop productivity annually. (Pajmon 1999).

Table 2 Species present on the jet crop during the study period

Order	Family	Species
Coleoptera	Coccinellidae	<i>Coccinella septempunctata</i> (L.) <i>C. novemnotata</i> (L.) <i>C. undecimpunctata</i> (L.)
Coleoptera	Curculionidae	<i>Hyper postica</i>
Coleoptera	Chrysomelidae	<i>Raphidopalpa foveicollis</i>
Homoptera	Aphidae	<i>Acyrtosiphon pisum</i> (Harris)
Neuroptera	Chysopidae	
Hymenoptera	Apidae	<i>Apis mellifica</i>
Orthoptera	Acrididae	<i>Thisiocetrus littoralis</i> (Ramb.)
Lepidoptera	Lycpindae	<i>Cosmolyce boeticus</i> L.
	Pieridae	<i>Pieris rapae</i> L.

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