

OCCURRENCE OF HEMIPTERAN SPECIES ON ALFALFA PLANT IN BAGHDAD

Razzaq SH. Augul* Nassreen N. Mzhr** M. S. Abul-Rassoul *

* Baghdad University /Iraq Natural History Museum

**Al-Mustansiriyah University/ College of science

ABSTRACT

Hemipteran species of alfalfa plant surveyed in Abu Ghraib, Baghdad during the months of April, May and October of 2010. The study was registered, eight species belonging to eight genera and six families. The results showed that *Deracoris* sp. Kirschbaum, 1855 and *Campylomma diversicornis* Reuter, 1878 the most abundant species while *Lygaeus pandurus* Scop. and *Pyrhocorius apterus* (Linnaeus 1758) were the lowest during the study period.

INTRODUCTION

Medicago sativa, (Family: Leguminosae), is the most important forage crop. Alfalfa is a perennial legume with high protein content dense foliage. A stand alfalfa sometimes lives for as long as 30 years and therefore, provides a relatively stable and favorable habitat for a large number of insects and arthropods. (Al suhaibani, 1996).

Hemiptera known as true bugs, it is a very large and diverse order. they are found all over the world; there are 80,000 described species in 37 families (Forero, 2006). The defining feature of hemipterans is their possession of mouthparts where the mandibles and maxillae have evolved into a proboscis, sheathed within a modified labium to form a beak or rostrum which is capable of piercing tissues (usually plant tissues) and sucking out the liquids—typically sap. They may be held roofwise over the body, or held flat on the back, with the ends overlapping, the hind wings are entirely membranous and are usually shorter than the fore wing, the antennae in Hemiptera are typically five segmented, and the tarsi of the legs are three segmented or shorter (Schuh and Slater, 1995). They pierce tissues of plants and feed on their juices (Knight, 1941; McGavin, 1992), live as entomophagous (Hassanzadeh *et al.*, (2009) and many of them are serious plant pests and pollinating (Safavi, 1973). Many species of bugs catch other insects and hence beneficial from an agricultural point of view (Linnavuori and Hosseini, 2000).

The aim of this study was to determine the prevalence of the hemipteran species which were founded on alfalfa in Baghdad.

MATERIAL AND METHODS

Specimens were collected from alfalfa field of Abu-Ghraib in April, May, October (2010) by standard sweeping net and held aspirator, Insect specimens of large and medium size were mounted on pin while small insects were preserved in 70% alcohol. Locality and date of collection were provided and using keys for diagnosed them such as Falamarzi, *et al.* (2009); Priesner, and Alfieri, (1953); Triplehorn and Johnson, (2005); Parshley, (1915); Steill and Meyer, (2003) and Anufriev, (2001).

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In addition they compared with specimens which kept at Iraq Natural History Research Center and Museum University of Baghdad/ Baghdad Iraq.

RESULT AND DISCUSSION

In this study which have been taken for gathering and identification of the bugs in the field of alfalfa in Abu-Ghraib in 2010, totally (8) specie. These species, belonging to (8) genera and (6) families have been collected (table1), figure (1). These species and their particular features were as follows:

1-Miridae (the plant bug):

There are small to medium, terrestrial insect, usually oval-shaped or elongate and measuring less than 12mm in length. In this family 3 genera and 3 species contain *Deracoris* sp., *Campylomma diversicoruis* Reuter, 1878, and *Creontiales pallidus*. In this investigation the species *Deracoris* sp. was registered in high population. It was predator and they have an important role in decrease of aphid population and nymphs of phytophagous *Lygus*; the *Lygus* is the most important alfalfa pest in the flower stage (Conti and Bin, 2001; Khanjani, 2005). this result was agreement with Mirab-balou, *et al.* (2007).

2-Anthocoridae (the minute pirate bugs):

Members of anthocoridae are relatively small (1- 5 mm) having an oval or elongate-oval shape, most are brownish in-general coloration, wing marking or shading gives some species a checkered appearance. Body somewhat flattened, and may be either glabrous or pubescent. The head prolonged interiorly, rostrum apparently three segmented, held away from the lower surface of head. Antennae four segmented; a pair of ocelli present or absent; hemi elytra with both cuneus and embolium separated by a distinct fracture; tarsi three segment, no ariolia. Male genitalia asymmetrical and ovipositor present, often reduced or absent. (Horton, 2008; Kelton, 1978).

The species of *Orius albidipennis* was collected only this species was registered in high population like the species *Deracoris* sp. Mirab-balou *et al.* (2007) mentioned that *Orius* species were crowded and predator of phytophagous mite, insect eggs, aphids thrips and small caterpillars.

3-Geocoridae (Big-Eyed Bugs):

Small,oblong-oval having the head broader than long, and prominent eyes that curve backward and overlap the front of Pronotum. a distinguishing feature of adult big-eyed bugs is the very short or absent claval commissure, the insects vary mottled, striped, and black species, These insects are very common in many types of agricultural fields (Mead, 2004). *Geocoris* which is worldwide in distribution, included 124 described species. Of this family *Geocoris pallidipennis* was collected. This bugs feeds upon smaller insects, butterflies eggs, the nymphs of phytophagous bugs, aphids and mites *Geocorius* sp., are among the most abundant and important predaceous insects in many cropping systems *Geocorius* sp. are known to feed on plants, however they rarely cause economic damage, their most distinguishing characteristic is their large, bulging eyes. (Hagler and Cohen, 1991).

4- Rhopalidae (Scentless plant bugs):

Small to medium sized insects that are heavily punctate and pubescent, and small spines on the head, Pronotum and legs, these bugs resemble the coreid bugs, but are smaller and have a greatly reduced ostiole. Or scent gland opening, prescence of numerous viens. In this family just *Liorhyssus hyalinus* was collected.

5-Lygaeidae (Seed Bugs):

The Lygaeidae are one of the larger and more diverse families in the hemiptera, with over 4000 species in 5000 genera, and are commonly known as seed bugs even through a number of species do not feed on seed; some are predators on other insects and others feed blood (hematophagy) (Schuh and Slater, 1995). of this family *Lygaeus pandurus* Scop. was collected in lowest population.

6-Pyrrhocoridae (Red Bugs):

Body medium-sized to large (6-30 mm), more or less elongate oval, rarely ant-mimetic. *Colour* frequently bright red or yellow and black, sometimes dark. *Head* usually simple; clypeus surpassing mandibular plates; ocelli lacking; antenna and labium four-segmented. Pronotum trapeziform, usually with well developed anterior collar, lateral margins frequently more or less widely, calli present; metathoracic scent gland ostioles more or less reduced. *Scutellum* triangular, small, shorter than clavus. *Fore wings* with distinct claval commisure; membrane of macropterous morphs usually with two basal cells and 7-8 branching longitudinal veins. *Legs* usually without modifications, femora unarmed or at most with small spines or denticles ventrally; tarsi three-segmented. (Schun and Slater, 1995).

Of this family *Pyrrhocorius apterus* (Linnaeus 1758). was collected. This insect feed on the seed, plants fallen on the land and from the other insect, but there are not injurious in alfalfa field.

Table (1): The percentage of the presence of hemipteran species on alfalfa field.

Species	Percentage %
Miridae <i>Deracoris</i> sp. <i>Campylomma diversicornis</i> <i>Crenotiales pallidus</i>	31.6% 30 % 5.4%
Anthocoridae <i>Orius albidipennis</i>	31.6%
Geocoridae <i>Geocoris pallidipearis</i>	0.5%
Rhopalidae <i>Liorhyssus hyalinus</i>	0.5%
Lygaeidae <i>Lygaeus pandurus</i>	0.2%
Pyrrhocoridae <i>Pyrrhocoris apterus</i>	0.2%

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Figure (1): Hemipteran species which is found on alfalfa field in Baghdad.

[a: *Deracoris* sp, b: *Campylomma diversicornis*, c: *Creontiales pallidus*, d: *Orius albidipennis*, e: *Geocoris pallidipennis*, f: *Lygaeus pandurus*, g: *Pyrrhocorius apterus*, h: *Liorhysus hyalinus*]

تواجد أنواع نصفية الأجنحة على نبات الجت في محافظة بغداد

رزاق شعلان عكل* و نسرین نوري مزهر** و محمد صالح عبد الرسول*
*متحف التاريخ الطبيعي، جامعة بغداد
**كلية العلوم، الجامعة المستنصرية

الخلاصة

اجري مسح لأنواع رتبة نصفية الأجنحة (Order: Hemiptera) المتواجدة في حقول الجت لمنطقة أبي غريب، بغداد خلال الأشهر نيسان و مايس وتشرين الأول لسنة ٢٠١٠ وقد سجل خلال الدراسة ثمانية أنواع تعود الى ثمانية أجناس تقع ضمن ستة عوائل كما سجل النوعان *Campylomma diversicornis* Reuter, 1878 و *Deraecoris* sp.

بأعداد كبيرة، بينما كان النوعان *Lygaeus pandurus* Scop. و *Pyrhocorius Papterus* (Linnaeus 1758) بأعداد قليلة جدا خلال فترة الدراسة.