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SURVEY AND POPULATION STUDIES OF INSECTS AT DIERAB AREA, SOUTH RIYADH, SAUDI ARABIA

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ABSTRACT

Studies on the relative abundance and population fluctuations of insects occurring in the agricultural experiments and research Station of the King Saud University at Dierab, South Riyadh, were carried out from September, 2009 to December, 2010 using: Hand Picking, Malaise Traps, Pitfall Traps and Sticky Traps methods. The survey revealed the presence of one hundred sixty-two species belonging to one hundred twenty-eight genera, of sixty-two families under nine orders, (Coleoptera, Dermaptera, Diptera, Hemiptera, Hymenoptera, Lepidoptera, Mantodea Neuroptera and Orthoptera). A total number of 1550 insects were obtained throughout the year. The largest numbers of individuals were observed during May, April and June. The largest number of species were found belonging to the order Coleoptera (81 species), followed by the hemipterans (16 species). Other orders were represented by varying number of species.

The coleopterans were found to be the most abundant and dominant, constituting the majority of the catch (1112 specimens, representing 71,7 % of the total catch), followed by hemipteran individuals (215 specimens, constituting 13.9 % of the total catch). Insects of other orders were less abundant and were represented by small numbers of individuals, with the Mantodea and Dermaptera constituting the minority of the catch (one specimen of one species) for each and Neuroptera (nine specimens of three species).

INTRODUCTION

Survey, population densities, fluctuations and relative abundance are of significant value as a guide for further faunal studies. Four of the most convenient methods of carrying out such studies are Hand Picking, Malaise Trap, Pitfall Trap and Sticky Traps.

In Saudi Arabia, Al Maqooshy (1996) surveyed the aphids in Riyadh region, recording 18 species of aphids. Also, Al Ahmad (1989) surveyed the scale insects in the same region and studied the population dynamics and natural enemies. Ayoub (1959) discussed the insect pests of Saudi Arabia together with recommendations for their control. Issa and Helal (2000), Ali and El Saedy (1999), Hamad et al. (1965), Gafaar (1995), Al-Rajwy (1998) and Al-Menshaway and Hejazy (2001) surveyed the insects in some Arabian regions. Also, various ecological and faunistic studies were carried out and reported by Hanna

(1963 and 1969), Al-Akkad et al (1997), Al-Gammal et al (1999) ; Badr et al (2001), Hafez and Bishara (1961); Hanna (1973); Alfieri (1976); Helal (1977); Sharaf El-din (1981); Badr (1985); Salem et al. (1985); Sheinishen et al. (1985); Amin et al (1985); Salem et al. (1986); El-Sayed (1987); Ali and Ibrahim (1988); Shah and Garg (1988); Bebars (2000); Abdel-Dayem et al. (2003); and Morsi and El-Gharbawy (2006).

The present work has been done by Hand Picking, Malaise Trap, Pitfall Trap and Sticky Trap, to survey and study the population density, relative abundance and fluctuation of population of insects at Dierab area, south Riyadh, Saudi Arabia.

MATERIALS AND METHODS

This study were conducted for surveying and studying the population of insects throughout a whole year (September, 2009 – August, 2010) in the Station research and

agricultural experiments of King Saud University at Dierab, South Riyadh (24.426216, 46.653016), about 220 hectares (2200 acres), located in the beautiful Tuwaiq escarpment in the middle of Saudi Arabia. The major plants are Nabk trees, Grapes, Pomegranate, Fig plant, clover, date palm, olives, etc. Ten locations in the investigation area, each contains five pitfall traps and three sticky traps, in addition to one Malaise trap. In pitfall traps method a plastic bottles, 1.5 liters were used, buried at a depth of 40 cm where the hole of the trap at the level of the soil surface. 5 pitfall traps were put at each site. The sticky trap, used, were a yellow plastic rectangular piece (45X20 cm) panted with sticky nontoxic glue for capturing the flying insects. Three sticky traps were hanged on three trees in each site. One Malaise trap of the BioQuip Malaise traps, with head No. 2875A type, were set in the investigation area. These traps were collected every two weeks and transferred to the laboratory.

In the laboratory the insects were removed carefully from the traps and sorted, identified, counted and recorded. The annual numbers and percentages of abundance were calculated.

Table (1) Metrological data of average monthly temperature and humidity during the period of the study

Months	Temperature (Avg.)	Humidity (Avg.) %
September 2009	31.5	19.78
October 2009	26.6	21.21
November 2009	23.1	47.3
December 2009	19.2	58.54
January 2010	19.3	58.82
February 2010	19.2	30.15
March 2010	25.9	31.95
April 2010	29.1	30.93
May 2010	44.5	20.1
June 2010	48.7	11.88
July 2010	47.5	10.82
August 2010	34.91	21.52

All taxa (Families, Genera and species) are arranged alphabetically according to their taxonomical position. Insects were identified based on taxonomical keys, materials kept in

the insect collection of the Plant Protection Department, College of Food and Agriculture Science, King Saud University and the collection of Regional Centre for Research on Agriculture and Water, Ministry of Agriculture, KSA, and by special taxonomists in UK, USA and Egypt.

The materials from this study were deposited in the King Saud University Museum of Arthropods (KSMA), Department of Plant Protection, College of food and Agricultural Sciences, King Saud University.

RESULTS AND DISCUSSION

Survey of the insects during a whole year (September 2009- August 2010) using Hand Picking (HP); Malaise Trap (MT); Pitfall Trap (PT) and Sticky Traps (ST) revealed the presence of one hundred sixty-two insect species within one hundred twenty-eight genera of sixty-two families in nine orders. These species are alphabetically arranged according to orders, families and species and they are listed with the locality in table (Y).

From this table, the order Coleoptera included the largest number of species (eighty-one species within seventeen families) followed by order Diptera (thirty-four species of seventeen families), order Hemiptera (sixteen species of eleven families), Hymenoptera (fourteen species of six families), Lepidoptera (seven species of four families), Orthoptera (five species of two families), Neuroptera (three species of three families) Dermaptera and Mantodea (one species of one family).

The total number of species which collected by pitfall traps were 68 species represented by 1040 specimens constituting 67.1 % of the total catch. The sticky traps collected 77 species represented by 310 specimens, constituting 20 % of the total catch. Nine species are collected by the hand were represented by 179 specimens constituting 11.5 %, while the malaise traps collected eight species represented by 21 specimens constituting 1.35 % of the total catch. The data indicated that, the total number of insects were 1550 individuals, the largest specimens were obtained during May, April June and

November (426, 210, 188 and 151 individuals, respectively), while the relatively lowest numbers were during September, February, August and January (36, 42, 48 and 65 individuals, respectively).

The largest number of individuals belonged to order Coleoptera (1113 individuals, representing 71.74% of the total annual catch), these insects were highly active and most abundant during the period from March to November with two major peaks of abundance during May and November (400 and 91 insects, respectively), followed by insects of order Hemiptera (215 individuals, constituting 13.87% of the total catch) nearly, the majority of these insects were trapped during March to December with two major peaks of abundance during April and November (60 and 33 insects, respectively). Order Diptera represented by 133 specimens, constituting 8.58% of the total catch, the majority of these insects were trapped during November to next June with two major peaks of abundance during June and

December. Orders Lepidoptera, Neuroptera and Orthoptera have nine individuals for each constituting 0.58% of the total catch. Orders Mantodea, Dermaptera, were represented by one individual for each constituting 0.065% of the total catch.

The most abundant and dominant species were the coleopteran species, *Mesostena puncticollis*, with a total annual number of 314 individuals, constituting 20.26% of the total annual catch, individuals of this species were largely active and most frequent during April and June (87 and 72 individuals, respectively). *Maladera insanabilis*, came next in abundance (157 individuals), active and most frequent during May and July (112 and 26 individuals, respectively).

From the previous data, it is believed that, the increase of individuals in May probably because of the suitable prevailing climatic conditions were at this month, while they were harsh during other months.

Table (2): Monthly Catches of Insects collected by various traps at Dierab,

No.	Order	Family	Species	Methods	Months												total
					Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	Coleoptera	Anthicidae	<i>Anthicus crinitus</i>	ST	0	0	0	0	0	2	0	0	0	0	0	0	2
2	Coleoptera	Anthicidae	<i>Endomia lewebrevi</i>	PT	0	0	0	0	1	0	0	0	0	0	0	0	1
3	Coleoptera	Anthicidae	<i>Omonadus formicarius</i>	ST	0	0	0	0	1	0	0	0	0	0	0	0	1
4	Coleoptera	Bostrichidae	<i>Calopertha truncatula</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	1
5	Coleoptera	Buprestidae	<i>Agrilus lituratus</i>	ST	0	0	0	0	0	0	0	0	0	0	4	0	4
6	Coleoptera	Buprestidae	<i>Anthaxia abdita Bily</i>	ST	0	0	0	0	0	0	0	0	0	0	6	0	6
7	Coleoptera	Buprestidae	<i>Anthaxia congregata</i>	ST	0	0	0	1	0	0	0	0	0	0	0	0	1
8	Coleoptera	Buprestidae	<i>Anthaxia kneuckeri</i>	ST	0	0	0	0	0	0	0	0	0	0	7	0	7
9	Coleoptera	Buprestidae	<i>Julodis euphratica</i>	HP	0	0	0	0	1	0	0	0	0	0	0	0	1
10	Coleoptera	Buprestidae	<i>Trachys latifrons</i>	PT	0	0	0	0	0	1	1	0	0	0	0	0	2
11	Coleoptera	Buprestidae	<i>Xanthermia philistina</i>	ST	0	0	0	1	0	0	0	0	0	0	0	0	1
12	Coleoptera	Carabidae	<i>Amara sp</i>	PT	0	0	0	0	0	0	0	0	0	0	0	1	1
13	Coleoptera	Carabidae	<i>Brachinus nobilis</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	1
14	Coleoptera	Carabidae	<i>Brachinus sp</i>	PT	0	0	0	0	0	0	0	0	0	0	1	0	1
15	Coleoptera	Carabidae	<i>Calodromius mayeti</i>	ST	0	0	0	0	0	0	0	0	0	0	1	0	1
16	Coleoptera	Carabidae	<i>Distichus planus</i>	PT	0	0	0	0	1	0	0	0	0	0	0	0	1
17	Coleoptera	Carabidae	<i>Myriochila melancholica melancholica</i>	PT	0	0	0	0	1	0	0	0	0	0	0	0	1
18	Coleoptera	Carabidae	<i>Pheropsophus africanus</i>	PT	0	2	0	0	0	0	0	0	0	0	0	0	2
19	Coleoptera	Carabidae	<i>Pogonus chalceus</i>	PT	0	0	0	0	4	0	0	0	0	0	1	0	5
20	Coleoptera	Carabidae	<i>Scarites sp</i>	PT	0	0	0	0	1	0	0	0	0	0	1	0	2
21	Coleoptera	Carabidae	<i>Stenolophus marginatus</i>	PT	0	1	1	0	0	1	0	0	0	0	0	0	3
22	Coleoptera	Carabidae	<i>Tetragonoderus arcuatus</i>	PT	0	0	0	0	2	0	0	0	0	0	0	1	3
23	Coleoptera	Clambidae	<i>Clambus sp.</i>	ST	0	0	0	0	0	0	0	0	0	0	0	4	4
24	Coleoptera	Clambidae	<i>Clambus sp.</i>	ST	0	0	0	0	0	0	0	0	0	0	15	3	18
25	Coleoptera	Cerambycidae	<i>Crossotus sp.</i>	HP	0	0	0	0	1	0	0	0	0	0	0	0	1
26	Coleoptera	Chrysomelidae	<i>Bruchidius lanceolatus</i>	ST	0	2	1	5	0	0	0	0	0	3	0	2	13
27	Coleoptera	Cleridae	<i>Necrobia rufipes</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	1

HP: Hand Picking; MT: Malaise Trap; PT: Pitfall Trap and ST: Sticky Trap

28	Coleoptera	Cleridae	<i>Tillodenops plagiatus</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	0	1
29	Coleoptera	Cleridae	<i>Wittmeridecus mediozonatus</i>	PT	0	0	0	0	2	0	0	0	0	0	0	0	0	2
30	Coleoptera	Coccinellidae	<i>Adonia variegata</i>	ST	0	0	1	0	4	0	0	0	0	0	1	1	7	
31	Coleoptera	Coccinellidae	<i>Adonia variegata</i>	ST	0	0	5	0	0	0	0	0	0	0	0	0	5	
32	Coleoptera	Coccinellidae	<i>Coccinella undecimpunctata</i>	ST	0	0	2	0	0	0	0	0	0	1	0	0	3	
33	Coleoptera	Coccinellidae	<i>Scymnus syriacus</i>	ST	0	0	2	2	0	0	0	0	0	1	0	1	6	
34	Coleoptera	Coccinellidae	<i>Scymnus syriacus</i>	ST	0	0	1	0	0	0	0	0	0	0	0	0	1	
35	Coleoptera	Coccinellidae	<i>Stethorus punctillum</i>	HP	0	0	0	0	1	0	0	0	0	0	0	0	1	
36	Coleoptera	Curculionidae	<i>Baris granulipennis</i>	HP	0	0	0	0	1	0	0	0	0	0	0	0	1	
37	Coleoptera	Dascillidae	<i>karumia inaequalis</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	1	
38	Coleoptera	Dermestidae	<i>Dermestes maculatus</i>	PT	0	0	0	0	0	2	0	0	0	0	0	0	2	
39	Coleoptera	Dytiscidae	<i>Eretes sticticus</i>	PT	0	0	0	0	2	4	0	0	0	0	0	0	6	
40	Coleoptera	Elateridae	<i>Aeoloides griseus</i>	PT	0	0	0	0	11	3	0	0	0	0	0	0	14	
41	Coleoptera	Elateridae	<i>Conoderus productus arabicus</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	1	
42	Coleoptera	Elateridae	<i>Drasterius aegyptiacus</i>	PT	0	0	0	0	5	4	0	0	0	0	0	0	9	
43	Coleoptera	Elateridae	<i>Heteroderes rutei</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	1	
44	Coleoptera	Elateridae	<i>Heteroderes musculus</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	1	
45	Coleoptera	Elateridae	<i>Heteroderes vagus</i>	PT	0	0	0	0	20	4	0	0	0	0	0	0	24	
46	Coleoptera	Meloidae	<i>Cylindrothorax angusticollis fairmairei</i>	PT	0	0	0	0	1	0	0	0	0	0	0	0	1	
47	Coleoptera	Meloidae	<i>Lyttonyx bicolor</i>	ST	0	0	1	0	0	0	0	0	0	0	0	0	1	
48	Coleoptera	Meloidae	<i>Mylabris calida</i>	HP	0	0	0	7	5	0	0	0	0	0	0	0	12	
49	Coleoptera	Scarabaeidae	<i>Hybosorus illigeri</i>	PT	0	0	0	0	35	2	0	0	0	0	0	0	37	
50	Coleoptera	Scarabaeidae	<i>Maladera insanabilis</i>	PT	0	0	0	0	2	0	0	0	0	0	0	0	2	
51	Coleoptera	Scarabaeidae	<i>Maladera insanabilis</i>	PT	0	0	0	0	112	3	26	5	2	1	8	0	157	
52	Coleoptera	Scarabaeidae	<i>Maladera sp</i>	PT	0	0	0	0	53	0	0	0	0	0	0	0	53	
53	Coleoptera	Scarabaeidae	<i>Oryctus elegans</i>	PT	0	0	0	0	1	2	0	0	0	0	0	0	3	
54	Coleoptera	Scarabaeidae	<i>Pentodon algerinum</i>	PT	0	0	0	0	8	6	0	0	0	0	0	0	14	
55	Coleoptera	Scarabaeidae	<i>Pentodon algerinum</i>	PT	0	0	1	0	0	0	0	0	0	1	0	0	2	
56	Coleoptera	Scarabaeidae	<i>Pentodon algerinum</i>	PT	0	0	0	0	0	0	1	0	1	0	0	0	2	
57	Coleoptera	Scarabaeidae	<i>Phaeadoretus iranicus</i>	PT	0	0	0	0	2	0	0	0	0	0	0	0	2	
58	Coleoptera	Scarabaeidae	<i>Podalgues cuniculus arabicus</i>	PT	0	0	0	0	5	0	0	0	0	0	0	0	5	
59	Coleoptera	Scarabaeidae	<i>Schizonycha flavicornis</i>	PT	0	0	0	0	2	0	0	0	0	0	0	0	2	
60	Coleoptera	Tenebrionidae	<i>Adesmia cancellata</i>	PT	24	7	4	7	2	1	0	0	0	10	4	0	59	
61	Coleoptera	Tenebrionidae	<i>Alphitobius laevigatus</i>	PT	0	0	0	0	13	0	0	0	0	0	0	0	13	
62	Coleoptera	Tenebrionidae	<i>Ceiroides brevicollis</i>	PT	0	0	1	1	2	4	0	0	0	0	0	0	8	
63	Coleoptera	Tenebrionidae	<i>Ceiroides pilosa</i>	PT	0	0	0	0	0	4	0	0	0	0	0	0	4	
64	Coleoptera	Tenebrionidae	<i>Ceiroides sardoa</i>	PT	0	0	0	0	2	4	0	0	0	0	1	0	7	
65	Coleoptera	Tenebrionidae	<i>Erodium servillei</i>	PT	0	0	1	0	0	0	0	0	0	0	0	0	1	
66	Coleoptera	Tenebrionidae	<i>Gonocephalum prolixum</i>	PT	0	0	0	0	2	0	0	0	0	0	0	0	2	
67	Coleoptera	Tenebrionidae	<i>Gonocephalum rusticum</i>	PT	1	5	1	1	3	2	0	1	0	0	10	0	24	
68	Coleoptera	Tenebrionidae	<i>Gonocephalum setulosum</i>	PT	0	0	0	0	12	0	0	0	0	0	6	0	18	
69	Coleoptera	Tenebrionidae	<i>Gonocephalum sorcinum</i>	PT	0	0	0	0	7	0	0	0	0	0	6	1	14	
70	Coleoptera	Tenebrionidae	<i>Mesostena puncticollis</i>	PT	0	3	23	87	49	72	36	21	10	12	1	0	314	
71	Coleoptera	Tenebrionidae	<i>Mycetocharina wittmeri</i>	PT	0	0	0	0	0	1	0	0	0	0	1	0	2	
72	Coleoptera	Tenebrionidae	<i>Oxycara buettikeri</i>	PT	2	3	1	0	0	0	1	0	1	2	1	5	16	
73	Coleoptera	Tenebrionidae	<i>Oxycara saudi-arabica</i>	PT	3	1	1	0	1	0	0	0	0	2	5	8	21	
74	Coleoptera	Tenebrionidae	<i>Pimelia arabica</i>	PT	7	3	3	1	0	0	0	2	0	5	4	0	25	
75	Coleoptera	Tenebrionidae	<i>Prionothea coronata</i>	PT	1	4	1	6	5	1	14	6	1	4	1	1	45	
76	Coleoptera	Tenebrionidae	<i>Scleron orientalis</i>	PT	0	0	0	0	0	0	0	0	0	0	2	0	2	
77	Coleoptera	Tenebrionidae	<i>Scleron sulcatum</i>	PT	0	0	1	0	0	0	0	0	0	0	0	0	1	
78	Coleoptera	Tenebrionidae	<i>Thriptera crinita</i>	PT	0	1	1	2	1	5	2	1	1	1	1	0	16	
79	Coleoptera	Tenebrionidae	<i>Trachyderma philistina</i>	PT	0	1	8	12	10	3	2	5	2	1	3	0	47	
80	Coleoptera	Tenebrionidae	<i>Tribolium castaneum</i>	PT	0	0	3	0	0	0	0	0	0	0	0	0	3	
81	Coleoptera	Tenebrionidae	<i>Zophosis complanata</i>	PT	0	0	0	0	6	0	0	0	0	0	0	0	6	
82	Dermoptera	Labiduridae	<i>Labidura riparia</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	1	
83	Diptera	Asilidae	<i>Ommatius sp.</i>	ST	0	0	0	1	0	0	0	0	0	0	0	0	1	
84	Diptera	Asilidae	<i>Stichopogon sp.</i>	ST	0	0	0	1	0	0	0	0	0	0	0	0	1	
85	Diptera	Bombyliidae	<i>Heteralonia aegina</i>	ST	0	0	0	0	1	0	0	0	0	0	0	0	1	
86	Diptera	Bombyliidae	<i>Spogostylum sp.</i>	ST	0	0	0	0	1	0	0	0	0	0	0	0	1	
87	Diptera	Bombyliidae	<i>Villa sp.</i>	ST	0	0	0	0	0	0	1	0	0	0	0	0	1	
88	Diptera	Calliphoridae	<i>Chrysomyia albiceps</i>	ST	15	5	2	0	0	0	0	0	0	0	6	18	46	
89	Diptera	Chilopidae	<i>Epimadiza nigressins</i>	ST	1	0	0	0	0	0	0	0	0	0	0	0	1	
90	Diptera	Chlopididae	<i>Eutropha siphloidea</i>	ST	0	0	0	0	0	1	0	0	0	0	0	0	1	

91	Diptera	Drosophilidae	<i>Zaprionus vittiger</i>	ST	0	0	0	0	0	0	0	0	0	0	0	2	0	2
92	Diptera	Ephydriidae	<i>Actocetor indicus</i>	ST	0	0	0	0	0	0	0	0	0	0	0	0	1	1
93	Diptera	Heleomyzidae	<i>Trioxselis sp.</i>	ST	1	1	0	0	0	0	0	0	0	0	0	0	0	2
94	Diptera	Hybotidae	<i>Crossopalpus aeneus</i>	ST	0	0	0	0	1	0	0	0	0	0	0	0	0	1
95	Diptera	Hybotidae	<i>Crossopalpus sp.</i>	ST	0	0	0	0	0	0	0	0	0	0	0	1	0	1
96	Diptera	Hybotidae	<i>Platypalpus sp.</i>	ST	0	0	0	0	0	0	0	0	0	0	0	1	0	1
97	Diptera	Mythicomyiidae	<i>Empidideicus psephenyps</i>	ST	0	0	0	0	0	0	0	0	1	0	0	0	0	1
98	Diptera	Muscidae	<i>Atherigona laevigata</i>	ST	0	0	0	0	1	0	0	0	0	0	0	0	0	1
99	Diptera	Muscidae	<i>Atherigona naqvii</i>	ST	0	0	0	0	0	3	0	0	0	0	0	0	0	3
100	Diptera	Muscidae	<i>Atherigona orientalis</i>	ST	1	0	0	0	0	0	0	0	0	0	0	0	1	2
101	Diptera	Pipunculidae	<i>Tomosvaryella sp.</i>	ST	0	0	0	0	0	4	0	0	0	0	0	1	5	10
102	Diptera	Sarcophagidae	<i>Wohlfahrtia magnifica</i>	ST	0	0	0	0	0	0	0	0	0	0	0	0	1	1
103	Diptera	Sarcophagidae	<i>Wohlfahrtia nuba</i>	ST	1	0	0	0	2	1	0	0	0	0	0	1	1	6
104	Diptera	Sarcophagidae	<i>Wohlfahrtia sp.</i>	ST	0	0	0	1	0	0	0	0	0	0	0	1	0	2
105	Diptera	Sarcophagidae	<i>Xeromyia argyrina</i>	MT	0	0	0	0	0	6	0	0	0	0	0	0	0	6
106	Diptera	Sarcophagidae	<i>Xerophilomyia sp.</i>	ST	1	0	0	0	0	1	0	0	0	0	0	0	0	2
107	Diptera	Scenopinidae	<i>Alloxytropus anomalus</i>	MT	0	0	0	1	0	0	1	0	2	0	1	0	5	
108	Diptera	Syrphidae	<i>Syritta flaviventris</i>	MT	0	0	0	0	0	1	0	0	0	0	0	0	0	1
109	Diptera	Tachinidae	<i>Leucostoma sp.</i>	MT	0	0	0	0	1	0	0	0	0	0	0	0	0	1
110	Diptera	Tachinidae	<i>Meigenia sp.</i>	ST	1	0	0	0	0	0	0	0	0	0	0	0	0	1
111	Diptera	Tephritidae	<i>Dacus ciliatus</i>	ST	2	0	2	1	0	1	0	0	0	1	2	0	9	
112	Diptera	Tephritidae	<i>Dacus longistylus</i>	ST	1	0	1	1	0	0	0	0	4	1	3	1	12	
113	Diptera	Tephritidae	<i>Dacus zonatus</i>	ST	0	0	0	1	0	0	0	0	0	0	0	0	1	
114	Diptera	Tephritidae	<i>Truparea amoena</i>	ST	0	0	0	0	0	5	0	0	0	0	0	0	5	
115	Diptera	Ulidiidae	<i>Physiphora demandata</i>	BT	0	0	0	0	0	1	0	0	0	0	0	1	2	
116	Diptera	Ulidiidae	<i>Physiphora smaragdina</i>	PT	0	0	0	0	0	1	0	0	0	0	0	0	1	
117	Hemiptera	Anthocoridae	<i>Orius albidipennis</i>	ST	0	0	0	0	0	1	0	0	0	0	0	0	1	
131	Hemiptera	Aphididae	<i>Myzus persicae</i>	ST	2	0	1	0	0	0	0	0	0	0	0	0	3	
118	Hemiptera	Cicadellidae	<i>Empoasca decipiens</i>	ST	0	0	0	1	0	0	0	0	0	0	0	0	1	
132	Hemiptera	Diaspididae	<i>Contigaspis zillae</i>	HP	0	0	16	52	0	0	0	0	0	40	22	26	156	
119	Hemiptera	Lygaeidae	<i>Geocoris tanninimensis</i>	ST	0	0	0	0	0	1	0	0	0	0	0	0	1	
120	Hemiptera	Lygaeidae	<i>Nysius cymoides</i>	MT	0	0	0	0	0	1	1	0	0	0	2	0	4	
121	Hemiptera	Lygaeidae	<i>Nysius sp.</i>	ST	1	1	3	1	2	0	1	0	5	2	1	2	19	
122	Hemiptera	Lygaeidae	<i>Spilostethus longulus</i>	ST	0	0	1	1	5	1	0	0	1	0	2	0	11	
123	Hemiptera	Miridae	<i>Creontides pallidus</i>	ST	0	0	0	0	0	0	0	0	0	0	1	0	1	
124	Hemiptera	Miridae	<i>Deraeocoris sp.</i>	ST	0	0	0	5	3	0	0	0	0	0	2	1	11	
125	Hemiptera	Nabidae	<i>Nabis capsiformis</i>	ST	0	0	0	0	0	1	0	0	0	0	0	0	1	
126	Hemiptera	Pentatomidae	<i>Eysarcoris inconspicua</i>	ST	0	0	0	0	0	0	0	0	0	0	1	0	1	
127	Hemiptera	Reduviidae	<i>Coranus aegyptius</i>	ST	0	0	0	0	1	0	0	0	0	0	0	0	1	
128	Hemiptera	Reduviidae	<i>Vachiria natalica</i>	ST	0	0	0	0	1	1	0	0	0	0	0	0	2	
129	Hemiptera	Rhopalidae	<i>Liorhysus hyalinus</i>	ST	0	0	0	0	0	0	0	0	0	0	1	0	1	
130	Hemiptera	Tingidae	<i>Galeatus scropphicus</i>	ST	0	0	0	0	0	0	0	0	0	0	1	0	1	
133	Hymenoptera	Apidae	<i>Amegilla byssina</i>	ST	0	0	0	3	0	0	0	0	0	0	0	0	3	
134	Hymenoptera	Apidae	<i>Amegilla sp.</i>	ST	0	0	0	0	1	0	0	0	0	0	0	0	1	
135	Hymenoptera	Apidae	<i>Xylocopa pubescens</i>	ST	0	0	1	0	0	0	0	1	0	0	0	0	2	
136	Hymenoptera	Formicidae	<i>Camponotus adenensis</i>	PT	0	2	1	0	0	0	0	0	0	0	1	1	5	
137	Hymenoptera	Formicidae	<i>Cataglyphis arenarius</i>	PT	0	0	0	0	0	0	1	0	0	0	0	0	1	
138	Hymenoptera	Formicidae	<i>Cataglyphis lividus</i>	PT	0	0	0	0	0	0	1	0	1	1	0	0	3	
139	Hymenoptera	Formicidae	<i>Cataglyphis niger</i>	PT	0	0	0	0	1	0	7	1	0	0	0	0	9	
140	Hymenoptera	Formicidae	<i>Messor ebininus</i>	PT	0	0	0	0	0	0	1	2	0	0	0	0	3	
141	Hymenoptera	Formicidae	<i>Monomorium niloticum</i>	PT	0	0	0	0	0	0	0	1	0	0	0	0	1	
142	Hymenoptera	Formicidae	<i>Monomorium sp.</i>	HP	0	0	1	0	0	0	1	1	2	0	0	0	5	
143	Hymenoptera	Halictidae	<i>Ceylallictus variegatus</i>	ST	0	0	0	2	2	4	14	0	1	0	1	0	24	
144	Hymenoptera	Ichneumonidae	<i>Cremastus aegyptiacus</i>	HP	0	0	0	1	0	0	0	0	0	0	0	0	1	
145	Hymenoptera	Megachilidae	<i>Megachila minutissima</i>	ST	0	0	1	0	0	0	0	0	0	0	0	0	1	
146	Hymenoptera	Sphecidae	<i>Stizus vespoides</i>	ST	0	0	0	0	1	1	0	0	0	0	0	0	2	
147	Lepidoptera	Danaidae	<i>Danaus chrysisippus</i>	ST	0	0	0	0	1	1	0	0	0	0	0	0	2	
148	Lepidoptera	Noctuidae	<i>Clytie sp.</i>	MT	0	0	0	0	0	2	0	0	0	0	0	0	2	
149	Lepidoptera	Noctuidae	<i>Heteropalpia profesta</i>	BT	0	0	0	0	0	0	0	0	0	0	1	0	1	
150	Lepidoptera	Noctuidae	<i>Pseudozarba mesozona</i>	MT	0	0	0	0	0	0	0	0	0	0	1	0	1	
151	Lepidoptera	Noctuidae	<i>Rivula pallida</i>	MT	0	0	0	0	0	0	0	0	0	0	1	0	1	
152	Lepidoptera	Pieridae	<i>Colotis liagore</i>	ST	0	0	0	0	0	1	0	0	0	0	0	0	1	
153	Lepidoptera	Pyralidae	<i>Hymenia recurvalis</i>	ST	0	0	0	0	0	0	0	0	0	0	1	0	1	

154	Mantodea	Eremiaphilidae	<i>Eremiaphila gene</i>	PT	0	0	0	0	0	0	0	0	0	0	1	1	
155	Neuroptera	Chrysopidae	<i>Chrysoperla carnea</i>	ST	0	0	1	1	0	1	0	0	0	0	1	0	4
156	Neuroptera	Myrmeleontidae	<i>Gepus invisus</i>	ST	0	0	0	1	0	1	0	0	1	0	0	0	3
157	Neuroptera	Nemopteridae	<i>Halter halteratus</i>	ST	0	0	0	2	0	0	0	0	0	0	0	0	2
158	Orthoptera	Acrididae	<i>Locusta danica</i>	ST	0	0	0	0	0	0	0	0	0	0	1	0	1
159	Orthoptera	Acrididae	<i>Sphingonotus rubescens</i>	ST	0	0	0	0	0	1	0	0	0	0	0	0	1
160	Orthoptera	Acrididae	<i>Sphingonotus savignyi</i>	ST	0	0	0	0	0	0	0	1	0	0	0	0	1
161	Orthoptera	Gryllidae	<i>Acheta domestica</i>	HP	0	0	0	0	0	1	0	0	0	0	0	0	1
154	Mantodea	Eremiaphilidae	<i>Eremiaphila gene</i>	PT	0	0	0	0	0	0	0	0	0	0	1	1	
155	Neuroptera	Chrysopidae	<i>Chrysoperla carnea</i>	ST	0	0	1	1	0	1	0	0	0	0	1	0	4
156	Neuroptera	Myrmeleontidae	<i>Gepus invisus</i>	ST	0	0	0	1	0	1	0	0	1	0	0	0	3
157	Neuroptera	Nemopteridae	<i>Halter halteratus</i>	ST	0	0	0	2	0	0	0	0	0	0	0	0	2
158	Orthoptera	Acrididae	<i>Locusta danica</i>	ST	0	0	0	0	0	0	0	0	0	0	1	0	1
159	Orthoptera	Acrididae	<i>Sphingonotus rubescens</i>	ST	0	0	0	0	0	1	0	0	0	0	0	0	1
160	Orthoptera	Acrididae	<i>Sphingonotus savignyi</i>	ST	0	0	0	0	0	0	0	1	0	0	0	0	1
161	Orthoptera	Gryllidae	<i>Acheta domestica</i>	HP	0	0	0	0	0	1	0	0	0	0	0	0	1
162	Orthoptera	Gryllidae	<i>Gryllus bimaculatus</i>	ST	0	0	0	0	1	4	0	0	0	0	0	0	5
Total					65	42	95	210	426	188	112	48	36	89	151	88	1550

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الملخص العربي

حصر ودراسة عشائر الحشرات في منطقة ديراب- جنوب الرياض- المملكة العربية السعودية

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قسم وقاية النبات، كلية علوم الأغذية والزراعة، جامعة الملك سعود، المملكة العربية السعودية
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أجريت دراسة الوفرة النسبية وتذبذب تعداد الحشرات في محطة جامعة الملك سعود للأبحاث الزراعية بديراب، جنوب الرياض بالمملكة العربية السعودية، في الفترة من سبتمبر، ٢٠٠٩ حتى ديسمبر، ٢٠١٠ باستخدام طرق الجمع المختلفة (الجمع اليدوي، مصائد ماليز، المصائد الأرضية والمصائد اللاصقة). وقد اسفرت هذه الدراسة عن حصر مائة واثنين وستين نوعاً من الحشرات تابعة لمائة وثمانية وعشرين جنساً واثنين وستين فصيلة من الرتب الحشرية التسع الآتية: غمدية الأجنحة، جلدية الأجنحة، الذباب، نصفية الأجنحة، غشائية الأجنحة، حشفية الأجنحة، فرس النبي، شبكية الأجنحة ومستقيمة الأجنحة. ووصل إجمالي عدد العينات التي جمعت اثناء فترة الدراسة الى الف وخمسمائة وخمسون عينة، سجل العدد الأكبر منها في شهر مايو وابريل ثم يونيو على التوالي، وكان أكبر عدد من الأنواع يتبع غمدية الأجنحة (٨١ نوعاً) ثم رتبة نصفية الأجنحة (١٦ نوعاً).

أوضحت الدراسة أن حشرات رتبة غمدية الأجنحة كانت الأكثر نشاطاً ووفرة حيث مثلت بعدد ١١١٢ فرداً تمثل ٧١,٧% من العدد الكلي للعينات قيد الدراسة، يليها حشرات رتبة نصفية الأجنحة بعدد ٢١٥ فرداً تمثل ١٣,٩%.