. Agric. Sci. Mansoura Univ., 28 (11): 6941 - 6949, 2003

ARTHROPOD COMPOSTION IN COTTON FIELDS AS MONITORED BY PITFALL TRAPS AND SOME BIOLOGICAL ASPECTS OF TRUE SPIDER, *Thanatus albini* (Audouin)

Hendawy, A.S. and G.A. El-Mezayyen
Plant Protect. Res. Inst., Sakha Agric. Res. St., Agric. Res. Center

ABSTRACT

Arthropod fauna was monitored in the cotton fields of Sakha Agricultural Research Station, Kafr El-Sheikh during 2002 cotton growing season using kerosene-baited traps (KBT) and vinegar-baited traps (VBT). It was found that KBT was more efficient in collecting arthropods than VBT. The most occurring insect pests were *Spodoptera littoralis, Lepidocertinus incertus* (Handschin)and *Empoasca discipiens* (Paoli), while the dominant natural enemies were *Thanatus albini* (Audouin), *Monomorium pharaonis* L. and *Scymnus interruptus* (Geoze). However, the traps have also collected some visitors; *Physiphora* sp., *Musca* sp. and *Platypalpus sp.*

Since *T. albini* was the most prevailing natural enemy, some of its biological aspects were investigated. Female spiderlings consumed more prey than males. Throughout the seven spiderling stages of female, they consumed 502 prey of different species compared to 367 prey for male during its six stages. The third stage took the shortest period, while the first one was the longest for both female and male. The spider adults lived for 143 and 43 days for female and male, respectively. The corresponding values of consumed prey were 227.5 and 144.50. Average laid egg-sacs per *T. albini* female was 5.50. The sex ratio, calculated from the total hatching spiderlings was 56.66 female to 43.34% male.

INTRODUCTION

Knowing faunistic composition of pests and beneficial arthropods inhabiting crop agroecosystem is a pre-requisite for proper management of pest populations. Pitfall traps are inexpensive, easy and quick to operate as a grid of traps can provide an impressive set of data (Gist and Crossley, 1973). However, catch size is influenced by a wide range of factors, apart from the population size (Briggs, 1961 and Luff, 1975).

Utilization of pitfall traps as a sampling tool for ground inhabiting pests and predators were reported by investigators to determine seasonal fluctuations, relative population densities, time of maximum activity and faunistic composition of soil-inhabiting insect species in many crops (Khalil *et al.*, 1975; Negm *et al.*, 1975; Wilkinson *et al.*, 1981; Abdel-Galil *et al.*, 1982; Rieske and Raffa, 1990; El-Dakhakny *et al.*, 1996 and Sherif *et al.*, 2001).

Predators including spiders, are an important agent in pest management. Agnew and Smith (1989) reported that spiders attack a large range of pest species throughout their development, are relatively long-lived and don't emigrate in large numbers during periods of low prey densities. In general, the predatory spiders often act as a buffer to prevent pest population from reaching critical levels (Riechert, 1974). *Thanatus albini* (Adudouin) (Philodromidae) was surveyed from different parts of Egypt (El-Hennawy, 1990), but so far only one study was made on the biology of this species in Egypt by El-Erksousy and Fawzy (2001). Joon *et al.* (1988); Halaj *et al.* (1995); El-Erksousy (2000), Rahil and Hanna (2001) and El-Erksousy *et al.*

(2002) studied some biological aspects of some spiders as biological control agents.

The present work aims to study the faunistic composition of pests, beneficials, visitors and their relative abundance as monitored by pitfall traps in cotton fields at Kafr El-Sheikh. Also, some biological aspects of *Thanatus albini* (Audouin) spider were investigated.

MATERIALS AND METHDOS

The study was conducted during 2002 cotton growing season at the farm of Sakha Agricultural Research Station, Kafr El-Sheikh. Cotton, *Gossypium barbadense* l. (Giza 88) was cultivated in an area of $^1/_2$ feddan on April 1st. Fertilizers and other cultural practices were applied according to the common recommendations with no pesticidal treatments throughout the experiment.

1. Arthropod composition:

a. Pit-fall traps:

Plastic containers (10 cm height and 5 cm diameter) were utilized as pitfall traps. The traps were embedded in the soil, with their tops just at the soil surface. Six traps were distributed at the experimental cotton area ($^1/_2$ feddan) and operated from June to October. Three traps baited with a mixture of kerosene and water (KBT) (1:2 by volume) were placed in cotton field. Another three traps baited with a mixture of vinegar and water (VBT) (1:2 volume) were situated in the same field. Traps were taken out from soil every three days and replaced by a new set at the same place.

b. Collection and identification of insects and spiders:

Contents of the traps were collected, categorized and prepared for identification. Identification of insect pests, visitors and natural enemies was achieved by taxonomists of plant protection Research Institute, Dokki, Cairo and of Rice Research and Training Center, Sakha, Agricultural Research Station. The most occurring spider was primarily identified as *Thanatus*. This identification was furtherly confirmed as *Thanatus albini* (Audouin) by Mr. Hesham K. El-Hennawy (Taxonomist of Arachnids).

2. *Thanatus albini* Biology:

a.Rearing the spider:

A collection of 32 adult females of *Thanatus albini* were obtained from cotton plants by sweep net and directly by hand (as the individuals were gently introduced into glasses tubes which was plugged by a cotton piece). The spider catch was moved to the laboratory and fed on newly hatching *Spodoptera littoralis* (Boisd.) larvae. Feeding continued till the spiders laid egg-sacs.

b.Food consumption and durations of spiderlings:

Egg-sacs were kept in the laboratory (27 $\pm$ 2°C & 70 $\pm$ 3% R.H.) till spiderling hatching. The progeny amounted 325 spiderlings which were separated individually in glass tubes (7 cm long and 3 cm diameter). The first spiderling was fed on *Tetranychus* sp. the second on *Aphis gossypii* Glov.,

the third on *Empoasca* spp. The spiderlings from 4th to 7th were fed on newly hatching *S. littoralis* larvae. Individuals of *Tetranychus* spp were provided by Cotton & Crops Acari Department, *A. gossypii* by Piercing & Sucking Pests Department. *Empoasca* individuals were collected in the current investigation by the aspirator from cotton and castor plants. The *S. littoralis* larvae were provided by cotton leafworm Department. Feeding of spiderlings continued till they reached maturity. Throughout feeding the numbers of consumed prey and the duration (in days) of each spiderling were recorded.

c.Food consumption and longevity of adults:

Seventy ive adults of *T. albini* were obtained. The individuals were sexed and 30 pairs (males and females) were categorized. Each pair, accompanied with newly hatching *S. littoralis* larvae, was introduced into a glass tube for two days. The prey were introduced in the tubes to overcome cannibalism habit of spiders.

After mating, both sexes were separated from each other and introduced individually in glass tubes (60 tubes). A known number of *S. littoralis* newly hatching larvae was provided to each tube. The spiders confined in the tubes were monitored till the females and males died.

Feeding capacity of both males and females was obtained by counting number of offered and consumed prey. Longevity of each sex was recorded as number of days elapsing from confining as pairs in the glass tube till death.

d.Sex ratio of progeny:

Egg-sacs were kept till hatching. The newly hatching spiderlings were examined and sexed. Thus, the sex ratio was calculated.

RESULTS AND DISCUSSION

1. Relative abundance of arthropods in cotton fields by using pitfall traps:

Data in Table (1) and Fig. (1) presented the numbers of pests, beneficial arthropods and visitors collected by both kinds of pitfail traps (KBT) and (VBT) from cotton fields in 2002 season. Results revealed the presence of twenty nine arthropod species belonging to twenty six families and ten orders.

a. Pests:

Ten pest species were collected by KBT and VBT from cotton fields. KBT was more effective in collecting pests than VBT; 64.42 and 35.58%, respectively. Generally, *Spodoptera littoralis* (Boisd.) was the most dominant captured species followed by *Lepidocertinus incertus* (Handschin), *Empoasca discipiens* (Paoli), *Gryllotalpa gryllotalpa* (L.), *Culex* spp. and *Empoasca lybica* (de Berg).

b. Beneficial arthropods:

Fourteen beneficial arthropod species were collected by the two kinds of traps in cotton fields. Kerosene was also more attractive than vinegar in collecting beneficials. The percentages of collected beneficial arthropods by

KBT and VBT were 69.62 and 30.38%, respectively. True spiders were the most collected beneficals especially *Thanatus albini* (Audouin) followed by *Monomorium pharaonins* L., *Scymnus interruptus* (Geoz), *Paederus alfierii* (Koch.) and *Calosoma chlorostictum* Dej. Results revealed that five true spider species, belonging to four families, were surveyed by each trap. These species were *T. albini, Lycorma ferox* (Lucas) and *Pardosa* sp. (Lycosidae), *Thyene imperialis* (Rossi) (Salticidae) and *Zelotes* sp. (Gnaphosidae).

Table (1) : Numbers of pests, beneficial arthropods and visitor insects collected by pitfall traps during 2002 cotton growing season at Kafr El-Sheikh region.

Order	Family	Species	Stage	Duration	No. of Individuals/ 3 traps/3 days	
					K	V
I. Pests						
Collembola	Entomobryidae	*Lepidoptertinus incertus* (Handschin)	A	Aug.-Sept.	3	13
Diptera	Culcidae	*Culex* spp.	A	Jul.	5	8
Hemiptera	Lygaeidae	*Oxycarenus hyalinpennis* (Costa.)	A	Jun.	3	0
	Pentatomidae	*Eurydemae ornatum* (L.)	A	Jul.	0	2
Homoptera	Cicadellidae	*Empoasca lybica* (de Berg)	N, A	Jul.-Aug.	9	3
		E. discipiens (Paoli)	N,A	Aug.-Sept.	10	5
Lepidoptera	Gelechiidae	*Pectinophora gossypiella* (Saund)	A	Aug.	0	2
	Noctuidae	*Spodoptera littoralis* (Boisd.)	L	Jul.	22	4
Orthoptera	Acrididae	*Aiolopus strepens* (Latr.)	A	Aug.-Sept.	2	0
	Gryllotalpidae	*Gryllotalpa gryllotalpa* (L.)	N	June-Sept.	13	0
Total					67	37
%					64.42	35.58
II. Beneficial arthropods						
Araneae	Gnaphosidae	*Zelotes* sp.	A,SL	Jun.Jul.	5	6
	Lycosidae	*Lycorma ferox* (Lucas)	A,SL	Jun.-Aug.	8	5
		Pardosa sp.	A		10	8
	Philodromidae	*Thanatus albini* (Audouin)	A	Jul.	20	12
	Salticidae	*Thyene imperialis* (Rossi)	A,SL	Jul.-Aug.	14	2
Coleoptera	Carabidae	*Calosoma chlorostictum* Dej.	A		2	1
	Coccinellidae	*Scymnus interruptus* (Goez.)	A	Aug.-Sept.	5	3
	Staphylinidae	*Paederus alfierii* (Koch).	A	June-Aug.	7	0
Diptera	Tachinidae	*Tachina larvarum* L.	A	Jun.	0	3
Hymenoptera	Braconidae	*Chelonus* spp.	A	Jul.-Aug.	3	0
		Not yet identified	A	Jul.-Aug.	0	3
	Formicidae	*Monomorium pharaonins* L.	A		33	5
	Ichneumonidae	Not yet identified	A	Jul.	1	0
Odonata	Coenagrionidae	*Ischnura senegalensis* (Ramb.)	A	Jul.-Aug.	2	0
Total					110	48
%					69.62	30.38
III. Visitor insects						
Coleoptera	Anthicidae	*Anthicus crinitus* Laf.	A	Jun.-Jul.	2	1
Diptera	Empididae	*Platypalpus* sp.	A	Jul.-Aug.	3	6
	Muscidae	*Musca* spp.	A	Jul.-Aug.	0	12
	Otitidae	*Physiphora* sp.	A	Aug.-Sept.	59	29
Hymenoptera	Apidae	*Apis mellifera* (L.)	A	Jun.-Aug.	7	0
Total					71	48
%					59.66	40.34

K: Kerosene, V: Vinegar, SL: Spiderlings, A: Adult, N: Nymph, L: Larvae

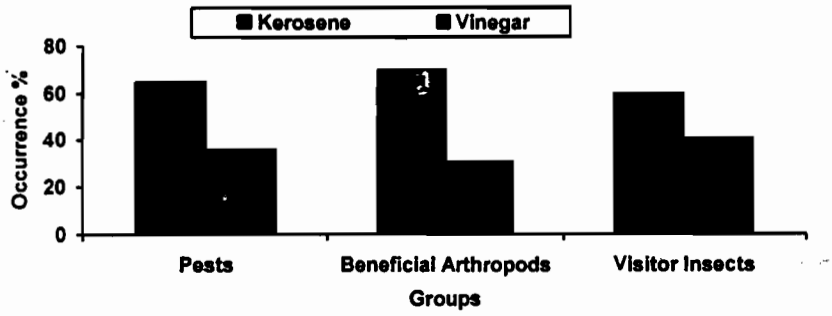

Fig. (1): Percentage of pests, beneficial arthropods and visitor insects collected by pitfall traps during 2002 cotton growing season at Kafr El-Sheikh region.

c. Visitors:

Five visitor insect species were captured by pitfall traps from cotton fields, belonging to five families and three orders. These families were Anthicidae, Muscidae, Otitidae, Apidae and Empididae. KBT was found to be more attractive than VBT in collecting visitor insects. The collected visitor insects by KBT and VBT were represented by 59.66 and 40.34%, respectively. *Physiphora* sp. was considered as the most dominant visitor insect in cotton fields followed by *Musca* spp., *Platypalpus* sp., *Apis mellifera* L. and *Anthicus crinitus* Laf.

Based on the obtained results, it may be recommended that for collecting true spiders, ants, lady beetles (*Scymnus*), rove beetles and *Calosoma* beetles, kerosene could be used in pitfall traps in cotton fields.

Several investigators recorded many arthropod species caught by pitfall trap in cotton fields. Khalil *et al.* (1975) and Negm *et al.* (1975) recorded a partial list of soil-inhabiting arthropods found in cotton fields at Assiut using pitfall traps. Wilkinson *et al.* (1981) compared the effectiveness of sticky and water traps for sampling beneficial arthropods in a red clover field in Missouri, USA. He found that water traps were more attractive in collecting spiders than sticky traps. The obtained results in the current investigation agree with those of Abdel-Galil *et al.* (1982) and El-Dakhakhni *et al.* (1996) who indicated that true spiders were the most dominant predators from pitfall traps in cotton and clover fields. Both authors recommended using kerosene as the most effective material in collecting true spiders by pitfall traps.

2. Some biological aspects of *T. albini* spider:

a. Food consumption of spiderlings:

As indicated in Table (2), female spiderlings consumed greater number of prey than did male with total number of 502.0 and 367.0 individual, respectively. The least food consumption was detected in the 4th instar which averaged 33.0 and 29.5 larvae of *S. littoralis* for female and male, respectively. The average of prey consumed in 1st, 2nd and 3rd instars were 121.50, 57.50 and 67.0 individuals for female, while those of male averaged 102.50, 47.50 and 58.0, respectively when fed on adult of *Tetranychus* spp.,

nymphs of *Empoasca* spp. and *Aphis gossypii*, respectively. However, the average of food consumption increased from 5th to 7th instar, represented by 45.50, 76.0 and 101.50 larvae for female, respectively while for male from the 5th to 6th, food consumption averaged 52.0 and 77.50 larvae, respectively. Results are in line with those of El-Erksousy and Fawzy (2001) who reported that *T. albini* consumed 1899 and 1727 *Schizaphis graminum* nymphs during different stages of female and male spiderlings, respectively.

Table (2) : Food consumption and duration of *T. albini* spiderligns fed on different preys at laboratory conditions (27°C ± 2, 70% ± 3% R.H.)

The developmental stage	Prey	Duration (days)		Food consumption	
		Female	Male	Female	Male
Egg incubation period	-	15.50±3.50	15.50±3.50	-	-
1st spiderling	*Tetranychus* spp.	22.0±4.001	19.0±4.001	121.50±13.50	102.50±12.64
2nd spiderling	*Empoasca* spp.	12.50±2.50	10.0±2.00	57.50±27.50	47.50±24.50
3rd spiderling	*Aphis gossypii*	8.0±2.00	6.50±1.50	67.0±26.00	58.0±21.00
4th spiderling	*Spodoptera*	11.50±2.50	8.50±1.50	33.0±13.00	29.50±9.50
5th spiderling	*littoralis*	14.0±3.00	11.50±2.50	45.50±14.50	52.0±17.00
6th spiderling	(new hatched	15.50±2.50	12.0±3.00	76.0±20.00	77.50±20.50
7th spiderling	larvae)	17.0±3.00	-	101.50±28.50	-
Total		116.0±23.0	83.0±18.00	502.0±143.00	367.0±105.14

b.Duration of spiderlings:

Data in Table (2) indicate that the incubation period averaged 15.50 days for each of female and male at 27 ± 2°C and 70 ± 3% R.H. The duration of different spiderlings were variable. The average of this period decreased progressively until the 3rd instar, then increased during the 6th and 7th instars. The shortest period was observed in the 3rd instar with an average of 8.0 and 6.50 days for female and male, respectively. The averages for female were 22.0, 12.50 and 8.0 days for first ,second and third instars, respectively while in case of male averaged 19.0, 10.0 and 6.50 days respectively when fed on *Tetranychus* spp. adult and nymphs of *Empoasca* spp and *Aphis gossypii*, respectively. On the other hand, from the 4th to 7th instar for females, durations averaged 11.50, 14.0, 15.50 and 17.0 days; respectively while for male from the 4th to 6th instar, these periods averaged 8.50, 11.50 an 12.0 days; respectively when fed on the larvae of *S. littoralis*. Generally, males required relatively shorter period than females to reach maturity with an average of 83.0 and 116.0 days; respectively. The results are in agreement with Rahil and Hanna (2001) and El-Erksousy *et al.* (2002) when they studied the biological aspects of the spider *A. aulicus* Koch on *Tribolium confusum* and *S. littoralis*, respectively. They showed that the total duration of male life cycle was shorter than that of male. However, the current study revealed that *T. albini* had seven and six stages of spiderlings for female and male respectively. This is in disagreement with El-Erksousy and Fawzy (2001) who recorded seven stages for either sex when the spider was reared on *Schizaphis graminum* nymphs.

C. Food consumption and longevity of *T. albini* adults:

As shown in Table (3), in general, the adult female consumed more number of prey than males;55, 100, and 72.5 larvae of *S. littoralis* for the

preoviposition, oviposition and post oviposition of female and 144.50 larvae of male. The ovipositional periods, averaged 17±4, 72±33 and 54±25 days for the preoviposition period, ovipsotion period and postoviposition period, respectively. On the other hand, the longevity for males averaged by 43±8 days. The number of egg-sacs varied, being 3-8 sacs/female with an average of 5.50 sacs. In this respect, Rahil and Hanna (2001) showed that the adult females of *Anelosimus aulicus* Koch spider consumed large number of prey than males. Also, the same authors indicated that the oviposition period of *A. aulicus* was 28-96 days for female that mated more than once. The pre-and post-oviposition periods were 9-16 and 51-210 days, respectively.

Table (3): Prey consumption, longevity and number of egg-sacs for *T. albini* spider reared on *S. littoralis* newly hatched larvae at (27 ± 2°C and 70 ± 3% R.H.).

Periods		No. of prey consumed		Longevity		No. of egg-sacs/female
		Female	Male	Female	Male	
Preoviposition	Range Mean ± S.D.	(40-70) 55 ±15.0	(85-204)	(13-21) 17±4.0	(35-51)	(3-8)
Oviposition	Range Mean ± S.D.	(90-110) 100±10.0	144.50±59.50	(39-105) 72±33.0	43±8.0	5.50±2.50
Postoviposition	Range Mean ± S.D.	(60-85) 72.50±12.50		(29-79) 54±25.0		
Total		227.5 ± 59.50		143 ± 62.0		

SD = Standard diviation

Table (4): Number of laid egg-sacs and sex ratio of *T. albini* spider.

No. of eggs/egg-sac	No. of spiderlings hatched	
	Female	Male
44	26	18
69	39	30
38	20	18
49	25	24
41	25	16
79	49	30
46	36	10
61	32	29
37	20	17
43	22	21
36	18	18
82	42	40
65	33	32
85	46	39
71	36	35
80	49	31
39	22	17
65	46	19
77	41	36
42	24	18
Total	651	498
Sex ratio	56.66	43.34

d. Adult oviposition and spiderling sex ratio of *T. albini*:

The female prefers to deposit its egg-sacs on the lower surface of cotton leaf. It guards the eggs during incubation period except during feeding times. The females lay their eggs in sacs, (36-85 eggs each) (Table 4). Eggs

are white creamy in colour, almost spherical then become yellow and yellow brownish just before hatching. Table (4) shows that total number of spiderlings hatched were 651 females and 498 males. Consequently, the sex ratio of *T. albini* spider was computed as 56.66 and 43.34% for female and male, respectively.

ACKNOLEDGMENT

The authors thank Mr. Hesham K. El-Hennawy (Taxonomist of arachnids) for identification of *Thanatus albini* (Audouin) spider, and thank Prof. Dr. Mahmoud R. Sherif, Rice Research and Training Center, Sakha, Agricultural Research Station, Agricultural Research Center for valuable comments and reviewing the manuscript.

REFERENCES

Abdel-Galil, F.A.; S.A. Temerak and M.A.A. Morsy (1982). Comparative efficiency of the use of kerosene and different baits in pitfall trapping of certain soil-inhabiting predaceous arthropods in clover fields. Assiut J. Agric. Sci. 13(1): 21-28.

Agnew, CW. and J.W. Smith, Jr. (1989). Ecology of spiders (Araneae) in peanut agroecosystem. Environ. Entomol., 18: 30-42.

Briggs, J.B. (1961). A comparison of pitfall trapping and soil sampling in assessing populations of two species of ground beetles (Col.: Carabidae). Rep. E. Mailing Res. Sta. 1960, 108-12.

El-Dakhakhny, N.T.; I.S. El-Hawary; M.B. Shawer; M.S. Tadros and G.A. El-Mezayyen (1996). Utilization of pitfall traps for sampling pests, beneficials and other insect species in clover, corn and soybean fields at Kafr El-Sheikh. J. Agric. Res. Tanta Univ., 22(3): 387-399.

El-Erksousy, M.H.M. (2000). Studies on some true spiders in Egypt. Ph.D. Thesis, Fac. Agric., Al-Azhar Univ., 130 p.

El-Erksousy, M.H.M. and Fawzy (2001). Biological studies on the true spider, *Thanatus albini* (Audouin) (Family: Philodromidae) on wheat aphid *Schizaphis graminum* (Rondani). Annals of Agric. Sci., Moshtohor, Vol. 39(1): 645-649.

El-Erksousy, M.H.M.; A.A. Shoeib and H.F. Dahi (2002). Studies on biological control using the spider, *Anelosimus oulicus* (Theridiidae). 2nd Inter. Conf., Plant Protect. Res. Inst. Cairo, Egypt, 21-24 December, 2002.

El-Hennawy, H.K. (1990). Annotated checklist of Egyptian spider species (Arachnidae: Araneae). Serket, 1(4-5): 1-49.

Gist, C.S. and D.A. Crossley (1973). A method for quantifying pitfall trapping. Environ. Ent. 2, 951-2.

Halaj, J.; D.W. Ross; R.R. Mason; T.R. Togersen and A.R. Moldenke (1995). Geographic variation in arboreal spider (Aranea) communities on Douglas in Western Oregon. Pan Pancific Entomologist. 72: 17-26.

Joon, N.K.; N.K. Paik and M.C. Lee (1988). Spiders from the Southern region of DMZ in Kanawondo, Lorean Arachnology, 4: 15-33.

Khalil, F.M.; A.A. Negm and A.M. Ali (1975). Insecta and Araneida recovered from pitfall traps in cotton fields at Assiut. Assiut J. Agric. Sci., 6: 169-174.

Luff, M.L. (1975). Some features influencing the efficiency of pitfall trapping. Environ. Ent. 2, 951-2.

Negm, A.A.; F.M. Khalil; A.M. Ali and F.A. Abdel-Galil (1975). Population dynamics and distributional pattern of certain soil-inhabiting predaceous arthropods recovered from pitfall traps in cotton and clover fields at Assiut. Assiut. J. Agric. Sci., 6: 97-107.

Rahil, A.A.R. and M.A. Hanna (2001). Some biological aspects of the true spider, *Anelosimus aulicus* (Theridiidae, Archnida). Conference of Sustainable Agricultural Development, Fayoum, Faculty of Agriculture, March 28-30/2001.

Riechert, S.E. (1974). Thoughts on the ecological significance of spiders. Bioscience, 24: 352-356.

Rieske, L.K. and K.F. Raffa (1990). Dispersal patterns and mark-and recapture estimates of two pine root weevil species, *Hylobius pales* and *Pachylobius picivorus* (Coleoptera: Curculionidae) in Christmas tree plantations. Environ. Entomol. 19(6): 1829-1836.

Sherif, M.R.; A.S. Hendawy and M.M. El-Habashy (2001). Spiders occurring in the Egyptian rice fields and adverse effect of insecticides. J. Agric. Res. Tanta Univ., 27(3): 463-470.

Wilkinson, J.D.; G.T. Schmidt and K.D. Biever (1981). Comparative efficiency of sticky and water traps for sampling beneficial arthropods in red clover and the attraction of clover head caterpillar adults to ainsyl acetone. J. Georgia, Ent. Soc. 15(2): 14-131, USA. (C.F. Rev. Appl. Serv. A, 69(8): 4564).

دراسة مفصليات الأرجل السائدة فى حقول القطن ، باستخدام المصائد الأرضية المطمورة مع تناول بعض النواحى الحياتية للعنكبوت المفترس *Thanatus albini* (Audouin)

أحمد سمير هنداوى ، جمال على المزين

معهد بحوث وقاية النباتات ، محطة البحوث الزراعية بسخا ، مركز البحوث الزراعية

أجريت دراسة للفونا الحشرية والحيوانية بحقول القطن بمحطة البحوث الزراعية بسخا (كفرالشيخ) خلال موسم ٢٠٠٢ باستخدام نوعين من المصائد الأرضية المطمورة و التى احتوت على الماء مخلوطا أما بالكيروسين أو الخل (١:٢).

أوضحت النتائج أن المصائد المطعومة بالكيروسين كانت أكثر جذبا لمفصليات الأرجل من المصائد المطعومة بالخل وكانت أكثر أنواع الآفات تواجدا بالمصائد هى: دودة ورق القطن وقافزة القطن ونطاطات الأوراق بينما كانت أكثر المفترسات توجدا هى: العنكبوت الحقيقى *Thanatus albini* والنملة الفرعونية وأبوالعيد الاسكمنس *Scymnus interruptus* كما جذبت المصائد أيضا بعض الحشرات الزائرة مثل ذباب *Physiphora* sp. ، *Musca* sp. وأحد الأنواع الحشرية المنتمية لعائلة Empididae و هو *Platypalpus* sp.

ونظرا لأن العنكبوت المفترس *T. albini* كان الأكثر تواجدا فى المصائد فقد أجريت دراسة تناولت بعض النواحى الحياتية للعنكبوت حيث أوضحت النتائج المتحصل عليها أن الأطوار غير الكاملة لإناث العنكبوت استهلكت أعدادا أكبر من الفرائس (٥٠٢) عن الذكور (٣٦٧) كما أن العمر الثالث استغرق أقل فترة زمنية فى حين استغرق العمر الأول أطول فترة وذلك لكل من الذكور والإناث.

عاشت الأطوار الكاملة للعنكبوت مدة ١٤٣ يوما للإناث ، ٤٣ يوما فقط للذكور استهلكت خلالها ٢٢٧,٥ ، ١٤٤,٥ فردا من الفرائس لكل من الجنسين على التوالى ومن ناحية أخرى بلغ متوسط وضع البيض لكل أنثى ٥,٥٠ كيس بيض وبلغت النسبة الجنسية ٥٦,٦٦ أنثى ٤٣,٣٤ ذكر.