

SURVEY OF TRUE SPIDERS ASSOCIATED WITH SOME FIELD CROPS IN EGYPT

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Abstract

The true spiders play an important role for reducing the infestation ratio of field crop pests. The sucking pests are favourable preys for it and also the first and the second instars of cotton leafworm. This study were carried out during the two successive two years 1998-1999 for surveying the true spider species associated with some field crops in some Governorates in Egypt. A survey study conducted to determine the presence of 10 families, 15 genera and 16 spider species associated with four different field crops. The relationship between temperature degree and the number of true spiders in Fayoum Governorate was studied.

Introduction

The true spiders is considered one of the most important biocontrol agents for controlling some field crops pests. Most of these spider species consumes high numbers of immature stages of some of these pests as well as decrease the population infestation of it. They form one of the most ubiquitous groups of predaceous organisms in the Animal Kingdom (over 30.000 species). Levy (1970) studied the outlines of the classification of and description of life histories of the spiders. Also, the developmental cycle of spider species *Thomisus onustus* Walkenar (Family : Thomisidae) was studied. Young et al. (1990) analyzed 29 faunal surveys of spiders found in nine field crops in the United States indicates the presence of 614 species in 192 genera and 26 families. These species represent 19 % of the 3311 species occurring in North America. The most frequently occurring species in field crops were *Oxyopes salticus* Hentz (Family : Oxyopidae), *Rhidippus audax* Hentz (Family : Salticidae), and *Tetragnatha laboriosa* Hentz (Family : Araneidae). Sallam (1996), in Egypt, collected 25 species of true spiders representing 18 families on different fruit crops, field crops and ornamental plants.

This present work was carried out to reveal some ecological aspects of true spiders in different Governorates of Egypt.

Materials and Methods

Survey studies were conducted in eight Governorates on four different field crops. Collections of the true spiders were carried out randomly in the selected habitats. Collecting methods included, beating net (branch shaking) and pitfall traps. The collected spiders were preserved in 70 % ethanol in glass vials and transferred to the laboratory for counting and classification.

a- Sampling Using Plant Shaking

For field crops which included cotton, broad bean and soybean, 10-15 plants were shaken for each sample, while for maize leaves of five-six plants were shaken over the shaking cloth.

b- Sampling Using Pitfall Traps

The pitfall traps consisted of glass bowls (5.5 cm diameter and 13 cm depth), into which 6 ml of 5 formalin and later foamy soap solution was used. Five traps were set at different places in each sampling site and checked biweekly during the surveying period. Pitfall traps were used for all types of plantations.

Meteorological data were obtained from Cairo Meteorological Station, records taken were minimum and maximum air temperature.

Results and Discussion

(A) Survey Study

Results of the survey studies are presented as shown in Table (1). It is obvious that spiders collected revealed 10 families and 16 spider species. The collected spiders were identified to 15 genera as follow : *Thonatus* and *Philodromus* (Family : Philodromidae), *Cheiracanthium* (Family : Clubionidae), *Thomisus*, *Xysticus*, *Ozyptila* and *Puncinia* (Family : Thomisidae), *Thyene*, *Neatha* and *Plexippus* (Family : Salticidae), *Oecobius* (Family : Oecobiidae), *Anelosimus* (Family : Theridiidae), *Zelotes* (Family : Fnaphosidae), *Dictyna* (Family : Dictynidae), unknown genus (Family : Corinnidae) and *Scytodes* (Family : Scytodidae). The highest number of true spider species collected from the cotton plants, while the lowest number were collected from the soybean plants.

(B) Effect of Temperature on the Population of True Spider on Cotton Plants During (1998-1999) in Fayoum Governorate

The data tabulated in Table (2) showed that the number of true spiders increase by increasing the temperature's degree, where the highest temperatures act as direct factor on increasing the individuals as well as increasing of insects activities and reproduction. Also, the amount of necessary food for spiders. The highest recording of spiders (101

spiders) noticed during July, but the lowest one (20 spiders) observed at the beginning of the season during April month.

Similar results were obtained in regard to stable and disturbed agriculture ecosystem (Dondale, 1956; Negm et al., 1976; Young et al., 1990).

Table 1. Spider individuals obtained by surveying on different field crops in Egypt.

Spiders				
Families	Species	Host	Locality	
Philodromidae	<i>Thonatus albini</i>	Maize	Beni-Suef	
	"	Maize	Giza	
	"	Cotton	Kalubia	
	"	Cotton	Beheira	
	"	Cotton	Fayoum	
	<i>Thonatus vulgaris</i>	Cotton	Fayoum	
	"	Cotton	Beheira	
	<i>Philodromus sp.</i>	Maize	Beheira	
	Clubionidae	<i>Cheiracanthium jovium</i>	Maize	Beni-Suef
		"	Maize	Gayoum
"		Maize	Kalubia	
"		Cotton	Gharbia	
"		Cotton	Fayoum	
Thomisidae	<i>Thomisus spinifer</i>	Broad-bean	Beni-Suef	
	"	Maize	Beni-Suef	
	"	Soybean	Sharkia	
	"	Cotton	Beheira	
	<i>Xysticus sp.</i>	Maize	Fayoum	
	<i>Ozyptila sp.</i>	Broad-bean	Sharkia	
	<i>Puncinia sp.</i>	Cotton	Dakahlia	
Salticidae	<i>Thyene imperialis</i>	Soybean	Dakahlia	
	"	Maize	Giza	
	"	Cotton	Gharbia	
	"	Cotton	Fayoum	
	<i>Neatha oculata</i>	Cotton	Dakahlia	
	<i>Plexippus paykulli</i>	Maize	Giza	
Oecobiidae	<i>Oecobius tembli</i>	Maize	Beni-Suef	
	<i>Oecobius tembli</i>	Cotton	Beheira	
Theridiidae	<i>Anelosimus aulicus</i>	Broad-bean	Sharkia	
Gnaphosidae	<i>Zeloes sp.</i>	Cotton	Giza	
	"	Cotton	Dakahlia	
Dictynidae	<i>Dictyna sp.</i>	Cotton	Beni-Suef	
Corimmidae	-	Maize	Fayoum	
Scytodidae	<i>Scytodes sp.</i>	Cotton	Fayoum	

Table 2. The relationship between mean temperature's degree and the number of true spiders during the cotton cultivation season (1998-1999) in Fayoum Governorate.

Months	Temperature mean (C)	Number of individuals/ 50 leaves
April	28.3	20
May	34.7	95
June	33.7	69
July	36.5	101
August	35.5	96
September	34.7	93

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