

Short Communication
Evaluating Traps and Diversity of Cabbage
Insects Fauna at Kafr El-Sheikh.

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A survey for insects fauna of cabbage was carried out weekly by five different methods, sweeping net with photoelector, light trap set on the ground, modified malaise trap (Chaba 1900), pitfall trap, and sticky trap.

It is known that there is no method recorded all of the species present. In the present work (2005), the highest number of species (75) was collected by pitfall trap, followed by sweeping net (61), and sticky trap (58). On the other hand, only five species were collected by malaise trap (Table 1). In general, 122 species of insects, some of them new, were recorded, the most prevailing pests were, the thrips, *Thrips tabaci*, and the aphid, *B. brassica*, (22299 and 1436 individs.. respectively).

1. Comprison insects catch collected by the five traps:

Shannon- Weaner diversity index (S.W.I.) was calculated as a tool for comparison diversity among insect species or families.

Arranging S.W.I. values for species revealed that the highest indices were recorded for photoelector (Sweeping net) (1.93) followed by sticky trap (1.87), pit fall trap (1.32), while index calculated for light trap was the lowest (0.93), the highest indices among families were recorded for photoelector (1.91) followed by sticky trap (1.84), pit fall trap (1.37), while index calculated for light trap was the lowest (0.91). Results indicated that the number of recorded species goes in a comparatively level with the S.W.I. Accordingly, it could be stated that the relative abundance of species or families in each method had an effect on the diversity index values. The same trend was recorded by Abd El-Salam in rice fields (1997).

All orders of insects (13) were collected by sweeping net, pitfall, and sticky traps, however light and malaise traps captured as little as insects of only 3 or 4 orders, respectively. On the other hand, 3 orders (Collembola, Dermeptera and Trichoptera) were not caught in sweeping net. Neuroptera, Odonata and Dermeptera were not also attracted by sticky trap.

Table (1): Shannon- Weaner diversity index for yearly average of insect species and families collected by five methods in 2005 season.

Collect. Method	No. of Individ.	No. of		S. W.I.* & Rank ()**	
		Spp.	Fam.	Spp.	Fam.
Sweep. Net	8308	56	49	1.93(1)	2.52 (3)
Pit-fall trap	9990	65	48	1.32 (3)	2.91 (2)
Malaise trap	14	5	5	1 (4)	1.73 (5)
Light trap	795	18	18	0.93 (5)	3.00 (1)
Sticky trap	45251	58	48	1.87 (2)	1.81 (4)

Table (2), Numbers of species collected by various traps and percentages from Kafr El-Sheikh region during 2004 and 2005 seasons.

Insect orders	Sweep. Net	Sticky trap	Pit-fall trap	Malaise trap	Light trap	Total no.
Coleoptera	11 (19.3)	13 (22.4)	19 (29)	1 (20)	5 (27)	
Trichoptera		1 (1.7)	-	-	-	
Neuroptera	1 (1.8)	-	-	-	-	
Diptera	13 (22.8)	15 (25.9)	13 (20)	3 (60)	5 (27.7)	
Hemiptera	6 (10.5)	2 (3.4)	5 (7.7)	-	1 (5.6)	
Homoptera	3 (5.3)	3 (5.2)	3 (4.6)	1 (20)	3 (16.7)	
Hymenoptera	17 (29.8)	19 (32.8)	17 (26.2)	-	1 (5.6)	
Dermaptera	-	-	1 (1.5)	-	-	
Collombola	-	1 (1.7)	1 (1.5)	-	-	
Lepidoptera	2 (3.5)	2 (3.4)	-	-	3 (16.7)	
Odonata	1 (1.8)	-	-	-	-	
Orthoptera	2 (3.5)	1 (1.7)	5 (7.7)	-	-	
Thysanoptera	1 (1.8)	1 (1.7)	1 (1.5)	-	-	
T. no. of spp.	57	58	65	5	18	
T. no. of ord.	10	10	9	3	6	

2- Evaluation the efficiency of the traps:

Data in Table 2 revealed that, sweeping net was most efficient for collecting Hymenoptera (17 species), representing (29.8%) and Diptera (13 species -22.8%). Pit-fall trap in collecting Coleopteran (19-29.2) and Hymenoptera (17-26.2%) followed by Diptera (13-20%). Malaise trap, collected Diptera, Coleoptera and Homoptera (3-60%), (1-20%) and (1-20%), respectively. In this respect, Honck and Kraus (1982) recommended using the same method, but, for small

parasitoids, i.e., Encyrtidae, Scelionidae, however, malaise trap was especially effective in collecting large parasitoids (flies and Ichneumonidae). On the other hand, pitfall trapping was used by Lindsey and Skinner (2001), to ensure as complete a sampling effort as possible, they recorded also that pitfall trapping was responsible for recording more species than dig sampling.

Finally, it could be concluded that by the multiple techniques followed in the present work, the writer was able to collect as many as 122 species from nearly all orders of insects from cabbage fields.

Acknowledgment:

Deep thanks are directed to Dr Csaba, K Trochcky the director of Systematic Parasitoid Laboratory in Koszeg in Hungary for identification and confirmation most of the specimens collected in the present survey.

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