OBSERVATION ON USEFUL AND HARMFUL ENTOMOFAUNA WITH PREVENTION AND CONTROL MEASURES APPLIED IN APPLE ORCHARDS FROM IASI AND VASLUI COUNTIES

OBSERVAȚII CU PRIVIRE LA ENTOMOFAUNA UTILĂ ŞI DĂUNĂTOARE CÂT ŞI MĂSURILE DE PREVENIRE ŞI COMBATERE APLICATE ÎN PLANTAȚIILE POMICOLE DE MĂR DIN JUDEȚELE IAŞI ŞI VASLUI

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Abstract: *Observations was made in the fruit farms belonging S.A. Loturi Service S.R.L. Deleşti, Vaslui country and Vasile Adamachi Iaşi stationary in May-August 2010. For this it was made regular observations directly on the farm, and is also harvesting samples and evidence using the beeting method which were then analyzed in the laboratory. Specify that in the stationary from the "Vasile Adamachi Iaşi"stationary, samples was collected from a apple orchards were is or not performed chemical and control treatments. The useful species who were reported during observation period was:Harpalus aeneus, Harpalus distinguendus, Polydrosus marginatus, Cartodere elongata, Stethorus punctilum. The families to belonging the species collected are: Formicidae, Aphididae, Tipulidae, Miridae,Carabidae ,*

Key words: beeting method, useful species, *Stethorus punctilum*, *Chrysopa carnea.*

Rezumat: *Observațiile au fost efectuate în cadrul fermelor pomicole aparținând S.A. Loturi Service S.R.L. Deleşti, jud. Vaslui şi Fermei „Vasile Adamachi Iaşi, în perioada mai-august 2010. Pentru aceasta au fost efectuate periodic observații direct pe teren, totodată recoltându-se şi probe cu ajutorul metodei frapajului ce au fost apoi analizate în laborator. Menționăm faptul că în cadrul Staționarului "Stațiunii Didactice Vasile Adamachi Iaşi"recoltarea probelor s-a făcut dintr-o plantație de măr unde nu au fost efectuate tratamente chimice de combatere. Speciile utile semnalizate în perioada de observație au fost:Harpalus aeneus, Harpalus distinguendus, Polydrosus marginatus, Cartodere elongata, Stethorus punctilum.Familiile la care aparțin speciile colectate sunt: Formicidae, Aphididae, Tipulidae, Miridae,Carabidae etc.*

Cuvinte cheie: frapaj, entomofaună utilă, *Stethorus punctilum*, *Chrysopa carnea.*

MATERIAL AND METHOD

Gathering of the material was made by the beeting method (Herea Monica et. al., 2010), from an apple plantation, ecologically sustained and performed chemical control. The observations were made in 2010; the biological material have been

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gathered from May to July. Gathering of the biological material have been done from 8 to 17 days period of time, totally being effectuated a number of 4 gatherings in SC Loturi Service SRL Delesti, Vaslui, and 5 harvesting in Vasile Adamachi Iasi stationary.

RESULTS AND DISCUSSIONS

Totally, in 4 harvesting (table 1) were collected 5 species respectivly 9 family (Stănoiu I, Năstase A. 1995), with a total of 56 samples.

-on first harvest on 28.05 I collected a total of 4 species and 6 families with a total all of 25 copies. Among them remember: Aphididae (11 samples), Anthomiydae (4 samples), Cicadelidae, *Polydrosus marginatus* (2 samples).

- the second harvest 15.06 total number of samples of individuals collected was 4, family owned Arahnidae duplicate and duplicate Cecidomiydae family belong.

- the third harvest 08.06 we collected a total of 13 specimens belonging to the order Hymenoptera, Coleoptera order have a samples belonging to, and one belonging to Diptera order.

Table 1

The species of entomofauna gathered, gathering data and the number of exemplars gathered from SC Loturi service SRL Delesti Vaslui in 2010

Data of harvesting	Order	No.	Name of species or family	No.of samples
28.05.2010	Diptera	1	Anthomiydae	4
		2	Chloropidae	1
	Coleoptera	1	*Polydrosus marginatus*	2
		2	*Microspis sedecimpunctata*	1
		3	*Orchestes pratensis*	1
	Hymenoptera	1	Formicidae	1
		2	Pteromalidae	1
	Homoptera	1	Cicadelidae	2
		2	Aphididae	11
	Neuroptera	1	*Chrysopa carnea*	1
	Total		**25**	
15.06.2010	Arachnida	1	Arachnidae	2
	Diptera	1	Cecidomiydae	2
	Total		**4**	
08.07.2010	Homoptera	1	Cicadelidae	3
		2	Aphididae	10
	Coleoptera	1	*Cantharis assimilis*	1
	Diptera	1	Chloropidae	1
	Total		**15**	
29.07.2010	Heteroptera	1	Miridae	3
	Homoptera	1	Aphididae	9
	Total		12	

- fourth collection 29.07 total was 12 samples, belonging to the families Miridae (3 samples), and Aphididae (9 samples).

Totally, in 5 harvesting (table 2) were collected 5 species respectivly 12 family, (Rogojanu V., Perju T., 1979) with a total of 65 samples.

-on first harvest on 05.05 I collected a total samples of 5 families with a total all of 18 samples. Among them remember: Aphididae (13 samples), Lygaeidae (2 samples), and other.

- the second harvest 09.06, total number of samples of individuals collected was 13, they belong to the *Myzus cerasi* species and Chloropidae family.

- the third harvest 24.06, we collected a total of 10 samples belonging to the Hymenoptera, Homoptera and Diptera order.

- fourth collection 14.07, total was 14 samples, belonging to the Tipulidae, Chloropidae , Anthomiydae, Lygaeidae, Formicidae etc.

Tabelul 2

The species of entomofauna gathered, data and the number of exemplars gathered from Vasile Adamachi Iasi in plantation chemically treated in 2010

Data of harvesting	Order	No.	Name of species or family	No.of samples
05.05.2010	Heteroptera	1	Lygaeidae	2
	Diptera	1	Tipulidae	1
	Hymenoptera	1	Ichneumonidae	1
	Thysanoptera	1		1
	Homoptera	1	Aphididae	13
	Total		**18**	
09.06.2010	Homoptera	1	Myzus cerasi	12
	Diptera	1	Chloropidae	1
	Total		**13**	
24.06.2010	Diptera	1	Anthomiydae	1
	Homoptera	1	Aphididae	6
		2	Cicadelidae	2
	Hymenoptera	1	Pteromalidae	1
	Total		**10**	
14.07.2010	Diptera	1	Chloropidae	4
		2	Anthomiydae	1
		3	Tipulidae	5
	Heteroptera	1	Lygaeidae	1
	Hymenoptera	1	Formicidae	1
	Coleoptera	1	*Coccinella 7 punctata*	1
		2	*Phyllotreta vittula*	1
	Total		**14**	
30.07.2010	Heteroptera	1	Miridae	4
	Coleoptera	1	*Stethourus punctilum*	4
	Neuroptera	1	*Chrysopa carnea*	2
	Total		**10**	

- the fifth collection the number of samples collected was 10, of which: *Chrysopa carnea*, *Stethourus punctilum*, Miridae.

Totally, in 5 gathering (table 3) were collected 3 species respectivly 12 family, with a total of 55 samples.

-on first harvest on 26.05 I collected a total samples of 3 families, and 2 species with a total all of 21 samples. Among them remember Formicidae with 8 samples, Aphididae with 10 samples (Rogojanu V., Perju T., 1979).

- the second harvest 09.06, total number of samples of individuals collected was 14, they belong to the Aphididae, Cicadelidae, Lygaeidae, Tipulidae, Ichneumonidae family.

- the third harvest 22.06, we collected a total of 5 samples belonging to the Hymenoptera, Homoptera and Diptera order.

- fourth collection 14.07, total was 6 samples, belonging to the Tipulidae, Aphididae, Miridae and Chrysopa carnea species.

- the fifth collection 30.07 the number of samples collected was 7, of which: *Chrysopa carnea* (1 samples), *Stethorus punctilum* (4 samples) and Miridae (4 samples).

Table 3

The species of entomofauna gathered, gathering data and the number of exemplars gathered from "Vasile Adamachi" Iasi in plantation chemically untreated

Data of harvesting	Order	No.	Name of species or family	No.of samples
26.05.2010	Hymenoptera	1	Formicidae	8
	Homoptera	1	Aphididae	10
	Diptera	1	Chloropidae	1
	Neuroptera	1	*Chrysopa carnea*	1
	Coleoptera	1	*Cartodere elongata*	1
	Total		**21**	
09.06.2010	Homoptera	1	Aphididae	8
		2	Cicadelidae	2
	Heteroptera	1	Lygaeidae	1
	Diptera	1	Tipulidae	1
	Hymenoptera	1	Ichneumonidae	1
	Neuroptera	1	*Chrysopa carnea*	1
	Total		**14**	
22.06.2010	Homoptera	1	Cicadinia	1
		2	Aphididae	1
	Diptera	1	Cecidomiydae	1
		2	Chloropidae	1
	Hymenoptera	1	Ichneumonidae	1
	Total		**5**	
14.07.2010	Diptera	1	Tipulidae	3
	Homoptera	1	Aphididae	1
	Heteroptera	1	Miridae	1
	Neuroptera	1	*Chrysopa carnea*	1
	Total		**6**	
30.07.2010	Neuroptera	1	*Chrysopa carnea*	1
	Coleoptera	1	*Stethorus punctilum*	4
	Heteroptera	1	Miridae	4
	Total		**9**	

To combat pests and pathogens of apple plantations in both stationary and have applied a series of chemical treatments.

Table 4

The chemical treatment situation aplied in 2010 from Delesti Vaslui stationary

No. treatment	Date of application treatment	The product used	The dose used in ha	The amount of water (l)
1	01.04.2010	Sulfomat 80 PU	9 kg	1500
		Sulfat de cupru	15 kg	1500
2	06.04.2010	Confidor oil SC 004	15 l	1500
3	13.04.2010	Sulfomat 80 PU	10 kg	1500
		Cocide (Kosaid)	7 kg	1500
4	24.04.2010	Chorus	0,6 kg	1500
		Dithane	5 kg	1500
		Insegar	1 kg	1500
5	11.05.2010	Score	0,45 l	1500
		Karatezeon	0,45 l	1500
		Merpan	3 kg	1500
		Sulfomat	10 kg	1500
6	15.05.2010	Coragen	0,25 l	1500
		Zato	0,15 kg	1500
		Sulfomat	10 kg	1500
		Cocide (Kosaid)	7 kg	1500
7	06.06.2010	Stroby	0,3 kg	1500
		Actara	0,3 kg	1500
		Magical Wite	4 l	1500
8	05.07.2010	Stroby	0,2 kg	1500
		Coragen	0,27	1500
9	15.07.2010	Insegar	0,5 kg	1500
		Shavit	3 kg	1500
10	28.07.2010	Calypso	0,5 l	1500
		Topsin	1,5 kg	1500

In Delesti Vaslui stationary were applied a total of 10 chemical treatments as follows (table 4): 01.04; 6.04; 13.04.; 24.04.; 11.05.; 15.05.; 06.06.; 05.07.; 15.07.; 28.07, and the products used were: Sulfomat 80 PU, Confidor oil SC 004, Cocide, Chorus, Dithane, Insegar, Score, Karate Zeon, Merpan, Coragen, Actara, Magical Wite, Stroby, Insegar , Shavit, Calypso, Topsin.

Table 5

The chemical treatment situation aplied in 2010 from Vasile Adamachi Iasi stationary

No. treatment	Date of application treatment	The product used	The dose used in ha	The amount of water (l)
1	07. 04	Bravo Decis WG	2l/ha 50g/ha	1500
2	06.05	Score Topas Karate Zeon	0,25 l\ha 0,25 l/ha 0,3 l/ha	1500
3	16.05	Folicur Decis	0,75 l/ha 0,75 l/ha	1500
4	23.05	Zeama sulficalcica	20l/ha	1500
5	27.05	Score Calypso	0,25 l\ha 0,2l/ha	1500

Table no.5 continued

6	06.06	Folicur Actelic	0,1 l/ha 1,5 l/ha	1500
7	13.06	Clarinet Calypso	1,5 l/ha 0,2 l/ha	1500
8	22.06	Dithane Thiovit Karate zeon	2,5 l/ha 4 kg/ha 0,25 l/ha	1500
9	1.07	Clarinet Calypso	1 l/ha 0,25 l/ha	1500
10	15.07	Clarinet Calipso	1 l/ha 0,25 l/ha	1500

In Vasile Adamachi Iasi stationary were applied a total of 10 chemical treatments as follows (table 5): 07.04, 06.05, 16.05, 23.05, 27.05, 06.06, 13.06, 22.06, 1.07, 15.07, and the products used were: Bravo, Decis WG, Score, Antracol, Calypso, Actelic, Clarinet, Thiovit, Karate Zeon.

The research during 2010, in both stationary were collected a total of 120 samples of insects belonging to a total of 14 families and 9 species (Panin I., 1951; Stănoiu I et Năstase A. 1995). In the two locations where chemical treatments were applied, their number was 10, and was taken into account previously forecast and warning and warning center in each county.

CONCLUSIONS

1. Two or three standing plantations, the method of collecting biological material was performed using the beating method.

2. Delesti Vaslui stationary, collected number was 4, with a total of 56 samples, of which: *Aphididae* (11 samples), *Anthomiyda*e (4 samples), *Cicadelidae* and *Polydrosus marginatus* (2 samples).

3. In "Vasile Adamachi" Iasi stationary, chemically treated plantation, the number of samples collected was 65 belonging to a total of 5 species and 12 families, but in plantation chemically untreated, the number of samples collected was 65, belonging to the 12 families and 3 species.

4. For to combat pest and pathogens in both stationary chemically treated, were applied to a total of 10 treatments for each of the two locations.

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