

CONTRIBUTIONS TO THE STUDY OF BEETLES ENTOMOFAUNA IN ANALYZED ORCHARDS USING THE BEATING METHOD

CONTRIBUȚII LA STUDIUL ENTOMOFAUNEI DE COLEOPTERE DIN CADRUL PLANTAȚIILOR POMICOLE ANALIZATE PRIN APLICAREA METODEI FRAPAJULUI

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Abstract. The research was conducted in 2008-2010 using beating method and observations were made in four stationary belonging to Iasi and Vaslui counties. In three of these stationarys chemical treatments were performed as follows: stationary V. Adamachi Iasi – treated, Miroslava Iasi and stationary SC Service Delești SRL Vaslui, untreated apple orchard were performed in Iasi stationary V. Adamachi - untreated. Beating method samples were collected were the sudden shaking of the branches of trees trunks with a rubber stick, which was previously under the trees placed a tarpaulin. To collect useful and harmful entomofauna tree crown, beating method consisted of shaking suddenly two branches of 10 trees in each stationary. For each sampling time of 5 trees was kept constant and marked with distinctive signs early in the season and five randomly chosen trees. After harvesting the biological material it was made in the laboratory where he was recording and then the samples were cleaned and collected insects were determined.

Key words: beating method, apple orchards, stationary

Rezumat. Cercetările s-au desfășurat în perioada 2008-2010 utilizându-se metoda frapajului, iar observațiile au fost efectuate în patru staționare aparținând județelor Iași și Vaslui. La trei dintre acestea s-au efectuat tratamente chimice și anume: staționarul Vasile Adamachi Iași - tratat, staționarul Miroslava Iași și staționarului de la ferma SC Loturi Service SRL Delești Vaslui, plantațiile de măr netratate au fost în cadrul staționarului Vasile Adamachi Iași -netratat. Prin metoda frapajului s-au recoltat probe care au constat în scuturarea bruscă a trunchiurilor a ramurilor pomilor cu ajutorul unui baston din cauciuc, unde în prealabil sub pomi a fost așezată o prelată. Pentru colectarea entomofaunei utile și dăunătoare din coroana pomilor, metoda frapajului a constat în scuturarea bruscă a câte două ramuri din 10 pomi din fiecare staționar. De fiecare dată eșantionarea a fost făcută din 5 pomi menținuți constant și marcați cu semne distinctive la începutul sezonului și 5 pomi aleși la întâmplare.

Cuvinte cheie: frapaj, livezi de măr, staționare

INTRODUCTION

As a result of quantitative and qualitative damage caused by pests, on the one hand to increase the number of chemical treatments to combat, something that

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results in explosive evolution of pests and on the other fauna decreased substantially useful to help maintain the balance pest populations (Tudose and Dobrin, 2002).

MATERIAL AND METHODS

The research was conducted in 2008-2010 using the beating method and observations were conducted in four counties of Iasi and Vaslui belonging stationary. Three of these chemical treatments were performed as follows: stationary V. Adamachi Iasi – treated, Miroslava Iasi stationary and farm plots Service SC Deleşti SRL Vaslui, untreated apple orchard were in Iasi V. Adamachi untreated.

Beating method samples were collected were the sudden shaking of the branches of trees trunks with a rubber stick, which was previously under the trees placed a tarpaulin. To collect useful and harmful entomofauna tree crown, beating method consisted of shaking suddenly two branches of 10 trees in each hospital.

For each sampling time of 5 trees was kept constant and marked with distinctive signs early in the season and five randomly chosen trees. After harvesting the biological material it was made in the laboratory where he was recording and then the samples were cleaned and collected insects were determined.

RESULTS AND DISCUSSIONS

Stationary V. Adamachi Iasi - untreated (table 1) in the apple orchard where no chemical treatments were applied in 2009 have been a number of eight harvests. After harvesting these 212 specimens were collected belonging to eight orders and 25 families. In 2010 the beating method the crown of the trees during the growing and harvesting were carried out five. They collected a total of 55 items that belong to 6 orders and 13 families, of which 24 specimens belonging to species of fauna useful insects and 31 species belonging to the fauna harmful.

Table 1
The situation regarding the collection of entomofauna from Vasile Adamachi Iasi – untreated stationary

Year	Beating method		
	Nr. useful species	No. harmful species	Total no.
2009	105	107	212
2010	24	31	55
Total	129	138	267
%	48,3 %	51,7 %	-

Stationary Vasile Adamachi Iasi - treated (table 2) by collecting insects using the beating method in 2009 apple orchard, after eight harvests were collected a total of 90 copies, they belong to eight orders and 25 families. Of the 90 samples, 74 were determined to species of useful entomofauna, and 16 specimens belonging harmful wildlife.

During the observations of 2010, the chemically treated orchard, fauna collected 81 total copies of which 13 specimens belonging to species of fauna useful insects and 68 species belonging to the fauna harmful.

Table 2

The situation regarding the collection of entomofauna from Vasile Adamachi Iași stationary

Year	Beating method		
	Nr. useful species	Nr. useful species	Total no.
2009	74	16	90
2010	13	68	81
Total	87	84	171
%	50,9 %	49,1 %	-

In the Miroslava stationary 2009 (table 3), after eight harvests were collected a total of 176 copies, of which 70 were determined as entomofauna species of useful and harmful fauna belonging to 106 copies.

In 2010 the beating method the crown of the trees during the growing season we have collected a total of 72 samples of which 57 samples belong to the species of fauna useful insects and 15 species belonging to the fauna harmful. In terms of systematically collected fauna belonging to eight orders of insects (Coleoptera, Hymenoptera, Heteroptera, Araneae, Neuroptera, Homoptera, Diptera and Orthoptera) and 13 families.

Table 3

The situation regarding the collection of entomofauna from Miroslava Iași stationary

Year	Beating method		
	Nr. useful species	Nr. useful species	Total no.
2009	70	106	176
2010	57	15	72
Total	129	121	248
%	52 %	48,8 %	-

Stationary Delești Vaslui (table 4) in 2009 have collected a number of 97 copies, 55 copies have been determined as of useful entomofauna species and 42 specimens belonging harmful wildlife.

In 2010 the number of specimens collected in the crown of trees during the growing season was 56 copies of which 11 samples belong to the insect fauna species useful and harmful fauna belonging to 45 species.

In terms of systematically collected fauna belongs to a number of 7 orders of insects (Coleoptera, Hymenoptera, Homoptera, Heteroptera, Neuroptera,

Diptera and Neuroptera) and 13 families: *Anthomyidae*, *Miridae*, *Chrysomelidae*, *Curculionidae*, *Formicidae*, *Pteromalidae*, *Aphidiidae*, *Araneidae*, *Chloropidae*, *Cecidomyidae*, *Cixiidae*, *Coccinellidae*, *Cantharidae*.

Table 4

The situation regarding the collection of entomofauna from Delești Vaslui stationary

Year	Beating method		
	Nr. useful species	Nr. useful species	Total no.
2009	55	42	97
2010	11	45	56
Total	66	87	153
%	43,1 %	56,9 %	-

CONCLUSIONS

1. If untreated variant, the stationary V. Adamachi Iasi - untreated, the number of beetle species collected was higher, 267 copies in both years studied. Useful species represented 48.3% and 51.7% of total specimens harmful.

2. The largest number of copies the package was registered in the stationary V. Adamachi of 267 copies of the relevant species represented 51.7% of the total collected.

3. Most abundant species belonged to the following families: *Aphididae*, *Staphylinidae*, *Miridae*, *Formicidae*, and *Anthomyiidae* *Pyrrhocoridae*

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