OBSERVATIONS ON *ADOXOPHYES ORANA* (FISCH.V.ROSL.) IN APPLE ORCHARDS IN THE NE AREA OF THE COUNTRY

OBSERVAȚII ASUPRA SPECIEI *ADOXOPHYES ORANA* (FISCH. V. ROSL.) ÎN PLANTAȚIILE POMICOLE DE MĂR DIN ZONA DE NORD EST A ȚĂRII

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Abstract: *Apple is attacked by more than 30 species which can affect fruit production. In recent years, a major problem is a special group of defoliating butterfly of the family Tortricidae. Adoxophyes orana F.R. is a common species in apple orchards in our country. Skin gall caused by larvae of fruit in addition to direct damages are wearing the penetration of various pathogens and especially fungus Sclerotinia fructigena.As a result data obtained can see that chemical group from the SCDP - Falticeni in 2011, have identified a large number of samples of the species were collected 225 larvae in the 6 harvests which indicate an attack on the whole vegetation period (the buds, leaves, young and mature fruit). Following increases in laboratory samples collected have resulted ware 44 adults. In the conditions of Farm Teaching "Basil Adamachi" Iasi due to chemical treatments performed warnings and weather conditions, there was no attack. In untreated plots due to the number of parasites and predators attack was reported just buds.*
Key words: *Adoxophyes orana, tortricides, apple orchards, pests*

Rezumat: *Mărul este atacat de peste 30 specii care pot influența producția de fructe. În ultimii ani o problemă majoră o reprezintă un grup aparte de lepidopterele defoliatoare din familia Tortricidae. Adoxophyes orana F.R. este o specie des întâlnită în livezile de măr din țara noastră. Rosăturile produse de larve asupra pieliței fructelor pe lângă pagubele directe, constituie porți de pătrundere a diferiților agenți patogeni şi în special a ciupercii Sclerotinia fructigena. În urma datelor obținute se poate observa că în lotul chimic din cadrul S.C.D.P. – Fălticeni s-au identificat un număr mare de exemplare ale speciei fiind colectate 225 larve în cele 6 recoltări ceea ce indică un atac pe toată perioada de vegetație (la muguri, frunze, fructe tinere şi mature). În urma creşterilor în laborator din exemplarele colectate au rezultat 44 de adulți. În condițiile Fermei didactice „Vasile Adamachi" Iaşi datorită tratamentelor chimice efectuate la avertizare şi a condițiilor climatice, nu s-a semnalat atac. În loturile netratate datorită numărului mare de paraziți şi prădători, a fost semnalat atac doar la muguri.*
Cuvinte cheie: *Adoxophyes orana, tortricide, plantații pomicole, dăunători*

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INTRODUCTION

In the past years apple orchards damages some species of lepidopteran defoliators important part of the family Tortricidae (Alexinschi and Peiu, 1966). After genus Cydia, *Adoxophyes orana* FR is the most important pest of this family doing significant damage especially in intensive orchards where chemicals are applied treatments (Charmillot, 1989).

Adults have accentuated sexual dimorphism. Wingspan is 15.0 to 22.0 mm in females, males are smaller 15.0 to 19.0 mm. The male's previous wings yellow ocher clear red-brown design, consisting of a basic field lines.

The female is blackish brown with wings drawing much darker earlier and often reduced to a few slashes. Hind wings are pale gray to brown-gray males and females.Mature larva is 18.0 to 20.0 mm in length, having variable color from yellow-green to dark green. The body has warts than yellow. Head and chest plate are black in young larvae and brown to yellow in mature larvae.Typically, this malicious attack recorded three periods, namely: spring in the vegetation, on the larvae hibernating buds, in summer, the leaves, growing tips and young fruit by larvae of various ages and autumn prior to harvesting the fruit to mature young larvae before withdrawal to sleep.

It is a polyphagous pest, attacking various species of fruit trees: apple, pear, peach, apricot, plum, and forest species: maple, hornbeam, beech, alder, birch. Abrasions caused by larvae of the fruit peel in addition to direct damages are wearing the penetration of various pathogens and in particular the fungus Sclerotinia fructigena (Diaconu 1997; Diaconu, 2007).

MATERIAL AND METHOD

Research on *Adoxophyes orana* F.R. in apple orchards have been made in the Research and Development Station for Fruit Growing Fălticeni and Teaching Station "Vasile Adamachi" University in 2011.In S.C.D.P. Fălticeni were studied two groups namely:

- A group that chemical treatments were applied according to warnings issued by the Plant Protection Centre, represented by the apple orchard on the farm "Center Grove" orchard established in 1990 with an area of -53 ha. Jonatan predominant varieties, Golden and Starkimson to 90% and the remaining 10% are Ionared varieties, Florina, Rădăşeni and Fălticeni.
- And a control group that were removed with a chemical treatment area of -0.5 ha being represented all the three varieties (Jonatan, Golden and Starkimson).The same was done in the Teaching Station "Vasile Adamachi" Iasi, were all studied two groups (chemically treated) surfaces of about 1 ha and 0.5 ha, being Jonatan predominant varieties, Golden and Starkimson

Observations were made by collecting larvae or pupae in the crown of trees in a selective manner by which were analyzed in the laboratory by increases creations themselves thus following the evolutionary cycle of the species.Larvae were collected with leaves that feed or shelter where they were feeding and pupae with împupare shelter, taking care to be with last exuvie larvae (Fig. 1).

After harvesting samples were transported to the laboratory where growth begins propriuzisa material collected material is subject to mandatory work stages

(larvae age grouping, labeling, preparing food for growth, increase site preparation, etc..) Being kept under continuous observation until the emergence of adult parasitoids or carnation leaf-rollers.

a b

Fig. 1(a,b) - Collecting, classifying and increase *Adoxophyes orana* FR in laboratory

The first phase is separated and the recording larvae, which was isolated in tubes, usually one copy of each of the tubes, but can be grouped and growth of larvae of the same age (less than 10 samples / test tube), depending on the species , the age of the larvae and the extent of the tube. Each tube is inserted a label stating the place, from which fruit tree species was collected, date of collection, species and number of fish that are in the test tube (if applicable) larvae age assessed by body length and other features on color, chetotaxie, behavior, etc. (Fig. 1B).Pupae were separated and recorded as larvae, but we took care of the last larval exuvie which confirms the determination of the Parasitoids species. are preserved specimens showing individual tube and label attached notations are noted as much information on: type of parasitoid, parasite mode, number of samples, etc. It should be noted also that the rest of the larval or pupal host store for subsequent establishment as a whole and the exact species of carnation leaf-rollers.

After recording the data on the label and isolation is introduced larvae feed inside it, food that consists of 2-3 leaves from your access fresh fruit tree species where collections occurred (in this case 2-3 leaves of apple) then tube is closed with a plug of cotton wool for the larvae to have air and are placed in cartons.

Changing food and excrement tube cleaning or replacement is done every 2-3 days or even daily if food is consumed entirely, at which point is marked morphological changes occurring while data recorded at the date of transition age in another, the size of the capsule body and the cephalic, the color of the frame and in particular the parts chitin, some elements and others chetotaxie

The individuals who die from various causes are removed from the tube and kept as dry material or 70% alcohol. For pupae, the morphological changes are not essential, we need to just turning into adults identifying sex.

RESULTS AND DISCUSSION

In S.C.D.P. Fălticeni were made throughout the growing season of 2011 a total of 10 crops of active larvae or pupae in apple canopy belonging Adoxophyes orana FR: June harvesting chemical group and four harvests in untreated group.

In the teaching farm "Vasile Adamachi" Iasi were made 10 harvests, that is 4 in chemical lot and 6 harvest untreated lot. Situation collecting belonging to chemical group SCDP Fălticeni is as follows (table 1):

- - First harvest took place on 29.04, when seven specimens were collected larval stage;
- - II of harvesting took place on 09.05, when 42 specimens were collected in the larval stage;
- - In a third crop of 26.05 date have been collected a total of 54 copies of the 49 specimens were collected at the stage of larval and pupal stage 5 copies;
- - The harvesting of 14.06 IV 12 specimens were collected in the larval stage;
- - Harvesting the fifth held on 30.06, when the collected specimens of 8 larvae stage;
- - In the sixth 14.07 harvesting of date have been collected a total of 102 copies, 99 copies 3 copies larval stage and at the stage of pupal.

Table 1

Situation monitoring Adoxophyes orana FR under S.C.D.P. Fălticeni - chemical group

Data harvest	Colected samples	Development stage collected	Adult ssamples after growth
29.04	7	Larvae	2
09.05	42	Larvae	5
26.05	54	Larvae 49 ex.	2
		Pupae 5 ex.	5
14.06	12	Larvae	3
30.06	8	Larvae	2
14.07	102	Larvae 99 ex.	25
		Pupae 3 ex.	

A total of 225 specimens were collected of which 217 copies in the larval stage and eight copies pupa. Following increases in the laboratory resulted:

- The first collection of the seven samples collected at the stage of larvae, resulted in two adults;
- At the second harvest of the 42 specimens collected in the larval stage resulted in 5 adults;
- The collection of 54 exemplary III of the 49 specimens collected from the larval stage resulted in 5 copies 2 adults and pupal stage, resulted in 5 Adults;
- From harvesting the fourth of 12 specimens collected in the larval stage resulted in 3 adults;
- We have a collection of 8 specimens collected in the larval stage resulted in 2 adults;
- The sixth collection of 102 specimens collected, 99 3exemplare stage larva and pupa stage, resulting 25 adults.

In the group treated in the S.C.D.P. Fălticeni took place four collections from the following: 09.05, 26.05, 14.06, last harvest taking place on 30.06 (table 2).

- The first collection since 09.05 there were 18 copies of Adoxophyes orana FR in the larval stage, at harvest of 26.05, 14.06, 30.06. not recorded any samples.

Of the 18 samples collected from monitoring growth and resulted in 4 adults.

Table 2

Situation monitoring *Adoxophyes orana* Fisch.V.Rosl. under S.C.D.P. Fălticeni - untreated group

Data harvest	Colected samples	Development stage collected	Adult ssamples after growth
09.05	18	Larvae	4
26.05	0	-	-
14.06	0	-	-
30.06	0	-	-

With didactic farm "Vasile Adamachi" University, the chemical group in 2011 were made of 4 harvest, the first harvest is performed at the other harvest data on 11.05, 30.05, 13.06 and 27. 06.

Following the comments made were not reported larvae orana FR Adoxophyes

The untreated sample collections were made 6 on 29.04, 11.05, 13.06, 27.06, 11.07 and 25.07, when this species was collected larvae (Table 3):

- The first collection of 29.04 was collected on a total of 26 larvae which resulted in 8 adult,
- In the second collection since 11.05. of the 40 specimens collected from 36 adult growth resulted,
- The harvest of 13.06, 27. 06, 11.07 and 25. 07 not recorded any samples.

The data obtained it can be seen that the chemical group of the SCDP - Fălticeni have identified a large number of individuals belonging Adoxophyes orana FR 225 specimens were collected, which show that there was attack especially in April - early July, the buds, leaves, growing tips, young fruit is known that this carnation leaf-rollers produce extensive damage in intensive orchards (Bovey, 1966). Following increases in the laboratory of the 225 specimens collected (larvae + pupae) have resulted in a number of 44 adults.

The chemical group, while didactic farm "Vasile Adamachi" Iaşi in 2011 due to chemical treatments carried out warnings and weather conditions, there was no attack.

Table 3

Situation monitoring Adoxophyes orana FR under Teaching Farm "Vasile Adamachi" Iasi - untreated group

Data harvest	Colected samples	Development stage collected	Adult ssamples after growth
29.04	26	Larvae	8
11.05	40	Larvae	36

13.06	0	-	-
27.06	0	-	-
11.07	0	-	-
25.07	0	-	-

In untreated plots in both areas have highlighted a few examples because of the large number of parasites and predators attack signaled the buds in April-May with the entry into vegetation. Thus, the S.C.D.P. Fălticeni were made of 4 harvests were collected 18 larvae which resulted in 4 adults and in Iasi were made 6 harvests were collected 66 specimens in the larval stage where they resulted in 44 adults.

CONCLUSION

1. In S.C.D.P. Fălticeni in the chemical lot attack has occurred throughout the growing season in the months of April to July, there were a total of six harvests identifying a large number of individuals being collected a total of 225 specimens belonging *Adoxophyes orana* FR

2. Because chemical treatments performed in warning and climate conditions in the chemical lot, while didactic farm "Vasile Adamachi" Iaşi in 2011 there was no attack.

3. In untreated plots, due to the number of parasites and predators in both areas were significantly reduced as the number of copies of the four harvests made at SCDP Fălticeni 18 samples were collected and larval stage of the Science of six harvests were made 66 samples collected throughout the larval stage.

4. Following the increases made in 225 specimens collected (larvae + pupae) from chemical lot 44 resulted in a number of adults which is 19.5%. While the total of 84 specimens collected from untreated plots resulted in a total of 48 adults which is 57%.

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