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Protection from Olive Flies (Olea Bractocera) with Innovative Eco-biology Methods

Mendim Bacaj[1], Enver Isufi[2]
[1] Agricultural Technology Transfer Centre of Vlore, Shamogjin, Vlore, Albania.
Biological Agriculture Institute, Durres

Abstract **– Plant protection in agriculture is among the most important agronomic practices .This is so for two major reasons; diseases and insects do huge economic damage, and also plant protection products in most cases are not friendly to the health of People, other living things and the environment .In the plant of olive the fly (Bractocera oleae) is a key pest. It took this status for several reasons:**

First appears in olive groves almost every year with high intensity.

Secondly economic causes great harm to the quantity and quality of production.

Third protection of olive fruits of its has high economic and ecological costs. This study aimed to improved some elements of techniques to protect the olive from the fly as monitored accurately fly in the olive groves, the use of weather onditions on the interpretation of the biology of the insect and inform farmers through e-mails in receiving the measures by product type for the protection of plants. At temperatures above 35 degrees Celsius are not recommended treatments for plants with protection products, because larval development is interrupted.

Keywords **– Flies, Olive, Pheromones, Weather Station, Xare.**

I. ENTRY

Data on the area where the study was conducted.

Within the Cross-Border projects between Albania and Greece undertook a study to ways of producing olive oil with high quality. For improving the quantity and quality of olive oil route survey asked olive innovative protection from flies (Barctocera oleae) . The perfected study methods of monitoring fly sexual pheromone and the indicators of climate monitoring by means of electronic weather stations. While working weather stations are enriched with new accessories by increasing the amount and type of weather data.

This area is located at the southern tip of Albania, along the border with Greece. The territory of this area lies in Xara and Konispol municipalities which are distinguished for olive cultivation. Total area of olive groves is 265 ha with about 79500 root, of which 130 ha to 20 000 plants planted cultivar "Kalinjot" 11 ha with 14,000 root, planted cultivar "Arbekuina" 90 ha with 35,000 root planted cultivar "Koroneiki "and the other involving Kallamoni, Megaron etc. 34 ha are planted with 10500 root.

Grove surfaces are made reference to the hilly terrain but also in the field. Only about 60% of the area is under irrigated conditions.

Interest in the olive plant is grown. This argues doubling production for root of these 25 years; namely before 1990 it was 15-20 kg / root, and today handles an average of 40 kg / olive root.

The area is characterized by high average annual temperature and very suitable for olive cultivation of fruit trees and other crops. In this area during the amount of active temperature reaches from 5000-6000 degrees Celsius. During a year in the area marked 320 days of sunshine.

On the level of fertility soils in the area are as follows (the study of olive of 2009)

The surface of the earth in% by assets with nutrient elements, the study of 2009			
feeder elements	Low in%	Medium in %	High in %
Humus	20	40	40
Calcium	x	x	100
Phosphorus	x	x	100
potassium	20	40	40

E-olive project is applied in two southern bordering municipalities with Greece.

In Xare municipality are some villages that cultivate olive which are : Vrine, Shëndelli, Xarë, Mursi, while Konispol municipality consists of: Ciflik, Shkalle, Konispol, Verve.

II. MATERIAL AND METHODS

- Monitoring the fly with pheromone
  Sexual pheromones are used Dacus stick type. This formulation consists from green tube, inside which there is a powder that has attracted the female fly pheromone. Dacus tube during the hanging in the olive tree rotates slightly so as to appear a small channel that helps out the environment pheromone scent of olive trees. Green tube wrapped by the glue used for special monitoring pheromones. A property of this adhesive substanceis that it does not dry out for several weeks. On this adhesive substance are trapped dust flies attracted by pheromone. Flies caught in pheromone are counted twice a week, than the flight curve show weekly seizures.
- Monitoring of weather on electronic weather station
  To harmonize the moments biology climate conditions in Xara is installed an electronic weather station. This station measures air temperature, air humidity, amount of rainfall, wind direction, solar radiation, etc. For purposes of the study were used as the main parameters air temperature, air humidity and rainfall decreased. These three elements help to predict the steps of the development of season.
- Means of communication to dissemination the message.
  Flight performance curve of the respective charts in temperatures and humidity in the environment of olive

trees have served us to predict the development of the fly and on this basis to inform people involved with olives that when the conditions are best for treatment against the olive .Messages are prepared by reminding people who care for olives type of product that they will use against.

- When You are using Eco-trap is recommended that they depend when growth begins once the flight performance
- When You are using products like Success 024 (plus protein biological insecticide) it is given more or less the same recommendation, but the treatments are carried out every 20 days and repeated after every stronger rain than 15 millimeters
- When Used kaolin (clay of very finely ground) are recommended treatments by the end of August-15 September
- When were used insecticides with systemic properties recommended when treatments are found 10% of grains with new larva
- When are used systemic insecticides or only semi absorbed by olive grains are recommended treatments when the fruits are found on 5% of the fruit on new larva.
- To understand the messages have been prepared with people who care for olives seminars directly in the field, where it is explained the biology of the fly (B.oleae) operation of pheromone monitoring the functioning of the weather station and the value of climate data in decision-making to protect the olive by flies.

III. Results and Conclusions

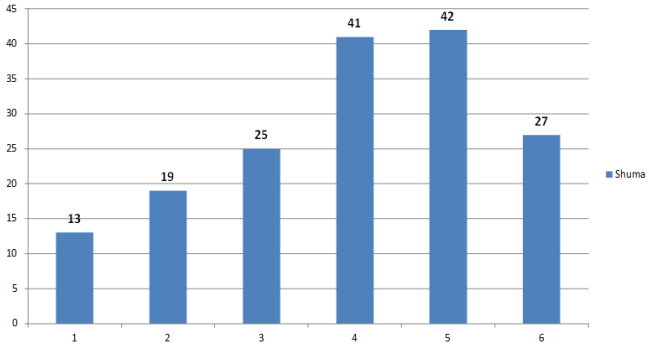
• *Chart Flight Flies in Pheromone*

Messages sent to people who care for olives for olive protection from flies (Bractocera Oleae)

Monitoring area of the olive fly Nr.1					
Data control of traps with monitoring pheromones					
03.07.2015	11.07	19.07	29.07	1.08	7.08
3	6	6	10	11	9
4	5	7	12	10	6
4	4	6	9	12	7
2	4	6	10	9	5
13	19	25	41	42	27

Messaging Chart

Chart of the progress of the flight the olive fly (B.oleaea) in monitoring traps Area No.1 (average of four pitfalls)



Results of monitoring and sent messages to people who care for olives

Monitoring area No. 1					
	Dates of control of monitoring pheromone traps				
Traps	14.08	21.08	28. 08	4.09	11.09
T.1	4	2	3	4	6
T.2	5	5	1	4	7
T.3	5	3	2	3	7
T.4	4	1	2	2	5
Total	18	16	8	13	25

Chart of the progress of the flight of the olive fly (B. oleae) in four monitoring pitfalls Area No.1

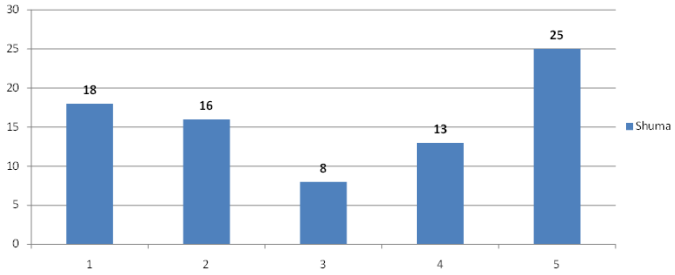


Fig. 1. Dacus stick

Fig. 2. Pitfalls models for monitoring of the olive fly

Messages for farmers (some examples)

- *Message No. 1 date 19 July 2015*

The situation of the performance of the olive fly (B.oleae) At the period 03 July to 19 July 2015 and the measures recommended

Seeing the curve of the olive fly the flight for the first fifteen days of July there is a trend to increase the number of stripes on the fly pheromone monitoring traps. On 19 July decreased almost twice the flies in the trap. This should prepare us for protective measures with products that kill adult insects. Measures and products to be used in the guide for sending. We should prepare for pitfalls with bottles hanging with DAP plus 1.5 liters of water. A new product is the product that you have demonstrated in the field called Suses 024. Accurately described in the guide usage patterns and doses of use

The message was prepared by the staff of Cross-Border project "Olive ....) To protect the olive from fly in the area of Xare , Saranda, county Vlora

- ***Message No. 2 date July 30. 2015***

The situation of the performance of the olive fly (B.oleae) in medium 03. July until 19 July 2015 and the recommended measures.

In monitoring pheromone traps flies amount of lashes grew significantly. In a flight area was caught 41 flies. This shows that the trend is to increase the number of flies.People who care for olives that did not use treatments should use a treatment or a combination of both measures, pitfalls with DAP plus water and 024 Success biological product. In the guide we have sent we have described methods of using the products and their mechanism of action.

High temperatures do not favor the development of eggs and larvae. Grains in the samples analyzed were not found neither eggs nor larvae of the fly. These climate data are taken from electronic weather station installed in fly in the area of.

The message was prepared by the staff of Cross-Border project "Olive ....) To protect the olive from fly in the area of Xare , Saranda, county Vlora

The Discussion of Results

Olive flies had different dynamics during the season. In late July and early August of the fly population has increased after the middle of August and in the first weeks of September the population grows. At the end of September and in October the population grows too much. 2015 summer temperatures have risen above 33-35 degrees Celsius and slowed as adult insects and larvae development as well.

Recommendations

- We recommend that monitoring of the olive fly pheromone be followed every year.
- Perform analysis in olive seeds for the first larval stages of development and the amount of their share of grains analyzed
- The weather station used to have an accurate forecast on the development of the fly because of weather conditions depends on the flight as well as the development curve of fly larvae.
- To establish a center to monitor the olive fly with trained people who will serve to the area for a long time