

GREECE

Biodiversity restoration, preservation & enhancement

Location

Zagora

Programming period

2014 – 2020

Priority

P4 – Ecosystems
management

Measure

M10 – Agri-environment-
climate

Funding (EUR)

Total budget 1 773 925.5
EAFRD 1 507 836.7
National/Regional 266 088.8

Project duration

2018 – 2022

Project promoter

Agricultural Cooperative
Union of Zagora-Pilio

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A cooperative of apple producers set up a joint effort among its members to control the codling moth, a major pest, by means of sexual confusion.

Summary

The codling moth (*Cydia pomonella*) is one of the principal pests of apple trees. Almost all the apple farmers in the municipality of Zagora (Thessaly) are members of the local agricultural cooperative. They cultivate apples according to the integrated production management method. Until 2017, Zagora's apple producers used synthetic insecticides to protect against the codling moth. This project replaced most of these chemicals with pheromone traps, which are proven to be very effective in controlling the moth population.



Results

Replacing pesticides with pheromone traps has led to a gradual recovery of the wild flora and fauna in the orchards. It has been particularly beneficial for pollinators and other insects that are useful for the apple trees.

Gradually, the pressure on the quality of the water resources in the area is being reduced.

Control of the codling moth is less labour intensive for the farmers.

The geotechnical department of plant protection needs to spend less time advising apple producers on pest control.

Lessons & Recommendations

- ❑ The beneficiaries of the project are individual apple producers. However, a basic prerequisite for the success of the method is the joint and coordinated implementation throughout the target region by all participants.

Context

The codling moth (*Cydia pomonella*) is one of the principal pests of apple trees. Almost all the apple farmers in the municipality of Zagora (Thessaly) are members of the local agricultural cooperative. They cultivate apples according to the method of integrated production management.

Before the project, there was a network of pheromone traps in the wider area of Zagora, monitored on a weekly basis. When necessary, the Geotechnical Officers informed on mass the producers, who would carry out the necessary sprays, using synthetic chemical insecticides. The need to find an alternative control method arose for several reasons, including:

- a gradual reduction in the number of beneficial insects in orchards, in particular pollinating insects;
- an increased risk of water pollution caused by synthetic insecticides;
- European and national legislation banning some active substances; and
- A market shift towards fresh products with minimal, or no chemical residues.

The Zagora area is characterised by sloping terrain and small fragmented plots, which forced producers to spend a significant number of working hours on spraying to control the codling moth, especially during the summer. Multiple sprays increased the risk of leaving trace residues of active substances in the fruit, which was in contrast to the cooperative's medium-term goal of eliminating them. Also, despite the coordinated spraying, the existence of some abandoned farms meant that the moth could reproduce because no spraying took place there.

It was already known that the application of synthetic insecticides has negative effects on other insects that are necessary for pollination. Spraying interventions also require farmers to halt some agricultural works for a few days after spraying, such as thinning of apples in the orchard. This results in more lost working hours.

Objectives

The project aimed to:

- protect and increase populations of wild flora and fauna of the orchard, especially pollinators and insects that are beneficial for apple trees;
- reduce the impact of apple production on the quality of the area's water resources;
- Reduce the working hours used for spraying;

- reduce the time that the geotechnical department spent providing plant protection advice;
- Optimise product quality and competitiveness;
- protect producers from exposure to plant protection products;
- treat the codling moth according to the principles of integrated plant protection (IPM);
- eliminate residues from active substances in the apples;
- Develop the local apple farming sector and thus increase the availability of jobs; and
- Make the cooperative more visible.

Main activities

Installed pheromone evaporators and pheromone traps, through which the producers and the cooperative monitor the codling moth population in the orchards. The evaporators are placed on a metal pipe in the plots.



The project also covered the costs of hiring external consultants who prepared the project's annual Action Plan, prepared and submitted the project application (support request and payment request) and supervise and coordinate the action in cooperation with various departments within the cooperative.

In order to control the operation of all evaporators, it is necessary to check them regularly. Thus, starting at the end of spring and until the autumn harvest period, agriculturalists carry out on-site inspections of all the evaporators in order to prevent any equipment malfunctions in a timely manner.

They check to make sure that the evaporators work correctly and according to schedule. Any malfunctions are recorded and if the problem cannot be fixed, the device is immediately replaced. In general, the project requires higher costs than chemical plant protection because of the specific technology applied and the know-how required to efficiently run the evaporators.

Nevertheless, this approach is part of a more comprehensive strategic choice of the members of the cooperative. The successful operation of the system reduced the number and extent of plant protection interventions needed to maintain production. At the same time, it serves the medium-term objective of reducing and, as far as possible, eliminating the residues of active substances from plant protection interventions, which is a key goal for the Administration.

The cooperative aims to market products with zero residues, if feasible. This would guarantee that the consumer, biodiversity and natural resources are fully protected.

Main results

Thanks to this practice there is a gradual recovery of the wild flora and fauna in the orchards and especially of the pollinators and other insects which are useful for the apple trees. The recovery is expected to become more apparent in the coming years.

Gradually, the pressure on the quality of the water resources in the area is being reduced. However, it is difficult to quantify the contribution of an individual plot, or a single farm taking part in the project.

Many fewer working hours are spent spraying the orchards and more time can be devoted to other agricultural work that enables cultivation to be optimised.

The geotechnical department of plant protection spends less time advising apple producers on pest control.

The project will further stimulate the sector's development and consequently will create opportunities for new jobs.

The visibility of the cooperative will be increased.

Key lessons

The beneficiaries of the project are individual apple producers. However, a basic prerequisite for its success is joint and coordinated implementation throughout the



target region by all participants. The role of the Agricultural Cooperative of Zagora Pelion, more widely known under the trade mark "ZAGORIN", is crucial. The members of the cooperative represent almost 99% of the producers in the region. The General Assembly of the cooperative agreed to the participation of all its producers in the project.

At the same time, it is important to mention the fact that the few apple-growers who are not members of the Cooperative, about 1% of the farmers in the region, understood the significant innovation that emerged from this initiative and agreed to participate.

Finally, it was important to train the cooperative's scientists, who supported the implementation of the project, and also the external consultants who took over the role of supervising the process.

Additional sources of information

www.facebook.com/ZagorinApple/