IPM adoption in my hub

Facilitation approach and progress made in IPM adoption

Virginia Bagnoni
Group of Agroecology (GoA)
Center of Plant Sciences
Sant'Anna School of Advanced Studies - Pisa

My group

PRESENTATION OF THE HUB COACH ORGANISATION

The hub coach is a collaborator of Sant' Anna School of Advanced Studies, a public research university working in the field of applied sciences.
IPMworks is coordinated by the Group of Agroecology within the Center of Plant Sciences that is concerned with advanced research approaches to enable more resilient and sustainable primary production systems.

THE HUB

The 12 farms of our hub are located in Tuscany on Monte Pisano, a hilly area between the cities of Pisa and Lucca.
7 out of 12 farms are commercial companies; 3 of them are certified organic farms.
Olive trees are the main cultivation for all of the farms.
Farms are characterised by small surfaces; high slopes; ancient olive trees: dense and very tall vegetation; manual work.
The hub focusses on prevention and monitoring against olive fly.

OBJECTIVES AND MOTIVATIONS OF THE FARMERS

- **Technical:** to reduce interventions and costs, focusing on a holistic approach and strategies that ensure quality and sustainability.
- **Economical:** to encourage the market recognising the importance of quality of production and labour of commercial farms.
- **Environmental and social:** to involve citizens and administrations to support olive growing as a part of common, cultural and landscape heritage.

DRIVERS

- **Technical:** lack of efficient chemical solutions and so a necessary adoption of ecological practices predisposes farmers to an innovative vision based on monitoring and prevention of damage from the main pests.
- **Environmental:** high level of biodiversity and ecosystem services although the area has been inhabited since ancient times
- **Economical:** the production of quality organic oil leads to higher product prices on the market and the possibility of trade outside the borders
- **Social:** traditional cultivation that is cultural and of landscape heritage. The presence of groups and associations for an agro-ecological and chemical input reduction approach (Spotello di Agroecologia di Calci) and for the promotion of quality production (Strada dell'Olio Monti Pisani).

BARRIERS

- **Technical:** difficulties in mechanizing work; lack of effective chemistry that can also be used in organic farming; lack of skills for a holistic approach.
- **Environmental:** unpredictability and extreme weather conditions in recent years and difficulties linked to the physical characteristics of the land (calcareous soils, slope, lack of water).
- **Economical:** high costs of some innovative solutions (e.g. traps for mass trapping) and high costs of manual labor.
- **Social:** Professional olive growers versus hobbyists.

IPM challenges and results

IPM Challenges

What were the main IPM challenges?

The first issue for our farmers was to find a strategy against olive fly since the most effective product available on the market was banned. Due to the characteristics of the territory they need to reduce interventions as much as possible to reduce costs and so focus on strategies ensuring the quality and sustainability of their work. Moreover, they see the rise of other pests such as the Asian bug and the green olive moth, so they have taken up the challenge of an overall approach to olive grove management, exploiting each technical choice as a part of a more complex holistic strategy.

The hub's results

What progress has the hub made on these challenges?

The hub tried rock powders as natural repellents, distributed together with adhesives such as soya lecithin, decreasing the association with copper products. They also experimented with the use of pheromones traps to implement data in an App for participatory monitoring of olive fly populations. In addition, the next demo will evaluate a different approach to pruning techniques to reduce pests such as the olive fly and increase natural olive fly predators as spiders.

What issues still need to be addressed?

Refining the use of DSS to ensure that only necessary actions are taken to contain the main pests.
Undertaking actions at a landscape level.
Staying connected with the need to integrate new possibilities after the end of the project.

How are the hub farmers going to proceed?

Farmers would like to keep in touch especially in crucial moments for decisions to be taken on interventions. They want to organize the collective purchase of technical means but also of instruments useful to a better managing of predictive models, e.g. weather shed for surveying data in the specific area.

Key conclusions

Demo events and discussions on use of DSS have supported the belief that interventions, even in prevention, are carried out only when necessary. Furthermore, the use of participatory monitoring to implement data closer to individual farm realities and microclimate, enhanced this awareness.

However, farmers are unable to fully rely on the proposed models and suggest modifications to make them more usable.

Study days and knowledge exchange events between our project and other projects working in the area improve knowledge of all the factors involved in olive grove management and help holistic research into solutions, leading to a more or less abandonment of chemicals and a greater sensitivity to the environment.

Facilitation approaches

Strategies to adopt against olive fly

What is the issue the hub work on more precisely?

Fighting the olive fly despite the lack of an effective and environmentally sustainable product being available. We want to address it and solve it collectively because an intervention at the level of a single farm can have consequences on neighbouring farms. Therefore, it becomes important to identify shared collective actions over larger areas.

How did you proceed? What did you do?

- Discussion of the problem followed by training meetings with experts to identify possible preventive solutions.
- Shared planning with farmers to set up trials at different locations in the hub.
- Training in field and hands on activities.
- Demos and workshops on participatory monitoring techniques and the use of digital decision support tools.

What conclusions can you draw?

The limited possibilities to control olive fly, which depend as much on seasonal weather patterns as on technical factors that cannot be overcome, leads to a holistic approach based on prevention and monitoring. This approach becomes relevant, both from an individual and collective point of view. This is complemented by a continuous exchange of opinions and results inside and outside of the hub.

My tips for making it work

- Broaden the discussion by participating in meetings, workshops and table discussions with other projects working on the same challenges with other farmers.
- Make farmers feel that they are bearers and not just recipients of knowledge.
- Remind them that everyone's ideas are important and can be communicated at any time, whenever possible, and disseminated to everyone by all available means: WhatsApp, mail, meetings or demos.

Individual facilitation

Individual discussion to focus on the main problem or emerging ones.

Individual surveys.

Setting up field trials on the single farms involved in the collective study.

Visits and exchange of opinions during field monitoring trials.

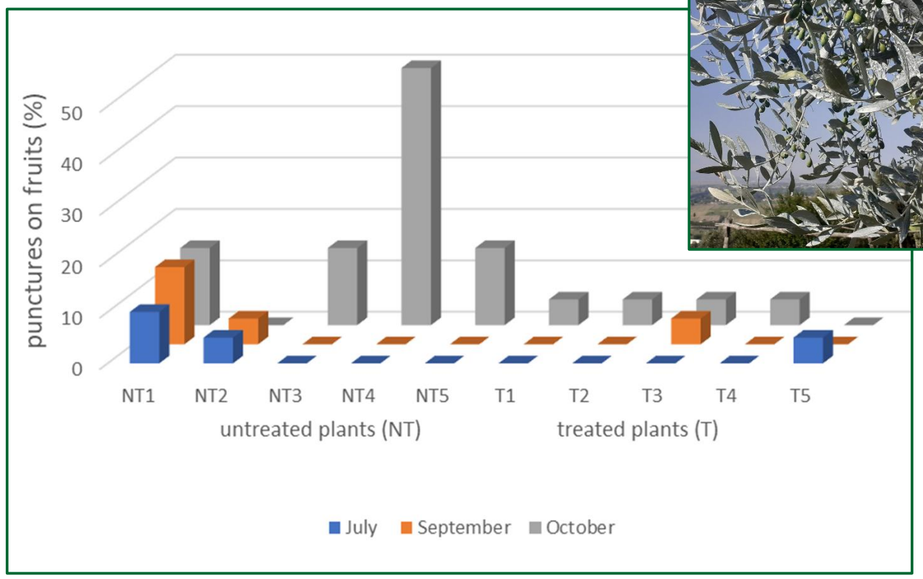
Field visits to the farm.

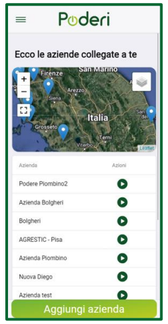
Collective facilitation

Collective discussions, demo-events, co-development, annual review/planning meetings and meeting with other working groups: these activities reinforce collaborative learning and peer to peer exchange.

Creating opportunities for free exchange and sharing moments of relaxation and friendship make farmers know each other better and sometimes support them in establishing new partnerships for the future.

IPM adoption & pesticide use





> We used rock dust the first year to prevent olive fly attack and we realised that it also had a great protective effect against water loss and insolation. In the second year, it was possible to manage the powders according to the indications of a digital tool for fly monitoring, thus distributing rock powder only when necessary.

> …this allowed the integration of different techniques, saving on intervention costs, learning to use pheromone traps by ourself and achieving good results without relying on chemicals. It works!

Rock powders are going to play a leading role in preventive strategies. If applied at the right time and correctly, the rock powders dissuade the female fly from laying her eggs and therefore preserves the productivity of the plant and economic benefits. In the two years of trials we've seen that plants treated with Zeolite recorded a lower fly attack than untreated plants, which instead showed an incidence of affected drupes reaching 50%.

The introduction of participatory monitoring and a digital system (APP "Poderi") to support interventions against the olive fly, as well as irrigation and fertilization, was another, integrated, step towards reducing dependence on chemical inputs, empowering farmers and consolidating an agro-ecological vision for a holistic approach.

Virginia Bagnoni
Hub coach

> Within the rural world, cooperation, interaction, and information sharing already exist, but they often take place in spontaneous and localised forms. They are rarely organised in their dynamics and finalised in their outcomes.
> I believe that the experience of IPMworks has provided an excellent, concrete contribution to the community of olive growers who work with passion in this area and will choose to preserve their land and the sustainability of their work in the coming years.

A European network of demonstration farms promoting low pesticide use and economically efficient management strategies

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