

IPM works ORCHARDS



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An EU-Wide farm network demonstrating and promoting cost-effective IPM strategies

INTEGRATED PEST MANAGEMENT

Integrated Pest Management (IPM) is based on a diversity of pest management measures (prevention, non-chemical control, best practices for optimizing pesticide efficiency, etc.). These are combined at the farm level to enable reduced reliance on pesticides, and therefore a decrease in the exposure of the environment and people to pesticides. Rare pioneer farmers throughout Europe are testing such IPM strategies and are succeeding in achieving good outcomes with low pesticide inputs. However the majority of European farmers still rely heavily on pesticides, with major environmental and societal impacts, because most of them have not adopted a comprehensive, farm-level and holistic IPM strategy so far.

IPMWORKS

IPMWORKS - An EU-wide farm network demonstrating and promoting cost-effective IPM strategies - is a four-year project (2020-2024) financed by the Horizon 2020 Research and Innovation programme of the EU. IPMWORKS is made up of a consortium of 31 partners from 16 European countries assembled with various types of organizations covering the following roles: Farmers organizations; Applied research, advisory and extension services; Academic research on social sciences; Academic research on agronomy (sensu lato) and environmental science and Training organizations. The project is coordinated by the French National Research Institute for Agriculture, Food and the Environment (INRAE).

DATASET



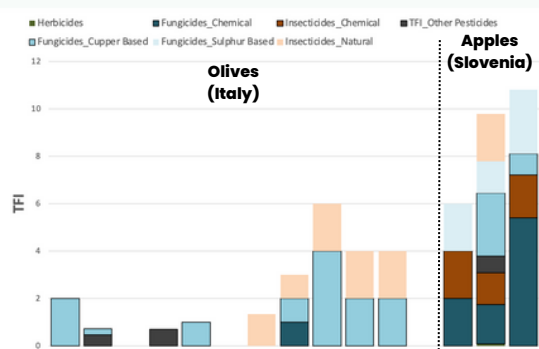
FARMERS' AWARENESS OF IPM AND MOTIVATIONS

Farmers' motivations and level of IPM adoption have been investigated through a survey, just after the farmers joined the network.

"IPM is a way to improve soil health", "I try to restrict my use of crop protection product", and "High Product Quality" is considered to be the most important statements informing about farmers' motivations for IPM.

Protecting the environment, natural resources, and biodiversity is a very important factor influencing farmers' decision to implement IPM.

PESTICIDE USE



Treatment Frequency Index (TFI)
TFI is used as a metric of frequency and intensity of pesticide use.

- The TFI was determined based on:
- number of treatments
 - average dose (% recommended dose for target pest)
 - average % of treated area
- TFI metric shows a large range of pesticide use across farms, that can be attributed to:**
- Nature of crops
 - Climatic conditions
 - Level of IPM adoption



DECISION SUPPORT SYSTEM

A few farmers mentioned they were using Decision Support Systems (DSS) for making the decision for fungicides or insecticides. Progress could be made on this area to avoid unnecessary treatments.



VARIETY CHOICE

Growing cultivars that are resistant to disease is an option in apple orchards. In olive groves, adapting cultivars is not really an option.



BIOCONTROL

Biocontrol is the reduction of pest populations by natural enemies. More than 80% of IPMWORKS Olive groves are managed with biocontrol, with fruit camouflage with Kaoloin and insect mass trapping as the main technical solutions. In apple orchards, insect mass trapping and mating confusion are used.

Biocontrol solutions are a major component of IPM strategies in orchards.

The survey informs about how far the various components of IPM are already implemented by IPMWORKS farmers in arable fields.

IPM INDEX

We tested a new IPM Index calculated from the information collected on crop and pest management.



VARIETY CHOICE



DECISION MAKING FOR TREATMENTS



MONITORING TREATMENT EFFECT



LANDSCAPE/BIODIVERSITY MANAGEMENT



GRASS COVER - SODDING



SOIL TILLAGE



MOWING



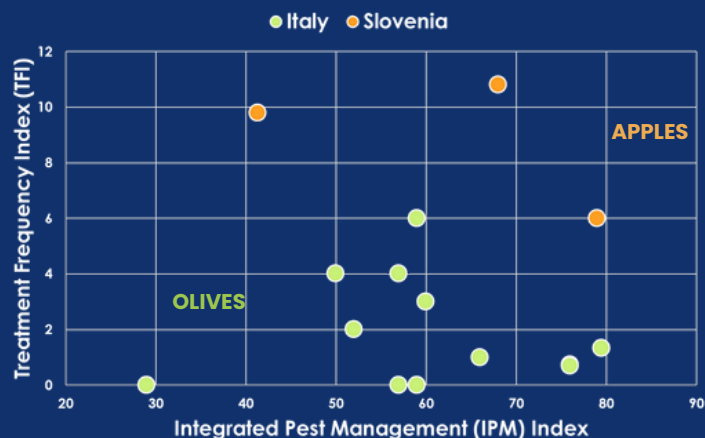
MULCH



BIOCONTROL

Based on information collected in IPMWORKS farms about the level of adoption of several components of holistic IPM, we tested a new IPM Index (sum of scores summarising IPM practices: use of Decision Support Systems, resistant cultivars, cover crops, mowing, mulching, use of biocontrol solutions, mechanical weeding, protection of wildlife at the landscape scale...).

The IPM Index ranges [0 - 84].



The range of IPM adoption varies across farms, and this explains part of the pesticide use.

SELF-EVALUATION



WEED CONTROL



DISEASE CONTROL



PEST CONTROL

No clear impact of IPM adoption on weed control.

Farmers consider disease, and pest control similar to better compared to neighbor farmers whatever the level of IPM adoption. **IPM is efficient for disease and pest control.**



WORKLOAD



EQUIPMENT COST



GROSS MARGIN

Most IPMWORKS farmers think they have similar or higher workloads, equipment costs, and gross margins as compared to neighbors. **IPM is cost-effective.**

CONCLUSION

The IPMWORKS network of farmers in orchards displays a large range of practices, with various levels of IPM adoption. The more IPM is adopted, the less pesticides are needed. Further progress in IPM adoption can be done with the help of IPMWORKS hub coaches.



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