Survey #1: IPM awareness, IPM adoption, pesticide use and self-evaluation
TOPICS OF SURVEY #1:

- Farming context
- Farmers’ expectations and preferences
- Cultural practices: farm level
- Cultural practices: crop level
- Pest control efficacy: perception of the farmer
- Cost-efficiency: perception of the farmer: self-evaluation

<table>
<thead>
<tr>
<th>Participant countries</th>
<th>Total organic orchards</th>
<th>Number of farms</th>
<th>Average orchard size</th>
<th>Average experience of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>5</td>
<td>15</td>
<td>3,65ha</td>
<td>19 years</td>
</tr>
<tr>
<td>Slovenia</td>
<td></td>
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</tbody>
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Tree species:
- Olive
- Apple
Farmers' Awareness of IPM and Motivations

Rating statements from not "Fully true" to "Not at all true" or "Very important to" "Not at all important".

**OBJECTIVES**

- IPM is a way to protect biodiversity
- IPM is a way to reduce environmental impacts
- IPM is a way to increase the added value of my products
- IPM is a way to protect the health of workers on the farm
- IPM is a way to protect the health of my family
- IPM is a way to protect my own health
- IPM is a way to improve soil health
- IPM is a way to reduce pesticide use
- IPM is a way to control pests
- IPM is a way to reduce unnecessary costs
- I try to restrict my use of crop protection products
- Alternative crop protection methods are too risky for me in terms of crop yields
- For me, crop protection must not be labor intensive
- For me, crop protection must be cost-effective

**MOTIVATIONS**

- Meeting the demands of consumers
- Meeting the demands of society
- Not compromising my health
- Reducing my workload
- As little administrative effort as possible
- Freedom in my choices
- Protecting the environment and natural resources
- Maintaining agricultural traditions
- Beautiful & healthy orchards
- An income as high as possible
- High product quality
- High yields

"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 for IPMWORKS farmers. 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:
- the number of treatments
- average dose (% recommended dose for target pest)
- average % of treated area (default = 100)

TFI metric shows a large range of pesticide use across farms, that can be attributed to:
- Nature of crops
- Level of IPM adoption
We tested a new IPM Index calculated from the information collected on crop and pest management.

### Topics included in IPM Index

Cultural practices at the crop and farm levels were evaluated based on the last 3 cropping seasons.

IPM practices included in the index were e.g. use of Decision Support Systems, resistant cultivars, cover crops, mowing, mulching, use of biocontrol solutions, mechanical weeding, protection of wildlife at the landscape scale...

Each practice rating was then scored between 0–4. The IPM index is the sum of the weighted scores and ranges [0 – 84].

The range of IPM adoption varies across farms, and this explains part of the pesticide use.
Farmers cited Decision Support Systems (DSS) for the implementation of fungicides and insecticides.

The survey informs about how far the various components of IPM are already implemented by IMPWORKS farmers in orchards.

- **Option 1**: All cultivars resistant to major diseases
- **Option 2**: Part of cultivars resistant to major diseases
- **Option 3**: No cultivar resistant to major diseases
- **Option 4**: All cultivars resistant to major insect pests
- **Option 5**: Part of cultivars resistant to major insect pests
- **Option 6**: No cultivar resistant to major insect pests

Resistant cultivars is not a main factor for olive groves (often old trees)... it is more important when selecting apple cultivars.
Biocontrol is widely adopted in IPM works olive groves (more than 80% of farms), with mass trapping and camouflage of fruits with kaolin as main solutions.

Mating disruption and mating confusion are also widely adopted in apple to control insect pests.
Self-evaluation of the quality of the disease and pest control as compared to other farmers in the area. Results are presented as a function of self-evaluation in IPM adoption.

**Quality of Weed Control**
- Better
- Rather better
- Similar
- Rather poorer
- Poorer

**Quality of Disease Control**
- Better
- Rather better
- Similar
- Rather poorer
- Poorer

**Quality of Pest Control**
- Better
- Rather better
- Similar
- Rather poorer
- Poorer

No clear impact of IPM adoption on weed control. Weed control is an issue in some organic farms, but IWM stands to improve control in conventional farms.

Farmers consider disease control to be similar or better than neighbor farmers, whatever the level of IPM adoption. IPM is efficient for disease control.

Farmers consider pest control similar to better compared to neighbour farmers, whatever the level of IPM adoption. IPM is efficient for pest control.
Self-evaluation of workload/ha, equipment costs, and gross margin as compared to other farmers in the area. Results are presented as a function of the self-evaluation of IPM.

**Workload/ha**
- Higher Workload
- Rather Higher Workload
- Similar Workload
- Rather Lower Workload
- Lower Workload

**Equipment Costs**
- Higher Costs
- Rather Higher Costs
- Similar Costs
- Rather Lower Costs
- Lower Costs

**Gross Margin**
- Higher Gross Margin
- Rather Higher Gross Margin
- Similar Gross Margin
- Rather Lower Gross Margin
- Lower Gross Margin

Whatever the level of IPM adoption, farmers consider workload/ha to be similar to higher.

Whatever the level of IPM adoption, farmers consider equipment costs to be similar to higher.

Most IPMWORKS farmers think they have similar or higher gross margins than neighbours. IPM is cost-effective.