

**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).

## 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.

## 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 reduce environmental impacts", "For me, crop protection must be cost-effective", "Not compromising my health" and "High Product quality" is considered to be the most important statements informing about farmers' motivations.

Farmers do not consider alternative crop protection methods to be too risky in terms of crop yields.



## DATABASE



NUMBER OF FARMS: **27**



PARTICIPANT COUNTRIES: **SPAIN**  
**PORTUGAL**  
**SLOVENIA**



TOTAL ORGANIC FARMS: **1**



AVERAGE GREENHOUSE SIZE: **166 HA**



AVERAGE EXPERIENCE OF FARMERS: **22 YEARS**

## IPM STRATEGIES USED

### DECISION SUPPORT SYSTEM

Some vine growers are making use of DSSs to avoid unnecessary treatments, but progress could probably be made in this area of decision making.

### VARIETY CHOICE

In vineyards the flexibility for using resistant cultivars is very small.

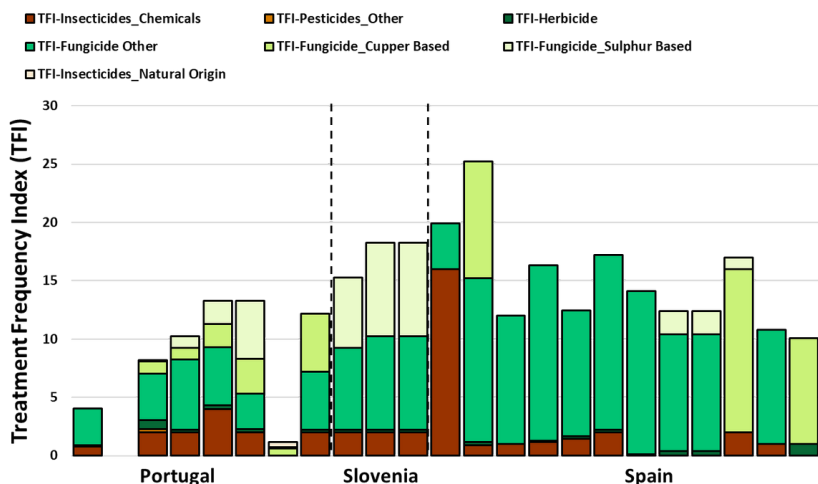
### BIOCONTROL

Biocontrol is the reduction of pest populations by natural enemies.

**Most IPMWORKS farmers in the vineyards sector are using biocontrol solutions, with grape camouflage with kaolin and insect mass trapping as the most popular approaches. Mating confusion and enhancement of beneficial organisms are also considered.**

Surveys inform about how far the various components of IPM are already implemented by IMPWORKS farmers in vineyards.

**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 the treated area

**TFI metric shows a large range of pesticide use across farms, that can be attributed to:**

- Climate conditions
- Level of IPM adoption

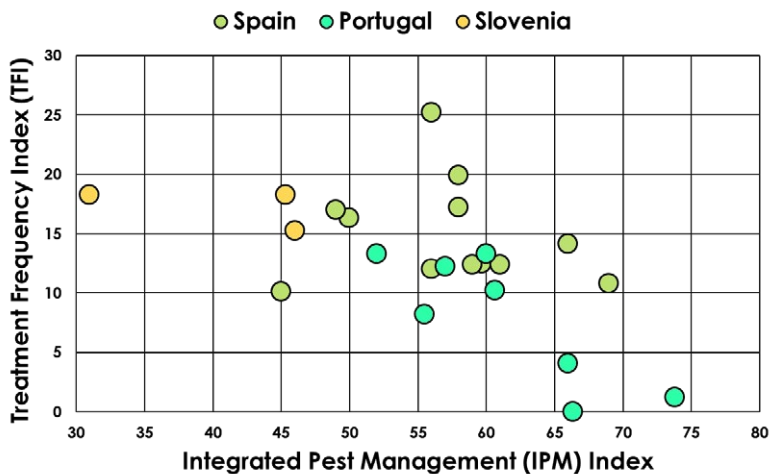
**IPM INDEX**

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

 Wine cultivar choice	 Decision making for treatments	 Monitoring treatment effect	 Landscape/biodiversity management	 Variety choice
 Grass cover	 Soil tillage	 Mulch	 Mowing	 Biocontrol

Based on information collected in IMPWORKS 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, mechanical weeding, cover crops, mowing, mulching, use of biocontrol solutions, protection of wildlife at the landscape scale.....).

The IPM Index ranges [0 - 80].



The range of IPM adoption varies across farms, and this explains a large part of the wide variations in pesticide use.

This suggests that IPM is efficient to reduce pesticide needs and use, when implemented with a holistic approach.

## SELF-EVALUATION



## WEED CONTROL



## DISEASE CONTROL



## PEST CONTROL

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



## WORKLOAD



## EQUIPMENT COST



## GROSS MARGIN

No clear impact of IPM adoption on workload/ha, equipment costs, and gross margin. **IPM is cost-effective.**

## CONCLUSION



The IPMWORKS network of farmers in Vineyards 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.

