THIS PROJECT HAS RECEIVED FUNDING FROM THE **EUROPEAN UNION' HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME** UNDER GRANT AGREEMENT N. 101000339

IPM works

# ARABLE FIELDS

***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

**NUMBER OF FARMS**

**83**

**PARTICIPANT COUNTRIES**

DENMARK
GERMANY
ITALY
SLOVENIA
THE NETHERLANDS
SPAIN
UNITED KINGDOM

**TOTAL ORGANIC FARMS**

**5**

**AVERAGE ARABLE FIELD SIZE**

**367ha**

**MAIN CROPS**

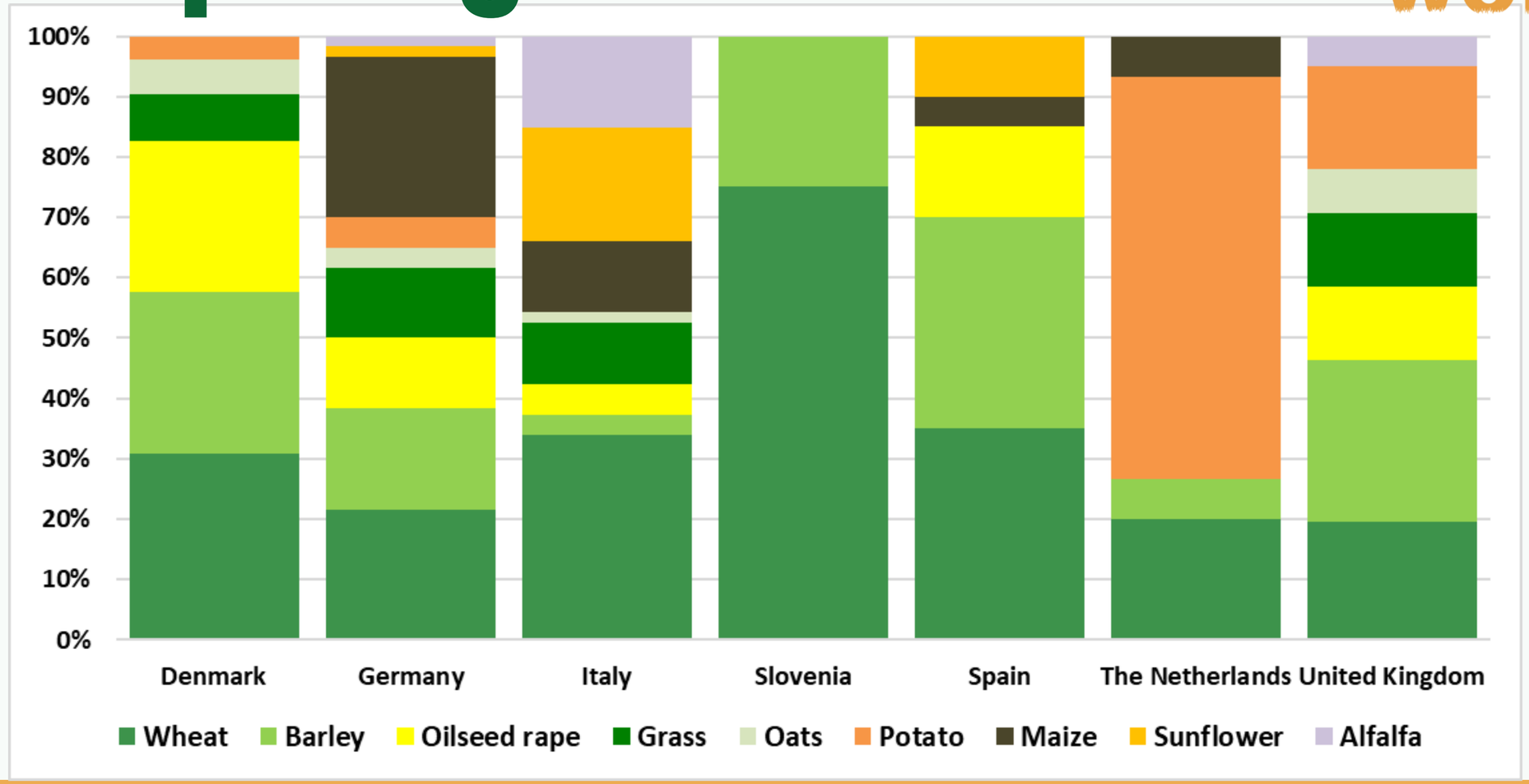
**WHEAT**
**POTATO**

**AVERAGE EXPERIENCE OF FARMERS**

**26 YEARS**

# Main arable crops in participating countries





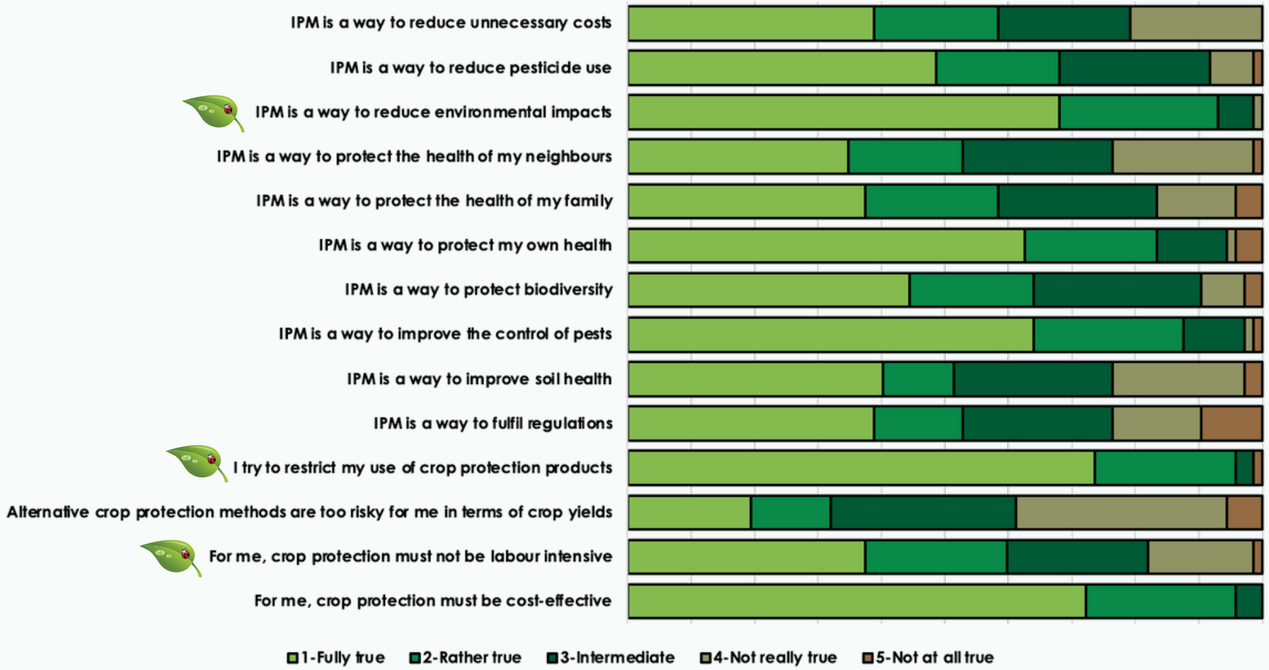

**The network covers a wide range of crops ...but some countries are more diversified than others.**

# Farmers' Awareness of IPM and Motivations

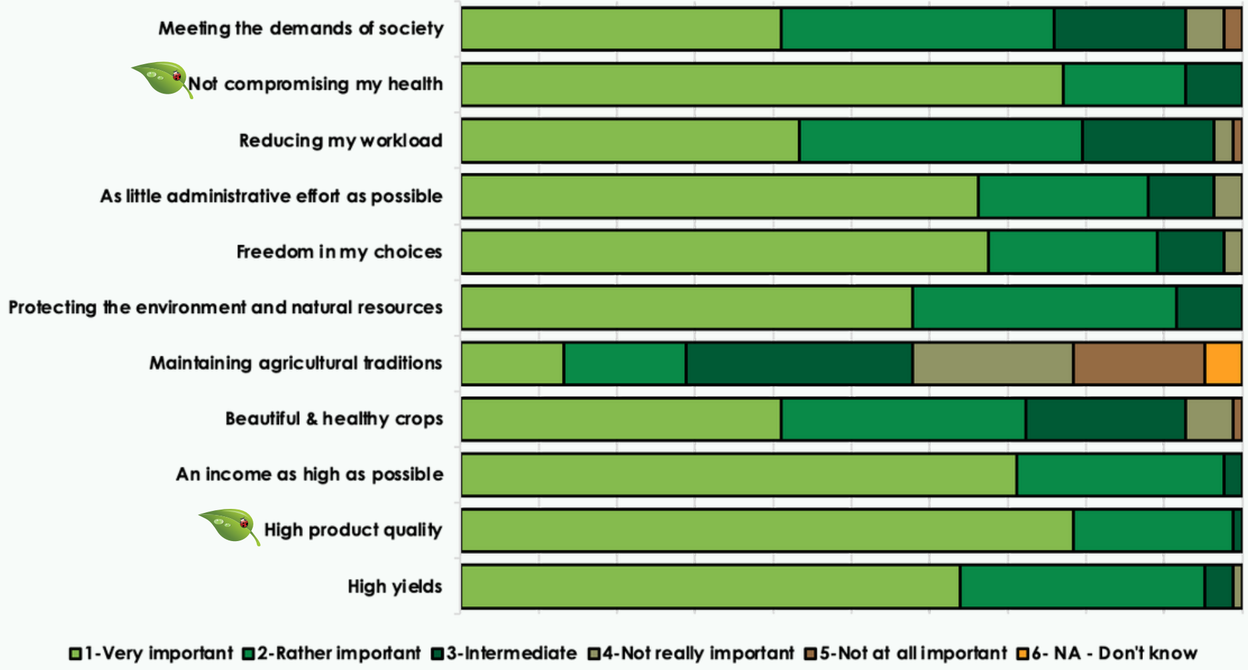


Rating statements from not "Fully true" to "Not at all true" or "Very important to "Not at all important".

## OBJECTIVES




## MOTIVATIONS

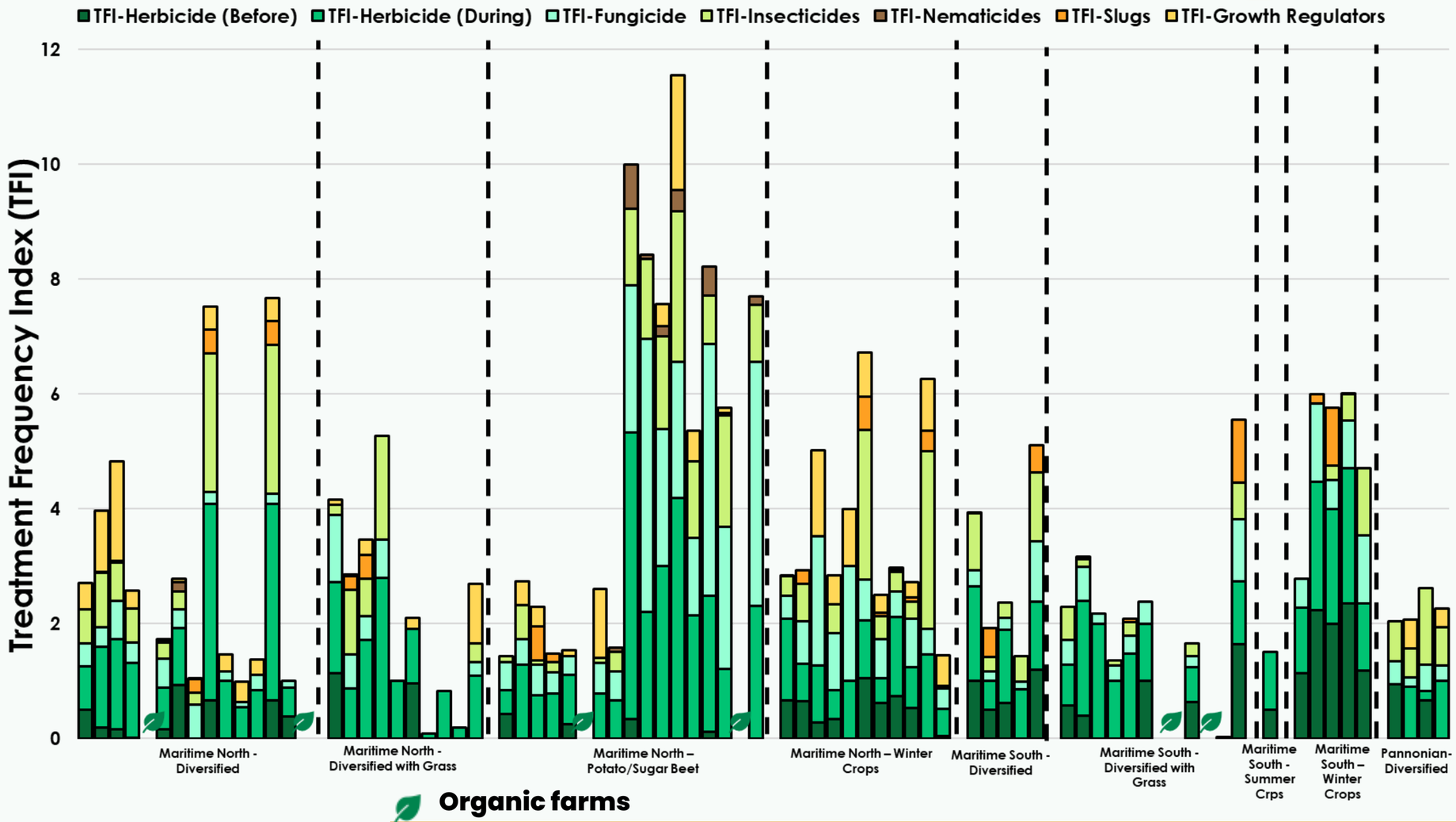



**"I try to restrict my use of crop protection products", "For me, crop protection must be cost-effective", "IPM is a way to reduce environmental impacts", "Not compromising my health" and "High product quality" are statements highly agreed upon by farmers.**

**"Maintaining agricultural traditions" is not something important, indicating that farmers are open to change and adopting new practices that will benefit them now and in the future.**

# 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)

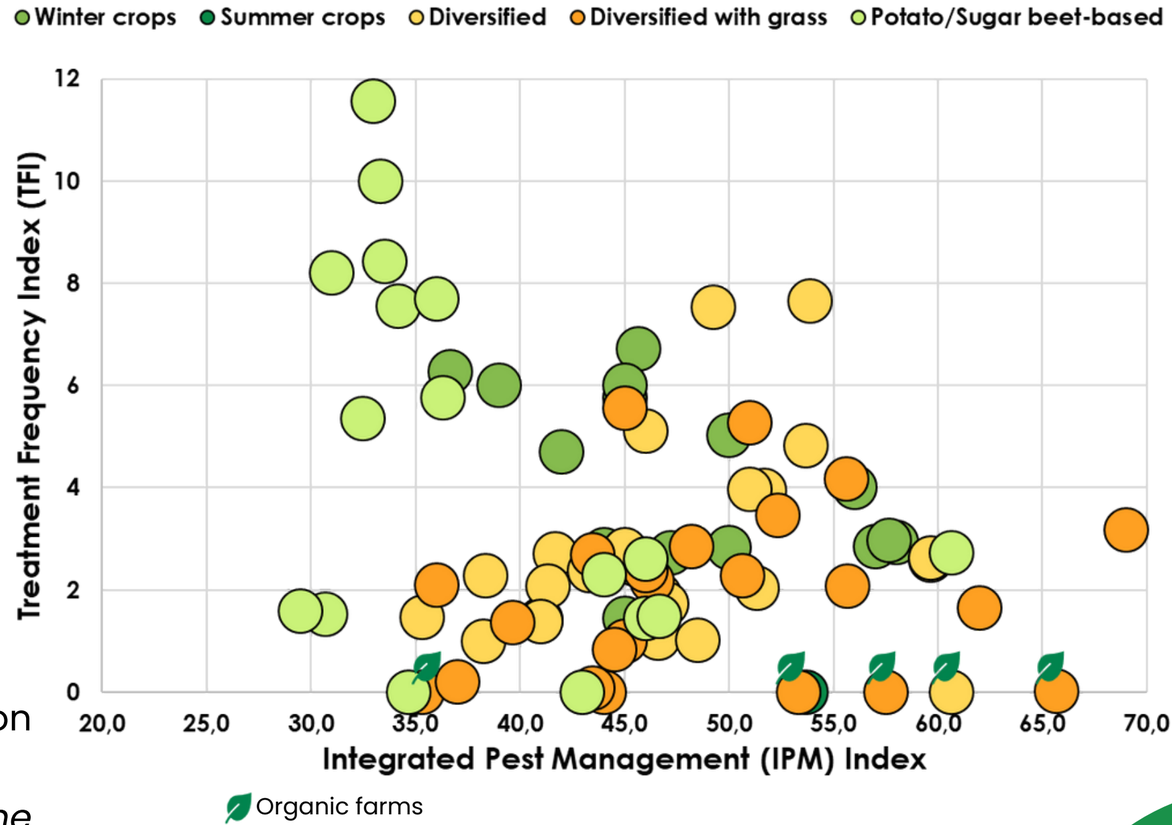
Farms are classified according to (i) main crops, (ii) climatic zone

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

- **Nature of crops (Potatoes and rapeseed are crops requiring high levels of pest/disease control)**
- **Geographic location**
- **Level of IPM adoption**

# Integrated Pest Management Index

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


**Topics included in IPM Index**

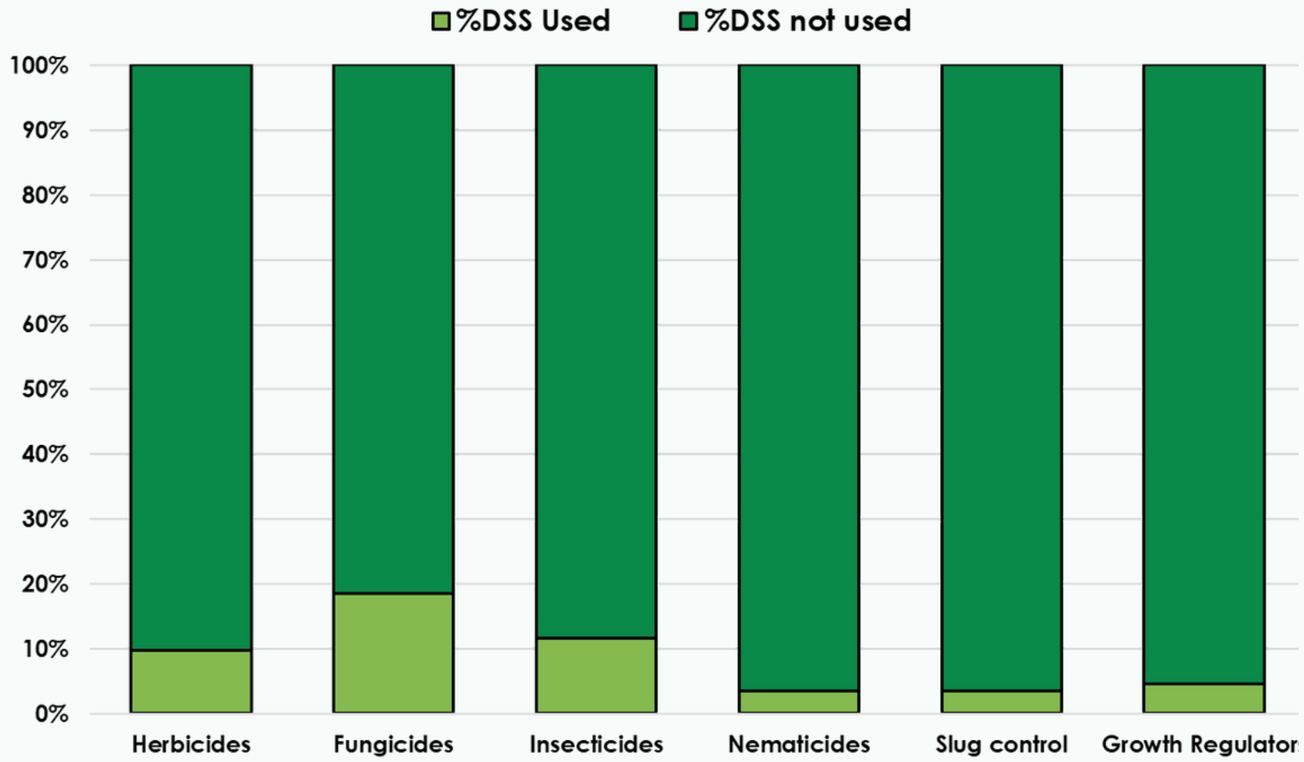
Cultural practices at the crop and farm levels were evaluated based on the last 3 cropping seasons.

IPM practices included in the index were e.g. *number of crops in the rotation, use of resistant cultivars, adapted sowing dates to escape pests, soil tillage strategy, use of Decision Support Systems, mechanical weeding…*

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. Farms diversified with grass show a lower TFI and higher IPM index.**

# Decision Support Systems

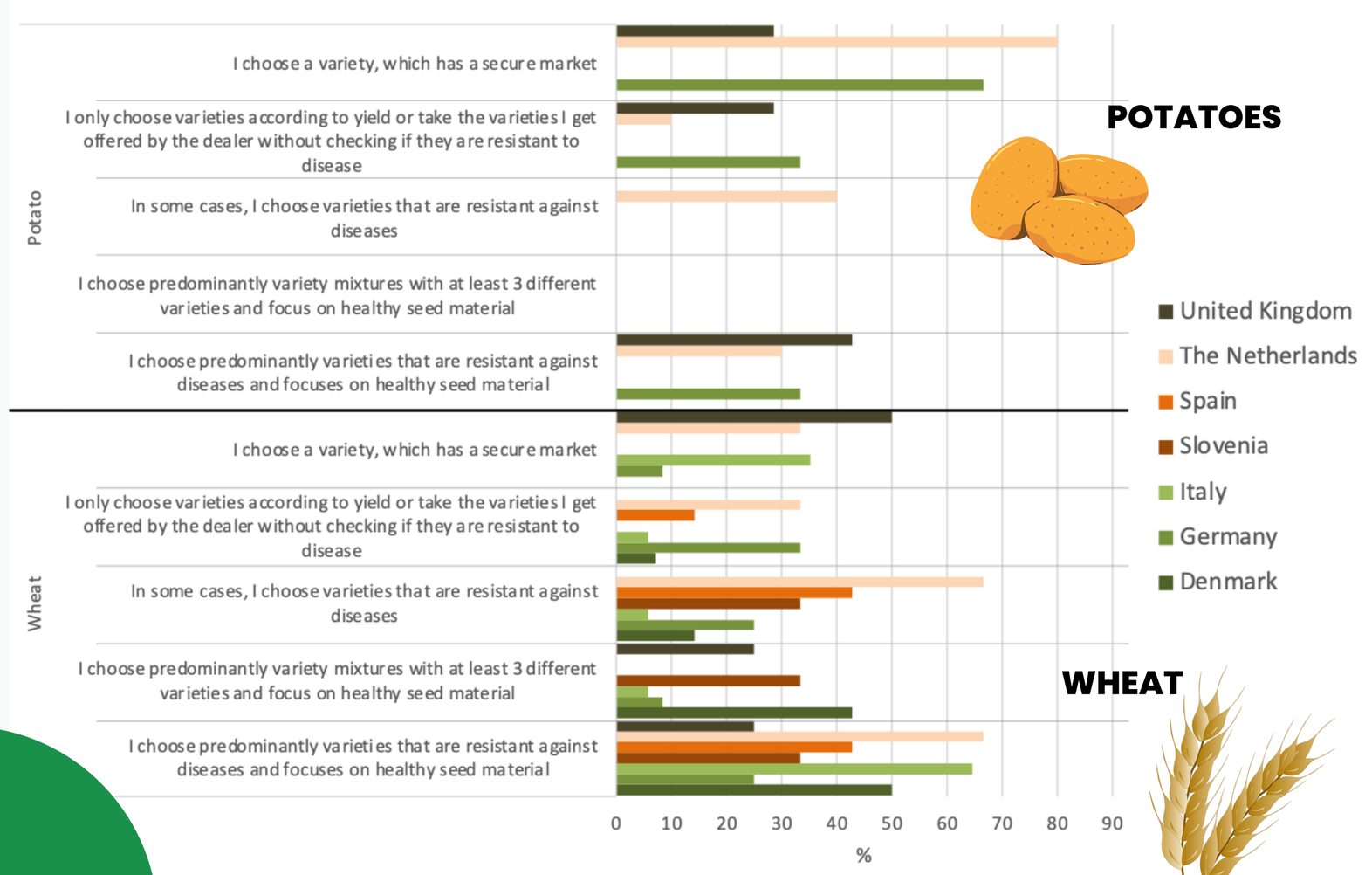



Farmers rarely cited Decision Support Systems (DSS) for the the decision making of treatments: herbicides, fungicides, insecticides, nematicides, slug control, and growth regulators.

**DSS DOES NOT APPEAR TO BE A MAJOR COMPONENT OF IPM STRATEGIES IN IPMWORKS ARABLE FARMS. PROGRESS COULD PROBABLY BE DONE IN THIS AREA.**

# Variety Choice

## Criterias for the selection of cultivars in IPMWORKS farms




**POTATOES**

**WHEAT**

**CHOOSING WHEAT CULTIVARS RESISTANT TO DISEASE IS A MAJOR OPTION, PARTICULARLY IN DENMARK, ITALY, SLOVENIA...**
**SOME FARMERS ARE GROWING MIXTURES OF WHEAT CULTIVARS TO ENHANCE THE CROP ROBUSTNESS.**

**POTATO CULTIVARS RESISTANT TO DISEASES ARE RATHER POORLY USED, BECAUSE OF TECHNOLOGICAL CONSTRAINTS FROM THE INDUSTRY.**

# Self-evaluation

## WEED, DISEASE AND PEST CONTROL

Self-evaluation of the quality of the weed, disease, and pest control as compared to other farmers in the area. Results are presented as a function of self-evaluation in IPM adoption.

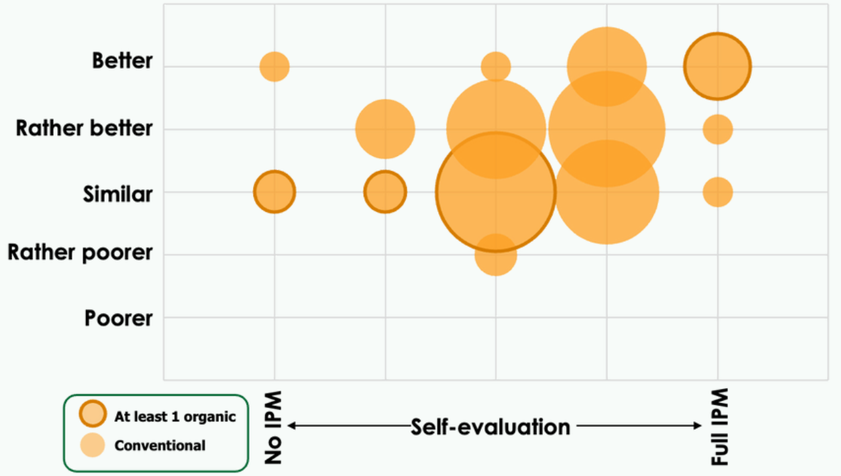
### Quality of Weed Control

as compared to neighbour farmers...


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

### Quality of Disease Control

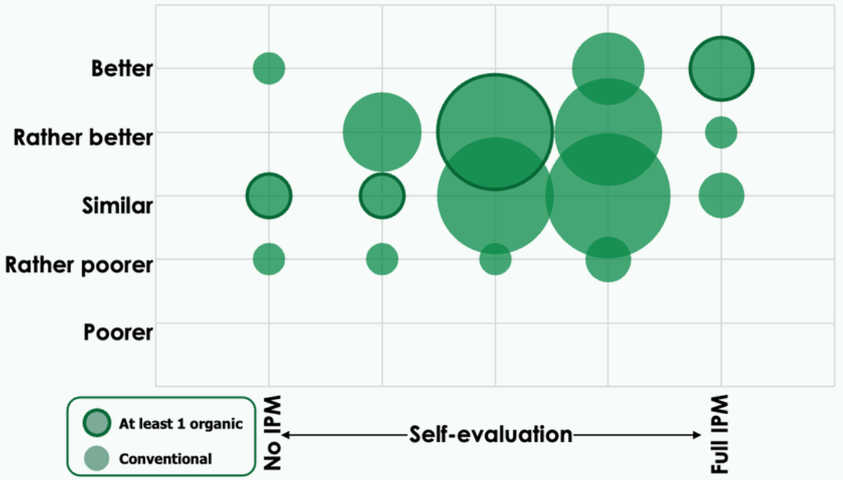
as compared to neighbour farmers...




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

### Quality of Pest Control

as compared to neighbour farmers...




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

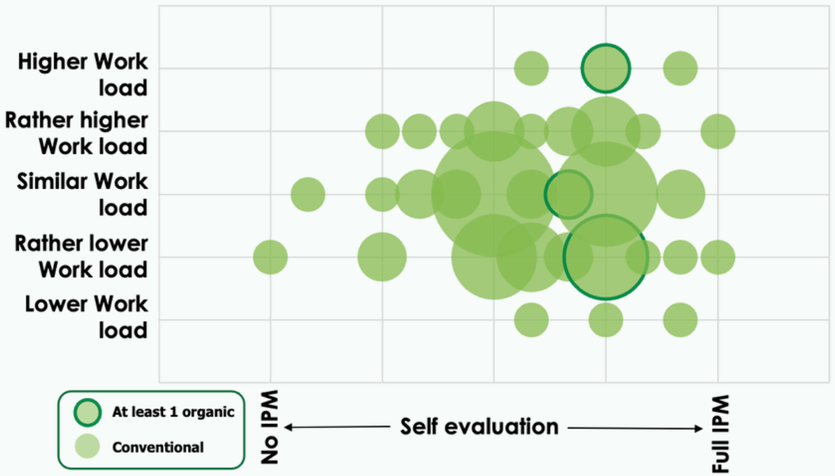
# Self-evaluation

## FARM PROFITABILITY

The farmers were asked to indicate whether their equipment costs, workload/ha, and gross margin were low, similar, or high, as compared to neighbors. Results are presented as a function of a self-evaluation of IPM adoption.

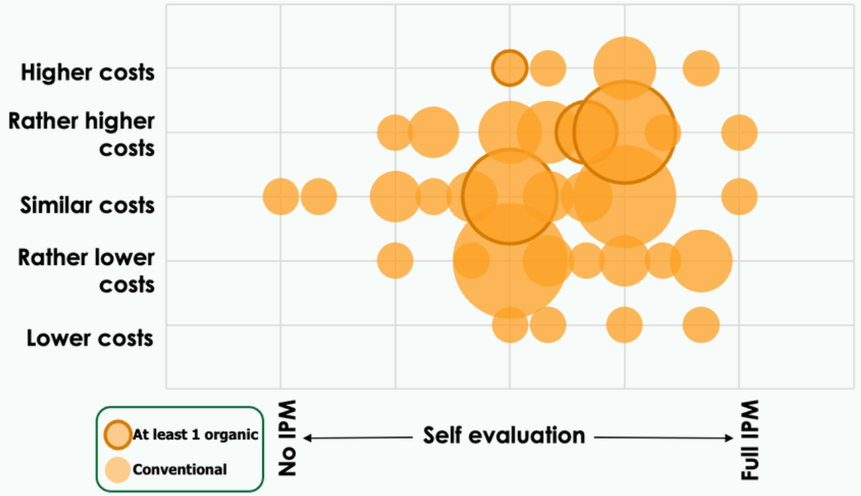
### Workload / ha

as compared to neighbour farmers...



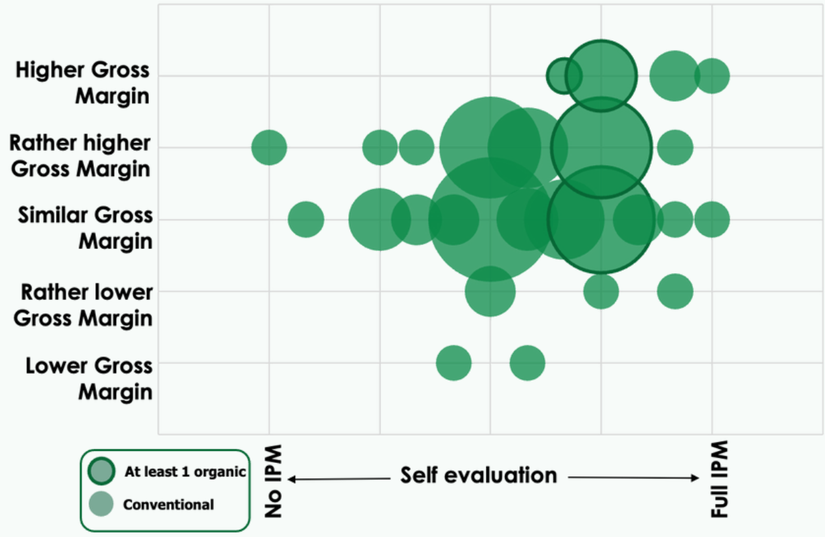

### Equipment Costs

as compared to neighbour farmers...




### Gross Margin

as compared to neighbour farmers...




**No clear impact of IPM adoption on workload/ha.**

**No clear impact of IPM adoption on equipment costs.**

**Most IPMWORKS farmers think they have similar or higher gross margins than their neighbors. <u>IPM is cost-effective.</u>**

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