Strategic Demonstration Plans

Deliverable D3.2

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

Coordination and Support Action (CSA)

01 October 2020 – 30 September 2024 (48 months)

Deliverable D3.2
Strategic Demonstration Plans

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Abstract

This Deliverable describes the IPM demonstration events planned for the upcoming years of execution, namely 2022, 2023 and 2024 of IPMWORKS in each participating country and existing hub. The document includes a summary of the IPMWORKS project, an introduction on the contents of this report, as well as a summarized overview of demo events in the upcoming years in a large table format. Additionally, specifics of each executed event are included as well as far as known in this early stage. At last, a conclusion section is written to summarize the main features and outcomes of the conducted demonstration events in 2021.

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1. IPMWORKS: Summary

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.

The objective of IPMWORKS is to promote the adoption of IPM strategies, based on a EU-wide network of farmers, who both progress further in the adoption of IPM – through peer-to-peer learning, and joint efforts – and demonstrate to other farmers that holistic IPM "works"; i.e. allows a low reliance on pesticides with better pest control, reduced costs and enhanced profitability. IPMWORKS coordinates existing networks promoting IPM and launched new hubs of farms in regions or sectors where IPM pioneers were not yet engaged in a relevant network. Advisors coordinating hubs have a major role in facilitating knowledge sharing, coaching farmers to find their own IPM solutions, and organizing local demonstration activities. IPMWORKS stimulates access to the 'IPM Decisions' platform and provides information on the IPM methods. It collects data for comparing IPM strategies, and shares results and dissemination material through channels widely used by farmers, broadcasting IPM success stories. It organizes training, and produces training material, targeting both farmers outside the network and advisory services, in order to prepare for the future dissemination of the peer-to-peer learning approach and the general adoption of IPM throughout the EU.

The demonstration of cost-efficiency of IPM is based on data describing the details of cropping systems and pest management in farms involved in the network. IPMWORKS also produces a range of data of various nature for dissemination and communication purpose: videos of farmers' testimonies, videos of demonstration events, leaflets describing cost-effective IPM-based strategies, etc.

Project Acronym	IPMWORKS
Project title	An EU-wide farm network demonstrating and promoting cost-effective IPM strategies
Grant agreement No.	101000339
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2. Introduction

IPMWORKS organizes a number of demonstration events each year in every hub for every participating country. This document summarizes and describes the demonstration events in the project, as far as already planned in February 2022, in the upcoming years of 2022, 2023 and 2024. This strategic demonstration planning helps the hub coaches to plan the 12 foreseen demonstrations over the complete project period. More details about the demonstrations will come as the demonstrations come closer in time. The detailed planning is integrated in the so called 'hub-journal', a document that contains information about all relevant tasks for the hub coaches. One month before the actual demonstration takes place all the details of the event and the organisation aspects are expected to be published in the hub journal. For each event, the following details are provided:

- Event title, hub member, country, date, location and number of visitors expected
- General subject and goal of the demonstration
- Description of IPM strategies shown in the demonstration
- Promotion activities and communication and dissemination material used for the demonstration and dissemination material produced during the demonstration, such as videos.

This information is described in section 3.

Role of demonstrations in AKIS

Demonstrations have proven to be an efficient way for knowledge sharing and knowledge transfer in agriculture. There is a large network of demonstration farms in Europe (the so-called Farm Demo network), coordinated by the H2020 Nefertiti project. The IPMWORKS demonstration farms are part of the European wide network. The specific objective for the IPMWORKS demonstration farms is to demonstrate that IPM indeed works in practice, that farms implementing holistic IPM strategies are less depending on and use less chemical pesticides and achieve the same or even improve their economic results. Holistic IPM means the integration of several measures, together building a crop protection strategy at farm level. This strategy consists in measures for 1) prevention of pests and diseases, such as sound crop rotations, the choice for robust varieties, enriched biodiversity and sustainable soil management, 2) monitoring of weeds, pests and diseases and use of Decision Support Systems (DSS) and 3) control measures based on best available technical application methods, mechanical and biological control and choice of pesticides with lowest environmental impact. The ambition and challenge for the IPMWORKS hub coaches and hub demonstration farms is to demonstrate the technical, environmental and economic results of such strategies to their peers, in the practical context of their farms. This is the best context for farmers to learn about IPM.

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3. Strategic demonstration plans

Planning demonstration events

The following table gives an overview of the demonstration events that are planned so far by IPMWORKS in the upcoming years of 2022, 2023 and 2024. Many details are not available at this moment. The planning is to be updated on a regular basis by the hub coaches. For every event, the title is included, as well as the organizing hub, country, date, location and expected number of visitors of the demonstration event.

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Strategic Demonstration plans						
Sector	**Event title**	**Hub**	**Country**	**Date**	**Location**	**Expected number of visitors**
Arable Crops	Reduced herbicide use due to mechanical weeding	JKI	Germany	May-22	IPMWORKS farm n°DE17AF0006	Unknown
	Diseases in cereals (e.g. wheat and barley)	JKI	Germany	May-22	IPMWORKS farm n°DE17AF0005	20
	Unknown	JKI	Germany	Jun-22	IPMWORKS farm n°DE17AF0008	Unknown
	Unknown	JKI	Germany	Jun-22	IPMWORKS farm n°DE17AF0009	Unknown
	Mechanical maintenance measures to reduce weed pressure	GLZ	Germany	May-22	IPMWORKS farm from Wesermarsch	Unknown
	Biodiversity mixture for grassland (Beespoke) for better soil structure and biodiversity on the field	GLZ	Germany	Jun-22	IPMWORKS farm from Ammerland	Unknown
	Remote sensing for improved use of plant protection products and fertilization	GLZ	Germany	Jul-22	IPMWORKS farm from Ostfriesland	Unknown
	Optimized pasture management to reduce weed pressure	GLZ	Germany	Aug-22	Non IPMWORKS farm	Unknown
	Grassland conversion / Oats as cover crop	GLZ	Germany	Sep-22	IPMWORKS farm from Ostfriesland	Unknown
	Evaluation of winter wheat cultivars, according to soil type (lavbunds jord), and the ability of a cultivar to compete against weeds in the field, and health against fungi	DL	Denmark	Jun-22	IPMWORKS farm n°DK11AF0008	16
	Visiting fertilizer field trial on organic soils	DL	Denmark	Jun-22	IPMWORKS farm n°DK11AF0008	16

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	Demo with a variety of drilling on a field with black grass, with ploughing, stubble harrowing or no-till	AU	Denmark	Unknown	Unknown	Unknown
	Visiting farmers' plots in Valdorba	INTIA	Spain	May-22	Unknown	Unknown
	Rust watch workshops	INTIA	Spain	May-22	Unknown	Unknown
	INTIA's experiments, open days in the field	INTIA	Spain	May-22	Unknown	Unknown
	Slug's control	INTIA	Spain	Nov-22	Unknown	Unknown
	Cover crop management, spring drilling to prevent BYDV, IPM tools for winter crop management	TEAGASC	Ireland	Feb-22	IPMWORKS farm n°IEAF0006	50
	Demonstrate IPM techniques in growing cereal and bean crops, use of pig slurry as an alternative to chemical fertilisers	TEAGASC	Ireland	Mar-22	IPMWORKS farm n°IEAF0001	Unknown
	Demonstrate IPM techniques in growing cereal and bean crops	TEAGASC	Ireland	Apr-22	IPMWORKS farm n°IEAF0002	Unknown
	Demonstrate IPM techniques in growing cereal and bean crops, use of precision technology to improve application accuracy	TEAGASC	Ireland	Apr-22	IPMWORKS farm n°IEAF0003	Unknown
	Demonstrate IPM techniques in growing cereal and bean crops	TEAGAC	Ireland	Apr-22	IPMWORKS farm n°IEAF0004	Unknown
	Demonstrate IPM techniques in growing cereal and bean crops	TEAGASC	Ireland	APR-22	IPMWORKS farm n°IEAF0005	Unknown
	OVLAC mini-plough	UCSC	Italy	Mar-22	IPMWORKS farm n°IT9AF0003	5 to 30
	On field test day for wheat hoeing solutions	UCSC	Italy	Mar-22	IPMWORKS farm n°IT9AF0012	5 to 30

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	On field test day for lentil relay seeding on wheat	UCSC	Italy	Mar-22	IPMWORKS farm n°IT9AF0011	5 to 30
	On field test day for fungicides efficiency on wheat	UCSC	Italy	May-22	IPMWORKS farm n°IT9AF0002	5 to 30
	On field test day for legumes relay seeding on wheat	UCSC	Italy	Apr-22	IPMWORKS farm n°IT9AF0009	5 to 30
	On field test day for brown marmorated stink bug (Halyomorpha halys) control on wheat	UCSC	Italy	May-22	IPMWORKS farm n°IT9AF0002	5 to 30
	New technology in weed suppression in sugar beet	KPODR	Poland	Apr-22	IPMWORKS farm n°PL5AF0004	30
	Pest and diseases in cereals, oilseed rape and legumes	KPODR	Poland	Jun-22	IPMWORKS farm n°PL5AF0012	50 to 100
	Holistic IPM approach in different crops	KPODR	Poland	Jun-22	IPMWORKS farm n°PL5AF0013	200
	To be defined	KPODR	Poland	Aug-22	IPMWORKS farm n°PL5AF0004	50
	Biofortification to reduce fungicide use in WW	JHI	Scotland	Jul-22	IPMWORKS farm n°UK6AF0005	100
	Cover and Companion Cropping Workshop	JHI	Scotland	Nov-22	To be determined	10
	Back to the Future: Integrating Livestock into Arable Systems	JHI	Scotland	Dec-22	To be determined	15
Greenhouse	Demonstrate farm IPM strategy in a late season strawberry crop and options for managing Thrips and aphids	INAGRO	Belgium	Feb-22	IPMWORKS farms n°BE4GH0004 and BE4GH0001	20 to 25
	Demonstrate farm IPM strategy in an early and late season strawberry crop and options for managing white fly	INAGRO	Belgium	Mar-22	IPMWORKS farm n°BE4GH0007	20-25

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	Demonstrate farm IPM strategy in an early strawberry crop and options for managing Botrytis	INAGRO	Belgium	May-22	IPMWORKS farms n°BE4GH0009 and BE4GH0003	20 to 25
	Demonstrate farm IPM strategy on a strawberry tray field	INAGRO	Belgium	Dec-22	IPMWORKS farms n°BE4GH0005 and BE4GH0004	20 to 25
	IPM in zucchini crops	COEXPHAL	Spain	Feb-22	IPMWORKS farm n°ES16GH0008	Unknown
	IPM in melon crops	COEXPHAL	Spain	Jun-22	IPMWORKS farm n°ES16GH0005	Unknown
	IPM in tomato crops	COEXPHAL	Spain	Apr-22	IPMWORKS farm n°ES16GH0006	Unknown
Orchard	Olive tree management	UCSC	Italy	Feb-22	To be determined	20
	Pruning disposal shredder	UCSC	Italy	Mar-22	To be determined	20
	Olive fly	UCSC	Italy	Jun-22	To be determined	20
	Olive fly	UCSC	Italy	Jul-22	To be determined	20
Outdoor Vegetables	Water management on the field	INAGRO	Belgium	Feb-22	Unknown	15
	Good pollination, male flowers	INAGRO	Belgium	Apr-22	Unknown	10
	Cultivar comparison	INAGRO	Belgium	Jul-22	Unknown	10
	Comparison on the use of chemical and biodegradable plastic in the field	INAGRO	Belgium	Oct-22	Unknown	10
	To be decided	INAGRO	Belgium	Oct-22	Unknown	10
	Different machines for weed control	DELPHY	Netherlands	Jun-22	Unknown	15 to 20
	Different types of warning systems	DELPHY	Netherlands	Aug-22	Unknown	15 to 20

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	Integrating organic practices in integrated production	CONSULAI	Portugal	Unknown	Unknown	Unknown
	Management of weeds	CONSULAI	Portugal	Unknown	Unknown	Unknown
	Soil	CONSULAI	Portugal	Unknown	Unknown	Unknown
	To be defined	CONSULAI	Portugal	Unknown	Unknown	Unknown
	Weed control with herbicides and mechanical machine in winter wheat	KGZS	Slovenia	Apr-22	Spodnja Polskava	10 to 20
	Control of diseases in winter barley according to weather conditions vs standard application	KGZS	Slovenia	May-22	Skoke	10 to 20
	Chemical control of the weed in mixed crop of spring barley and fodder peas	KGZS	Slovenia	May-22	Pernica	10 to 20
	Control of grape vine moths with mating disruption methods 1	KGZS	Slovenia	Jul-22	Kajzar	10 to 20
	Control of grape vine moths with mating disruption methods 2	KGZS	Slovenia	Jul-22	Ormoz area	10 to 20
	Bio stimulants as plant protection agents in the production of peppers	BIOSENSE	Serbia	Jul-22	IPMWORKS farm n°RS13OV&ORM0006	10 to 15
	Importance of cover crops in plant protection	BIOSENSE	Serbia	Sep-22	IPMWORKS farm n°RS13OV&ORM0004	10
Vineyard	Reducing insecticides use, favouring biocontrol agents, mating disruption, mating confusion, insect mass trapping	FEUGA	Spain	Unknown	Unknown	Unknown
	Test a new technological vineyard monitoring service, monitor in real-time, remotely and at various precision levels (grapes, plant, pot and vineyard)	FEUGA	Spain	Unknown	Unknown	Unknown

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	Solutions predict fungal diseases in vineyards (downey mildew, powdery mildew and botrytis)	FEUGA	Spain	Unknown	Unknown	Unknown
	Mechanical weed control using an innovative technique/machine “intercepas”	CONSULAI	Portugal	Mar-22	IPMWORKS farm n°PT13VI0011	20 to 30
	Ozone for plant protection	CONSULAI	Portugal	Apr-22	IPMWORKS farm n°PT13VI0003	Unknown
	Biodiversity practices	CONSULAI	Portugal	Jun-22	IPMWORKS farm n°PT13VI0007	Unknown

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Specifics of demonstration events

In the next section, as far as available at this early stage, more specific information is provided per demonstration event, as illustration of the type of information that is requested for the planning of demonstrations. This includes the description of IPM strategies and IPM measures, what promotion activities and dissemination and communication materials are used, what dissemination material will be created during the demonstration that can be used for further communication and dissemination actions and how the evaluation of the demo event will be done.

Arable Crops

- Reduced herbicide use due to mechanical weeding – JKI Germany

The farmer wants to demonstrate IPM methods (e.g. mechanical weed control) and its potential to reduce the use of chemical plant protection products.

- Diseases in cereals (e.g. wheat and barley) – JKI Germany

Identification and treatment of virus diseases in cereals; comparison of different varieties of wheat.

- Unknown – JKI Germany

No further information available at the moment.

- Unknown – JKI Germany

No further information available at the moment.

- Mechanical maintenance measures to reduce weed pressure – GLZ Germany

No further information available at the moment.

- Biodiversity mixture for grassland (Beespoke) for better soil structure and biodiversity on the field – GLZ Germany

No further information available at the moment.

- Remote sensing for improved use of plant protection products and fertilization – GLZ Germany

No further information available at the moment.

- Grassland conversion / Oats as cover crop – GLZ Germany

No further information available at the moment.

- Evaluation of different soil treatments before sowing winter wheat – DL Denmark

No further information available at the moment.

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- Evaluation of winter wheat cultivars, according to soil type (lavbunds jord), and the ability of a cultivar to compete against weeds in the field, and health against fungi – DL Denmark

No further information available at the moment.

- Visiting fertilizer field trial on organic soils – DL Denmark

No further information available at the moment.

- Demo with a variety of drilling, on a field with black grass, with ploughing, stubble harwing or no-till – AU Denmark

No further information available at the moment.

- Visiting farmers' plots in Valdorba – INTIA Spain

No further information available at the moment.

- Rust watch workshops – INTIA Spain

No further information available at the moment.

- INTIA's experiments, open days in the field – INTIA Spain

No further information available at the moment.

- Slug's control – INTIA Spain

No further information available at the moment.

- Cover crop management, spring drilling to prevent BYDV, IPM tools for winter crop management – TEAGASC Ireland

To demonstrate IPM techniques in growing cereal and bean crops.

- Demonstrate IPM techniques in growing cereal and bean crops, use of pig slurry as an alternative to chemical fertilisers – TEAGASC Ireland

To demonstrate IPM techniques in growing cereal and bean crops, use of pig slurry as an alternative to chemical fertilizers.

- Demonstrate IPM techniques in growing cereal and bean crops – TEAGASC Ireland

To demonstrate IPM techniques in growing cereal and bean crops.

- Demonstrate IPM techniques in growing cereal and bean crops, use of precision technology to improve application accuracy – TEAGASC Ireland

To demonstrate IPM techniques in growing cereal and bean crops and the use of precision technology to improve application accuracy.

- Demonstrate IPM techniques in growing cereal and bean crops – TEAGASC Ireland

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To demonstrate IPM techniques in growing cereal and bean crops.

- Demonstrate IPM techniques in growing cereal and bean crops – TEAGASC Ireland

To demonstrate IPM techniques in growing cereal crops.

- OVLAC mini-plough – UCSC Italy

The farm has the mini-plough as a demo for one year, the retailer gave him to test it and to lend it to other farmers. The machinery is of great interest because it works well for seedbank reduction (tillage with inversion) but without the trade-offs of deep ploughing.

- On field test day for wheat hoeing solutions – UCSC Italy

The farmer wanted to test a good machinery to perform a good hoeing on wheat, which is very difficult to be performed and the machineries have a high cost. Other farmers expressed their interest in machines like this, but did not buy any because of the high cost. A contractor has a good machine and it could be interesting to have him to show and test this machine with the other farmers.

- On field test day for lentil relay seeding on wheat – UCSC Italy

The farmer knows the market opportunities of the lentils and already tested the crop, but he was not so happy of the result. The lentil plant is very short and the varieties did not go through good breeding programs. There is a big problem in harvesting lentils because of the loss of the harvestable part and also weed control is very difficult (very low competitive crop). The farmer would like to test lentil in inter-cropping with relay seeding in spring on wheat, on a quite large field scale.

- On field test day for fungicides efficiency on wheat – UCSC Italy

The farmer uses a DSS on wheat and on chickpea and he is equipped with a meteo station. He was happy with the test he made together with the technicians and retailers. The fungi pest on wheat are very spread and of high concern among all the farmers of the hub (all the farmers of the hub produce wheat), so having effective molecules to be sprayed is crucial to lower the environmental impact of the treatments in the Pisa area.

- On field test day for legumes relay seeding on wheat – UCSC Italy

The farm operates inside a National Park, with many problems of damages by wild fauna and many environmental restrictions, so the farmer is keen on finding more environmentally friendly agriculture, lowering the input and eventually switching to organic agriculture. But he is aware that he needs to be trained and do some trials before switching to organic. He was enthusiast when speaking about relay inter-cropping with alfalfa (or other legumes e.g. clovers), a spread practice in the area until some decades ago, and wanted to implement a field trial. The inter-cropping is a good solution for improving N content in the soil and for weed control, but needs to be tested to overcome the trade-offs.

- On field test day for brown marmorated stink bug (Halyomorpha halys) control on wheat – UCSC Italy

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The farmers suffered a severe damage by H. halys last year. One of his wheat stock was refused by the retailer due to the brownish endosperm colour.

- New technology in weed suppression in sugar beet – KPODR Poland

Demonstrate new technology in weed suppression with less spraying to a wider audience.

- Pest and diseases in cereals, oilseed rape and legumes – KPODR Poland

Pests and diseases occurring in cereals, oilseed rape and legumes in this season as well as how agrometeorological conditions are affecting the situation of this season.

- Holistic IPM approach in different crops – KPODR Poland

Demonstration of holistic IPM approaches on different crops replicated in plot settings.

- To be defined – KPODR Poland

No further information available at the moment.

- Biofortification to reduce fungicide use in Winter Wheat – JHI Scotland

Comparing the effect on disease pressure between biofortification and conventional fungicides.

- Cover and Companion Cropping Workshop – JHI Scotland

Comparing cover crop success in Scotland, including what crops are best for the Scottish region and companion cropping in OSR and potential fertiliser savings.

- Back to the Future: Integrating Livestock into Arable Systems – JHI Scotland

Traditional mixed farming is back in fashion with a growing number of the regenerative farming movement. Assessing the different ways of including livestock in arable rotations and their benefits.

Greenhouse

- Demonstrate farm IPM strategy in a late season strawberry crop and options for managing Thrips and aphids – INAGRO Belgium

The IPM strategies for thrips and aphids from two hub members will be monitored in an Autumn cultivation. The occurrence of thrips, aphids and their natural enemies will be monitored. Their IPM schedule will be surveyed and linked to the monitoring data. There will be no in field comparison, but the IPM strategies from both hub members will be compared.

- Demonstrate farm IPM strategy in an early and late season strawberry crop and options for managing white fly – INAGRO Belgium

From Autumn till Spring, white fly (Trialeurodes vaporariorum) can be a major problem in strawberries. The fly and larvae feed on the leaves of the strawberry plants. The larvae also produce honeydew on which the fungus Cladosporium spp. can grow. Therefore a good control of the white fly is necessary. White fly can be controlled with chemicals, but more ecological alternatives are available such as natural enemies.

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Spider mites are already often used in strawberries, but the predatory wasp Encarsia formosa not. In this demo event, the use of spider mites, whether or not combined with Encarsia Formosa, will be demonstrated.

- Demonstrate farm IPM strategy in an early strawberry crop and options for managing Botrytis – INAGRO Belgium

Botrytis can infect strawberry flowers and cause production yields during the growth of the fruits and in storage. This fungus is mainly chemically controlled, however alternatives are available.

Bumble bees or bees are used in tunnels and glasshouses to fertilize the flowers. Biobest, a company specialized in bumble bees and biological crop protection distributes flying doctors. These are bumblebee hives that are combined with Prestop 4B. Prestop 4B contains spores of the fungus Gliocladium catenulatum which can control Botrytis. The bumblebees spread the fungus spores on the strawberry flowers and in this way the flowers are protected against a Botrytis infection.

In this demo-event the use of flying doctors will be demonstrated.

- Demonstrate farm IPM strategy on a strawberry tray field – INAGRO Belgium

Several pathogens such as Phytophthora spp. can infect the roots in the nursery. Once the plants are planted in a production cultivation the plants can totally collapse with high yield losses as a result. Different chemical pesticides fade out due to strict regulations and non-renewal of the active substance. Therefore alternatives are needed. Trichoderma spp. can control several root pathogens and can be used in the tray substrates. The use of Trianum (a. s. Trichoderma harzianum) in a tray substrate will be demonstrated.

- IPM in zucchini crops – COEXPHAL Spain

No further information available at the moment.

- IPM in melon crops – COEXPHAL Spain

No further information available at the moment.

- IPM in tomato crops – COEXPHAL Spain

No further information available at the moment.

Orchard

- Olive tree management – UCSC Italy

No further information available at the moment.

- Pruning disposal shredder – UCSC Italy

No further information available at the moment.

- Olive fly – UCSC Italy

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No further information available at the moment.

- Olive fly – UCSC Italy

No further information available at the moment.

Outdoor Vegetables

- Water management on the field – INAGRO Belgium

The overall goal is to demonstrate and make farmers aware of BAT for water and erosion management on their land in the specific case of zucchini.

- Good pollination, male flowers – INAGRO Belgium

Demonstrating best practice on bumblebee hives/bee keeping.

- Cultivar comparison – INAGRO Belgium

No further information available at the moment.

- Comparison on the use of chemical and biodegradable plastic in the field – INAGRO Belgium

No further information available at the moment.

- To be decided – INAGRO Belgium

No further information available at the moment.

- Different machines for weed control – Delphy Netherlands

No further information available at the moment.

- Different types of warning systems – Delphy Netherlands

No further information available at the moment.

- Integrating organic practices in integrated production – CONSULAI Portugal

Look into practices and topics that the organic farmer uses (monitoring, prevention) and that can be adopted by all farmers.

- Management of weeds – CONSULAI Portugal

Show innovative methods for weed management. To be better defined.

- Soil – CONSULAI Portugal

No further information available at the moment.

- To be defined

No further information available at the moment.

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- Weed control with herbicides and mechanical machine in winter wheat – KGZS Slovenia

How to efficacy control weeds in winter wheat with herbicides and mechanical equipment.

- Control of diseases in winter barley according to weather conditions vs standard application – KGZS Slovenia

Control of diseases in winter barley according to weather conditions and diseases pressure vs standard application according the phenological phase.

- Chemical control of the weed in mixed crop of spring barley and fodder peas – KGZS Slovenia

How to efficiently control weeds in mixed crop of spring barley and fodder peas.

- Control of grape vine moths with mating disruption methods 1 – KGZS Slovenia

How to efficiently control population of grape vine moths in the vine grape with mating disruption method.

- Control of grape vine moths with mating disruption methods 2 – KGZS Slovenia

How to efficiently control population of grape vine moths in the vine grape with mating disruption method.

- Bio stimulants as plant protection agents in the production of peppers – BIOSENSE Serbia

Activation of natural plant defence mechanisms, instead of the use of synthetic pesticides.

- Importance of cover crops in plant protection – BIOSENSE Serbia

Cover crops as plant protection tools.

Vineyard

- Reducing insecticides use, favouring biocontrol agents, mating disruption, mating confusion and insect mass trapping – COEXPHAL Spain

No further information available at the moment.

- Test a new technological vineyard monitoring service, monitor in real-time, remotely and at various precision levels (grapes, plant, pot and vineyard) – COEXPHAL Spain

No further information available at the moment.

- Solutions predict fungal diseases in vineyards (downy mildew, powdery mildew and botrytis) – COEXPHAL Spain

No further information available at the moment.

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- Mechanical weed control using an innovative technique/machine "intercepas" – CONSULAI Portugal

Why: Weed control in the row is essential for good vine development. The technique demonstrated does weed control without the use of herbicides.
What: Mechanical weed control using an innovative technique: "intercepas".
It is a common practice in the most developed producers and with particular attention to the impact on the environment. However, what will be observed is an evolution of what is commonly done.

- Ozone for plant protection – CONSULAI Portugal

No further information available at the moment.

- Biodiversity practices – CONSULAI Portugal

No further information available at the moment.

4. Conclusion

All the hub coaches in the IPMWORKS project were asked to make a strategic demonstration plan for the whole project period. Along the course of the project, hub coaches will add the details about the demonstration events planned in the hub journal. In this report, all the demonstration events were briefly summarized and elaborated upon when more information was already available. Some demonstration events have been conducted so far in different crops, for different goals, such as weed management or pest management and in various countries. The number of demonstrations will increase in the coming years.

The detailed planning and evaluation of the demonstration events will be used for internal learning, helping hub coaches to organise inspiring holistic IPM demonstrations for the farming community across Europe.

All persons within the IPMWORKS consortium commit with all that is written in this deliverable. The partners' main contacts will ensure that all persons in their team commit with the procedures that are described.

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