Warwick webinar outdoor vegetables_April 25, 2023

Sabien Pollet

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SmartProtect - 15 Partners - 12 countries - 2020-2023

inagro

WARWICK
THE UNIVERSITY OF WARWICK

www.emu.ee
Eesti Maaülikool
Estonian University of Life Sciences

University of Ljubljana

iniav
Instituto Nacional de Investigação Agrária e Veterinária, I.P.

VÚRV
Výzkumný ústav rostlinné výroby
Poznatky pro udržitelné zemědělství

JKI
Julius Kühn-Institut

A.R.E.F.L.H

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AGENSO

EFOS

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IPM THEMATIC NETWORK


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Copenhagen
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Samara
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Saratov
Volgograd
Rostov-on-Don
Krasnodar
Georgia
Tbilisi
Armenia
Azerbaijan
Baku
Caspian Sea
Black Sea

SMARTPROTECT stages

A THEMATIC Network on SMART IPM - Compile knowledge ready for practice - Multiple approach levels

KNOWLEDGE COLLECTION

Asses ↑↓ *Refine*

EVALUATION & BENCHMARKING

Report to exchange groups ↑↓ *Recommend changes*

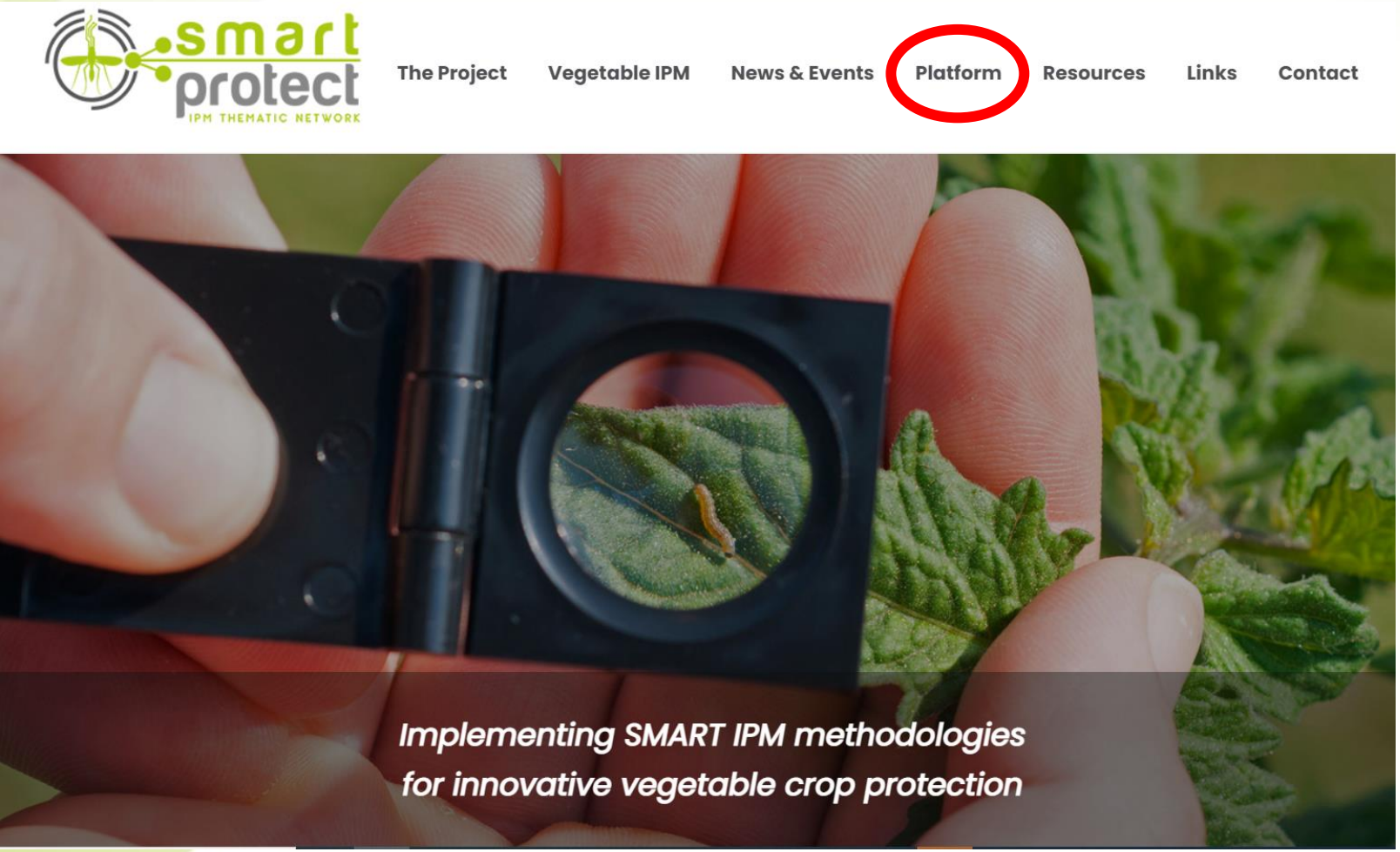
EXCHANGE

Base for multi-actor network ↑↓ *Link to other EU member states*

KNOWLEDGE MANAGEMENT

2. SmartProtect platform developed by Agenso

2. SmartProtect platform developed by Agenso



Website link https://www.smartprotect-h2020.eu/

Subscribe to our newsletter: SmartProtect H2020 (smartprotect-h2020.eu)

SmartProtect platform [Smart Protect - Home (smartprotect-h2020.eu)]

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Welcome to SmartProtect Platform!

SmartProtect Platform is a thematic network focusing on SMART IPM solutions for farmers, advisors, experts, researchers, technology providers, and any other interested end-user. In this SmartProtect platform you can find technologies and methodologies for Integrated Pest Management (IPM) in vegetable production for open-field and greenhouse production systems. IPM solutions are divided by technique type (application techniques, decision support techniques, diagnostics and detection techniques, and monitoring techniques), while are also accessible by application range (Bacteria, Beneficials, Fungi, Insects, Mites, Nematodes, and Viruses).

Technique Types

- Application techniques 44
- Decision support techniques 42
- Diagnostics and detection techniques 71
- Monitoring techniques 35

4 groups of techniques

Application Range

Bacteria 41

Sprayer vision

Hybrix 2.1 Agricultural spra...

Beneficials 20

Alumaster 2.0

Bioverblazer

SmartProtect platform Smart Protect - Home (smartprotect-h2020.eu)

Search function

uv c

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Newest

Filters Clear All

Active Filters

Production System: Greenhouse ×
Production System: Open field ×
Technique Type: Application techniques ×
Technique Type: Monitoring techniques ×

Technology Readiness Clear

<TRL7 TRL7 TRL8 TRL9

Production System Clear

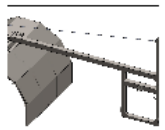
- [x] Greenhouse
- [x] Open field

Technique Type Clear

- [x] Application techniques
  - [x] Sprayers
  - [x] Spraying drones
  - [x] UV-systems
  - [x] Distribution systems for beneficials
  - [x] Others
- [ ] Decision support techniques

Application Range Clear

- [ ] Bacteria
- [ ] Beneficials
- [ ] Fungi
- [ ] Insects
- [ ] Mites
- [ ] Nematodes
- [ ] Viruses



UV-C 'Dragon' unit

The Dragon delivery system is mounted to a tractor and pulled at a precise speed through the field to deliver the required dose. The optimal dose and schedule will vary for different crop and pathogen systems. When designing for a new crop-pathogen system, the optimal procedure is determined through a combination of laboratory and field studies to ensure that disease severity is reduced while minimizing damage to the crop. This is being developed by the Lighting Research Center (LRC) in the USA (information online at https://lightandplanthealth.org/dragon.html). The LRC is part of a university and not a manufacturer, nor are we selling these units. The website includes plans where farmers could construct their own units to use and evaluate if they wish, and the arrays are being used and tested in ongoing research with farmers.

Lumion UV-C robot

The company octinion (merged with Priva to Kompano in 2021) makes robotic platforms. Their xenion robotic platform outfitted with UV-C lights is called Lumion. Lumion helps to manage powdery mildew on strawberries using UV-C light. The fungus specific DNA absorbs the UV-C light, thus avoiding damage to the crop. It is a robot that can move around the crop. The platform can operate on rails or tires.

Information on platform

platform.smartprotect-h2020.eu/en/view/ipm/164

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Lumion UV-C robot

Technology Readiness Level
TRL 9

9

Farm Scale Types
Big scale, Small scale

Description

The company octinion (merged with Priva to Kompano in 2021) makes robotic platforms. Their xenion robotic platform outfitted with UV-C lights is called Lumion. Lumion helps to manage powdery mildew on strawberries using UV-C light. The fungus specific DNA absorbs the UV-C light, thus avoiding damage to the crop. It is a robot that can move around the crop. The platform can operate on rails or tires.

For More Information Visit Website

Crops Used
- Cucumber
- Strawberry

Crops Possible
- All

Countries Used
- Belgium
- Canada
- Germany
- Netherlands

Countries Not Suitable
- No Countries

Species
- Range of species

Tech Requirement Comment

System on rails or concrete paths > 2.4m needed

Training Comment

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Information on platform

CapTrap

Technology Readiness Level
TRL 9

9

Farm Scale Types
Big scale, Small scale

Production Systems
Greenhouse, Open field

Technique Types
Decision support techniques, Monitoring techniques, Insect monitoring (Monitoring techniques)

Application Ranges
Insects

Company Name
Cap2020

Country Origin
France

Description

Cap2020 offers 3 connected traps designed for trapping different kinds of pests. The funnel trap is suitable for trapping noctuids, but also other pests such as the boxwood borer. Thanks to the attractiveness of the pheromone and the analysis of the movement of the insect in the trap, only the target insect is counted. The second trap is an ideal tool for monitoring populations of corn pests including the European corn borer, the creel trap has for several years proven its worth in mass trapping of this pest. This trap works with a specific pheromone. The vision trap as third system is a multiple pests trap. The CapTrap Vision system was designed to identify and enumerate pests on sticky plates. To count pests, performant algorithms using deep learning are used and integrated into the trap. The counts are send directly to your CapTrap account, allow real-time monitoring of the presence of the pest and optimal interventions.

For More Information Visit Website

Crops Used

- All
- Brussels sprouts
- Cabbage
- Cauliflower
- Corn
- Head cabbage (white, red, savoy)
- Maize

Crops Possible

- All

Countries Used

- France

Species

- Autographa gamma
- Plutella xylostella
- Agrotis segetum
- Range of species

Information on platform

Technique Types
Decision support techniques, Monitoring techniques, Insect monitoring (Monitoring techniques)

Application Ranges
Insects

Company Name
Cap2020

Country Origin
France

Contact Person
contact@cap2020.fr

Special Requirement ☐

Need for a special agricultural landscape ☐

Need Special Training ☐

Crops Possible
- All

Countries Used
- France

Species
- Autographa gamma
- Plutella xylostella
- Agrotis segetum
- Range of species
- Tuta absoluta

Tech Requirement Comment

The traps are completely autonomous, because they are connected to solar panel. They are geolocated to a GPS location.
The sim-cards are multi-operators communicating in the world that will always be able to communicate with you on all continents.
An optional weather forecast for a temperature and humidity is available

Cost Detail

Buy a trap : from 539 €
Rent a trap : between 200 and 400 € per season (depends on the trap and the duration)

Example Cases/Additional information

Helicoverpa armigera, Mamestra brassicae, Striacosta albicosta, Ostrinia nubilalis, Sesamia nonagrioides, Lobesia botrana, Eupoecilia ambiguella, Cryptoblabes gnidiella, Duponchelia fovealis, Cacoecimorphapronubana, Cydalima perspectalis, Cydia pomonella, Cydia funebrana, Thaumetopoea pityocampa

Support

Free central support

Media Files

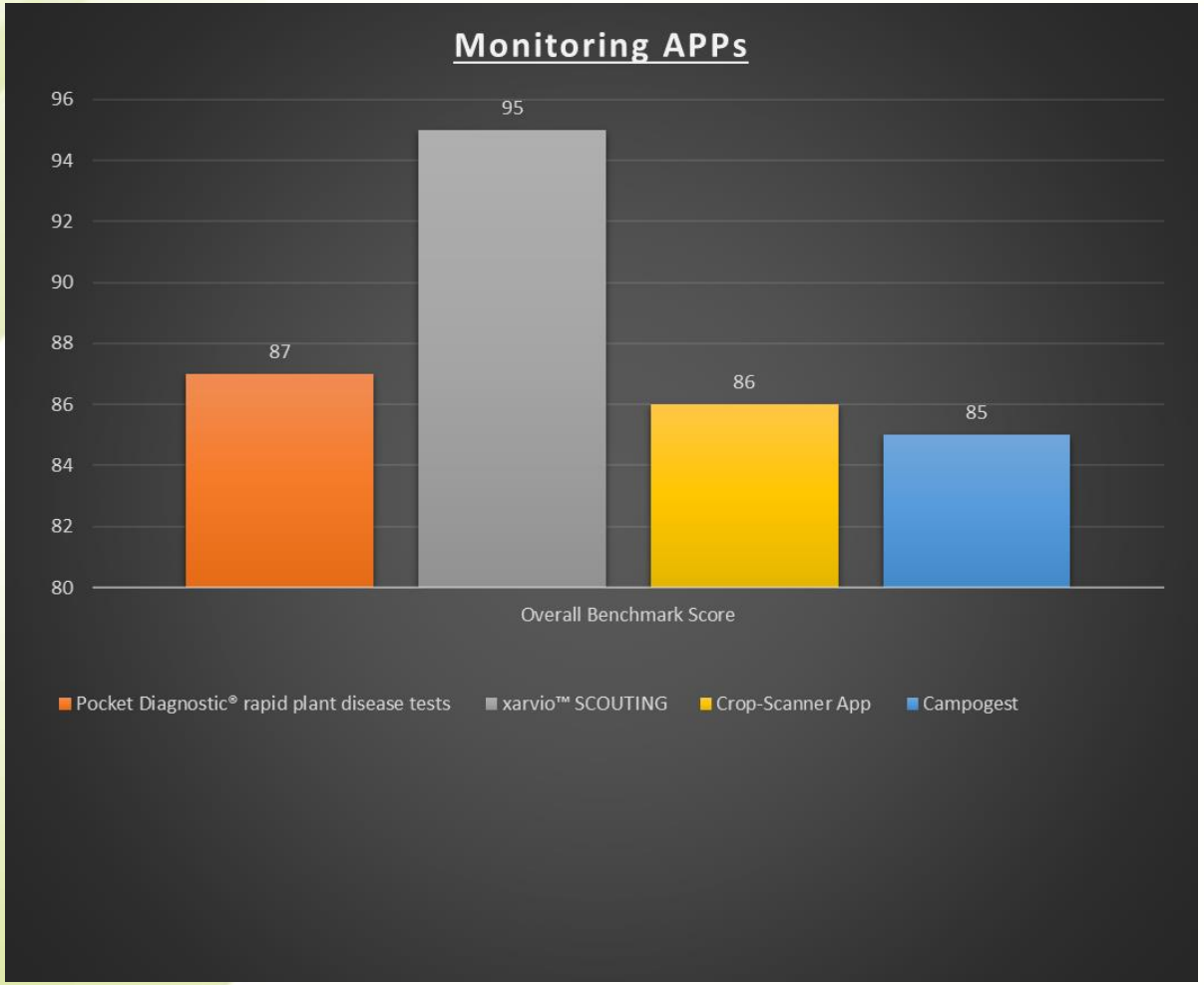
Youtube Videos

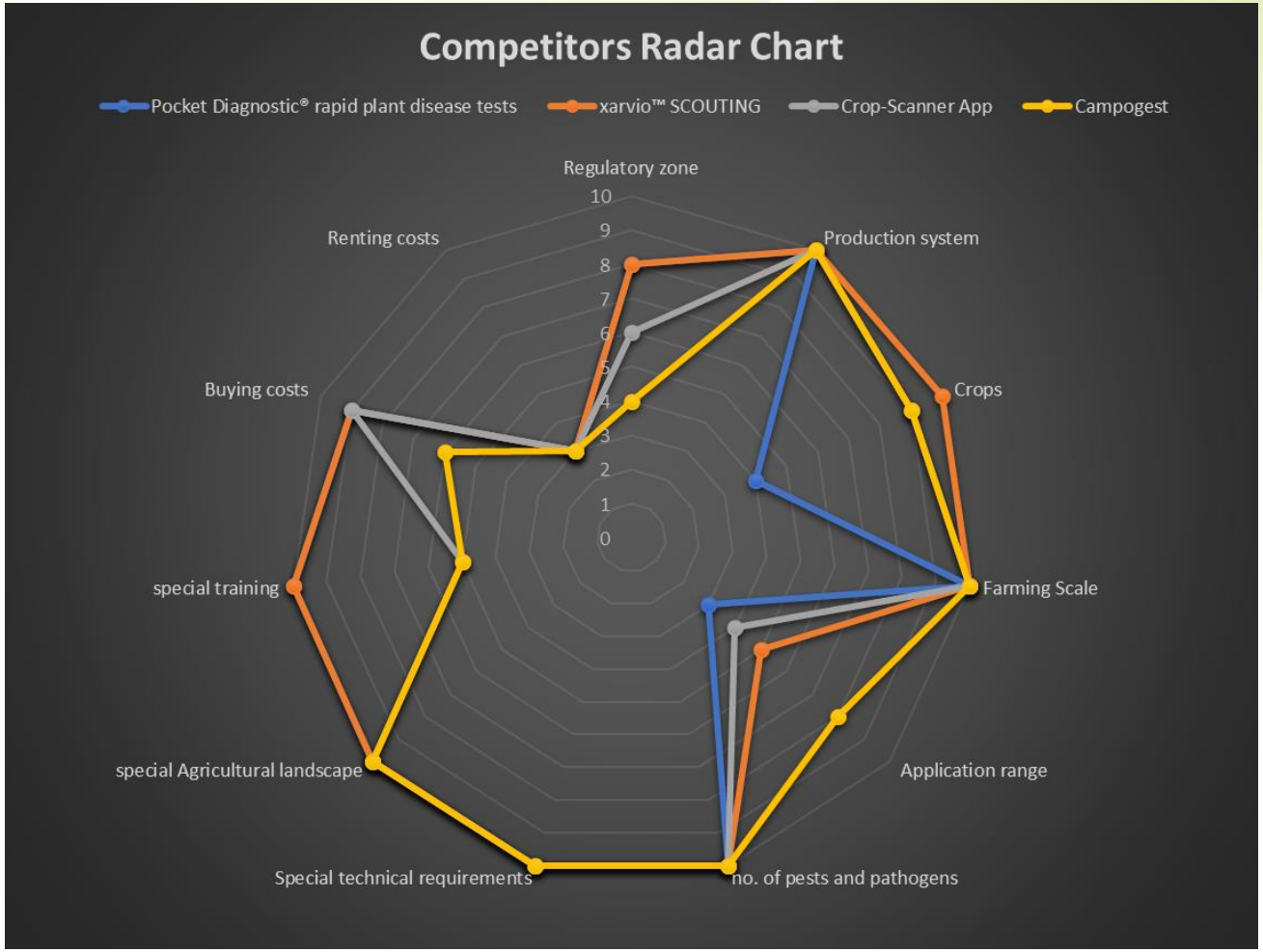
3. Benchmarking methodologies and technologies by JKI

1. **Identify** the current European socio-economic, regulatory, and technical **bottlenecks** hindering the **widespread use of smart IPM** methodologies and technologies through stakeholders and experts interviews and questionnaires.

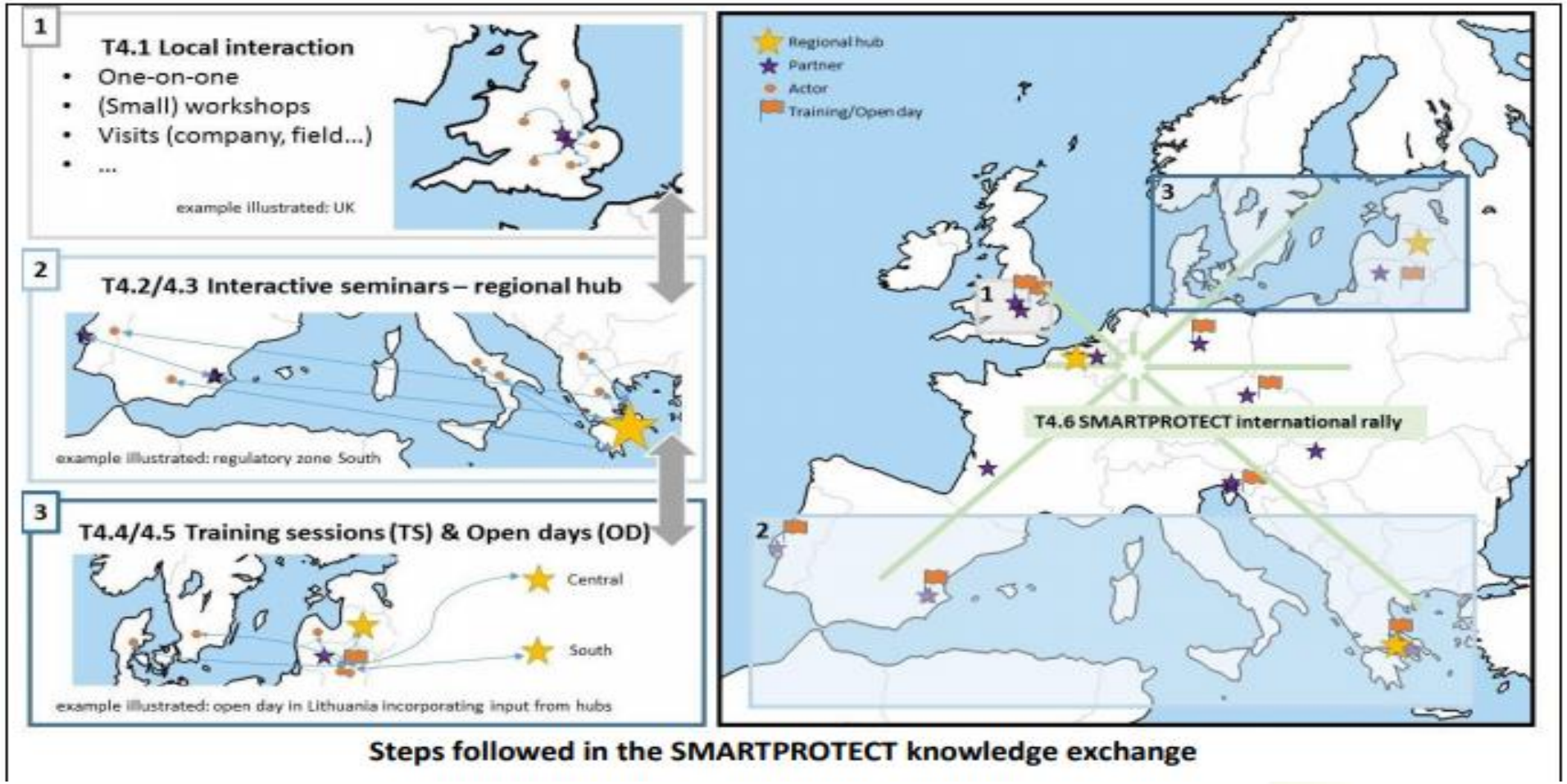
1. Design and implement benchmark strategy on the innovative technologies gathered in WP2 to **identify the most promising techniques** and map their applicability in **case studies**

Output benchmarking: selection best techniques ⟹ case studies 2022





4. Knowledge exchange by VUVZ: focus in 2022-2023



Steps followed in the SMARTPROTECT knowledge exchange

Knowledge exchange Inagro: introduction end-users on smart traps

Demo Field Day, Inagro, Belgium 04/10/2022


Demo Field Day mobile smart Apps, JKI,
Gülzow, 31/08/2022

Demo Field Day of Pest monitoring, EMU, Tartu, Estonia, 05/10/2022

Open day - LATHORT - plant protection in vegetable growing Latvia, 19/09/2022

Open Day - CAJAMAR RESEARCHCENTRE - Smart Technologies for IPM

Spain, 27/04/2022

Benchmarking traps in tomato greenhouse, Portugal

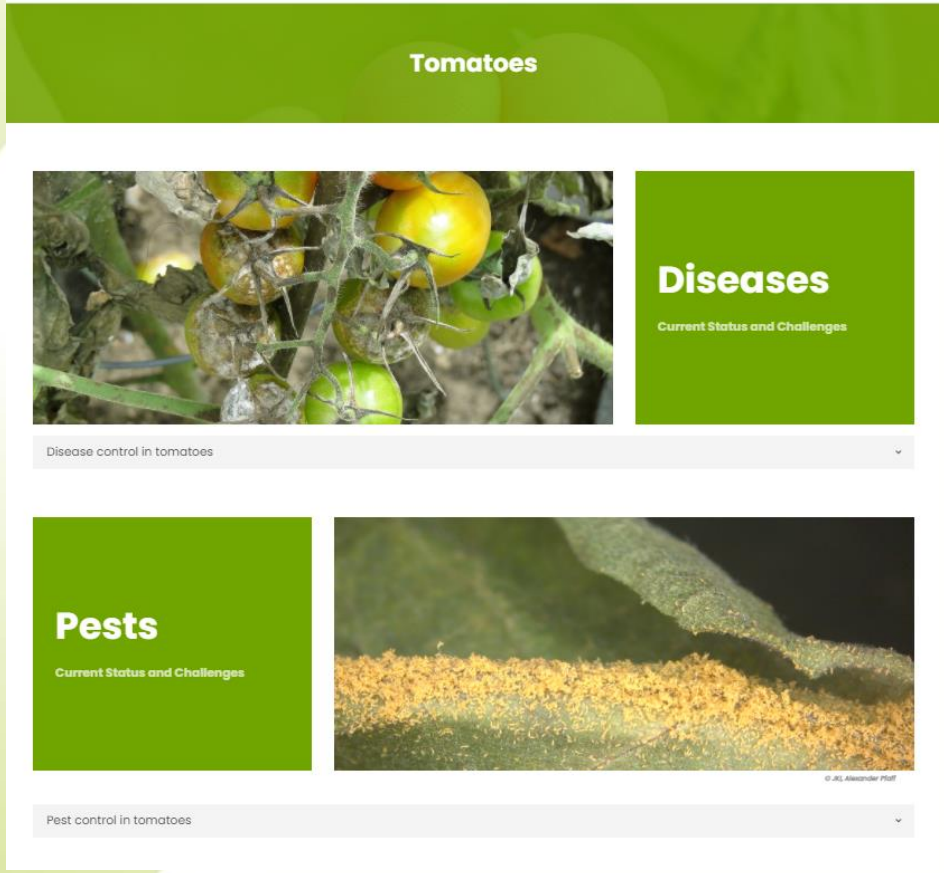
Open day - AREFLH – INAGRO – International Horticultural Congress (IHC) France, 14 – 20/08/2022

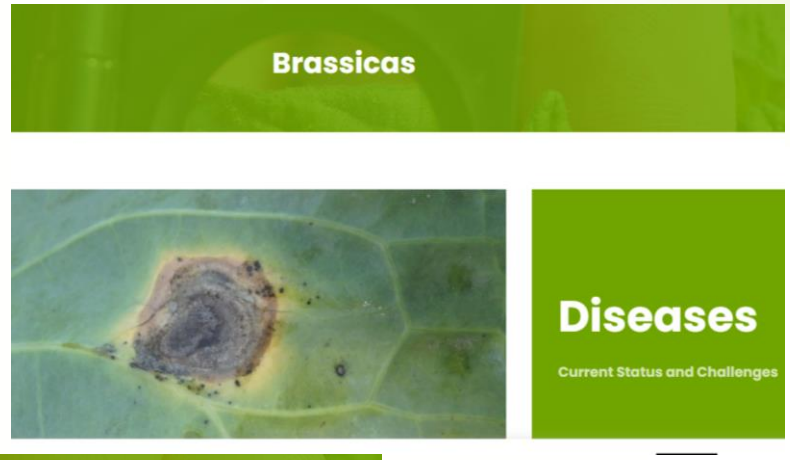
Seminar - INIAV – The use of advanced techniques in crop protection Portugal, 21/11/2022

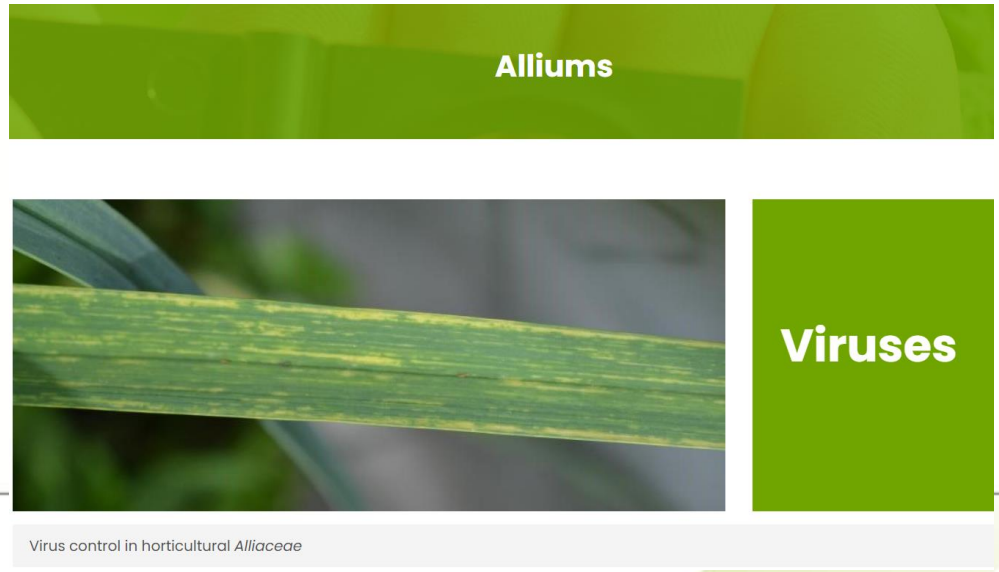
Benchmarking traps in carrots and bean seed fly, UK

Fact sheets on website

- IPM pyramid
- Fact sheets about pest and diseases in allium, brassicas and tomato cultivations







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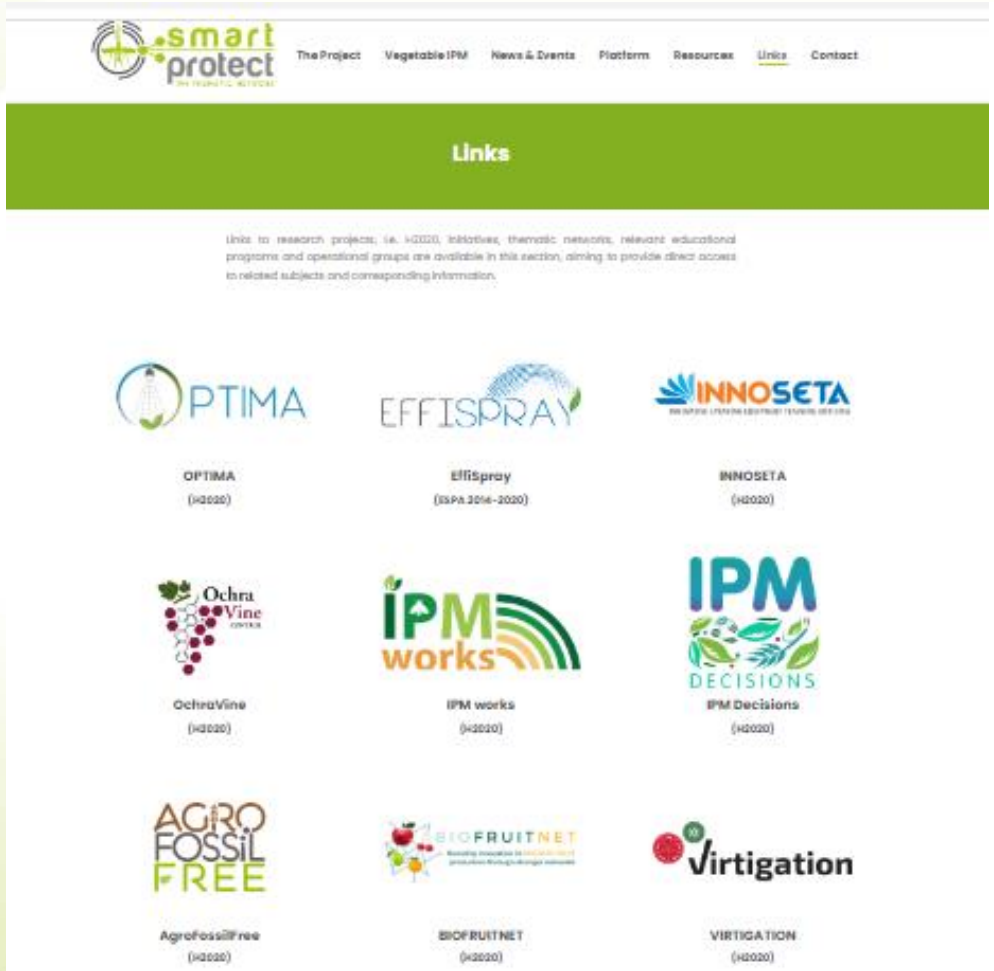
SmartProtect links with 23 other EU projects



novIGRain
(H2020)

ATLAS
(H2020)

EURAKNOS
(H2020)

FAIRshare

NOVATERRA
(H2020)

DIVERFARMING
(H2020)

FF-IPM
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(LIFE)

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EcoStock
(H2020)

MIND-STEP
(H2020)

SUSFERT
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newsletter: SmartProtect H2020 (smartprotect-h2020.eu)

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Thank you!

Contact information (sabien.pollet@inagro.be)

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