# Integrated Pest Management Tools

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www.adas.uk

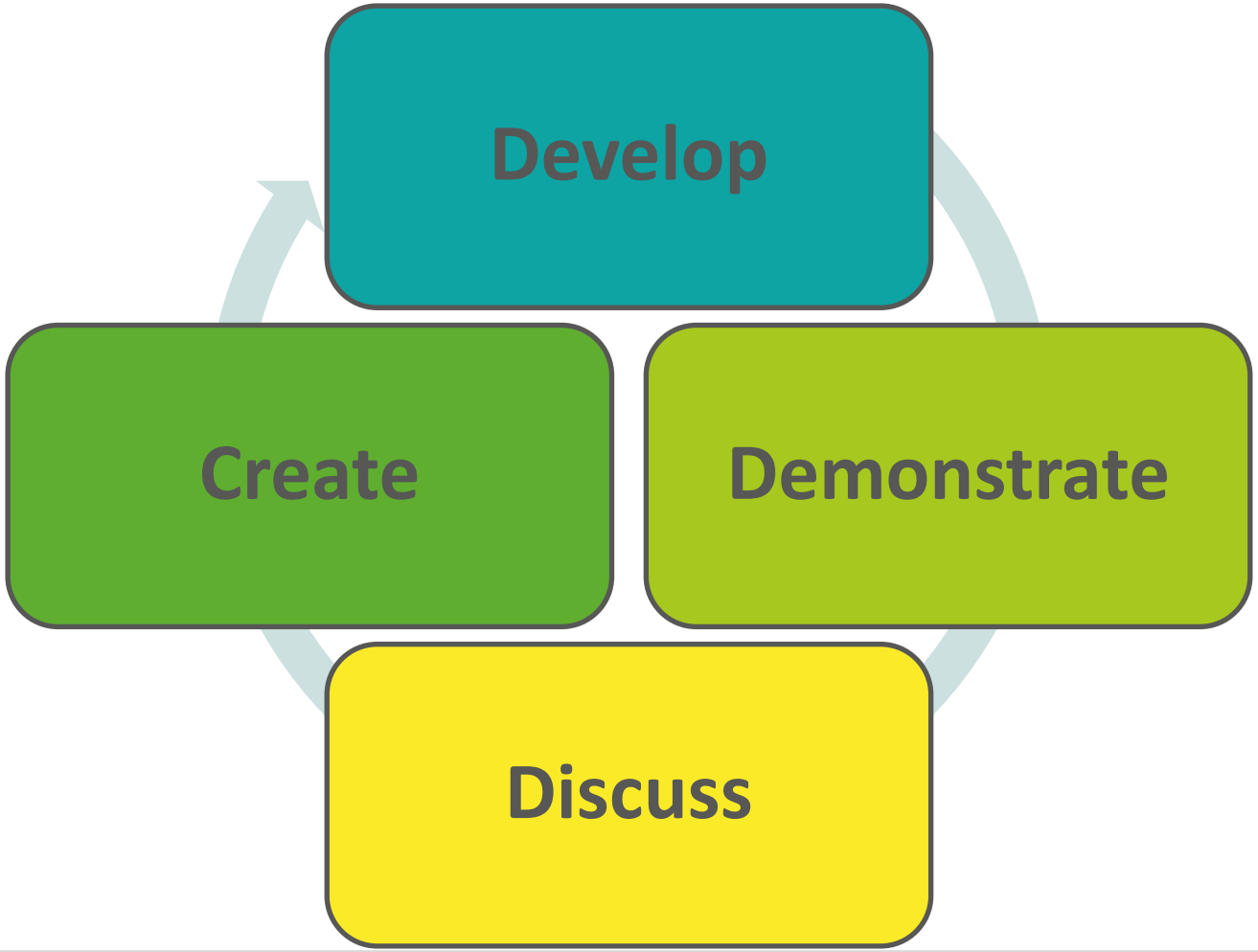
# Integrated Pest Management Tools

# Integrated Pest Management Tools

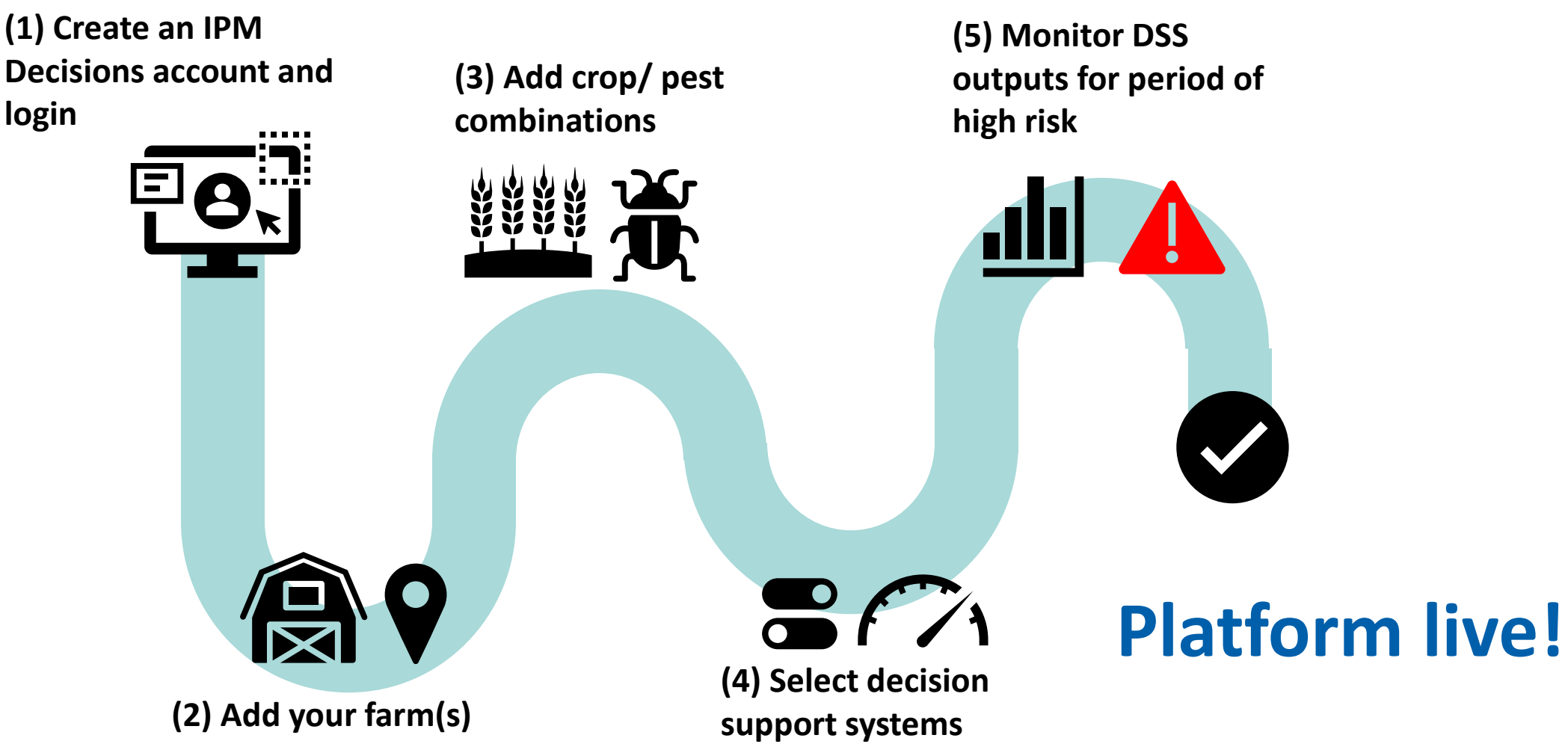
## Five Pillars of Holistic IPM

| | |
|---|---|
| Pillar 1 | • Agricultural landscapes with diverse semi-natural habitats |
| Pillar 2 | • Cropping systems designed to manage pests, weeds and diseases |
| Pillar 3 | • Optimized decision making, guiding operational and strategic IPM choices |
| Pillar 4 | • Preferential use of non-chemical control options |
| Pillar 5 | • Increased efficiency of treatments |

# Integrated Pest Management Tools



# The IPM Decisions Platform



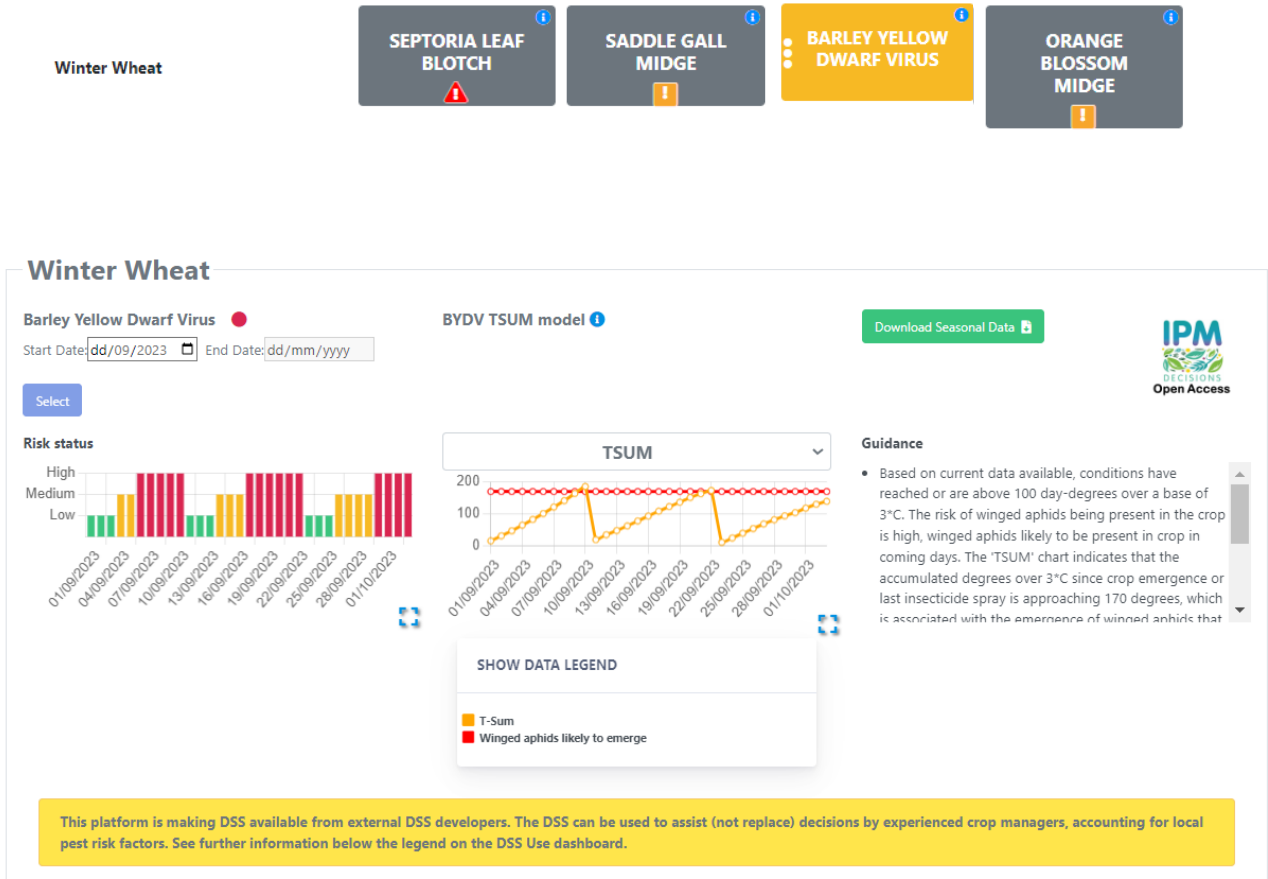

Horizon 2020

IPM Decisions – Project 817617
IPMWorks – Project 101000339

www.IPMDecisions.net
www.IPMWorks.net

# IPM Decisions Platform

| Pest | Crops |
|---|---|
| Cabbage moth | Brassicas |
| Cabbage fly | Brassicas |
| Septoria | Wheat |
| Carrot rust fly | Carrot |
| Cutworm | Multiple crops |
| Orange wheat blossom midge | Wheat, Rye, Barley, Oats, Triticale |
| Pollen beetle | Oilseed rape |
| Saddle gall midge | Wheat, Rye, Barely, Oats, Triticale |
| Codling moth | Apple, Pear |
| Barley Yellow Dwarf Virus | Winter wheat, winter barley |
| Potato early & late blight | Potato |
| Grey Field slug | Oilseed rape and cereals |




https://www.platform.ipmdecisions.net/

# Link to the platform…

www.platform.ipmdecisions.net/login

https://www.platform.ipmdecisions.net/

IPM DECISIONS

Language: English ipmdecisions
Account Manager

## FARM MENU

- Farm Management
- DSS Use Dashboard
- External Link DSS Dashboard
- DSS Comparison Dashboard

This project receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817617. Learn more at https://ec.europa.eu

### Farm creation

Farm name: BCPC Demonstration farm

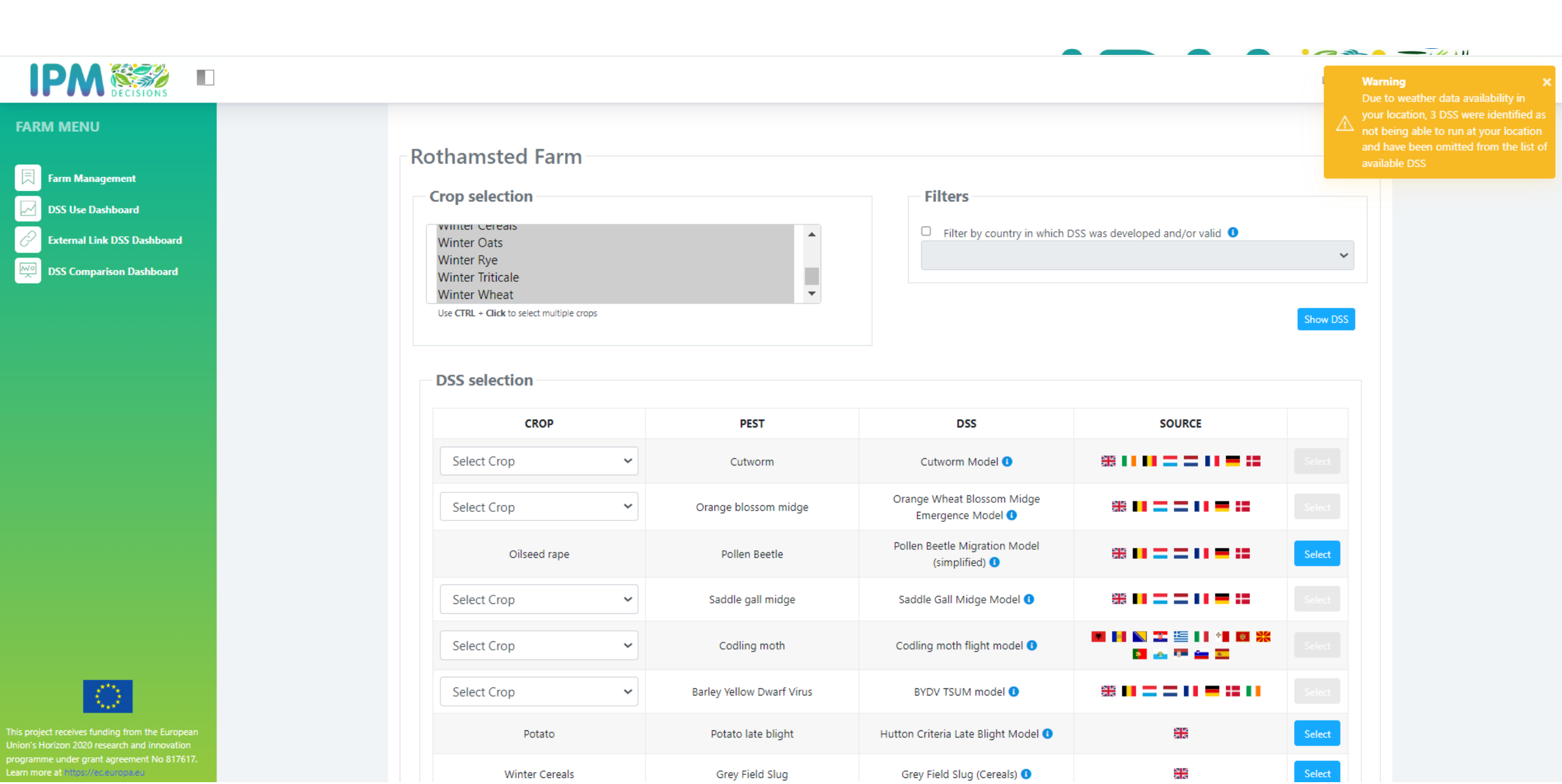
Select farm location

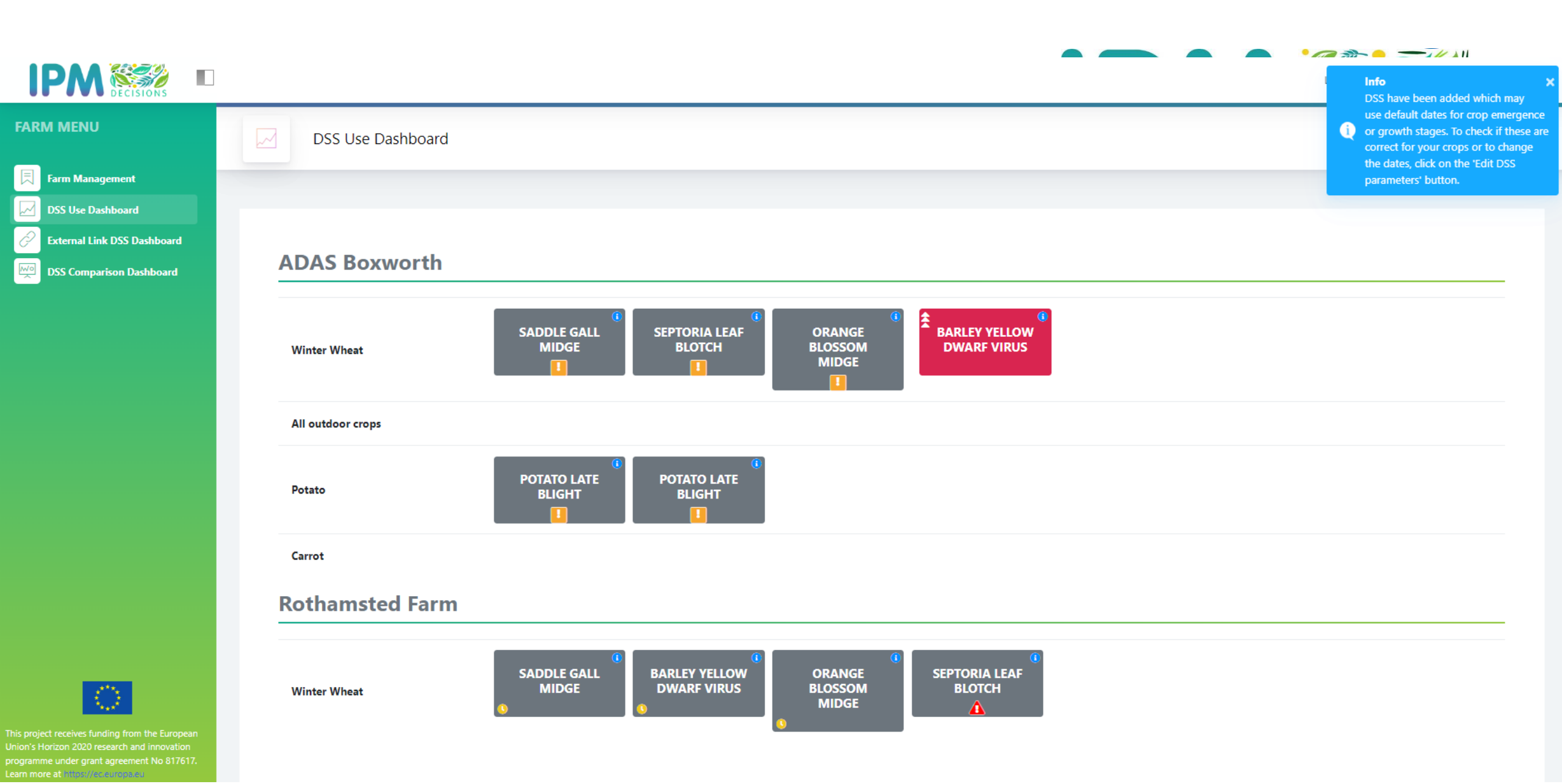

Cancel | Unlock map | Save

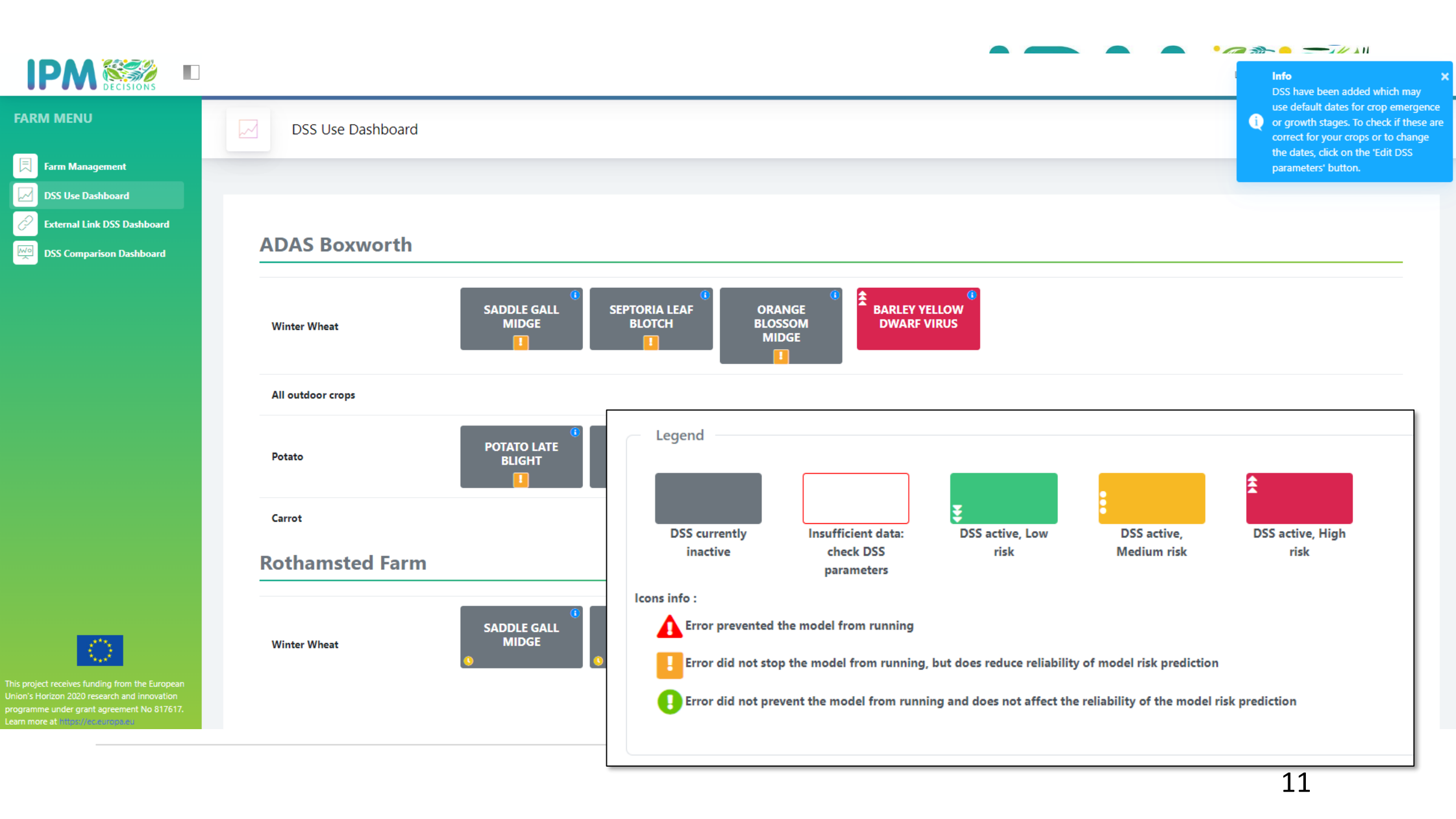
### DSS INFORMATION TABLE

Add DSS Model

| DSS | Crop | Pest | Source | Actions |
|---|---|---|---|---|


IPM DECISIONS
FARM MENU
Farm Management
DSS Use Dashboard
External Link DSS Dashboard
DSS Comparison Dashboard
This project receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817617. Learn more at https://ec.europa.eu
Warning
Due to weather data availability in your location, 3 DSS were identified as not being able to run at your location and have been omitted from the list of available DSS
Rothamsted Farm
Crop selection
Winter Cereals
Winter Oats
Winter Rye
Winter Triticale
Winter Wheat
Use CTRL + Click to select multiple crops
Filters
Filter by country in which DSS was developed and/or valid
Show DSS
DSS selection
CROP
PEST
DSS
SOURCE
Select Crop
Cutworm
Cutworm Model
Select Crop
Orange blossom midge
Orange Wheat Blossom Midge Emergence Model
Oilseed rape
Pollen Beetle
Pollen Beetle Migration Model (simplified)
Select
Select Crop
Saddle gall midge
Saddle Gall Midge Model
Select Crop
Codling moth
Codling moth flight model
Select Crop
Barley Yellow Dwarf Virus
BYDV TSUM model
Potato
Potato late blight
Hutton Criteria Late Blight Model
Winter Cereals
Grey Field Slug
Grey Field Slug (Cereals)


IPM DECISIONS
FARM MENU
Farm Management
DSS Use Dashboard
External Link DSS Dashboard
DSS Comparison Dashboard
DSS Use Dashboard
Info
DSS have been added which may use default dates for crop emergence or growth stages. To check if these are correct for your crops or to change the dates, click on the 'Edit DSS parameters' button.
ADAS Boxworth
Winter Wheat
SADDLE GALL MIDGE
SEPTORIA LEAF BLOTCH
ORANGE BLOSSOM MIDGE
BARLEY YELLOW DWARF VIRUS
All outdoor crops
Potato
POTATO LATE BLIGHT
POTATO LATE BLIGHT
Carrot
Rothamsted Farm
Winter Wheat
SADDLE GALL MIDGE
BARLEY YELLOW DWARF VIRUS
ORANGE BLOSSOM MIDGE
SEPTORIA LEAF BLOTCH
This project receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817617.
Learn more at https://ec.europa.eu


IPM DECISIONS
FARM MENU
Farm Management
DSS Use Dashboard
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DSS have been added which may use default dates for crop emergence or growth stages. To check if these are correct for your crops or to change the dates, click on the 'Edit DSS parameters' button.
ADAS Boxworth
Winter Wheat
SADDLE GALL MIDGE
SEPTORIA LEAF BLOTCH
ORANGE BLOSSOM MIDGE
BARLEY YELLOW DWARF VIRUS
All outdoor crops
Potato
POTATO LATE BLIGHT
Carrot
Rothamsted Farm
Winter Wheat
SADDLE GALL MIDGE
Legend
DSS currently inactive
Insufficient data: check DSS parameters
DSS active, Low risk
DSS active, Medium risk
DSS active, High risk
Icons info :
Error prevented the model from running
Error did not stop the model from running, but does reduce reliability of model risk prediction
Error did not prevent the model from running and does not affect the reliability of the model risk prediction
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Learn more at https://ec.europa.eu

FARM MENU

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DSS Details

## Winter Wheat

**Barley Yellow Dwarf Virus**

Start Date: dd/09/2023 End Date: dd/mm/yyyy

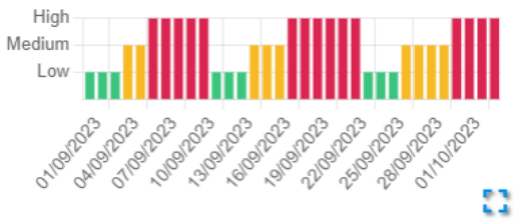
Select

**BYDV TSUM model**

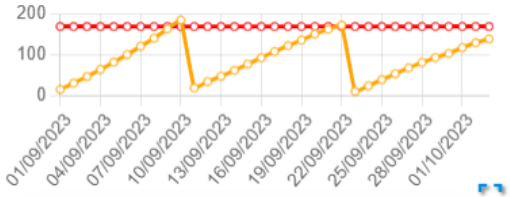
Download Seasonal Data

IPM DECISIONS Open Access

**Risk status**




TSUM




SHOW DATA LEGEND

**Guidance**

- Based on current data available, conditions have reached or are above 100 day-degrees over a base of 3*C. The risk of winged aphids being present in the crop is high, winged aphids likely to be present in crop in coming days. The 'TSUM' chart indicates that the accumulated degrees over 3*C since crop emergence or last insecticide spray is approaching 170 degrees, which is associated with the emergence of winged aphids that

**This platform is making DSS available from external DSS developers. The DSS can be used to assist (not replace) decisions by experienced crop managers, accounting for local pest risk factors. See further information below the legend on the DSS Use dashboard.**

Edit Parameters

Delete Back

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FARM MENU

- Farm Management
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BYDV TSUM model (IPM Decisions) for Winter Wheat on ADAS Gleadthorpe

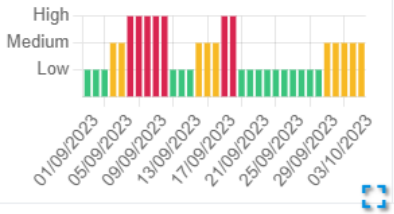
Deselect

Compare Models

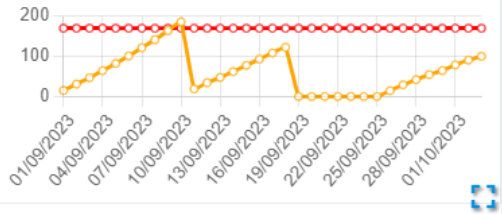
**Model 1 : BYDV TSUM model (IPM Decisions) for Winter Wheat on ADAS Boxworth**

Start Date: dd/09/2023 End Date: dd/mm/yyyy Select

Risk status




TSUM

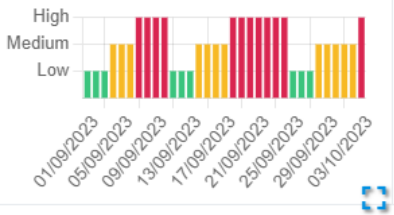



| Day | T-Sum | Winged aphid... | Risk status |
|---|---|---|---|
| 01/09/2023 | 15.02 | 170 | 2 |
| 02/09/2023 | 30.82 | 170 | 2 |
| 03/09/2023 | 46.69 | 170 | 2 |
| 04/09/2023 | 64.33 | 170 | 3 |
| 05/09/2023 | 82.32 | 170 | 3 |

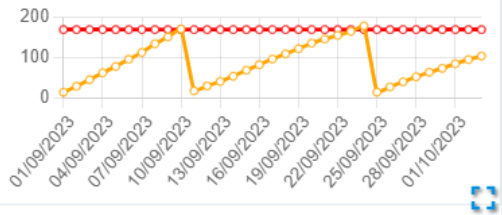
**Model 2 : BYDV TSUM model (IPM Decisions) for Winter Wheat on ADAS Gleadthorpe**

Start Date: dd/09/2023 End Date: dd/mm/yyyy Select

Risk status




TSUM




| Day | T-Sum | Winged aphid... | Risk status |
|---|---|---|---|
| 01/09/2023 | 14 | 170 | 2 |
| 02/09/2023 | 28.98 | 170 | 2 |
| 03/09/2023 | 45.06 | 170 | 2 |
| 04/09/2023 | 62.26 | 170 | 3 |
| 05/09/2023 | 78.23 | 170 | 3 |

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# Adaptation Dashboard

**Select Model for adaptation**

Hutton Criteria Late Blight Model (IPM Decisions) for Potato on Brussels Virtual Demonstration Farm

Select Model

**Original Parameters**

10

Relative Humidity Threshold

90

Consecutive Days

| Day | Number ... | Risk status |
|---|---|---|
| 01/03/2023 | 0 | 2 |
| 02/03/2023 | 0 | 2 |
| 03/03/2023 | 0 | 2 |
| 04/03/2023 | 0 | 2 |

**Revised Parameters**

10

Relative Humidity Threshold

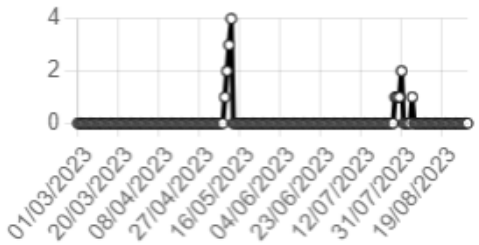
85

Consecutive Days

| Day | Number ... | Risk status |
|---|---|---|
| 01/03/2023 | 0 | 2 |
| 02/03/2023 | 0 | 2 |
| 03/03/2023 | 0 | 2 |
| 04/03/2023 | 0 | 2 |

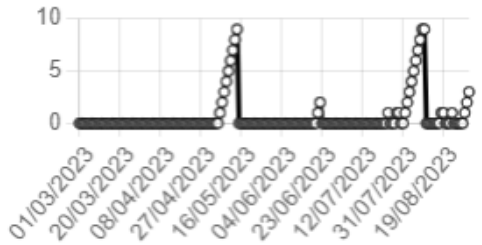
**Risk status**


**PHYTIN**




**Risk status**


**PHYTIN**

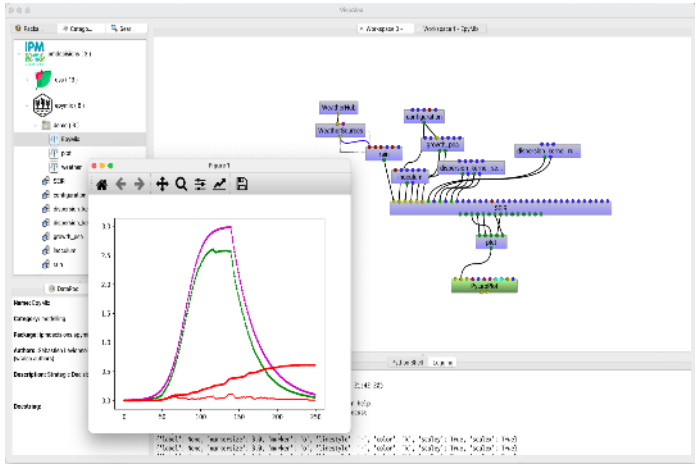


# Integration Dashboard

## *For Researchers and Developers*


- Development environment (Python) to access to all the platform resources :
  - Data sources, Tools, DSS Models

- OpenAlea Scientific Workflow & Visual Programming
  - Test existing models
  - Develop new models for sustainable agriculture

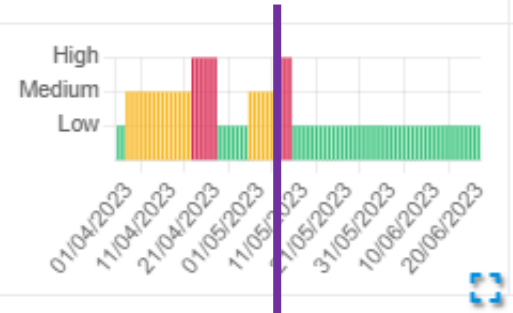


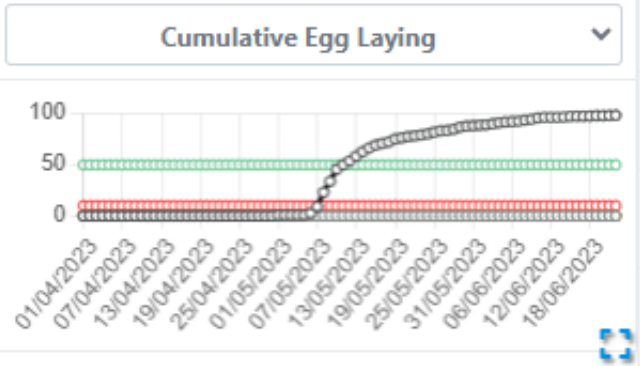
- IPM-Decisions Factory
  - Transform Python / OpenAlea models to a DSS
  - Integrate this DSS after review

# Quick example

**Model 1 : Carrot Fly (Warwick HRI) (WarwickHRI) for Carrot on ADAS Boxworth**

Start Date: 01/04/2023 End Date: 22/06/2023 Select

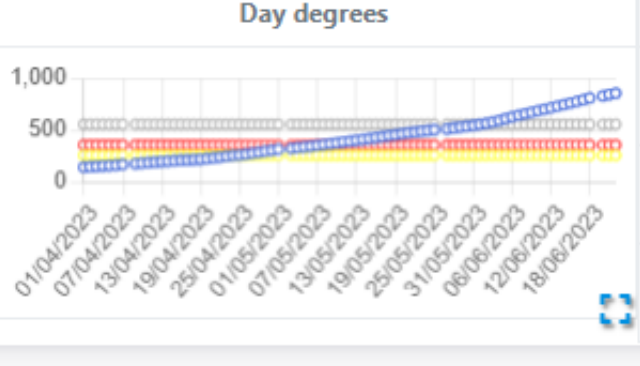



| Day | Cum... | Cum... | Cum... | Abo... | Abo... | Abo... | Risk ... |
|---|---|---|---|---|---|---|---|
| 02/02/2023 | 0 | 0 | 0 | 0.0001 | 10 | 50 | 2 |
| 03/02/2023 | 0 | 0 | 0 | 0.0001 | 10 | 50 | 2 |
| 04/02/2023 | 0 | 0 | 0 | 0.0001 | 10 | 50 | 2 |

**Model 2 : Carrot rust fly temperature model (VIPS) for Carrot on ADAS Boxworth**

Start Date: 01/04/2023 End Date: 22/06/2023 Select


| Day | Accumu... | Thresho... | Thresho... | Thresho... | Risk sta... |
|---|---|---|---|---|---|
| 19/02/2023 | 144.11 | 260 | 360 | 560 | 2 |
| 20/02/2023 | 148.73 | 260 | 360 | 560 | 2 |
| 21/02/2023 | 151.92 | 260 | 360 | 560 | 2 |

English

# IPM DECISIONS PLATFORM

A "one-stop shop" for decision support in integrated pest management

About Factsheets

Register

Login

Quickstart guide

Support

Newsletter

Terms & conditions


Farmers & Advisors

Researchers

Developers

DSS informations

# IPM Demonstration Network

## A network of demo farms

- Demonstrating cost-effective IPM strategies

## Promoting a holistic vision of IPM

- Able to reduce the reliance on pesticides

## A specific methodology based on hubs of farmers

- Peer-to-peer knowledge exchange to progress further towards holistic, cost-effective IPM

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# A Pan-European IPM Demo Network


Data collected across the network illustrates and benchmarks the performance of holsitic IPM strategies.

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www.IPMWorks.net

# IPMWORKS Toolbox

HOME ADD RESOURCE IPMWORKS PROJECT HELP AND SUPPORT ADMIN LOGIN

**Disclaimer** This IPMWORKS Resource Toolbox is a repository for IPM resource developed by the EU IPMWORKS project (101000339). The cooperating partners have no economic responsibility whatsoever for losses due to using this service. In continuing to use the IPMWorks Resource Toolbox you agree to Part 1 of the Toolbox Terms and Conditions.

Sectors
Select sector
Country of origin
Select region
Project
Select project
Resource types
Select resource type
Resource title
Specific pest
Select pests
Specific crop
Select crops
Resource language
Select language
Search Reset
Request resource


MULTI-SECTOR
EU IPM Project
IPM Decisions Stepping-up IPM decisions support for crop protection
Learn more...


ARABLE FIELD CROPS
United Kingdom Pest Monitoring
Pollen beetle treatment thresholds (UK oilseed rape)
Learn more...


ARABLE FIELD CROPS
United Kingdom IPM Decision Support System
LEAF Simply Sustainable IPM Guide
Learn more...


ARABLE FIELD CROPS
United Kingdom IPM Decision Support System
BYDV TSUM Model (Predict transmission of disease by aphid vectors in crop)
Learn more...


OUTDOOR VEGETABLES
Finland IPM Decision Support System
Carrot fly flight model (Predicts risk of flight and oviposition in crop)
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ARABLE FIELD CROPS
France Economics
Technical and economic implication of IPM
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Book - Improving IPM in horticulture (2022) [Burleigh Dodd Science Publishing]
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# IPM eLearning

1. Agrosystem. Concepts and theory – Holistic approach to IPM
2. Plant health risk challenges and policy context in the EU
3. Integrated Weed Management
4. Integrated Disease Management
5. Integrated Invertebrate Pest Management
6. Holistic IPM examples
7. Assessment of an IPM system
8. Soft skills for facilitating interactive learning and demonstration on IPM

# IPM Demonstrations – BYDV management

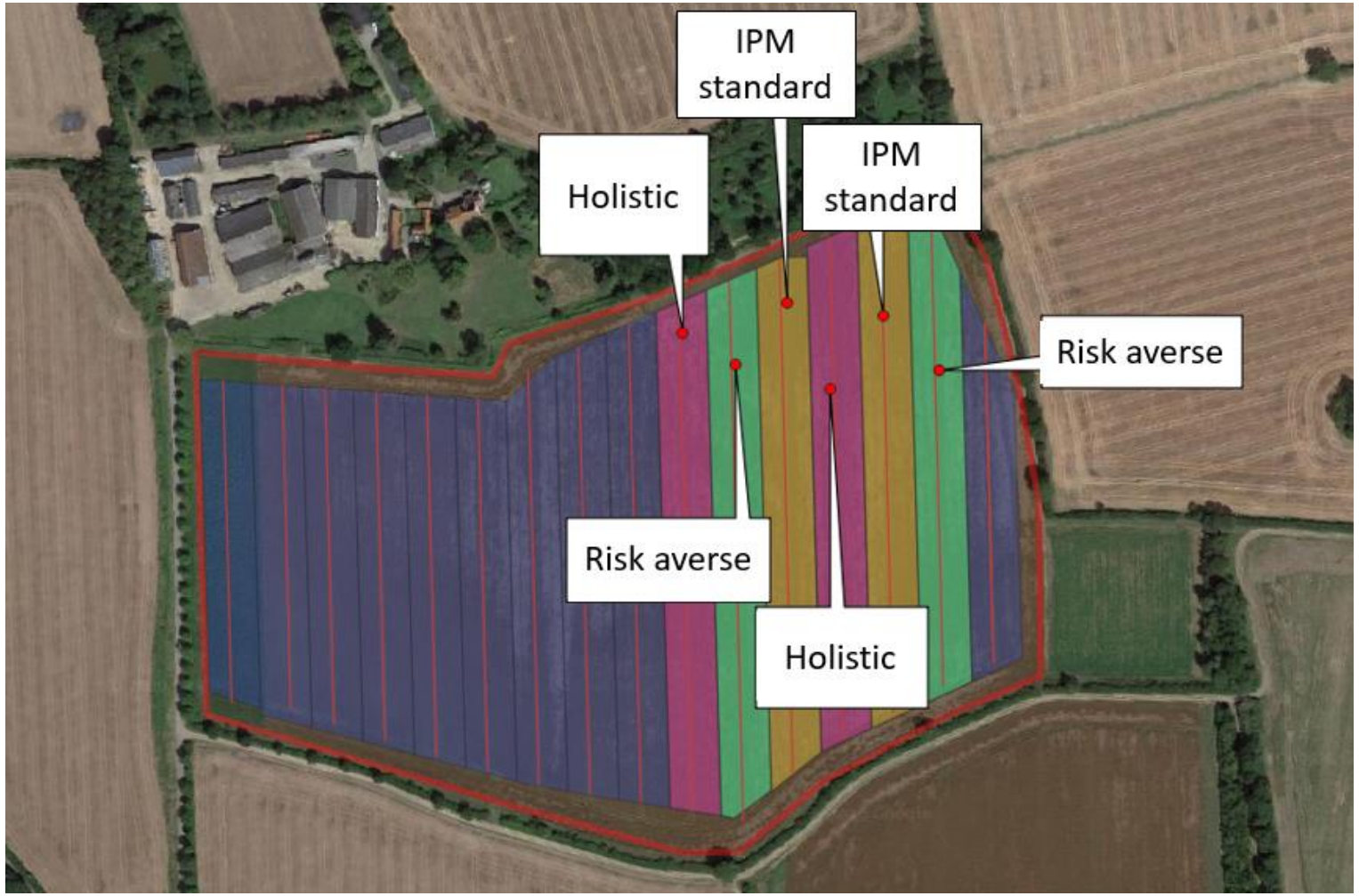
**Risk averse**

**V**

**IPM standard**

**V**

**Holistic**




Horizon 2020

IPM Decisions – Project 817617
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www.IPMWorks.net

# IPM Demonstrations – BYDV management

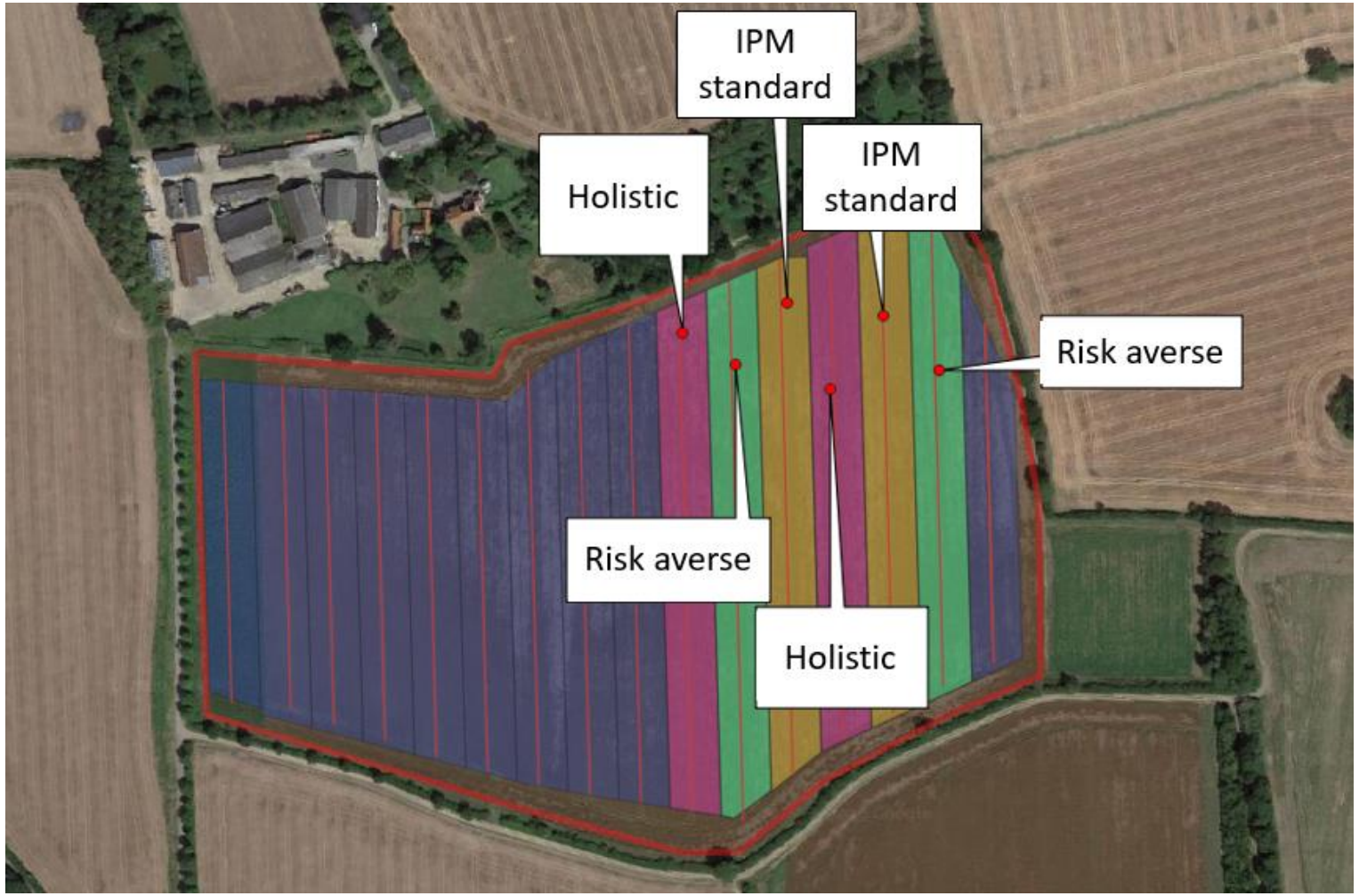
**Risk averse (4)**

**V**

**IPM standard (2)**

**V**

**Holistic (0)**

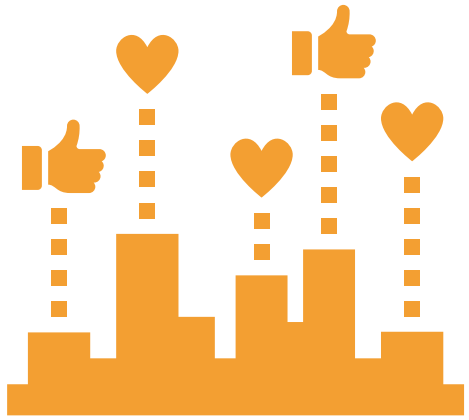


# IPM NET

**Aim of IPM NET**: To better understand the effectiveness of IPM approaches on farm yield, profitability and  sustainability.

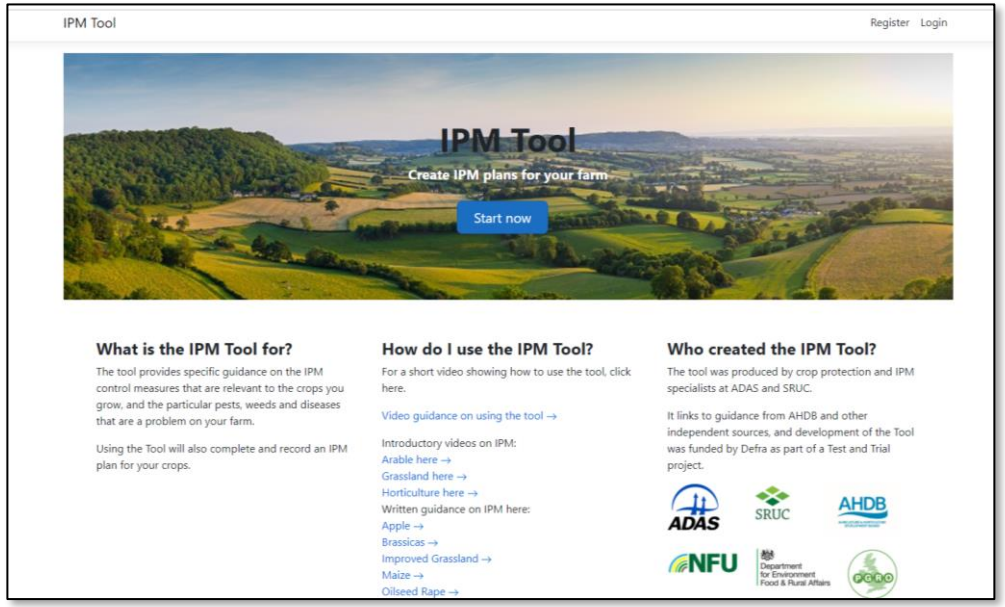
Access to tools and knowledge


Collect and analyze IPM data



Share information and experience

# IPM NET





IPM DECISIONS

IPM works

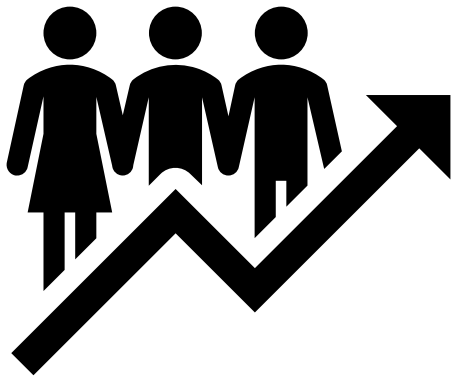
# IPM NET

**Aim of IPM NET**: To better understand the effectiveness of IPM approaches on farm yield, profitability and  sustainability.

Open for IPM NET Pilot Members

Kick-off meeting with Steering Group

Opportunities for IPM NET Sponsors



# AdvisoryNetPEST

**Aim of AdvisoryNetPEST**

Increase the sharing of knowledge and adoption of innovative solutions to reduce the use and risks of pesticides.

2024 - 2029

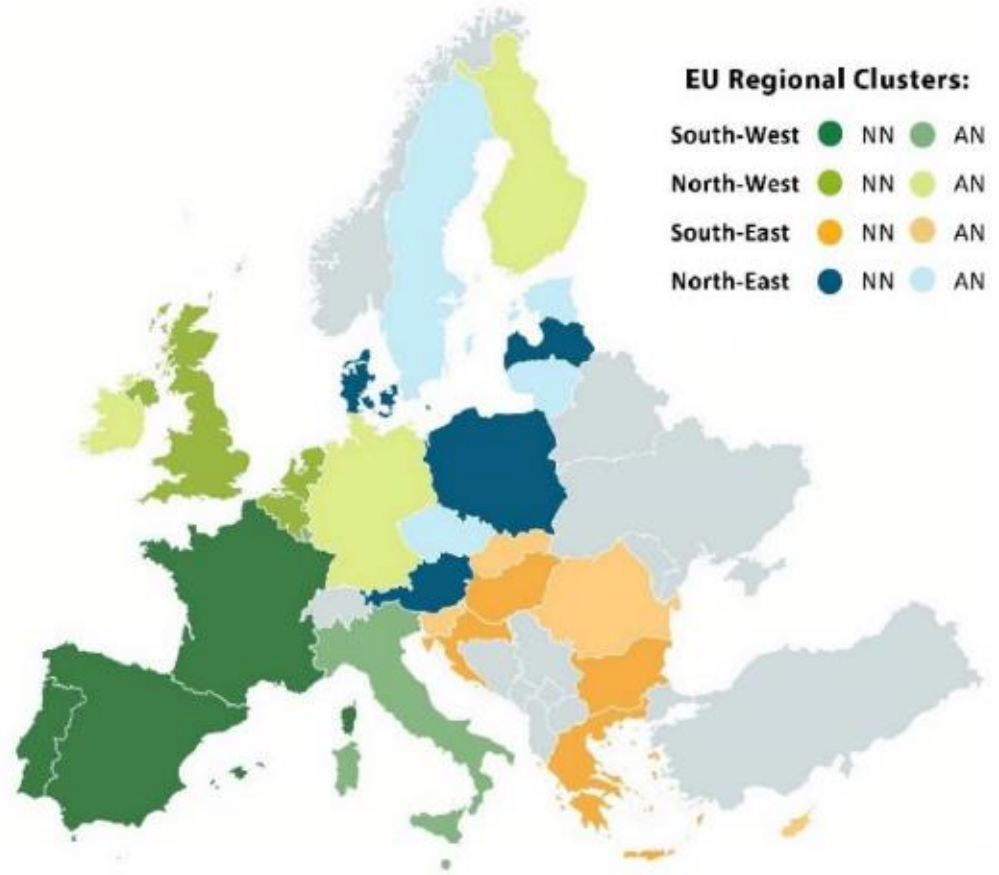



*Figure 1 National Networks, Associated Networks and EU Regional Clusters.*

Funded by the Horizon 2020 Framework Programme of the European Union

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