

A short guide to using Agrosyst Survey#2

Survey #2

The objective of survey#2 is to produce quantitative data on IPMWORKS' IPM-based strategies, about pesticide use and impact, and cost-efficiency. To compute indicators, we need a comprehensive detailed description of technical crop management.

Outputs of Survey#2 should feed:

- Farmers' discussion within hubs, based on benchmarking
- The IPMWORKS project communication
- Specific communication towards Policy makers, who have high expectations for IPMWORKS. We have to convince them that IPMWORKS is useful and should be maintained and expanded. We need quantitative results for this.

Hub coaches are in charge of collecting data for Survey#2.

The deadline for completing the survey is December 31, 2023

Agrosyst is an information system to be used for collecting data required for IPMWORKS' survey #2. The interface will help you to describe farming practices (and a rough description of the farming context) and will compute technical indicators (TFIs, input costs, margins, etc.).

AGROSYST describes cropping systems. You are asked to choose and describe at least **one** cropping system (a rotation), for each farm in your Hub (the most representative, or the nicest IPM strategy). Describe one cropping season (year), either 2022 or 2023 (or eventually a synthesis of both years if you wish).


As a reminder: a crop year is the interval between the last harvest of year n-1 and the last harvest of year n.


Home page

3

- 1 The map shows all the IPMWORKS hubs, and the pre-existing national farm networks affiliated to IPMWORKS. Click on the green pins, and see the names, email addresses and sectors of the hub coaches.
- 2 The home page allows you to find your way around, view your farms, cropping systems and crop management details, and create your performance files.
- 3 In the orange box at the top right, by clicking on your name, you can change your password and change the language of the interface (remember to save and refresh your page after each change). There is no connection between country and language, so you can use any language.

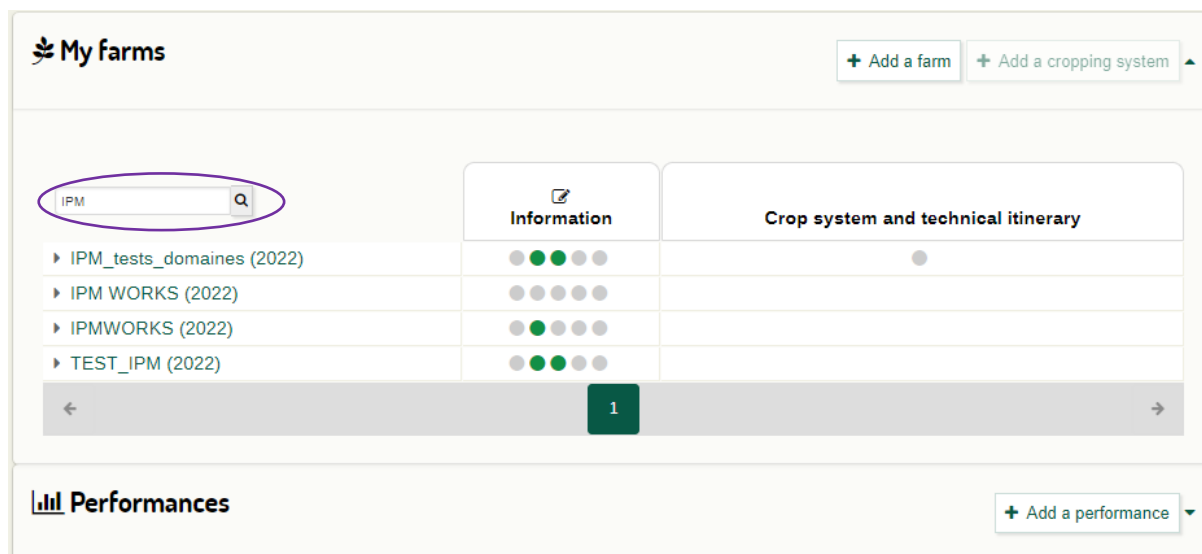
4

You can contact us by using the link  at the bottom right of the page, specifying the concern (adding species/varieties, plant protection products, reporting bugs, questions about the operation of Agrosyst...).

You can always come back to the home page by clicking on the  house at the top left.

Mandatory data are marked with an asterisk (*). They have to be filled in to be able to save the page.

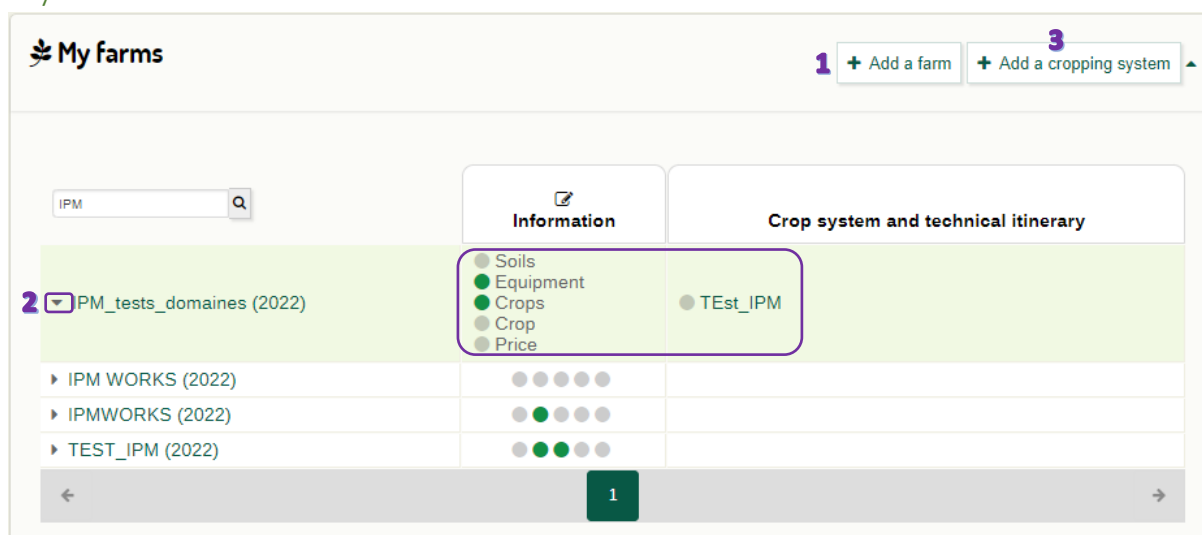
Filter



The screenshot shows the 'My farms' interface. At the top right, there are two buttons: '+ Add a farm' and '+ Add a cropping system'. Below these, there is a search bar with the text 'IPM' entered and a magnifying glass icon. The search results show a list of farms: 'IPM_tests_domaines (2022)', 'IPM WORKS (2022)', 'IPMWORKS (2022)', and 'TEST_IPM (2022)'. Each farm has a progress bar with five dots. The first dot is green for 'IPM_tests_domaines (2022)', while the others are grey. Below the list, there is a pagination bar with a left arrow, the number '1', and a right arrow. At the bottom, there is a section for 'Performances' with a bar chart icon and a button '+ Add a performance'.

If you have many farms, you can enter the name of one farm in the search bar to filter the farm list.

My farms



The screenshot shows the 'My farms' interface with a farm selected. At the top right, there are two buttons: '+ Add a farm' (labeled with a purple '1') and '+ Add a cropping system' (labeled with a purple '3'). Below these, there is a search bar with the text 'IPM' entered and a magnifying glass icon. The search results show a list of farms: 'IPM_tests_domaines (2022)', 'IPM WORKS (2022)', 'IPMWORKS (2022)', and 'TEST_IPM (2022)'. The first farm, 'IPM_tests_domaines (2022)', is highlighted with a green background and a purple arrow (labeled with a purple '2') pointing to its name. The 'Information' tab is selected, showing a list of items: 'Soils', 'Equipment', 'Crops', 'Crop', and 'Price'. The 'Crops' item is highlighted with a green background and a purple box. The 'Crop system and technical itinerary' tab is also visible, showing a list of items: 'TEst_IPM'. Below the list, there is a pagination bar with a left arrow, the number '1', and a right arrow.

1 Click on "Add a farm" to create a new farm.

2 Click on *the name of your farm* to go directly to the **Information** page.

☐ Click on the arrow in front of *the name* or directly on the grey/green dots to unfold the details. This way you can see your progress: the dot turns green when all the compulsory information of the tab is filled in.

3 To add a cropping system, pull down the details of the desired farm and click on "Add a cropping system".

Farm Information

This page is composed of 8/9 tabs. In this form, you will describe the farm, the crops, the equipment and the products used.

- **Context:**

Enter the growing season year (cycle from the previous harvest to the current harvest, the year is the year of harvest), the name of the farm, the type of farm, your name, the country and the municipality. For more precision you can enter the exact GPS coordinates of the farm (not mandatory).

- **Characteristic:**

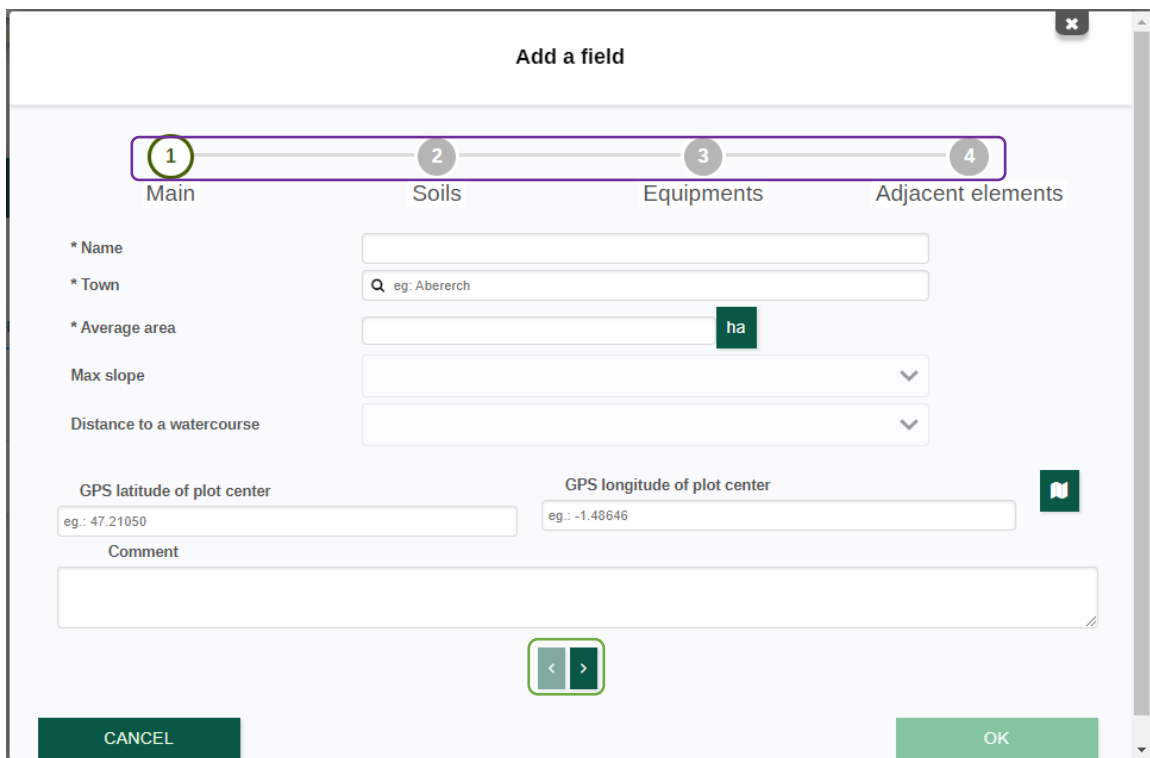
Indicate at least the orientation of the farm, especially if livestock is present on the farm. By indicating the presence of livestock, a new tab "Livestock" appears (for a rough description of livestock: type of livestock, number of animals). The other information (not mandatory) allows to understand the farmer's approach and the management of the farm, some of which are included in the calculation of indicators (indicated by π).

- **Livestock:**

Present only if you have previously indicated the presence of livestock on the farm. Click on "Add", at least indicate the type of animals (dairy, beef, pigs...) then create your herds by clicking on "Add". Again, specify the type of animals (dairy cows, heifers, bulls...) and their feed. Remember to click on "OK" and save.

- **Soils:**



Click on "Add a field". A pop-up window appears where 4 categories are to be filled in: general information (name, municipality, surface area...), soil (texture, depth, stoniness...), equipment (irrigation system, drainage, protection...) and neighbouring elements (trees, fallow land, meadows, orchards...). You can fill in several soils if necessary.



To move from one page to another you can click on the arrows or on the number of the desired page directly.

- **Equipment:**













Click on "Add equipment" and fill in all the equipment used in the cropping system you will describe.

You can download the full Agrosyst list of equipment via  . Once your equipment is complete, you have to create combinations of tools used for crop management (traction + tools, e.g., tractor + harrow). Click on "Add a combination of tools", select the tools and select corresponding actions (tillage, sowing, harvest...). Defaults tool operating speed are suggested from the AGROSYST database, but you can update it if you have the information. These combinations will thereafter be suggested for crop management sequences. You can also describe manual interventions (whether or not they are performed by a service provider). You can copy/paste  the equipment from one farm to one another.

Tool combinations are required in crop management as this information is used to calculate indicators related to fuel consumption or work load.

However, if you don't have all the precise details of equipment, a rough description of it by selecting approximate equipment (e.g. a five bodies mouldboard plough whereas the real equipment was a six bodies plough) is enough for computing standardised indicators.

- **Crops:**

Context	Characteristics	Livestock	Field properties	Equipment pool / Tool combinations	Crops / Cultivar	Inputs and prices	Plots	Price
Fill in at least the crops in the field for which you will later describe interventions.								
Crop(s) (harvested)								
<input type="checkbox"/>	Type of crop	Culture					Actions	
<input type="checkbox"/>	I	cover crop					 	
<input type="checkbox"/>	M	grassland					 	
<input type="checkbox"/>	M	soft wheat					 	
<input type="checkbox"/>	M	triticale_vesce					 	
<input type="checkbox"/>	M	wheat					 	
		Add a crop (harvested) 		Adding a catch crop (not harvested) 		Copy and paste cultures		

Add a crop (or a catch crop, i.e. not harvested)

- The dots indicate whether the crop is a mixture of species and/or varieties (tick-boxes when creating a crop)

Crop (harvested)

* Name of the crop

EXAMPLE

☐ Mixed species
 ☐ Variety mix
 ☐ Permanent grassland
 ☐ Temporary grassland
 ☐ Grazed grassland
 ☐ Mown grassland

Species and variety(ies)

Species	Qualifier	Seasonal type	Destination	Cultivar	Relative surface area %	Actions
No species entered. To add one, use the "Add" button.						
						Add

CANCEL OK

Indicate the crop name, eventually tick one tick-box if appropriate (e.g., mix of varieties) and click on "Add" to select the crop species in the drop-down list (you can start typing the species to facilitate the selection)

Eventually add the cultivar(s)

Species and variety(ies)

Species

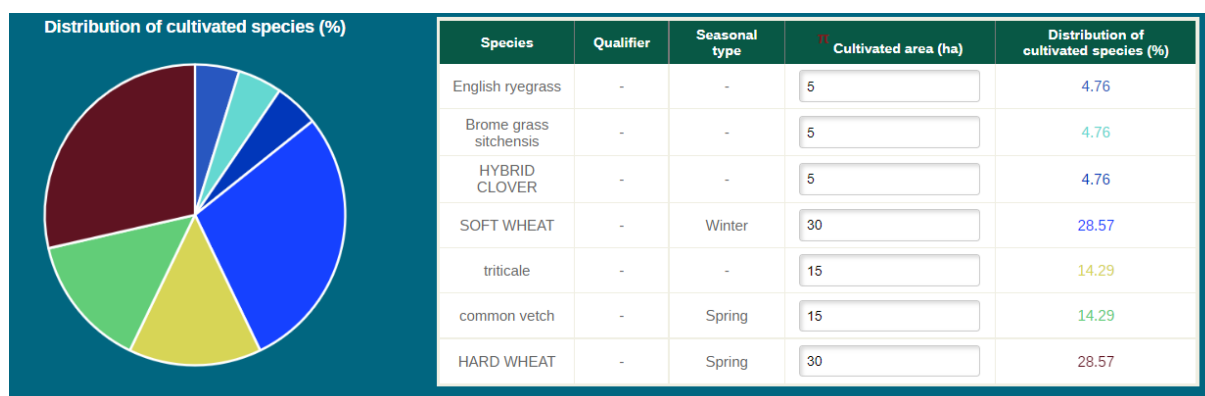
rapeseed, oilseeds, Spring

Cultivar

DK Cosmos

CANCEL OK

The list of species can be downloaded Remember to click on "OK".



You can indicate the area of each species. Please note that these are the species and not the crops! The diagram gives an overview of the proportions of each species on the farm.

Inputs and prices:

All inputs have to be listed here. Click on "Add an input" in the relevant input category, then fill in the input description. If you have the information of input price, you can save it in the price section (not mandatory). The inputs can then be used in the crop management. For example, for a treatment with a plant protection product, a drop-down list will suggest the products from the section **Inputs and Prices/Registered products (Chemical and non-chemical PPP)**.

There is a link between the country where the farm is registered and the list of available products. Only products from the relevant country are shown.

Specific case of seed coating: It is important to enter seed lots in the corresponding tab of the **Input and prices** section. First, select the crop, then the species/varieties and finally the unit of seeding dose. The second tab allows you to specify whether seeds are certified, chemically treated and/or biologically inoculated. These seed lots will be available for your subsequent sowing actions (see the crop management part).

You can copy and paste  your inputs to another farm.

- **Plots:**

You can indicate the number of parcels/fields on the farm and their situation in relation to the holding and to each other.

- **Crop prices:**

You can enter the selling price of harvested products, for each crop. This tab can only be filled in once harvesting have been included in the crop management (see the section about it).

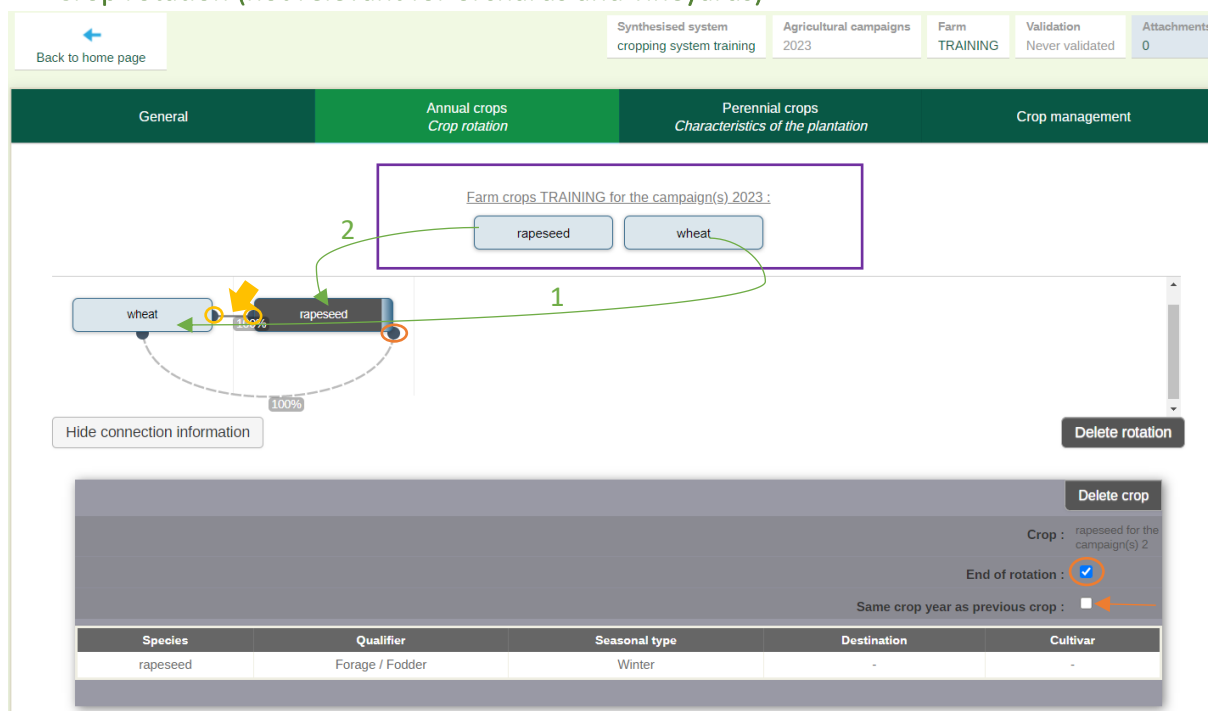
Cropping Systems and Crop Management

This page is composed of 4 tabs. In this form, you will describe the crop rotation (or the main features of vineyards/orchards), as well as the details of the crop management operations.

- **General:**

Fill in the name chosen for the cropping system, specify the year (or years, if you chose to describe a synthesis of 2 years; then the format should be: 2022, 2023), the sector and the type of management (organic or conventional). **Be careful to fill in the IPMWORKS number associated with this farm.** If you do not know farm IPMWORKS numbers, please contact Stanka (stanka.klemencic@kmetijski-zavod.si).

- **Crop rotation (not relevant for orchards and vineyards)**



Species	Qualifier	Seasonal type	Destination	Cultivar
rapeseed	Forage / Fodder	Winter	-	-

- On the upper part, you will find all the crops entered on your farm. If the crop does not appear, you must create it on your farm.

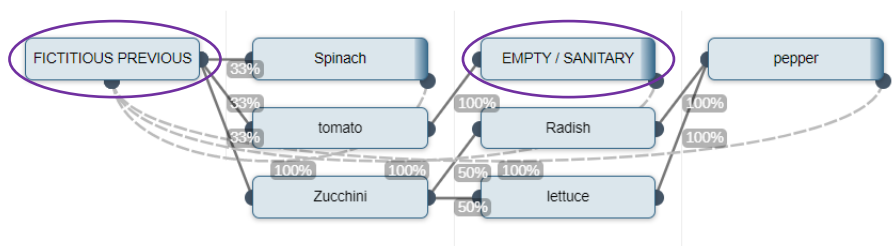
To set crop rotation:

- All crops listed in the farm are displayed on the top of the screen. Click and drag the first crop into the crop rotation space provided (blue area that appears on the left). Repeat this operation to position each crop in the rotation.
 - Then link the crops together by positioning the arrow at the right end of the box (a blue dot appears), click, hold and drag the line to the left end of the desired crop.
 - 👉 By clicking on this link, you can enter a catch crop in the box below (the catch crop has to be listed beforehand in the section Crop / Cultivars of the farm).
 - Finally, complete the rotation. Click on the last crop(s) and tick the "End of cycle" box in the box below the rotation. Don't forget to link the last crop(s) to the first one to close the rotation.
 - By default, two succeeding crops are for two years. If you have several succeeding crops within a given year, click on the second crop, and click on the tick-box 'Same crop year as previous crop'. Two succeeding crops in the same years are displayed in darker blue.
- If you have a crop grown over several years, drag and drop several time the same crop (by default, 1 crop = 1 year). You will thereafter have to describe the crop management for each year (but don't worry, the copy/paste functionality will help a lot!)

Please remember to save the crop rotation.

/!\ Rotations can be complicated to describe, especially for the Greenhouse and Outdoors vegetables sectors. If you don't know what is the previous crop, you can create an empty crop (fictitious previous) without any species, and declare it as the previous crop.

Example:



- **Perennial crops (relevant for orchards and vineyards only):**

If all of cultivars of a given species are managed the same way, you can declare in your farm just one crop (e.g., Olive tree) with all the varieties in it (if there are several). Describe the orchards/vineyards in this tab **Perennial cops/characteristics of the plantation**.

If there are differences in crop management across varieties, then you should have 1 crop for each variety at the farm level (e.g., Crop 1 = Vine-Chardonnay and Crop 2 = Vine-Pinot Noir). In the tab **Perennial cops/characteristics of the plantation**, declare the share of each variety in the cropping system and describe the orchards/vineyards for each variety.

- **Crop management:**

For each crop in your rotation, you must enter each intervention, i.e., each pass over the crop, whether mechanised or manual, from the harvest of the previous crop to the harvest of this crop; several actions can be carried out during a given pass (e.g. soil tillage and sowing in the same pass).

- When adding an intervention, a box appears, choose the type of intervention you want and select the appropriate tool combination (if no tool combination is suggested for this type of intervention, you must create it in your equipment pool).
- You can specify whether the intervention concerns the catch crop by ticking the relevant box.
- You can also modulate the frequency of this intervention, both spatially if the intervention was not performed on all plots for this crop, or on the whole plot area, and temporally if you have carried out this intervention several times over a given period (e.g. several passes of the same mechanical weeding tool).

Example: I treated my field with an herbicide but only 1 row out of 2 and I did it 3 times at the beginning of the year.

You must then specify which species/varieties are concerned by the intervention. By default, all species/varieties are ticked.

You then fill-in the details of each action (there may be several). It is in this box that you note the type of sowing carried out, the yield and the destination of your harvest...

Finally, the last box concerns the inputs. This is where you select seed coating (for a sowing action) or the products used (for a PPP treatment or a fertiliser application). If the desired input does not appear in your drop-down list, it is because it was not entered in the *Inputs and prices* tab when you filled in the *Farm information* section.

<input type="checkbox"/>	Name	Action(s)	Dates of intervention (DD/MM)	Intermediate crop assignment	Temporal frequency	Spatial frequency	Proportion of area treated	Proportion of area affected by the intervention	Data entered	Delete
<input type="checkbox"/>	harvest	-	On 14/10	-	1.00	1.00	-	1.00	-	
<input type="checkbox"/>	tillage	-	On 14/10	-	1.00	1.00	-	1.00	-	
<input type="checkbox"/>	seed	-	On 14/10	-	1.00	1.00	-	1.00	-	

Drag and drop an intervention to change the order

Add an intervention

If one intervention is in pink/red, as above, it means that some information is missing at the action and/or input level.

Synthesised crop management of the crop wheat (Rank 1) ?										
	Name	Action(s)	Dates of intervention (DD/MM)	Intermediate crop assignment	Temporal frequency	Spatial frequency	Proportion of area treated	Proportion of area affected by the intervention	Data entered	Delete
<input type="checkbox"/>	sowing	-	On 14/10	-	1.00	1.00	-	1.00	-	
<input checked="" type="checkbox"/>	ppp	-	From 15/02 to 01/04	-	3.00	0.50	Plant protection products : 50 %	1.50	-	
<input type="checkbox"/>	Harvester	-	On 14/10	-	1.00	1.00	-	1.00	-	

Drag and drop an intervention to change the order

Copy the interventions

Add an intervention

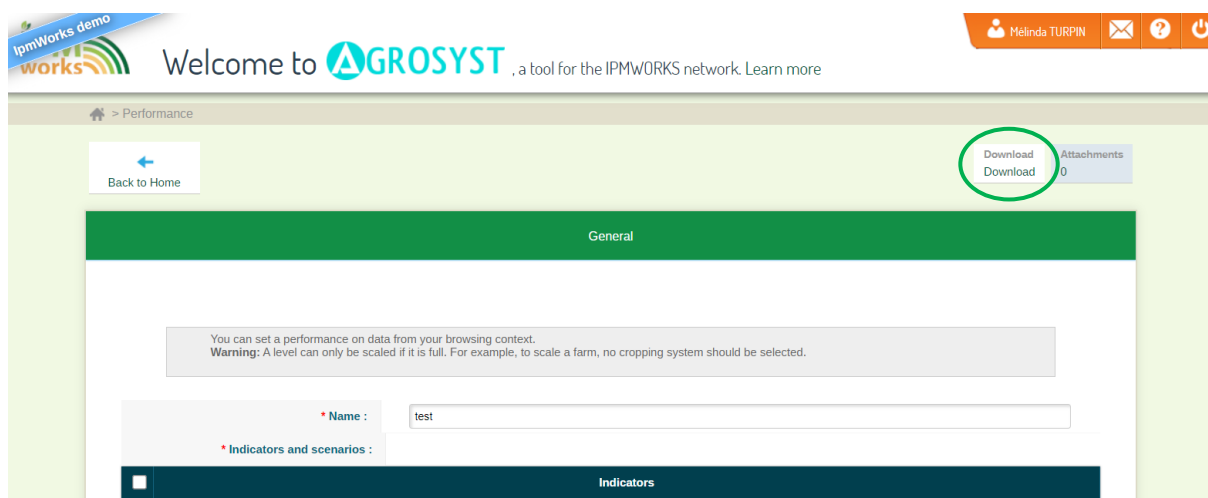
You can copy and paste one or more interventions on another crop in the same farm. You then only have to modify the yields and inputs to adapt them to this new crop.

- The tick-box on the top-left is for selecting all interventions.

Performances

You can run a computation of technical and economic indicators, that are then stored in the system as a .xls file. To search and view a stored performance file, click on "Performances" on the home page of AGROSYST. You can then search for your performance file by the name you gave it, the name of the farm or the name of the cropping system.

To create a new performance file, click on "Add a performance". Give it a name, select the indicators you want to calculate, specify the farm(s) and the associated cropping system(s). Finally, click on save. The "Download" button will turn green once calculations are done, and you can click on it to download your performance file in xls format.



Tips and Tricks

- **Savings:**

Remember to save **regularly**, at each tab.

- **Copy and paste:**

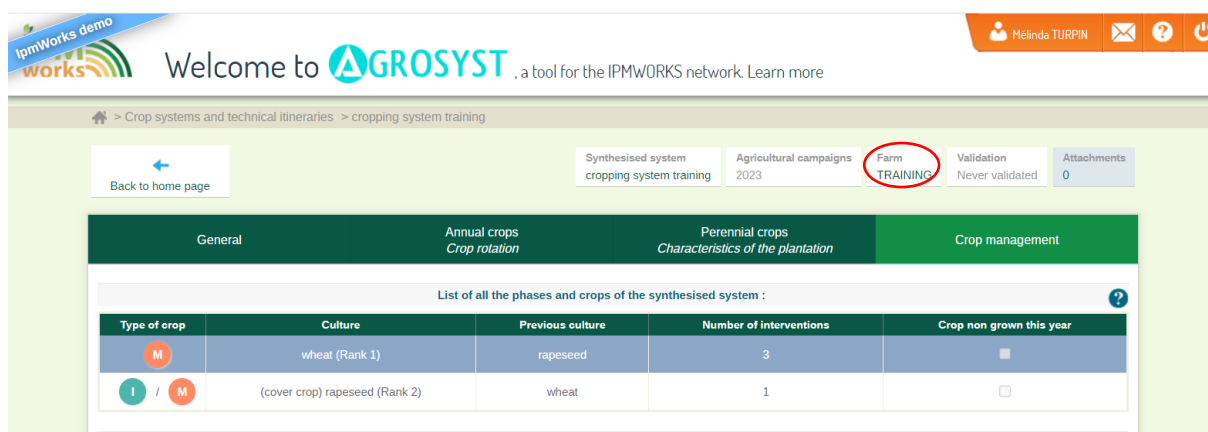
You can save yourself a lot of typing by using copy/paste. You will find this functionality for farm equipment (copy/paste on another farm), for farm inputs (copy/paste on another farm) and for crop management (copy/paste within the same farm).

- **Tabs/Windows:**

It is recommended to open several tabs or windows on your browser: one tab with the farm details and one tab with the rotation and the crop management.

Right click on the page tab and duplicate your page.

Or, if you realise that you are missing inputs or tool combinations when describing crop management, you can right-click on the farm name and open the page in a new tab to update the farm description.



- **Symbols:**

To assist users in their input, symbols are present throughout Agrosyst.

*: the asterisk in front of a field indicates that the entry is mandatory. The page cannot be saved if these fields are not filled in.

π: the pi indicates that the field is involved in the indicator calculation.

?: The question mark gives additional information about the field to help with the filling in.

List of mandatory (and important) data to save

- **Farm information:**
Farm name, type (commercial farm), contact person, country, city/municipality
Important (but not mandatory): Farm type / Main production(s)
Important in case of livestock (but not mandatory): type and number of animals
- **Soil (except in greenhouses)** **Tab 'Field properties'**
Soil type, texture, depth, stoniness...
- **Equipment:**
List of equipment used in the cropping system, and combination of tools for each type of operation.
Don't need to be super-precise for the equipment properties
- **Crops/species/cultivars:**
List of crops grown in the described cropping system, including species (and better if you can also inform on cultivars), including cover crops
- **Crop rotation (or characteristics of the plantation for vineyards and orchards)**
- **Crop management for each crop (each term of the crop rotation):**
Comprehensive sequence of interventions, from harvest of the previous crop to harvest of the considered crop, including tools combinations, dates, spatial and temporal frequency, inputs, doses, yields.

List of secondary information (not mandatory, not so important)

- Age, motivation of farmer
- GPS location
- Labour forces, human resources
- Prices (inputs and harvested products)
- Plots