2. The DIVERSIFOOD database on underutilised genetic resources performance - *A guide to navigate the results of participatory on-farm evaluation*

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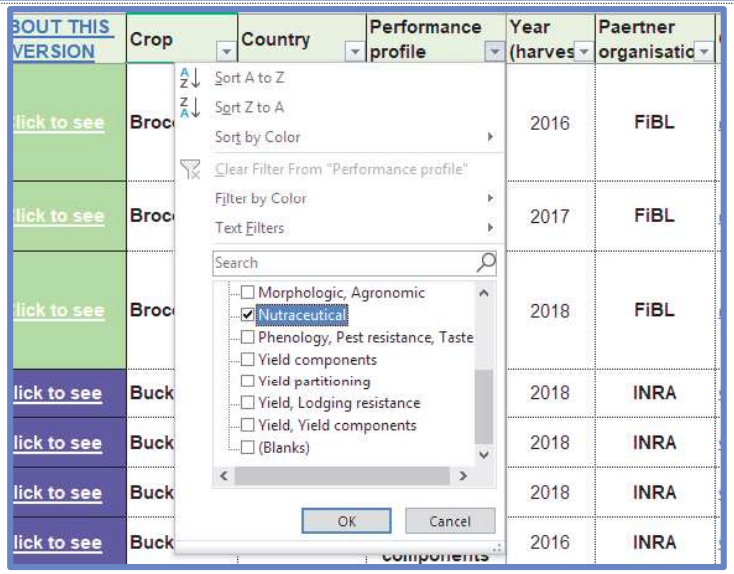
The main spreadsheet

The database is an **excel file** that can be navigated using links and the **"filter" function**. When opening the file, you are on a general sheet with all the trials represented. This sheet can be navigated and filtered by all its columns.

	A	B	C	D	E	F	G	H	I	J	K
1	ABOUT THIS VERSION	Crop	Country	Performance profile	Year (harves	Paertner organisatic	Contact	Location	Soil features	Soil management	Fertilisation
2	enter your data										
3	Click to see	Broccoli	FRANCE	Yield partitioning	2017	ITAB, INRA	estelle.serpolay@itab.asso.fr	Morlaix		rotative harrow	none
4	Click to see	Broccoli	FRANCE	Nutraceutical	2016	INRA, ITAB, ARI	martin.koller@fibl.org, veronique.chable@inra.fr, michalis.omirou@ari.gov.cy				
5	Click to see	Broccoli	SWITZERLAND	Nutraceutical	2016	FiBL, ARI	martin.koller@fibl.org, michalis.omirou@ari.gov.cy				
6	Click to see	Broccoli	NETHERLANDS	Yield partitioning	2016	INRA, ITAB	enuijten@louisbolk.nl	De Beersche Hoeve, the Netherlands	Sandy soil, easy drainage	ploughed	grass -clover and manure
7	Click to see	Broccoli	NETHERLANDS	Yield partitioning	2017	LBI	enuijten@louisbolk.nl	Doves Farm, Wiltshire, South West England	Sandy soil, easy drainage	ploughed	grass -clover and manure
8	Click to see	Broccoli	SWITZERLAND	Yield partitioning	2016	FiBL	martin.koller@fibl.org	Agrico Birsmattenhof, Therwil (Switzerland), plot "Witterswil"	loess soil	ploughed	commercial organic fertilizer (feather powder)

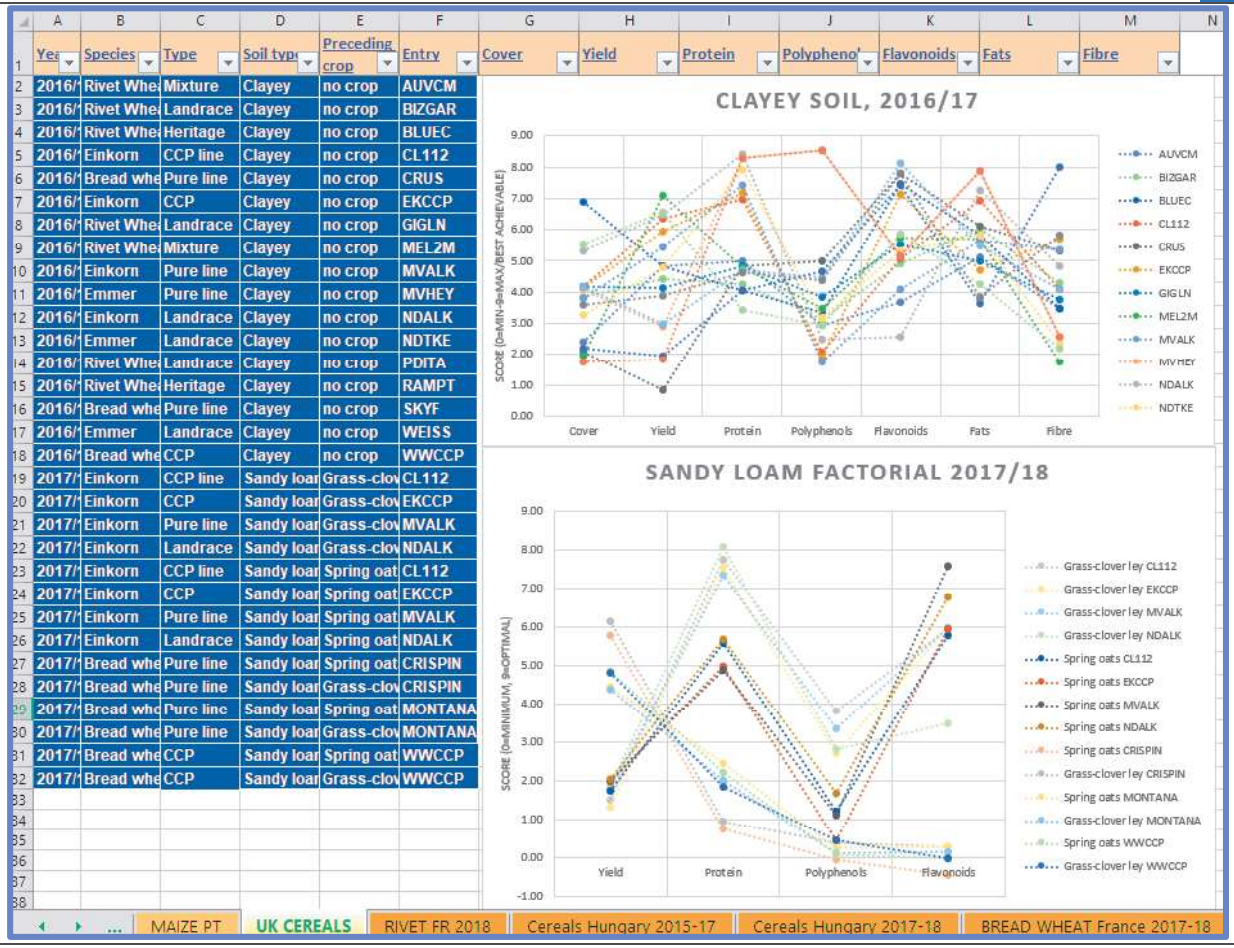
For example, you can filter by "performance profile", where the performance variables shown are indicated, and decide you want to select trials who show a "nutraceutical" profile of the accessions tested. You then visualise the trials who cover this kind of profile and can further filter by "crop" or "country" for example. Once identified a trial of interest, **link on the first cell of the row ("click to see")** leads you to the data spreadsheet.



The data spreadsheets

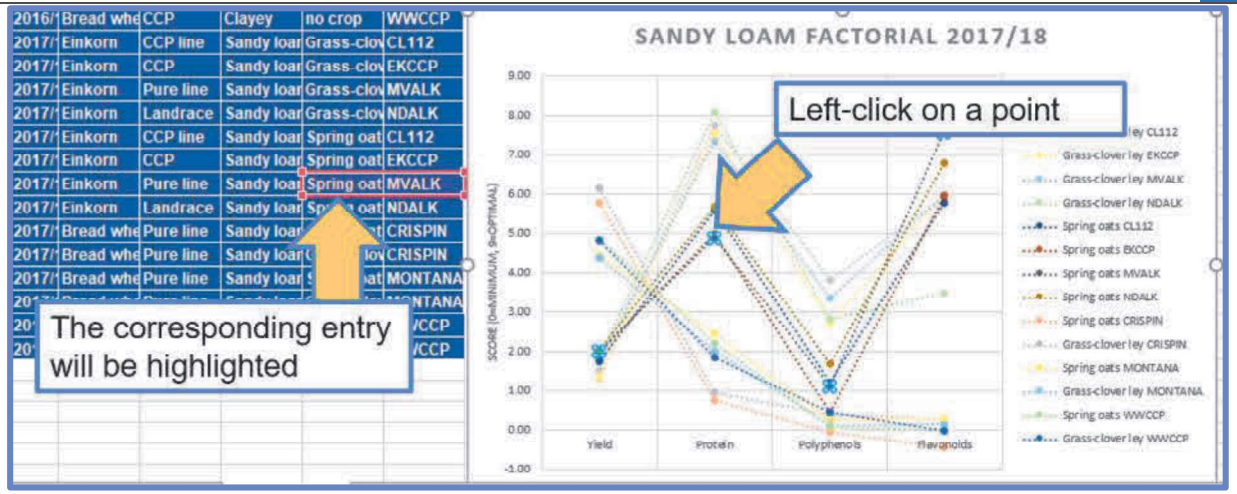
A data sheet opens. **Fixed variables** (in this case, Year, Species, Type, Soil type, Preceding crop, Entry) are on the left-hand side. **Performance variables** are inserted as **scores derived by relating actual values to a min-max range** derived from literature and/or from local conditions and knowledge.

A scoring 0 to 9, '0' indicates the minimum acceptable value and '9' indicates the maximum or best achievable value. This way, the charts on the right-hand side will visualise the performances as positioned in a meaningful range: even visualising the profile of a single accession, you will be able to understand if its yield and quality are "low", "average" or "high".

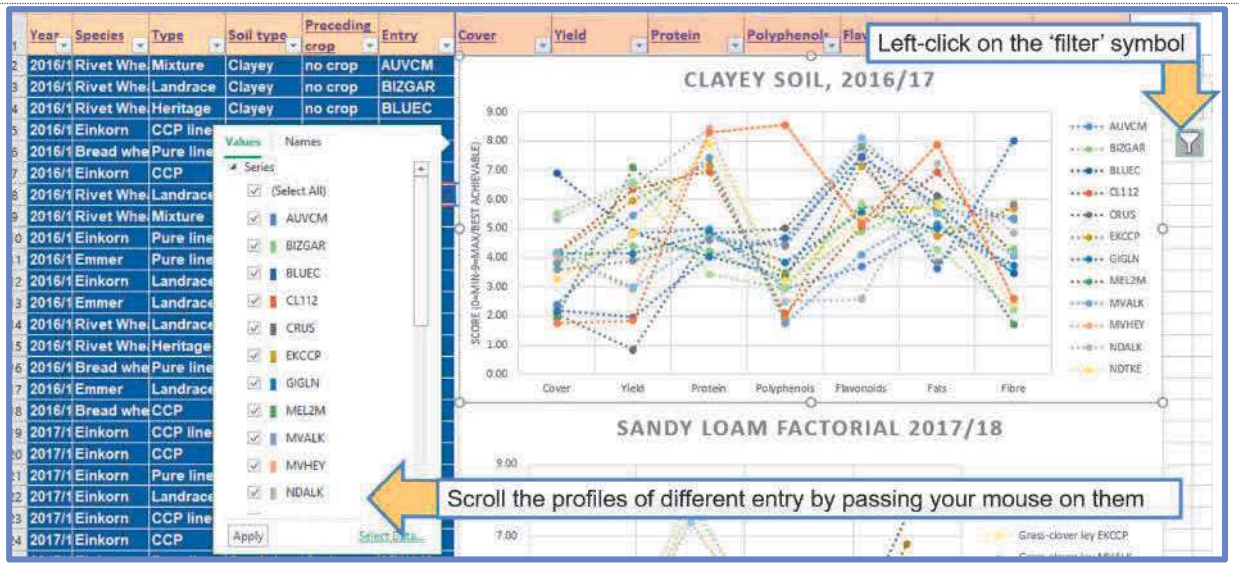


Exploring the charts

These graphs can be navigated in different ways. First, you can explore by **left-clicking on specific points** or data series on the graph, and **the corresponding entry will be highlighted**



Alternatively, you can explore the different profiles using the **filter button appearing on the top-right side of the graph** when selected

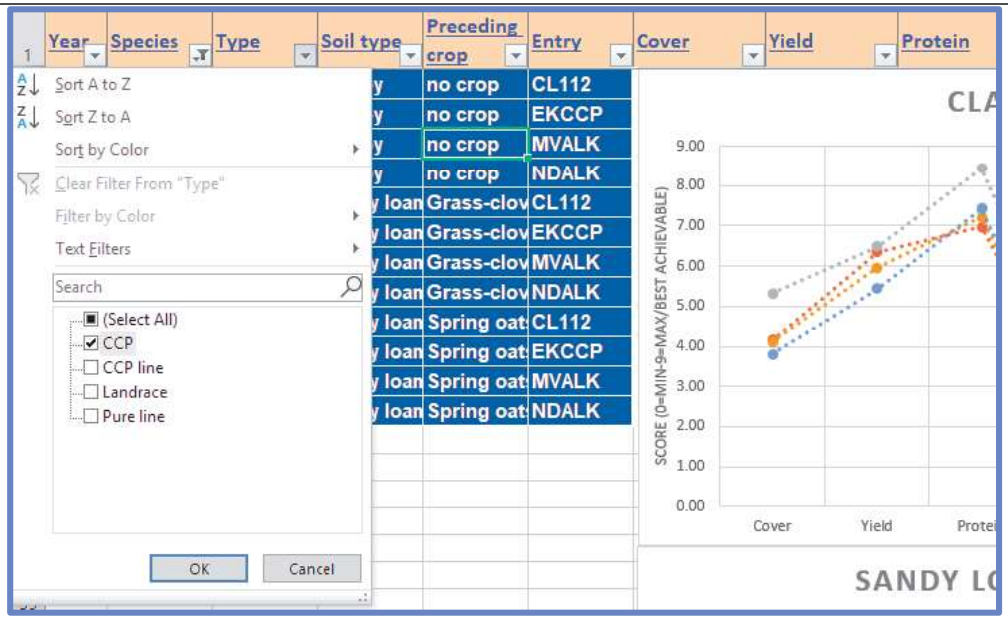


Navigation through filters

To analytically navigate the graphs is using the **filter function on the header row**.

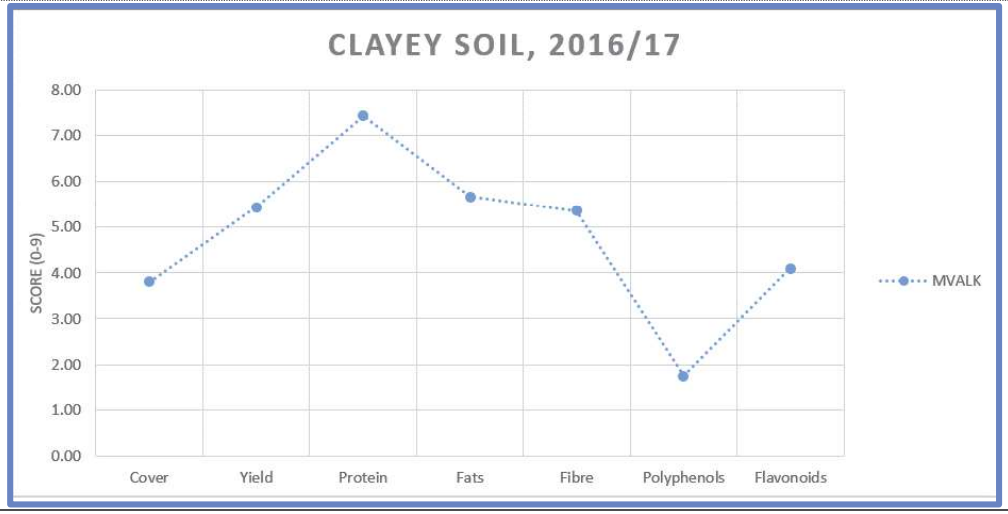
In this case, for instance, you can filter by “species” and select one out of four different species tested.

Further filtering by “type” you can select within the genetic types available within the species filtered earlier on.

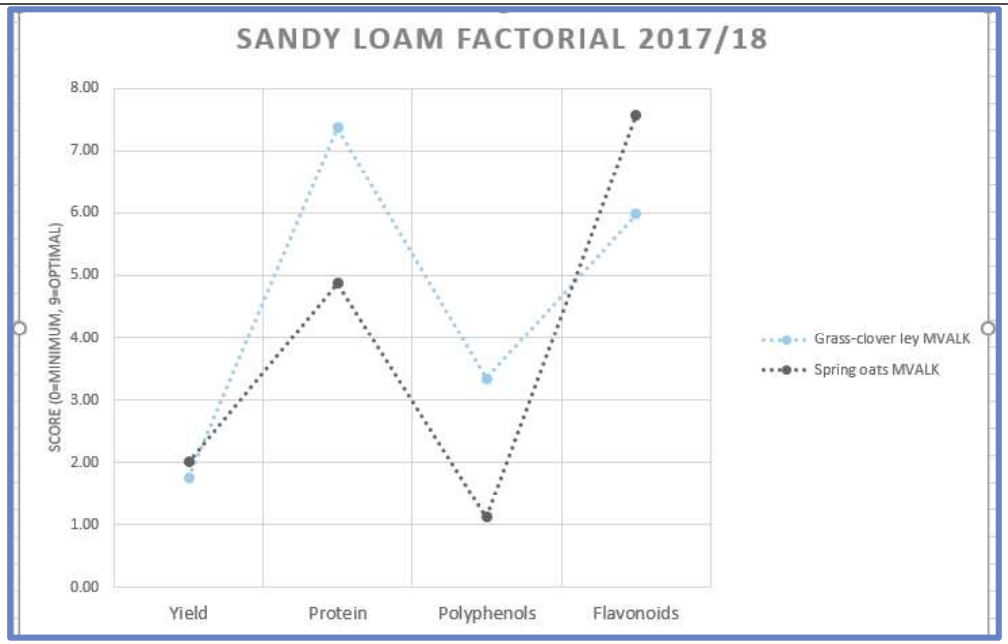


You can finally **identify a single accession**, whose **profile will appear on the graphs**.

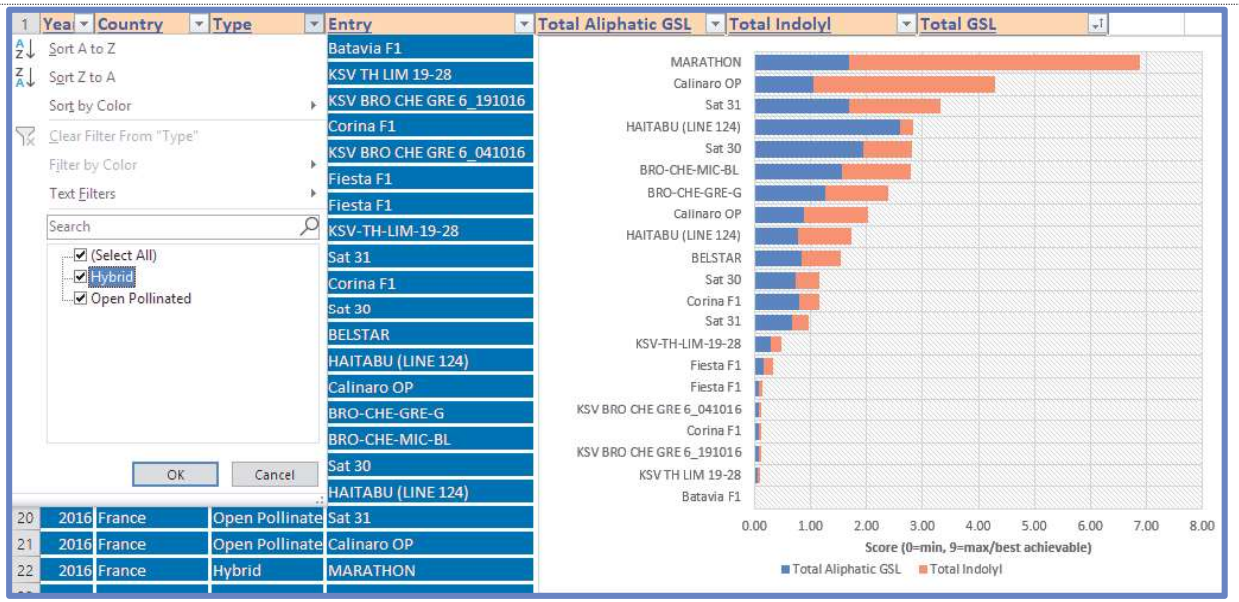
In the first graph there is only one profile for this accession, as it has been tested in a single site in that year. You can observe its average cover, good yield, extremely good protein level, and low polyphenol content.



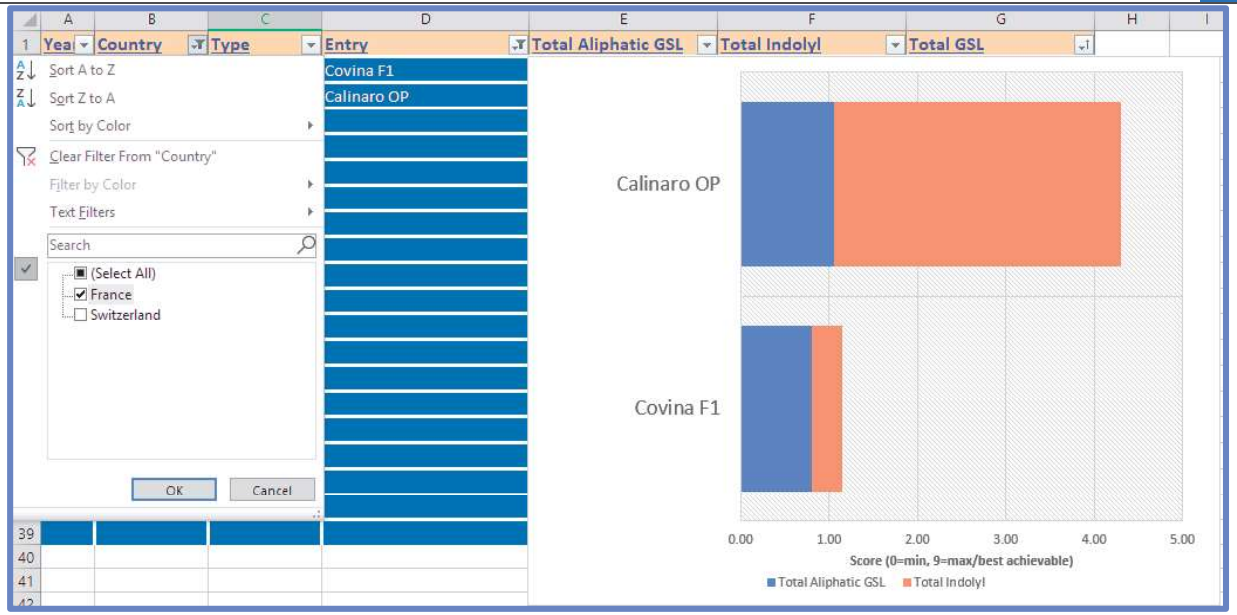
In the second graph of this sheet, you see two profiles instead, as the accession was **tested on two fields** in different rotational positions. Here you can appreciate that the yield is generally low, grain protein and polyphenols content are visibly higher the crop grown after a grass-clover ley (light blue line) than after spring oats (dark grey line).



Other data sheets have different graphs. Here for example the graph shows the content of the two main components of glucosinolates in broccoli. The entries represent open-pollinated (OP) and F1 hybrid varieties grown in Switzerland and France in 2016.

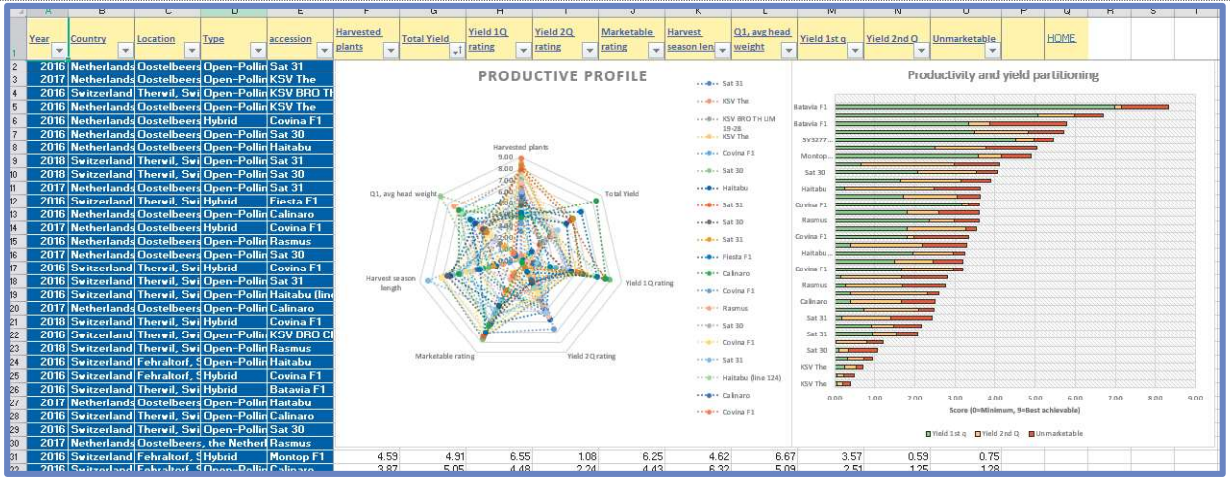


Selecting one open-pollinated and one hybrid that were grown in both sites, the graph shows that the GSL content was visibly higher in the OP than in the F1 hybrid in France, mainly due to higher indolyl (orange bars).

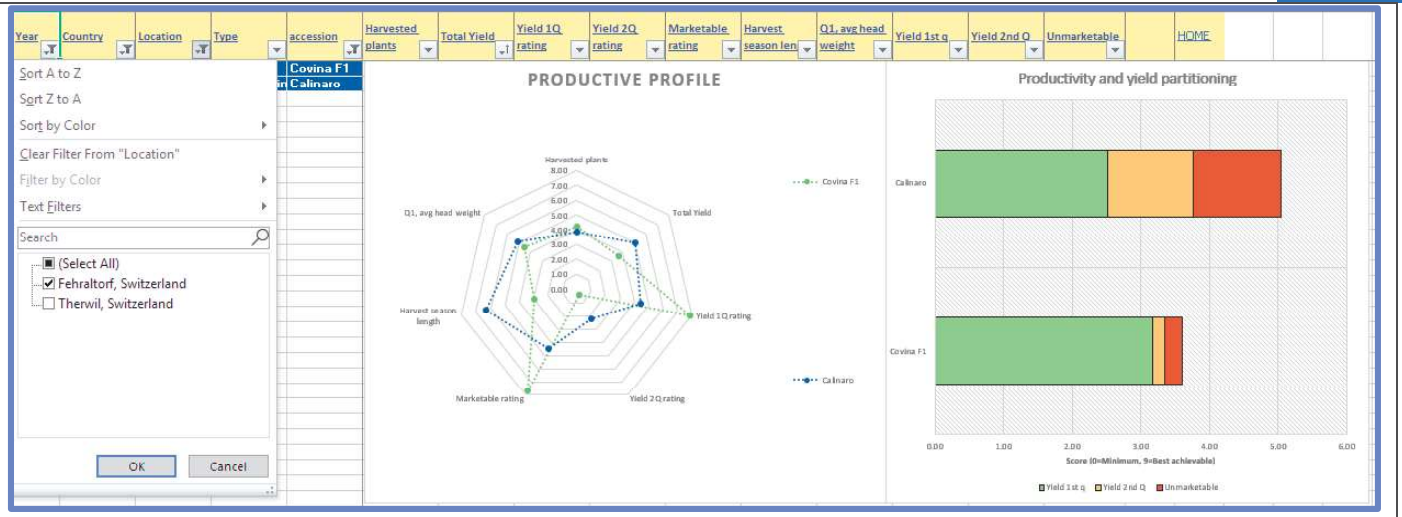


Results from multiple locations

Broccoli trials also have a comprehensive sheet with a **multi-year multi-location trials** (2016 to 2018 in Switzerland and the Netherlands) where the productive profile is visualised with a **radar chart** (left-hand) and the yield partitioning as a **stacked bar chart** (right-hand).

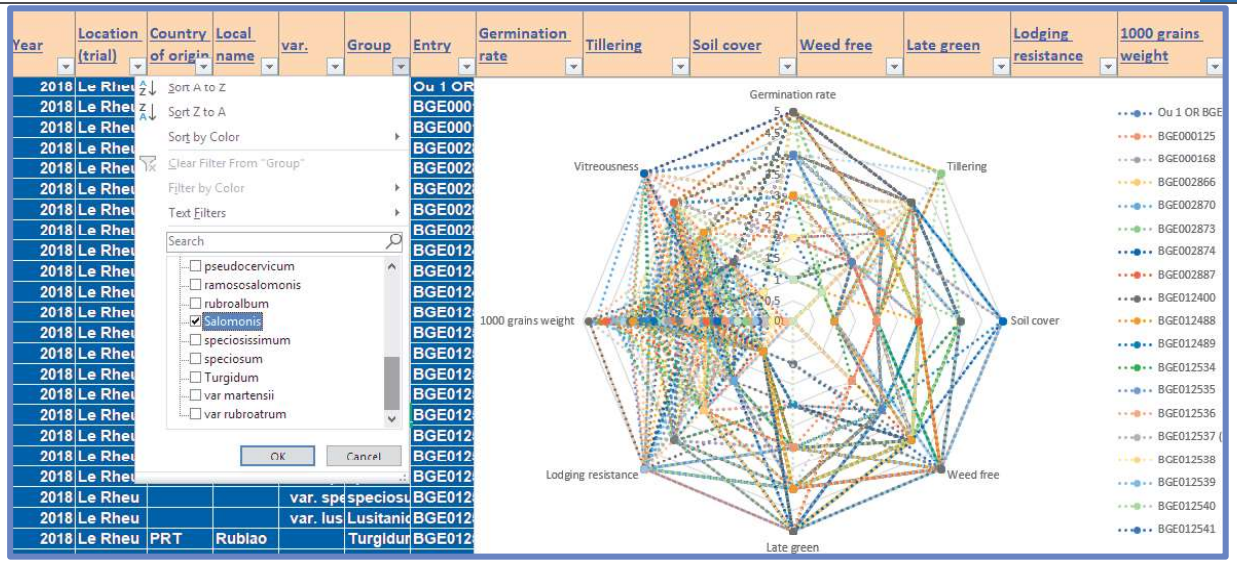


Entries are classed as Open-Pollinated and F1 Hybrid. An OP (“Calinaro”) and a F1 hybrid (“Covina”) can be compared in the two location where they have been tested in Switzerland, showing that the OP had higher total productivity than the F1, but higher rate of unmarketable (brown bar) yield.

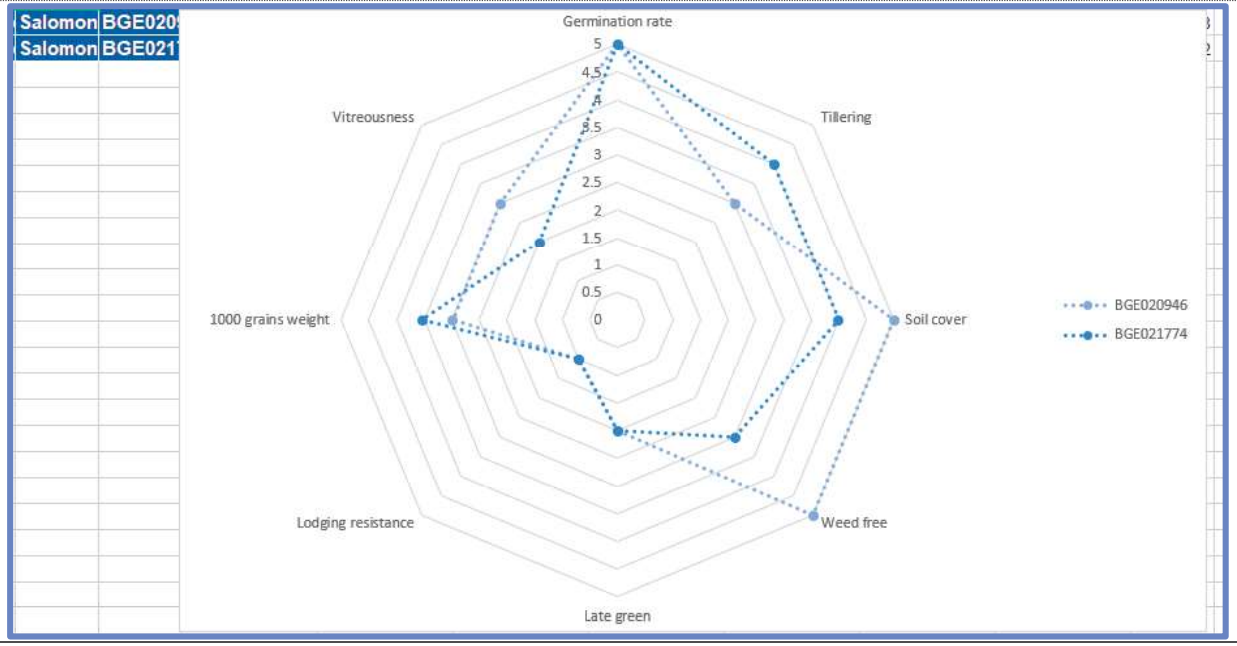


Screening a large collection

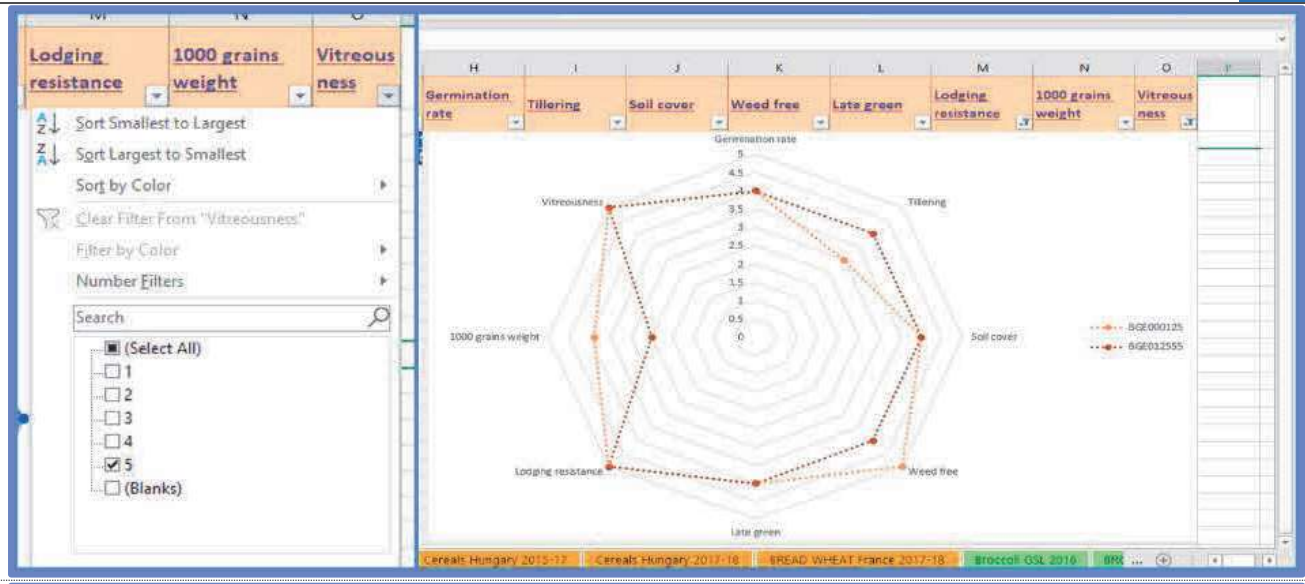
As a last example, there is a datasheet (RIVET FR) with more than 150 rows visualised by a radar graph, with an agronomic and grain features screening of rivet wheat accessions. This can be browsed by e.g. taxonomic group.



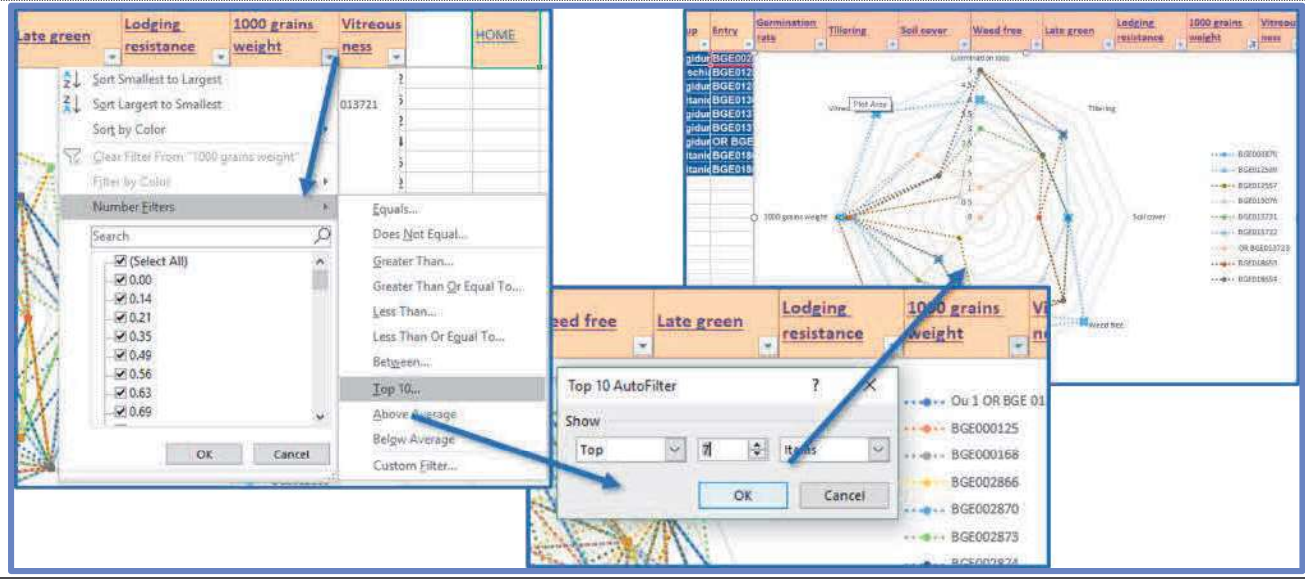
Here is for example the profile of the two entries of *Triticum Turgidum Salomonis*



In this case it may be good to directly **filter by performance variables**.
For instance, two key variables for rivet wheat are vitreousness, indicator of pasta-making quality, and lodging resistance, very important for a tall cereal. Both variables are a 1 to 5 score. Filtering by maximum value ("5") for both you can identify accessions responding to your criteria.

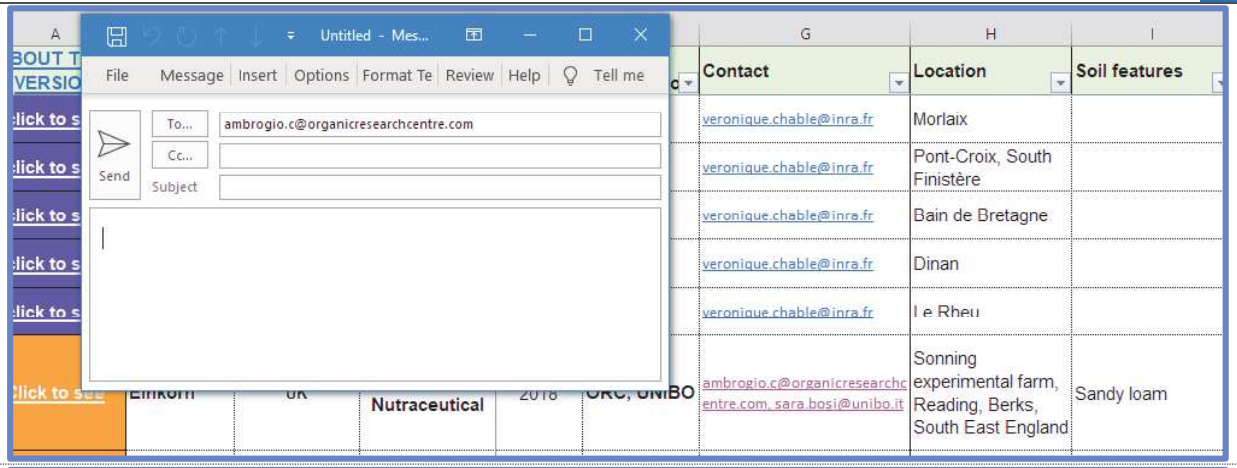


For continuous, numerical variables, a further option is to use the number filter functions, to select e.g. the top 7 values of grains average weight

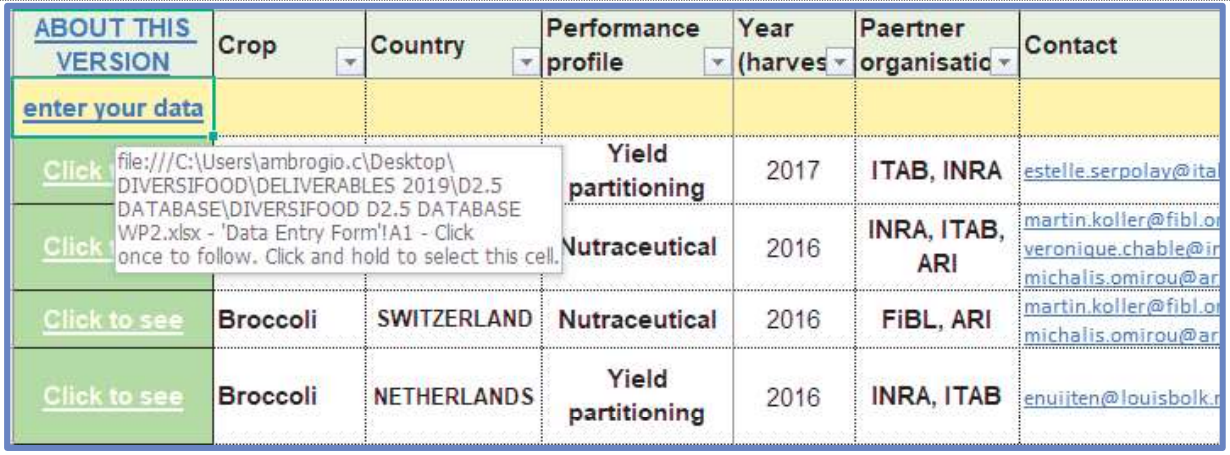


Get in touch

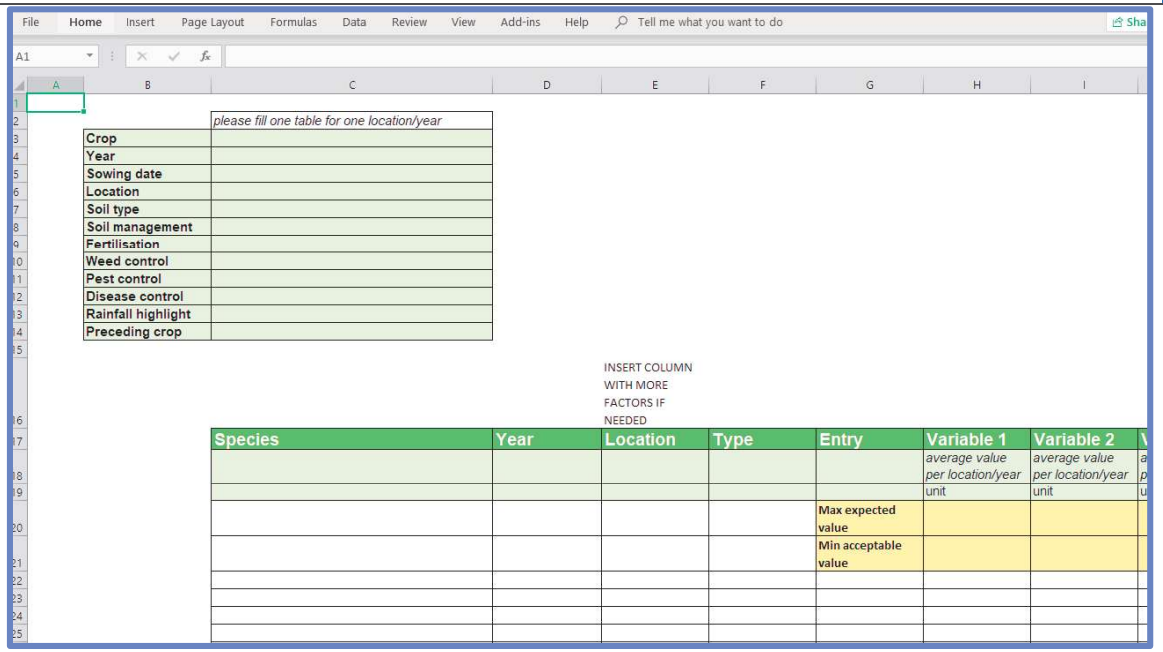
More information, including actual data, description of specific accessions and access to seeds if available, can be obtained directly from the trial's leaders, whose email contacts are indicated in the main spreadsheet.



This Excel file is a proof of concept of a database to visualise performances of different accessions in different trials, each with its own conditions and performance profiles. The database will be **periodically updated and improved**, and this could be an opportunity to visualise and bring value to other data coming from other experiences. In the first sheet, there is a link to a "**data entry form**".



In this data entry form, there are **two tables that you can copy and fill with your data**. Filled entry forms can then be sent to the Organic Research Centre (email: Ambrogio.c@organicresearchcentre.com).
Do not forget to indicate, for each variable, what the best/maximum and the minimum acceptable value would be. According to your indications, your data will be transformed in a 0-9 rating and visualised accordingly. When overlapping with existing trials exist (e.g. common accessions and/or variables), we will attempt to merge outcomes from your experiences with existing results.



You can always check which version you have downloaded by clicking on the top-left cell in the main sheet