

# Agronomic monitoring of CEREALS WINTER

FORECAST MODELS



TASK MANAGEMENT



**GRAINDSS**

POWERED BY  
**AGRICOLLUS**



PRESCRIPTION MAPS




SATELLITE IMAGERY



CROP SCOUTING



 Increase yield and quality of barley and wheat

 Reduce management cost

 Prevent the onset of Fusarium wilt

 Monitor crops health, even remotely



## FIELD MAPPING

Geolocate the field on the map and draw it. Features will be immediately hooked. You can enable the cadastral map and enter sheet and parcel information.

Use one of the following methods to create your field.



### Draw on map

Locate the plot on the map and draw it manually.

✓ Select



### Automatic detection

Locate the plot on the map and enable automatic detection to map the field with just one click.

✓ Select



### Upload files

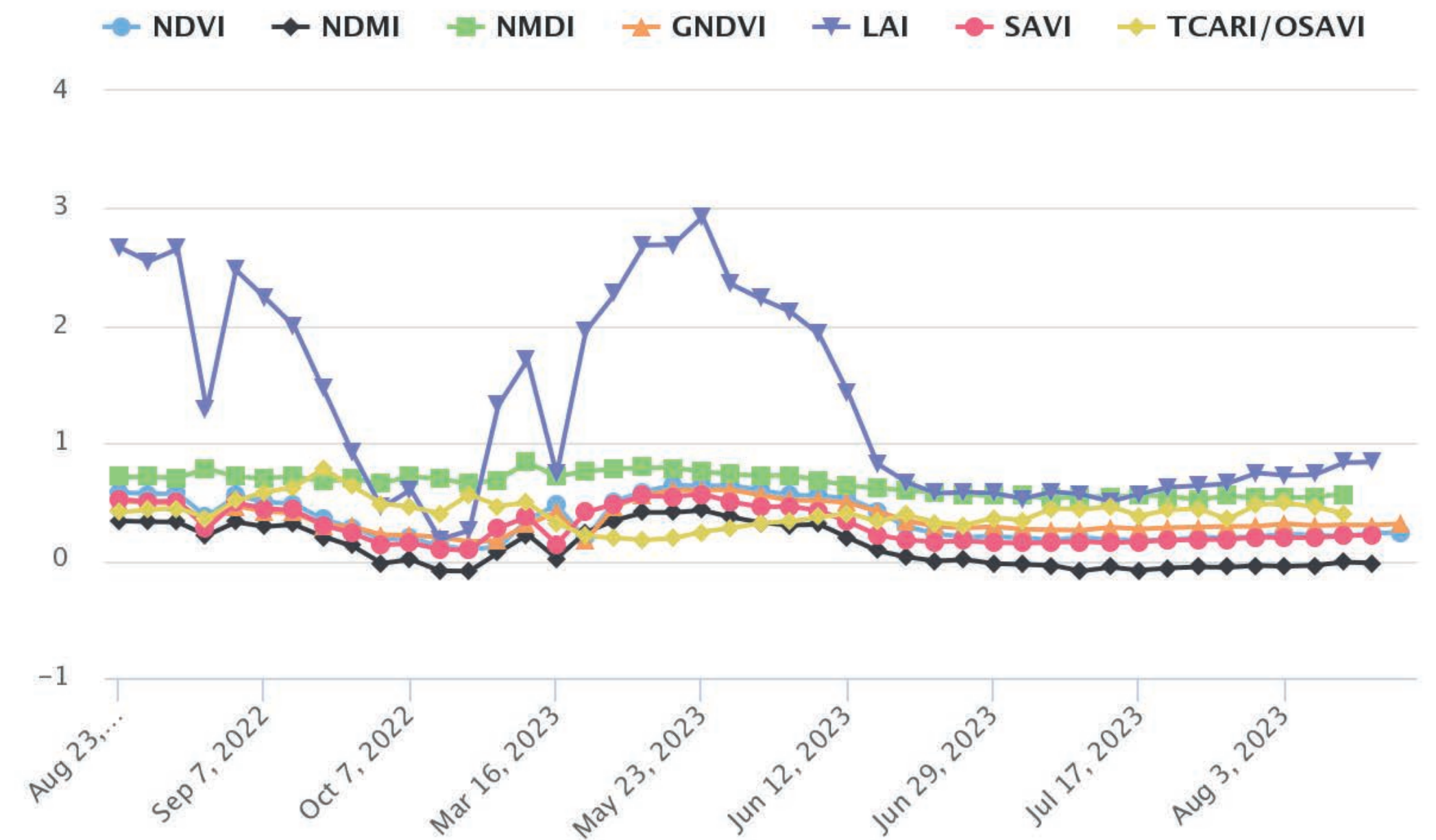
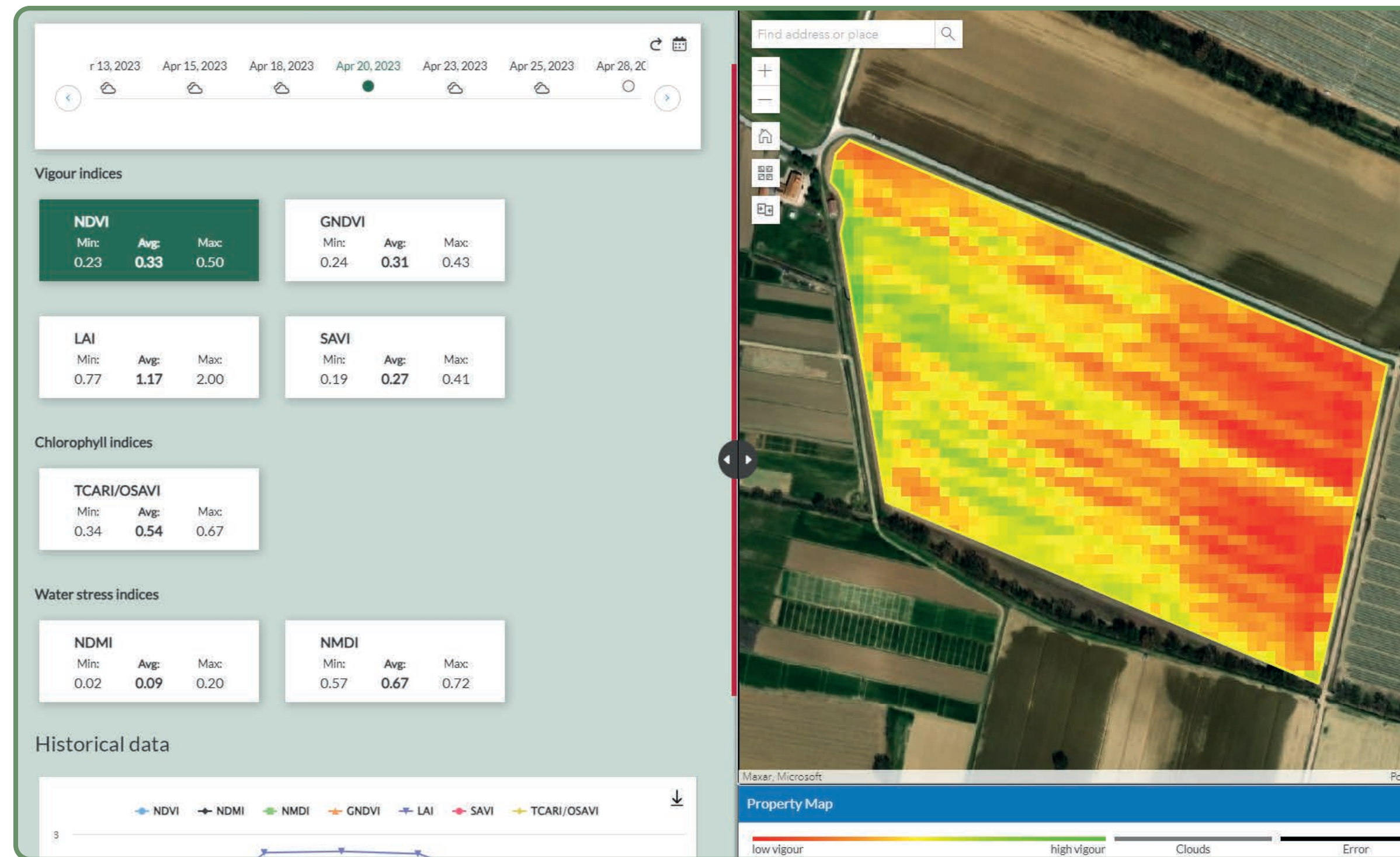
Upload a .shp or .kmz file.

✓ Select



## SATELLITE IMAGERY

Consult Sentinel-2 satellite images with vigor, water stress and chlorophyll indices to assess the health of the crop and plan monitoring activities.



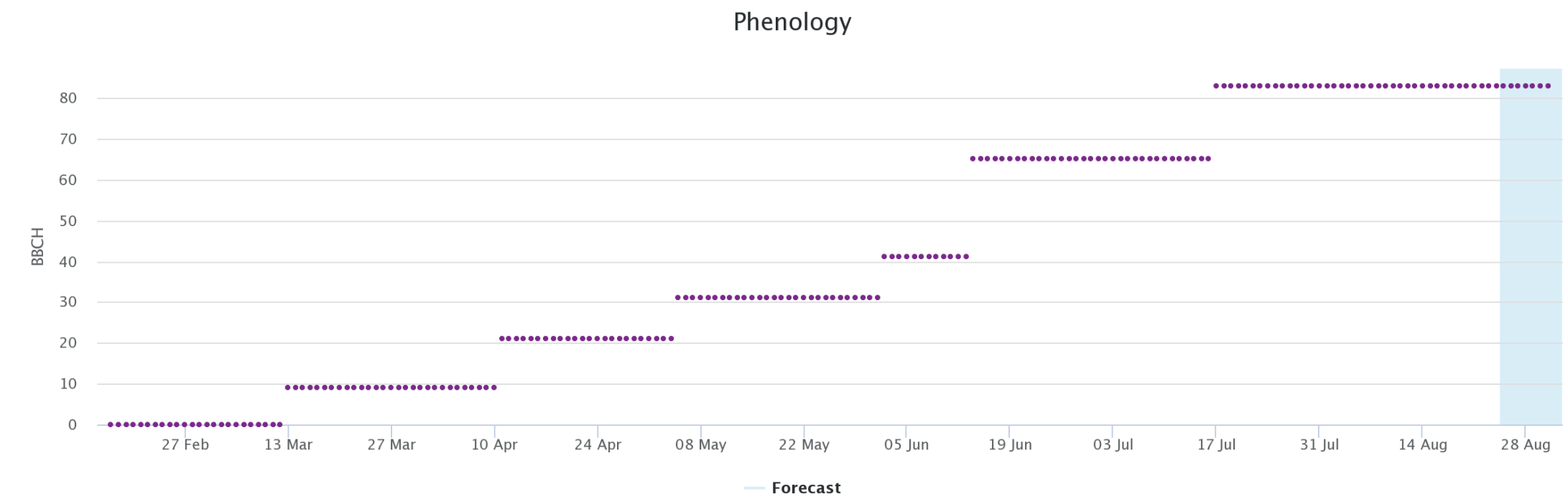


## FORECAST MODELS



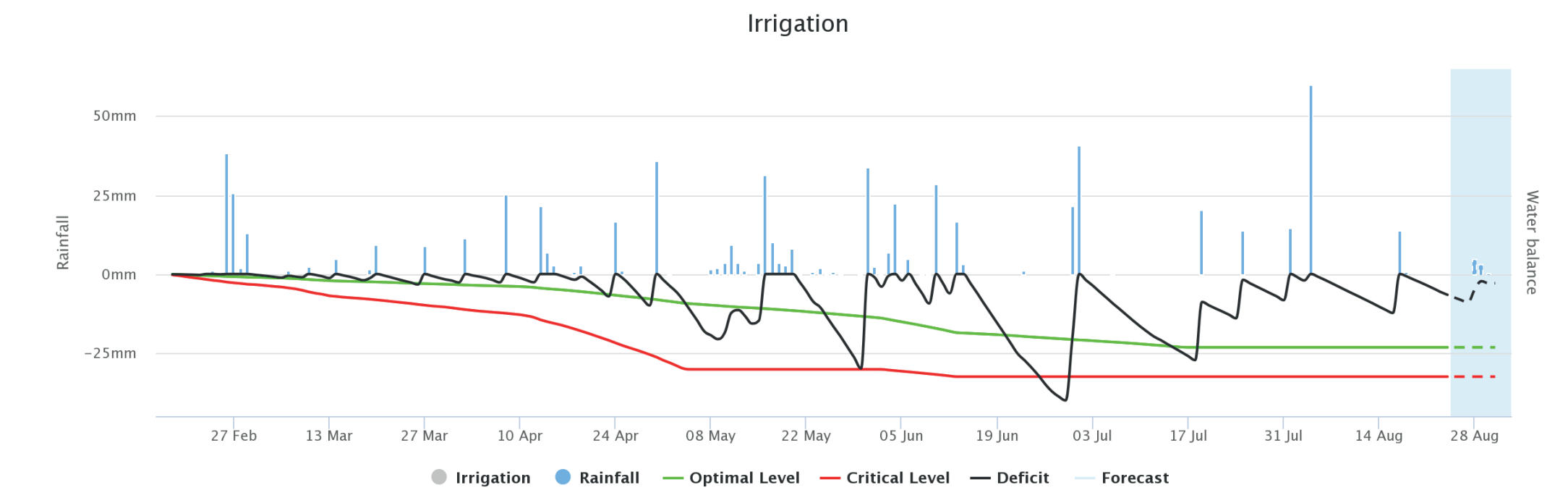
### PHENOLOGY

Prediction of phenology to assess field needs in each development stage.



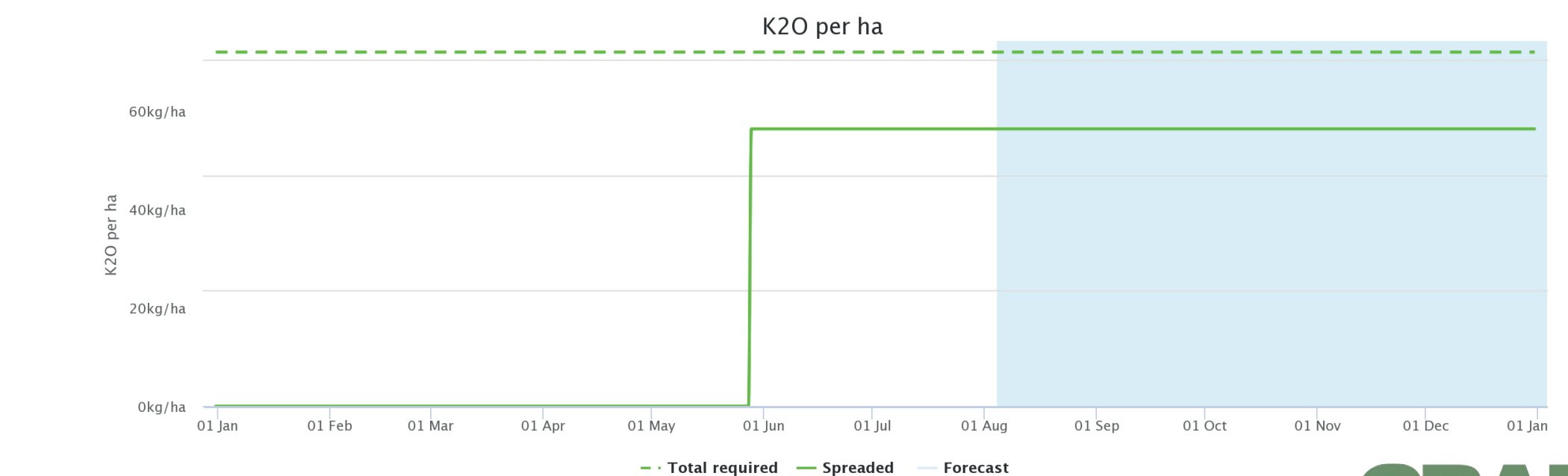
### IRRIGATION

Evaluation of water requirements to carry out irrigation when necessary with the right amount of water.

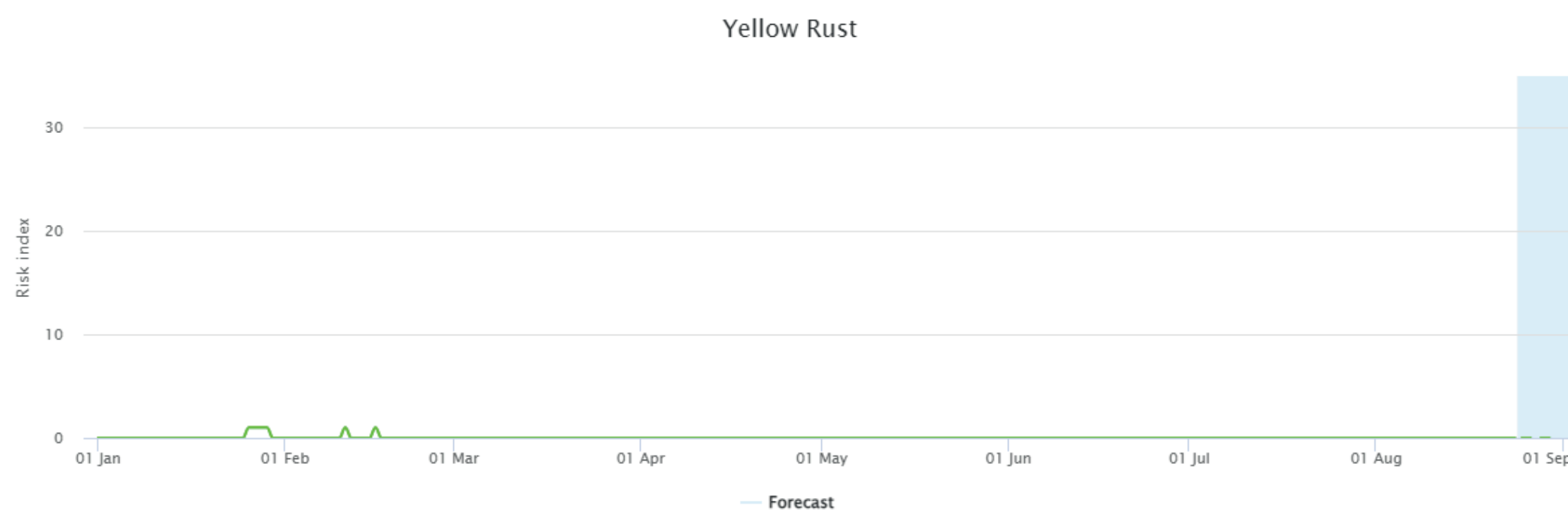
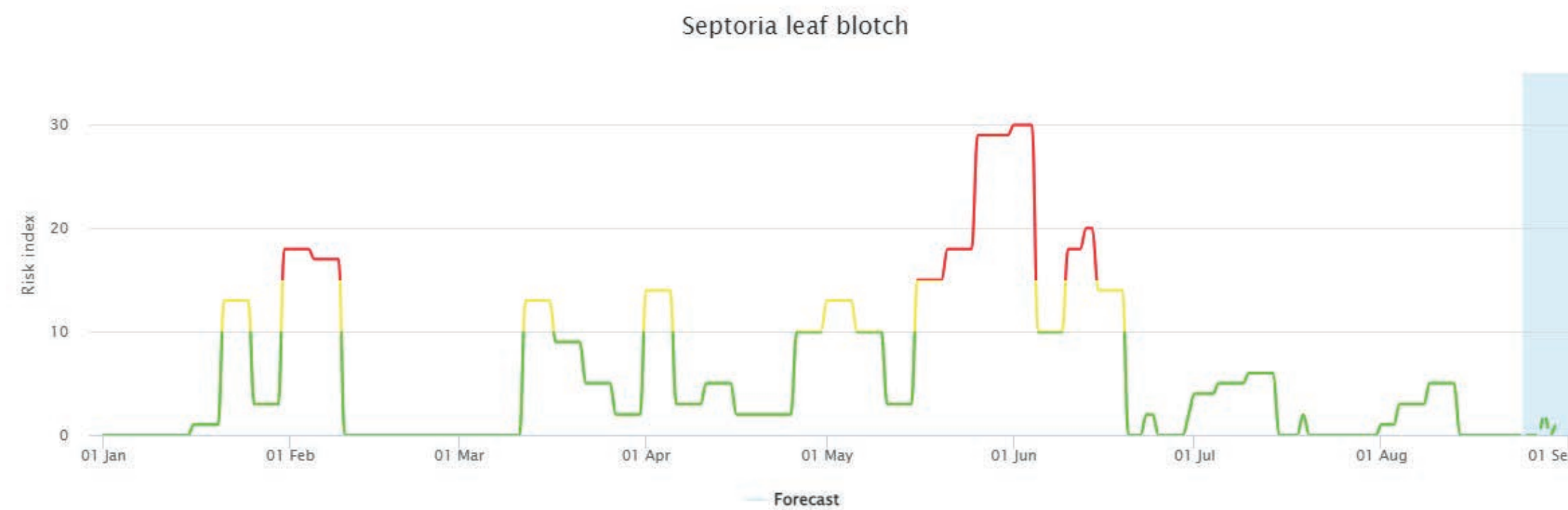
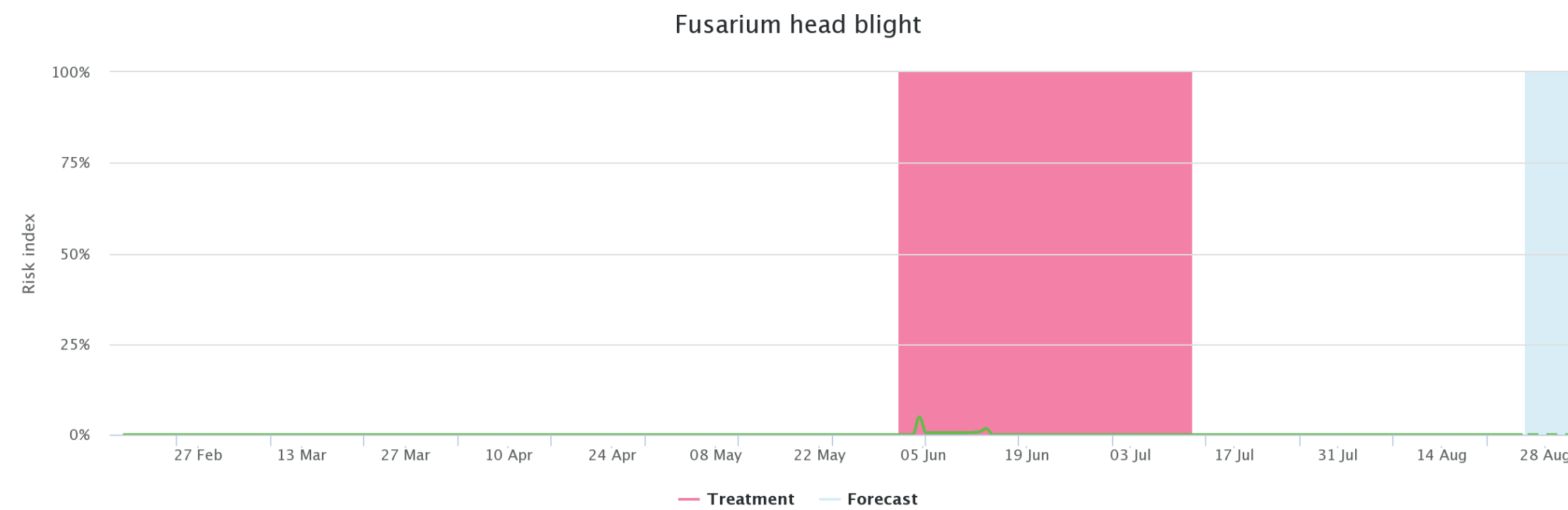


### FERTILIZATION

Calculation of the total nitrogen, phosphorus and potassium needs (Kg/ha) required by the crop in order to obtain important suggestions on the doses of fertilizer to be applied.



# FEATURES



## PHYTOPATIES MODEL

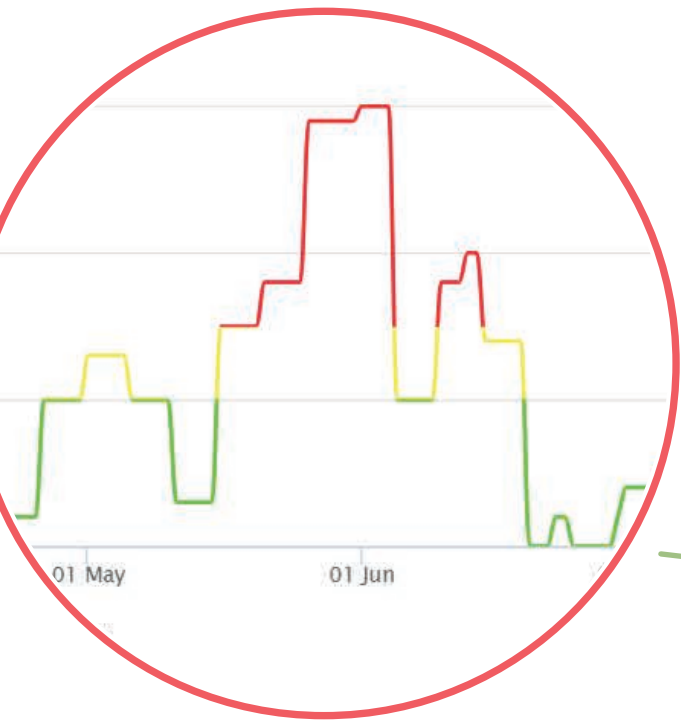
Prediction of **Fusarium**, **Septoria sacc.**, **Puccinia striiformis** development to estimate the probability of daily spread of the fungus and take timely action. The defense forecast models interact with the registered treatments.

# FEATURES



## DECISION SUPPORT

Suggest operations to be carried out based on collected data.



0 % Presence  
4.00 % Damage intensity  
*Fusarius*

No risk  
*Septoria*

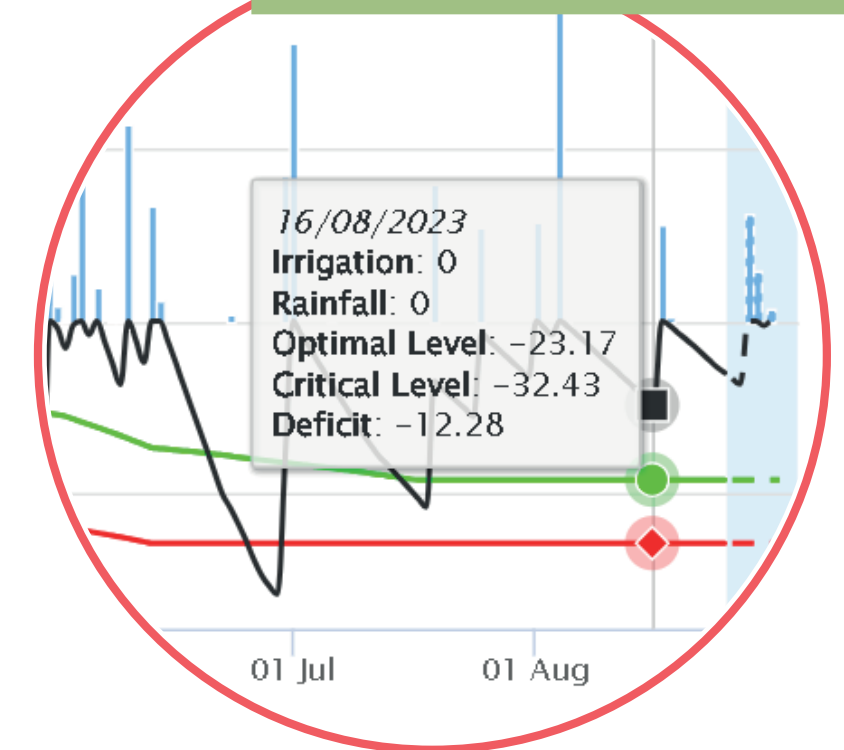
No risk  
No infections started  
*Yellow Rust*



12-HOUR FORECAST

0.00 mm  
*idro requirements*

ESTIMATE OF IRRIGATION REQUIREMENTS FROM FORECAST MODEL



● ripening (BBCH 83)

FIELD ACTIVITIES ENTERED BY THE USER AND INTEGRATED INTO THE PHENOLOGY FORECAST MODEL



ALERTS FROM DEFENSE MODELS FOR THE CEREALS WINTER  
PREDICTION OF INFESTATIONS OF PLANT DISEASES AND INSECTS



RISK DEGREE LEGEND





## SUSTAINABILITY



Monitor the **economic** (yield, production) and **environmental** (water consumption, input control and farm biodiversity) **sustainability indicators** of your farm. You can set the level to be reached for each indicator and monitor how the work is going.

-  Economic 
-  Environmental 
-  Targets List 

**ENVIRONMENTAL INDICATORS** ENVIRONMENTAL ?

Environmental indicators focus on the impact of agricultural practices on the surrounding environment

### Water

Indicator	Value	Target	Status	
Total water consumption	<b>20899.38 m<sup>3</sup></b>	Less than 459781.50m <sup>3</sup>		∨
Average water consumption	<b>7404.53 m<sup>3</sup>/ha</b>	Less than 7500.00m <sup>3</sup> /ha		∨
Water use efficiency	<b>0 m<sup>3</sup>/t</b>			

# FEATURES

The screenshot displays the GRAINDSS software interface. On the left, a control panel includes a field selection dropdown (Casalina 20), an imagery index dropdown (NDVI), a date range selector (22 Sep to 15 Oct), fertilizer name (Urea) and nutrient percentage (46%), number of zones (3), and calculation mode (Average - direct). Below these are input fields for average nutrient (120 kg/ha) and variation from average (20%). A table summarizes the zones, and summary statistics for total fertilizer, total area, and average nutrient are provided at the bottom. On the right, an aerial map shows a field with a color-coded prescription map overlaid, ranging from yellow (low) to red (high). A zoomed-in inset of the map is visible at the bottom left of the map area.

Zones	Area	Avg nutrient
Zone -1	4.83 ha	145,79 kg/ha
Zone 0	7.77 ha	121,49 kg/ha
Zone 1	5.97 ha	97,19 kg/ha

**Total fertilizer** 4843.22 kg  
**Total area** 18.57 ha  
**Avg nutrient** 120 kg/ha



## PRESCRIPTION MAPS

Choose the most suitable vegetation index to draw up the prescription map and carry out a variable rate fertilization.



# FEATURES



## WORK



### TASK MANAGEMENT

Create and assign tasks to be done in the farms to your collaborator in real time.



### MACHINERY

Register your agricultural machinery, any problems and maintenance carried out. You can also connect them to Agricolus by using Agrirouter.




### CROP OPERATIONS

Register where, how and when crop operations (treatments, fertilization, pruning, harvest) have been carried out. You can also access phytosanitary products database.

The screenshot displays the Agricolus software interface. On the left, there is a list of operations for 'Azienda 1' and 'Common wheat'. The operations include fertilization and treatments, with details such as quantity, N per ha, P<sub>2</sub>O<sub>5</sub> per ha, and K<sub>2</sub>O per ha. On the right, there is a map view showing the location of the operations. The map is overlaid with a blue color, indicating the area of interest. The interface also includes a legend and a filter for 'Fertilisation'.

Operation	Reported On	Fertiliser type	Quantity	N per ha	P <sub>2</sub> O <sub>5</sub> per ha	K <sub>2</sub> O per ha
8-24-24 (Mineral)	Feb 17, 2023, 00:00:00	8-24-24 (Mineral)	4935.12 kg	32 kg/ha	96 kg/ha	96 kg/ha
nitrate ammonico (Mineral)	Apr 4, 2023, 00:00:00	nitrate ammonico (Mineral)	2220.8 kg	48.6 kg/ha	0 kg/ha	0 kg/ha
Urea (Mineral)	May 29, 2023, 00:00:00	Urea (Mineral)	1603.91 kg	59.8 kg/ha	0 kg/ha	0 kg/ha
18-46 (Mineral)	Mar 23, 2023, 00:00:00	18-46 (Mineral)	3685.79 kg	46.8 kg/ha	119.6 kg/ha	0 kg/ha



Lot code: 001a1



Landing page

<https://web.agricolus.co>

Visit page

The QR code on the mask will allow easy access to the web page dedicated to the product traceability. In this way, all detailed product information can be consulted with great convenience



## PRODUCTION LOTS

Create and assign to each crop its own production lot to improve **traceability** of operations. A **QR code** is also generated that allows you to access and share the dedicated web page where you can consult all the information on the product.



## CROP SCOUTING

Geolocate and register data from crop scouting by using the **mobile App** for phytosanitary monitoring and evaluation of crop development.



- ! ISSUES
- ⚠️ DAMAGES
- 🕒 TRAPS
- 📷 CATCHES
- 🌱 PHENOLOGY
- 🐛 PESTS AND DISEASES
- 🧪 SOIL ANALYSIS

# FEATURES



## WEATHER



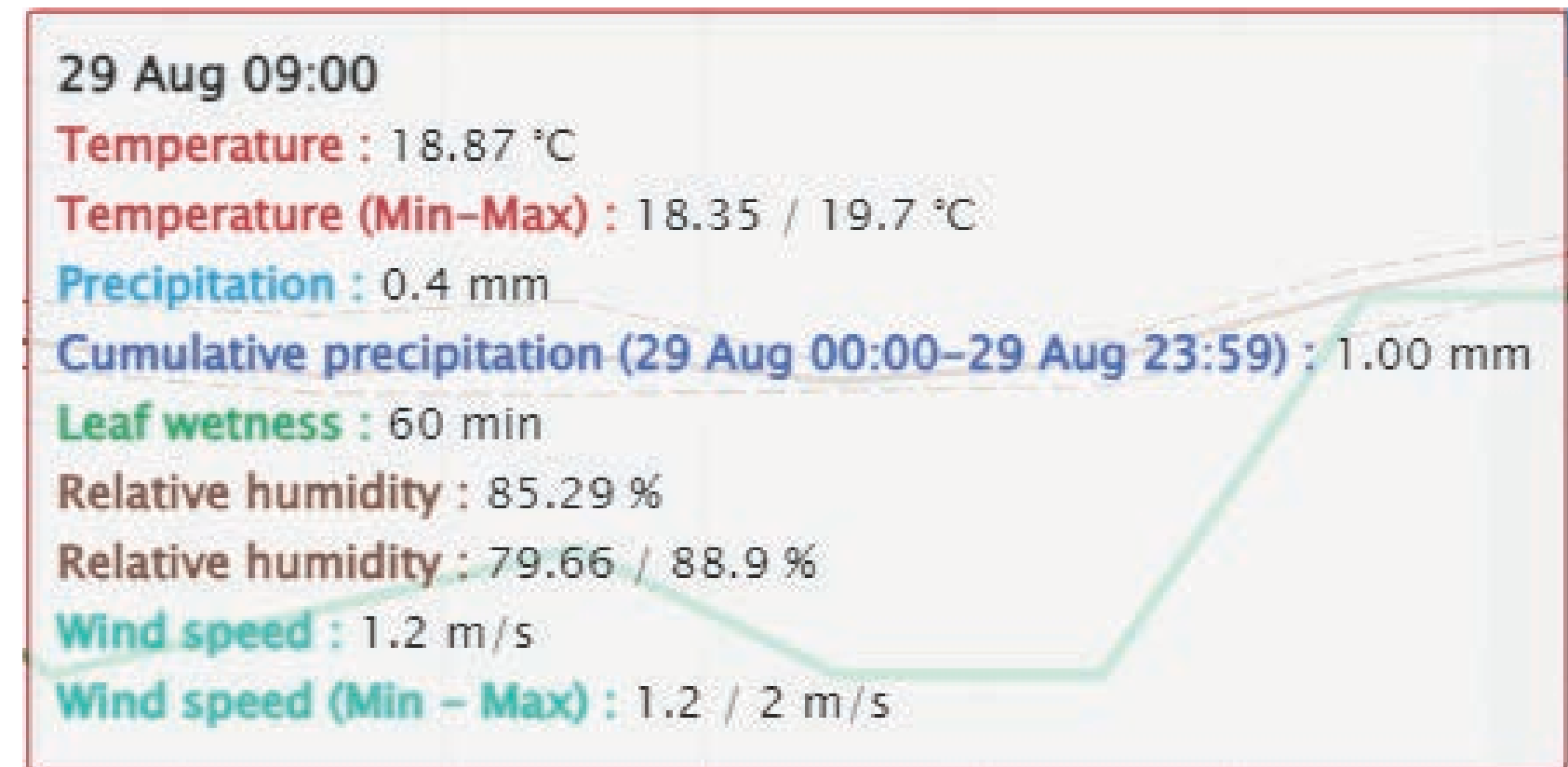
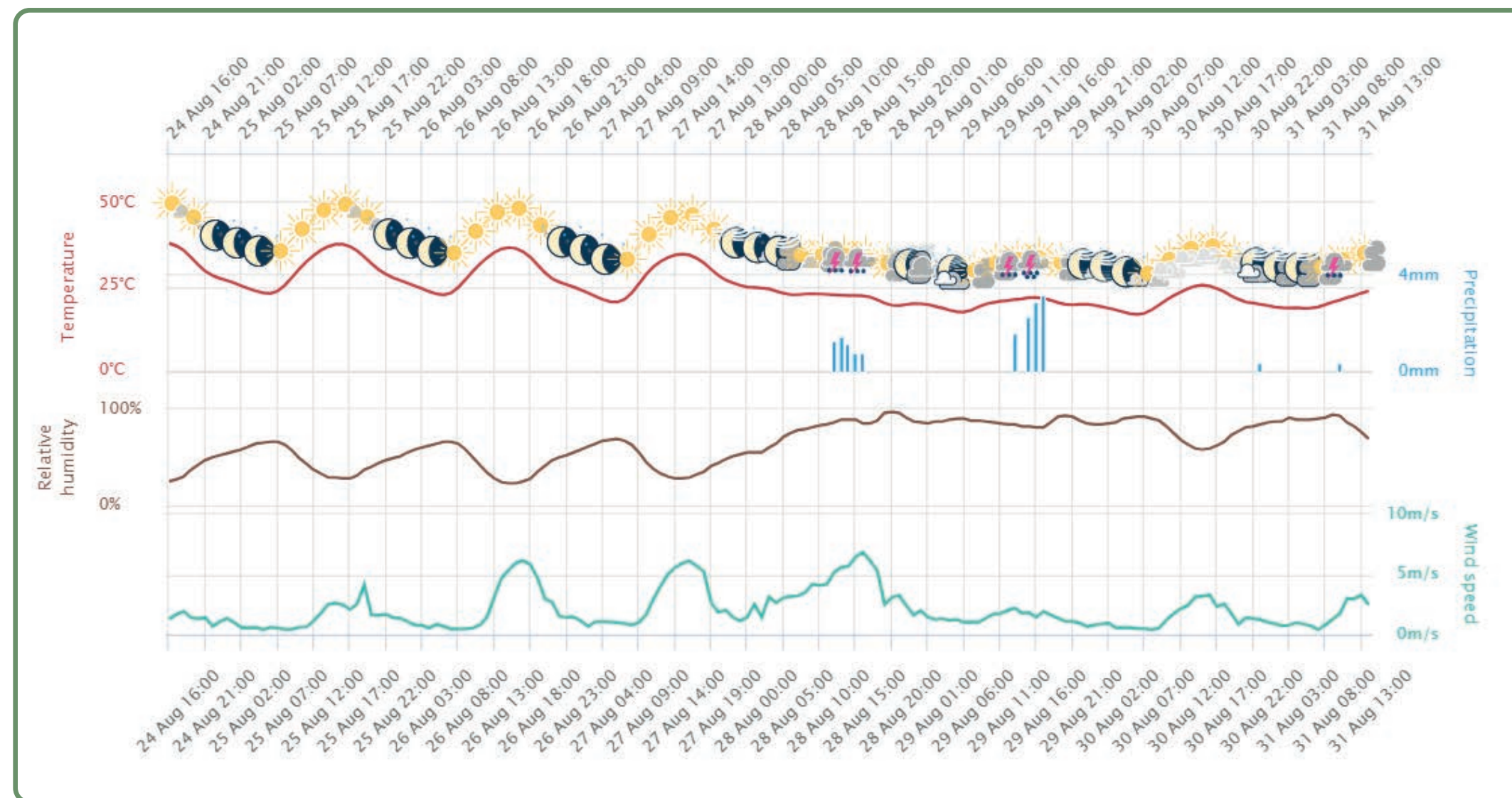
### WEATHER FORECASTS

Consult professional weather forecasts up to 7 days updated every hour: temperature, humidity, wind speed, rainfall.



### WEATHER STATIONS

Virtual weather station included; physical weather stations and sensors can be purchased or integrated, if already present in the company.





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