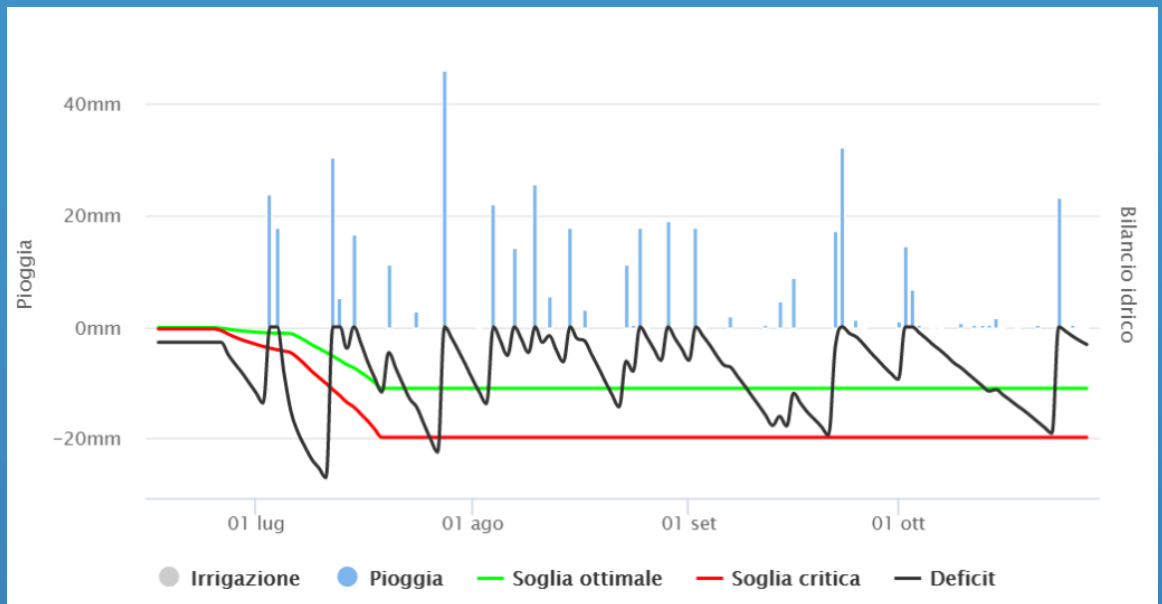




WATERAGRI

FACTSHEET

IRRIGATION MANAGEMENT PLATFORM



Key information

The Irrigation Management Solution is an online platform developed by Agricolus that uses information from soil monitoring and remote sensing products to estimate irrigation needs for optimal irrigation scheduling in agriculture. The solution helps farmers, agronomists and consultants manage irrigation scheduling and crop stress in real time, ensuring optimal production while reducing water use, energy consumption and environmental impact.

Stakeholders: farmers, advisors, consultant.



A. Brief Introduction:

The irrigation management solution developed estimates irrigation requirements for optimal irrigation scheduling. It integrates remote sensing, geographic information systems and global positioning systems to increase the operational utility and spatial resolution of the crop simulation and water balance model. Irrigation outputs include daily information on crop water status and irrigation requirements, as well as temporal patterns of soil moisture levels compared to upper (optimal soil moisture status to be achieved with irrigation) and lower (onset of stress when irrigation is mandatory) thresholds. Additional data outputs from the model include phenological phase, crop coefficient and water stress coefficient.

B. Design concept:

The Precision Irrigation solution is based on calculating the soil water balance. The soil water balance requires input of hourly weather data, soil characteristics, crop development stage and irrigation rates applied to the field, which you enter in the "WORK" section.

The outputs of the model include the water deficit, which expresses the amount of water (mm) required to bring the soil back to field capacity, i.e. the amount of water held in the soil after excess water has been drained by gravity.

The model provides the critical threshold, which expresses the amount of water (mm) below which water stress starts to occur at that particular phenological stage. The optimum threshold expresses the amount of water (mm) that must be replenished in the soil to avoid water stress. The model suggests irrigation every time the water deficit falls below the critical threshold and the amount suggested corresponds to the millimetres needed to bring the soil back to the optimal threshold.

C. Technical information:

The installation and activation of the irrigation management system requires an installation of a physical or virtual weather station. Monitoring and management of the precision irrigation system after installation is fully automated and does not need on-site support.

D. Costs and Benefits:

Farming benefits include:

- Yield increase, non-reduction in the face of constraints (climatic, economic, etc.), stability of yield over time, etc.,
- Water retention potential/capacity estimation (if possible as mm for water retention solutions),
- Nutrient recovery potential/capacity assessment (if possible as kg/ha or other units; provide information about the kind of nutrients recovered/recycled/reused e.g., nitrogen, phosphorus, potassium)

- Product/byproduct marketing (e.g., circular economy, climate change adaptation/mitigation, reduction in disposal costs)

The cost of the Agriculus Precision Irrigation system is 360 EUR per year of subscription. The benefits of using an irrigation management system are many, leading to optimized use of water input and minimized water wastage. Furthermore, soil with an adequate moisture level leads to a higher content and retention of nutrients and organic matter, which will lead to greater soil fertility and higher crop quality and quantity. In addition, optimized utilization of water resources will lead to an adaptation of the farm and farming system to ongoing climate change.

E. Challenges and opportunities

One of the biggest issues is the training the users to change their working habits and make optimal and efficient use of the proposed solution.

F. Reference and demonstration:

More details and major technical information are available at www.agriculus.com



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