Vivent Biosignals – Plant Controlled Irrigation

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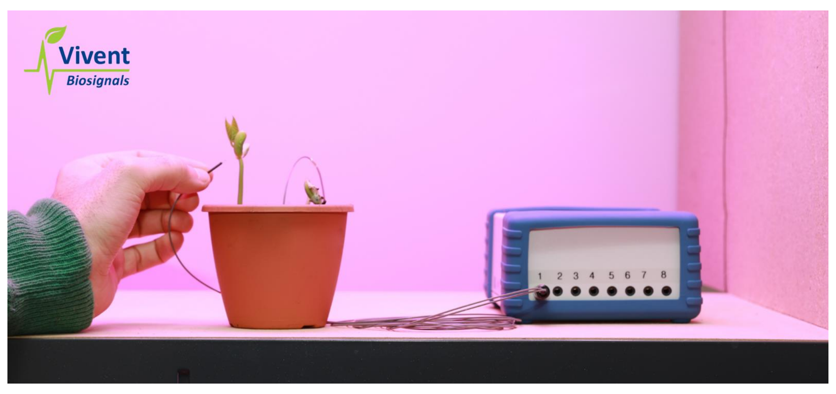
Vivent Biosensor and technology – Plants are talking, we let you listen in



Plants are continuously sensing and responding to environmental changes, transmitting vital information through electrical signals. Vivent Biosignals' biosensors record and interpret these electrical signals, providing data services to growers, breeders, and leading Agtech companies, delivering actionable insights directly from plants.

Vivent's Dashboard displays all detection models and physiological analyses in real-time, giving immediate visibility into plant health. These analyses include the detection of threats such as drought stress, soil-borne pests, fungal infections, and nutrient deficiencies.

Trial context and introduction

Modern agriculture demands innovative solutions to enhance plant productivity and deliver precise, real-time insights into plant health. One critical area of focus is irrigation, where advanced technologies allow for more efficient water usage by adjusting to the plant's specific needs, ensuring optimal growth while minimizing waste.

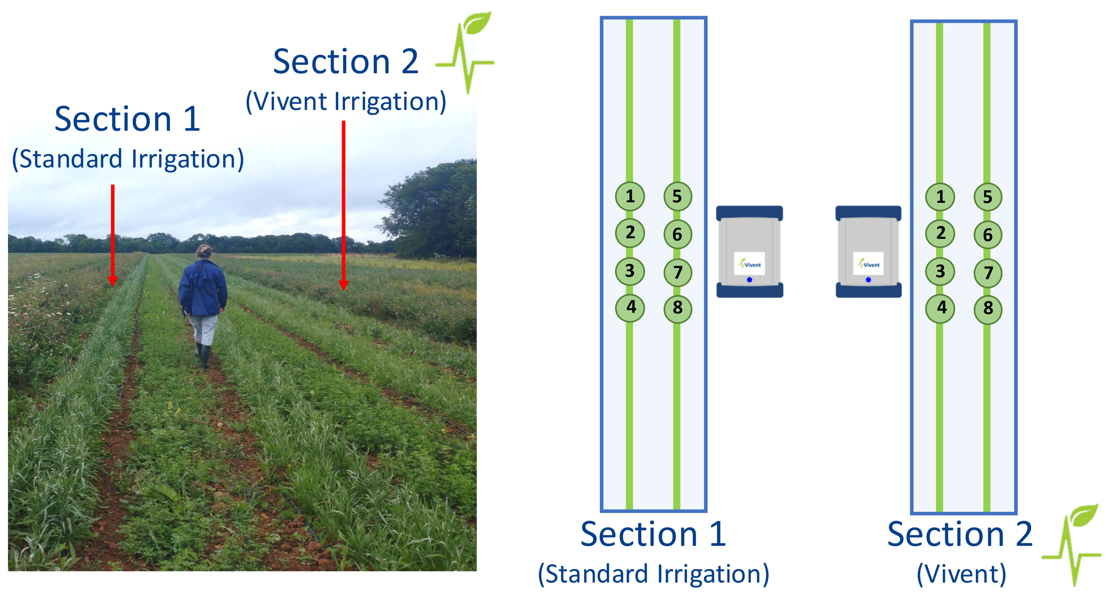
In summer 2024, in collaboration with *Hectar* and *Parfums Christian Dior*, we initiated a trial to test irrigation management on cornflower fields in the Île-de-France region.

The aim of the trial is to evaluate the effectiveness of innovative, data-driven irrigation systems compared to traditional methods, with the aim of improving water efficiency and plant productivity.

Vivent biosensors, equipped with an AI algorithm for **early drought stress detection**, were used to monitor irrigation by showing real-time plant water status on our dashboard platform.

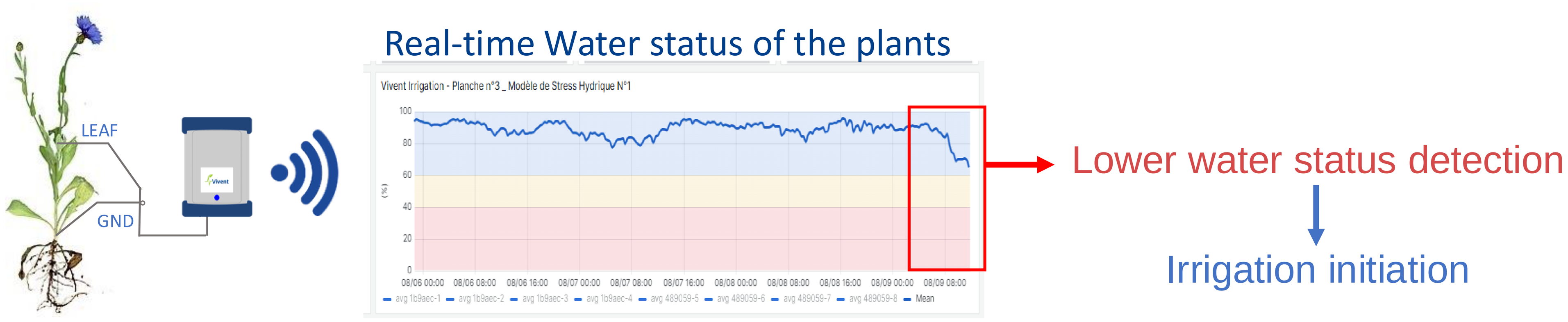
Experimental setup

For this trial, two sections of cornflower fields were selected in the Hectar farm. Section n°1 used standard irrigation (control), while Section n°2 followed Vivent's recommended irrigation based on real-time data.



Two sensors were installed in each section, with each device connected to eight plants for continuous monitoring.

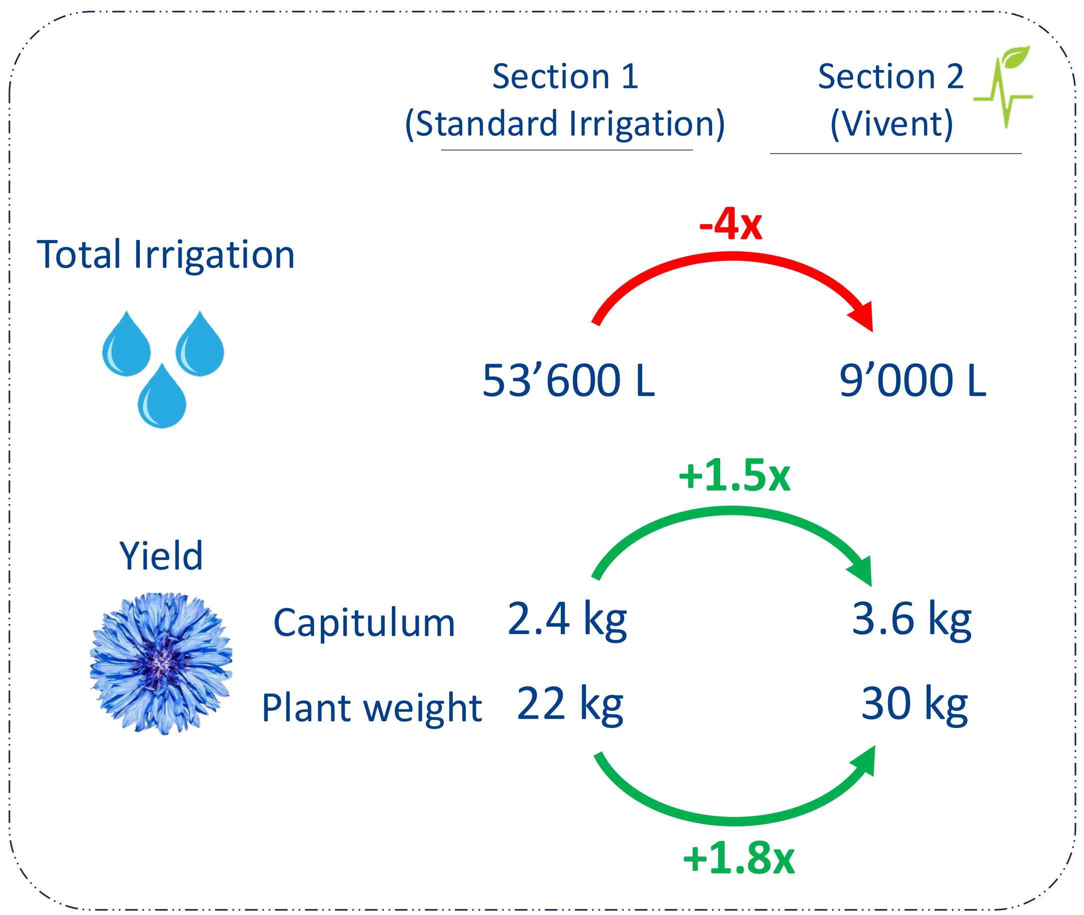
The biosignals are captured and analyzed to assess the plants' water status. This data is transmitted live to the dashboard for monitoring. If the water status falls too low, indicating drought stress, irrigation is automatically triggered.



Results

The final results showed that Vivent's water status monitoring reduced irrigation by a factor of four, saving approximately 45.000 liters of water.

Additionally, Sector 2 irrigated with Vivent's biosensors showed a 1.5x increase in capitulum production and 1.8x more plant biomass.



Conclusions

Vivent biosensors enhance agricultural efficiency by providing real-time insights into water status and plant health, reducing water usage and boosting crop yield. Our plant-driven technology has the potential to autonomously control irrigation, optimizing resource use and increasing productivity.

Vivent Biosignals

HECTAR

Christian Dior
PARFUMS

Find updates on the ongoing trial and on other interesting applications of electrophysiology for crop health monitoring on our website or contact us at info@vivent.ch

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