Interreg VI Project: Irristaud 2.0

Water is a precious resource and increasingly scarce on a seasonal basis, even in Central Europe. In agriculture and horticulture, water consumption and resource efficiency are among the central challenges. In light of political and societal expectations that producers should work in a resource-conserving manner, the search for sustainable solutions is more urgent than ever. Modern phenotyping methods theoretically enable precise use of water and nutrients, but in practice, concrete implementation of these technologies is often lacking.

This is where the IrriStaud 2.0 project comes in. Funded by EU Interreg, it aims to achieve more resource-efficient perennial plant production through the use of advanced sensor technology and intelligent control systems. This technology is intended to optimize water usage and precisely regulate nutrient supply in order to minimize the ecological footprint of production while simultaneously maximizing quality and yields.

Our Activities in Detail

As part of the project, we use modern sensor technology to determine the water and nutrient requirements of various cultivated plants in real time. The resulting data enables a precise analysis of the supply status of the plants. In addition, we are developing an irrigation control system based on the real-time data collected. This system ensures that plants receive exactly the amount of water and nutrients they need. Another important aspect of our project is the graphical preparation of the sensor data. This data visualization provides production managers with valuable insights into the condition of their plant stocks and enables well-informed and rapid decisions. To ensure that our developments meet practical needs, we seek continuous exchange with horticultural consultants and practitioners. This dialogue helps us develop needs-based products that are truly applied in practice and useful to producers. A particular focus is placed on cross-border collaboration between Dutch and German experts, as perennial cultivation is highly significant on both sides of the border.

Project Partners

Compas Agro B.V.

Rhine-Waal University of Applied Sciences

University of Bonn

Yookr B.V.

Forschungszentrum Jülich (Associated Partner)

Project Duration:

01.01.2024 – 31.12.2026

Sensor Systems

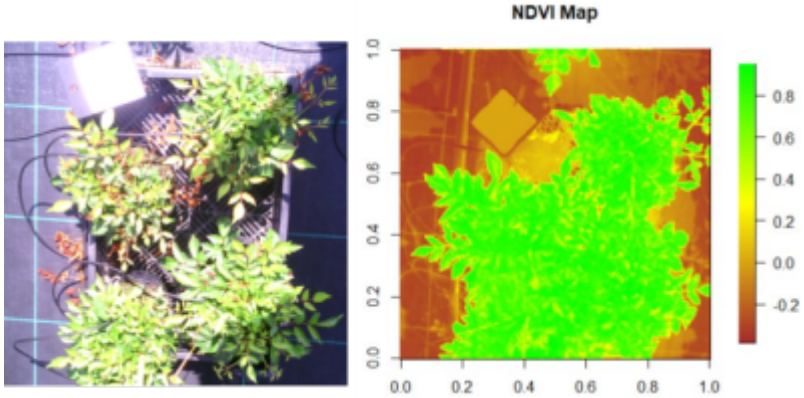
Field Weasel (FZJ)

FieldWeasel is an autonomous positioning system for open fields using GPS antennas upgraded with RTK to position the sensor platform at less than 2cm. The FieldWeasel has two driving units, a sensor platform, and a 13 m-long bridge with a movable sensor platform. Each driving unit has 2 wheels that can turn 360 degrees providing ultimate maneuverability in the field. Reference



Specim IQ

For our field campaigns the Weasel is equipped with a Specim IQ Hyperspectral camera measuring in the range of 400 - 1000 nm. Specim IQ Product Page Below are a few sample images and results:



DJI Mavic 3 Multispectral

EOLab WebODM Flight Campaigns Compas Agro

With Account (#Irristaud):

EOLab WebODM

Without Account

13/08/2024 RGB

13/08/2024 Multispectral

02/08/2024 RGB

02/08/2024 Multispectral

18/07/2024 RGB

18/07/2024 Multispectral

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