

WheatWatcher

The WheatWatcher project is developing a digital system to monitor soil health, assess plant conditions, and trace wheat quality from field to flour production. By integrating soil nutrient and plant stressor data with management tools, the project will help farmers, mill owners, and policymakers ensure safe, high-quality, and traceable food production throughout the supply chain.



Soil Monitoring System

- Evaluates soil nutrient levels as well as chemical and biological stress factors.
- Utilises proximal soil sensing technology, which combines non-invasive and invasive sensors, along with an automatic sampling kit that operates based on sampling plans generated by remote sensing.
- The multi-sensor "on-line" kit features various detection methods that can be attached to different types of soil equipment, such as tillers, planters, and seeders, and can function at depths ranging from 5 to 50 cm.

Mobile Crop Sensing Platform

- Delivers real-time assessments of crop health and stress to support the early identification of issues such as nutrient deficiencies and diseases.
- Uses multispectral and hyperspectral cameras to capture crop images across multiple spectral bands for more detailed analysis.



Decision Support System

- Collects and analyses data to assist land managers in making site-specific decisions, such as soil remediation and precision treatments for soil and crops.
- Incorporates a machine learning model to offer quick insights into wheat growth patterns by predicting both current and future crop development.
- The decision support system receives data from users, sensor platforms and from various available data sources, including satellite imagery, historical records, and national and European soil maps.