

IMAGERY AND ANALYTICS

Water Stress Index

Unlike traditional imagery—which reveals the impact of irrigation issues only after the fact—Ceres Imaging’s Water Stress Index provides a precise and accurate measure of crop stress in real time. We combine proprietary crop models with thermal imagery capable of capturing temperature differences as small as 0.1 degree Celsius between plants. In 20% of the fields we fly, we detect an irrigation issue affecting more than five acres.

Detect hidden irrigation issues—and uncover new opportunities to improve.

Common uses

- Pinpointing common issues in both drip and pivot irrigation systems—including leaks, clogged emitters, and pressure issues
- Optimizing irrigation system design and scheduling for terrain and soil conditions
- Improving distribution uniformity
- Selecting the best locations for moisture probes and other point-source sensors

How it works

Ceres Imaging can assess the relationship between plant transpiration and the crop canopy's surface temperature. Our analysis of the data is powered by machine learning, allowing us to rapidly identify individual plants or areas of the crop canopy that exhibit a stress response. Full-canopy measurements of water stress are categorized by severity using established benchmarks specific to crop type and maturity.

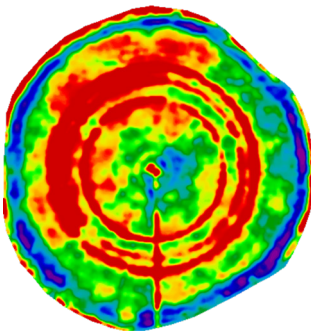
The Water Stress Index presents this analysis as a simple and intuitive classification, translating the complexity of multispectral imagery into an easy-to-understand representation of stressed and non-stressed areas of a field. In 20% of the fields we fly, we detect an irrigation issue affecting more than five acres.



FROM IMAGERY TO ACTION

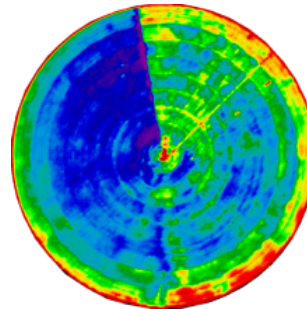
High-resolution multispectral imagery is only the beginning. Our analytics tools help you interpret your data—translating what you can see in your imagery into what you can do about it.

The Water Stress Index is included standard in all Ceres Imaging service packages.



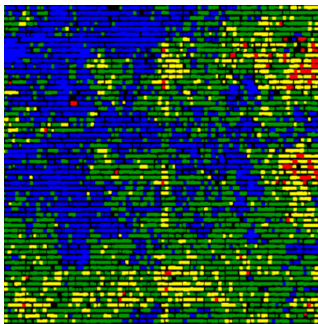
Clogs

The red rings show where a clogged nozzle has resulted in underwatering.



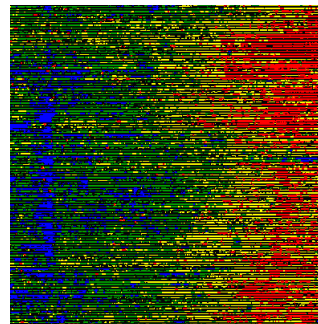
Pressure issues

An irrigation pressure issue presents as a gradual increase in crop stress toward the edge of the field.



Damaged drip lines

The stressed area in this field was found to have drip lines damaged by rodents.



System design

The irrigation system in this field needs improvements to match the terrain: the imagery shows underwatering on the uphill end of the field.

