



Ceres Imaging for irrigation issue detection

Drip irrigation systems

For all the advantages that drip irrigation offers, even the most thoughtfully designed system is vulnerable to malfunctions that can hurt the operation's bottom line. Clogs, leaks, and pressure issues can be difficult to detect with the naked eye before damage to the crop is already done. For those who want to stay ahead of irrigation problems, Ceres Imaging offers an powerful alternative.

The aerial advantage

Whether motivated by a need to protect yields, educe labor costs, or improve uniformity, an overhead analysis of your irrigation system offers growers both “big-picture” insights and a detailed view of variations in plant health invisible to conventional scouting.

Ceres Imaging uses scientific-grade thermal cameras to detect subtle temperature differences as small as 0.1 degree Celsius between plants—the most precise imagery available for agriculture. On the ground, a 100-gallon difference in water dispersal across an orchard, vineyard, or field is easily missed: even to the most experienced irrigation manager, the wetting pattern may appear normal. But from the air, Ceres Imaging can automatically pinpoint and quantify hot and cool areas before the inconsistency affects plant health or yield.



PREVENT WATER STRESS

“To us, [on the ground], the trees looked OK. But it was clear through the imagery that we were not getting enough water to our trees in a uniform manner. Ceres Imaging is so sensitive it showed us problems the trees were not yet telling us about.”

Harold Brockman
Brockman Farming

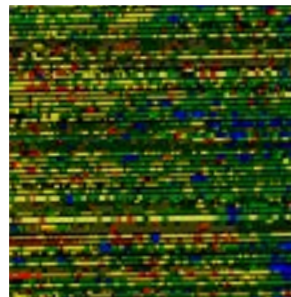


A step ahead

Traditional NDVI imagery tends to reveal irrigation issues long after they impact plant health and yield. By contrast, our high-resolution thermal imagery and proprietary Water Stress Index provides an accurate and intuitive measure of crop stress in real time.

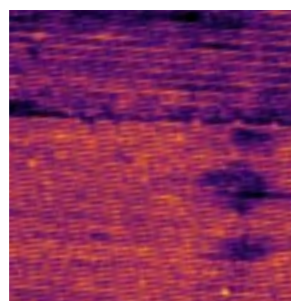
EXAMPLE 1: PRESSURE ISSUE

Irrigation pressure issues across a field present as a gradual increase in crop stress as water moves farther away from the pump and filter station.



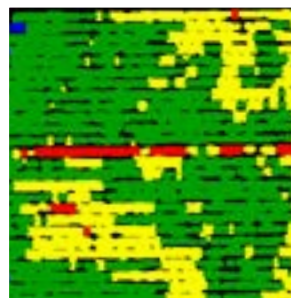
EXAMPLE 2: LEAK

In high-resolution thermal imagery, cool leaks appear dark against the warmer background. Very dark areas may indicate a leak that's created standing water.



EXAMPLE 3: CLOGGED EMITTER

The linear pattern of the stressed area indicated in red suggests a clogged emitter or other equipment malfunction.



How it works

Ceres Imaging captures imagery of growers' fields using multispectral cameras. Within 48 hours of the flight, growers can access their imagery and analytic insights on their tablet, mobile device, or desktop computer.

Unlike providers that deliver unprocessed photographs, Ceres Imaging analyzes patterns to help growers diagnose, quantify, and correct issues. For example, the Water Stress Index reveals possible irrigation problems by displaying a color scale showing relatively wet areas versus relatively stressed areas.

Our GPS function and offline access to imagery make it easy to follow up in the field—and our remote sensing and agronomy experts are always on hand to help.

IMPROVE PROFITABILITY WITH IRRIGATION ISSUE DETECTION

Ceres Imaging helps the typical customer identify and correct more than a dozen acute issues over the course of a season, with an **average savings to yield of 7%**. For a grower managing 1,000 acres, that represents more than \$45,000 in profits.

