

SpectraCam

Optical pigment sensor



What can the SpectraCam detect?

Detection of abiotic stress, such as **nutrient or drought stress**, even before visible symptoms are present.

How do you use the SpectraCam?

Aim the cameras at the crop. After starting, the system will adjust the settings to the light conditions (**calibration**). Then the measurements can start. Unless the SpectraCam indicates it's invalid, **one measurement per plot is sufficient**.

Scientific background & interpretation results

The SpectraCam emits light of different wavelengths, after which five cameras measure the reflection from the crop. Based on these measurements the following indices are determined: Chlorophyll (red Edge, green), Red Edge Inflection Point (vitality/stress) and the Normalized and Weighted Difference Vegetation Index (biomass).

If plant experiences nutrient/drought stress:

- ➔ Chlorophyll content ↓
- ➔ Normalized and Weighted Difference Vegetation Index ↓ => Biomass ↓
- ➔ Red Edge inflection point shifts to shorter wavelengths => Vitality ↓ / Stress ↑

Pros & Cons

- + mobile system, non-destructive, data send to server (stored, analyzed in mapping system → easily accessible)
- expensive, heavy → supporting system required (adapted to crop(system))

Price range: € 30000 - 40000 (+ € 600/year subscription 4G, online server and crop maps)

Company: TechNature B.V.

More information? <https://www.technature.nl/en/spectracam/>