PolyPEN RP410

Optical pigment sensor

What can the PolyPEN detect?

Detection of **nutrient deficiencies** or **drought stress**, before they can be detected with the eye.

How do you use the PolyPEN?

Put the **leaf clip** on a leaf of your crop, preferably in the centre of the youngest fully grown leaf. The measurement is made in **less than a second**. Take regularly at least **5 scattered measurements** (in one plot) to reach a conclusion after comparison with measurements in optimal conditions.

Scientific background & interpretation results

The sensor emits light in a broad range of wavelengths (380-790 nm) and measures the reflection and absorption by chlorophyll and stress metabolites in the leaf. Then the PolyPEN calculates automatically all commonly used reflectance indices.

If plant experiences nutrient/drought stress:

- ➔ Chlorophyll content of the leaves will decrease ↓
- ➔ Flavonoid content and anthocyanin content (stress molecules) of the leaves will increase ↑
- ➔ Effect on some interesting parameters: Normalized Difference vegetation index (**NDVI**) ↓, Normalized Pigment Chlorophyll Index (**NPCI**) ↓, Anthocyanin Reflectance Index (**ARI**)↑, Lichtenthaler Index II (**Lic1**) ↓, Carter Index II (**Ctr2**) ↑,…

Pros & Cons

+ portable, cheap, fast, non-destructive, easy to use software

- does not distinguish between drought and nutrient deficiency, reports relative indices (optimal reference values required for different crops)

Price range: € 4000-5000

Company: PSI Photon Systems Instruments

More information? https://handheld.psi.cz/products/polypen/#info