

# SPECTRAL EVOLUTION

## Spectroscopy Analysis for Wheat

Wheat is one of the most common ingredients in food products such as bread, cereal, noodles, cakes, and more. A field spectrometer or spectroradiometer can provide critical information on wheat growth and health to help ensure a successful crop.

Measurements taken of a wheat canopy during different stages of growth can provide data on protein, lignin, cellulose, water, sugar, starch, chlorophyll content and more. With a field spectroradiometer like the PSR-1100 or PSR-1100F from Spectral Evolution, spectral reflectance measurements provide insights for physiological wheat trait selection, estimated crop yield, monitoring of crop stress, and control of crop pests.

NIR spectroscopy is fast, easy-to-use and completely harmless to the sample. Using the 19 vegetation indices available with the PSR-1100 and PSR-1100F through the DARWin SP Data Acquisition software, a researcher can gather data on vegetation, pigment, chlorophyll, and moisture content and further analyze the data to:

- ◆ Determine the photosynthetic area and activity of the crop canopy
- ◆ Measure crop health and growth
- ◆ Estimate potential grain yield at different growth stages
- ◆ Monitor plant stress through measurement of chlorophyll content
- ◆ Check for nutrient deficiencies or over fertilization
- ◆ Check moisture content to fine-tune irrigation

UV/VIS/NIR spectrometers from SPECTRAL EVOLUTION deliver fast, more accurate, and more flexible ways to analyze wheat than traditional methods. NIR spectrometers such as the PSR-1100 and PSR-1100F provide an accurate solution for wheat analysis at an affordable price:

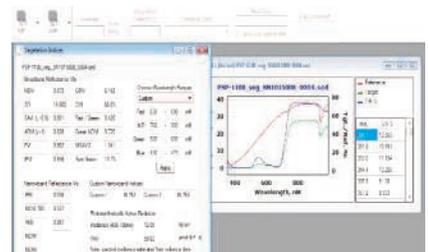
- ◆ PSR-1100 offers a fixed 4° direct attach lens
- ◆ PSR-1100F offers a removable fiber optic for a range of lenses, probes, and other optical accessories
- ◆ 320-1100nm spectral range
- ◆ Keypad and LCD display—stores 2500 scans without a computer
- ◆ One-touch operation with autoexposure and autoshutter
- ◆ Compact, lightweight, handheld unit—less than four pounds
- ◆ Snap-in rechargeable battery
- ◆ Built-in laser targeting
- ◆ Easy-to-use DARWin SP Data Acquisition software saves scans as ASCII files for use with third party software, including chemometrics, without pre-processing

The available vegetation indices include NDVI, SR, SAVI, ARVI, EVI, WBI, GRVI, and many more.

If your research requires a full range spectroradiometer, the PSR+ has the highest resolution and best sensitivity of any field portable spectroradiometer on the market.



*Wheat crop health can be accurately assessed using a field spectrometer for different measurements.*



*Scan with pull down vegetation indices for the PSR-1100 from the DARWin SP interface.*

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