



## **PRESS RELEASE**

**Remote sensing is an important tool for vegetation studies.**

**SPECTRAL EVOLUTION spectrometers and spectroradiometers with DARWin software provide fast access to vegetation indices.**

*Lawrence, MA – February 12, 2013* – Vegetation indices are valuable in many geoscience fields. They provide researchers with accurate calculations of plant characteristics. Working with a SPECTRAL EVOLUTION field portable spectrometer or spectroradiometer, researchers can collect spectral reflectance properties in different wavelength bands, and using vegetation indices, perform vegetation identification, crop yield forecasting, crop health assessment, canopy studies, land and water resource management, and more.

Vegetative indices are valuable for assessing the amount, condition, and identification of vegetation. They have been designed to detect vegetation while minimizing the effects of soil brightness, topographical distortion, and atmospheric noise. The early indices were simple ratios of the red and NIR bands. New indices have been created to detect and measure different characteristics. Using a variety of indices can help create a more complete picture of a farm, field, forest canopy, or other area of interest.

DARWin SP Data Acquisition software (included with every SPECTRAL EVOLUTION spectrometer or spectroradiometer) can be configured with specialty pull-down menus to automatically calculate a range of broadband and narrowband vegetation indices, including the following:

- NDVI – Normalized Difference Vegetation Index
- SR – Simple Ratio Vegetation Index
- SAVI – Soil Adjusted Vegetation Index

- ARVI – Atmospherically Resistant Vegetation Index
- EVI – Enhanced Vegetation Index
- IPVI – Infrared Percentage Vegetation Index
- PRI – Photochemical Reflectance Index
- WBI – Water Band Index
- PAR – Photosynthetically Active Radiation
- GRVI – Green Ratio Vegetation Index
- DVI – Difference Vegetation Index
- Red/Green – Red Green Ratio
- Green NDVI – Green Normalized Difference Vegetation Index
- MSAVI2 = Modified Soil Adjusted Vegetation Index Type II
- Sum Green - 0 Summed Green Vegetation Index
- NDVI705 – Red Edge Normalized Vegetation Index
- NDWI – Normalized Difference Water Index
- NDNI – Normalized Difference Nitrogen Index
- CCI – Chlorophyll Content Index

SPECTRAL EVOLUTION spectrometers and spectroradiometers are ideal for vegetation studies, delivering:

- Fast, full-spectrum UV/VIS/NIR measurements – with a single scan
- Superior reliability in the field with 100% diode array optics with no moving parts
- Bluetooth interface for wireless communications
- Lithium-ion re-chargeable batteries for field use
- Optional Getac PS236 Personal Digital Assistant (PDA) with GPS, a digital camera for photo tagging, audio notes, and a sunlight readable screen
- Field switchable optics for varying target sizes and measurement modes
- Optional leaf clip with built-in reflectance standard and comfortable spring grip handle

Our leaf clip is specifically designed for leaf reflectance measurements. It includes a built-in white plate, small spot and low power illumination to keep excess heat from burning the leaf during measurement. It allows you to measure a small leaf area without damaging the sample. A SPECTRAL EVOLUTION spectrometer or spectroradiometer and a leaf clip could be productively used in the following applications:

- Estimation of crop and grass chlorophyll
- Maize and soybean canopy studies
- Photosynthesis study in corn and soybean crops
- Small spot size allows for measurement of single pine needles and small leaves without including the mid-rib
- Water stress and relative water content in maize
- Leaf chlorophyll content in grasses
- Physiological condition of crops
- Leaf chlorophyll and nitrogen content

- Leaf pigment content in forest canopies
- Measurement of vegetation for plant biochemical, including chlorophyll, xanthopylls, lignin, cellulose and nitrogen
- Analysis of seed nutrient properties for corn, wheat, rice, soybeans, and other crops

For more information on our vegetation indices, please visit:

<http://www.spectralevolution.com/software.html>

For information on field spectrometers and spectroradiometers for remote sensing, visit:

[http://www.spectralevolution.com/portable\\_spectroradiometer\\_remote\\_sensing.html](http://www.spectralevolution.com/portable_spectroradiometer_remote_sensing.html)

#### **About SPECTRAL EVOLUTION**

Established in 2004, SPECTRAL EVOLUTION is a leading manufacturer of laboratory and handheld portable spectrometers, spectroradiometers and spectrophotometers. SPECTRAL EVOLUTION spectrometers are used worldwide for many mission-critical lab and field applications in mining, remote sensing, vegetative studies, ground truthing, environmental and climate studies, developing satellite calibrations, and more, due to their reliable, robust, rugged design and user-friendly one-touch features.

SPECTRAL EVOLUTION maintains a facility in Lawrence, Massachusetts which houses design, prototyping, manufacturing and service facilities for the instruments that it markets and sells worldwide, either through direct sales, OEM sales or through distributor agents.

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