



## **PRESS RELEASE**

### **Measuring Efficient Light Usage in plants with a Field Spectroradiometer**

#### **SPECTRAL EVOLUTION's DARWin SP software includes 19 popular vegetation indices, including PRI and Red/Green.**

*Lawrence, MA – March 22, 2017* – When used with spectral measurements from a field spectroradiometer such as the PSR+ from Spectral Evolution, the Photochemical Reflectance Vegetation Index (PRI) and Red/Green Vegetation Index (Red/Green) can provide researchers with important data on the ability of vegetation to efficiently use sunlight for photosynthesis. This data can provide a picture of plant health including an assessment of plant stress.

One of the 19 vegetation indices offered with DARWin SP Data Acquisition software and the PSR+ field spectroradiometer, PRI looks at the carotenoid pigments, especially the xanthophyll pigments absorbed by plants. The pigments can signify growth rate and biomass production. PRI uses the wavelengths of light from 400 to 700 nanometers and has a measurement range of -1 to 1 with healthy vegetation falling between the values of -0.2 to 0.2 in the PRI index.

In addition to PRI, the PSR+ with DARWin SP includes the Red/Green Index for growth cycle studies, stress detection of canopies, and prediction of potential crop yield. The Red/Green Index measures the expression of leaf redness caused by anthocyanin to the green caused by chlorophyll. It can be used as an indication of leaf production and/or stress. The means of the bands in the red range are divided by those in the green range. The typical range for green vegetation is 0.7 to 3.

DARWin provides access to the following Vegetation Indices:

GRVI (Green Ratio Vegetation Index)	IPVI (Infrared Percentage Vegetation Index)
SR (Simple Ratio Vegetation Index)	Sum Green (Summed Green Vegetation Index)
DVI (Difference Vegetation Index)	PRI (Photochemical Reflectance Index)
SAVI (Soil Adjusted Vegetation Index)	NDVI 705 (Red Edge Normalized Vegetation Index)
Red/Green (Red Green Ratio)	WBI (Water Band Index)
ARVI (Atmospherically Resistant Vegetation Index)	DWI (Normalized Difference Water Index)
Green NDVI (Green Normalized Difference Vegetation Index)	PAR (Photosynthetically Active Radiation)
EVI (Enhanced Vegetation Index)	
MSAVI2 (Modified Soil Adjusted Vegetation Index Type II)	

These vegetation indices can be used with our field units to confirm or correct hyperspectral imagery with ground truthing or as part of a grid approach to mapping and measuring an area, for example, a crop field.

For more information: [http://www.spectralevolution.com/applications\\_light\\_use.html](http://www.spectralevolution.com/applications_light_use.html)

Or, to speak with a Technical Specialist: [sales@spectralevolution.com](mailto:sales@spectralevolution.com)

#### **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.

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