OPTI-SCIENCES, INC.

ACM-200 plus Anthocyanin Content Meter

Applications

- Non-Destructive Measurement
- Monitor Sugar Maple Senescence
- Study anthocyanin content in leaves and flowers
- Anthocyanin has be shown to enhance plant pest protection and photoprotection.

Features

- Up to 160,000 measurement storage
- Lightweight, Hand-Held Design Optimized for Field Work
- Display Anthocyanin Content Index and Calculated Sample Averages
- Built-in Data-Logging
- USB output
- Graphic data display
- Stand Alone Operation- No P.C. Required

The ACM-200 plus Anthcyanin Content Meter provides a fast estimate of anthocyanin content on the intact leaves of plants and flowers. Reduce grinding or destructive assays! The measurement is rapid, nondestructive and simple to obtain, allowing researchers to gather reliable data that has been shown to correlate to chemical testing.

The ACM-200 plus is designed to be highly reliable and long lasting. It incorporates a large measuring area for signal averaging over a large sample area. This approach provides a reading that takes into account small structure variations that can affect repeatability and reliability when compared to a smaller sampling area. The ACM-200 plus is the successor to the CCM-200 anthocyanin meter, an instrument that was introduced in the year 2005.

The ACM-200 plus has the large on-board memory, storing up to 160,000 measurements or up to 94,000 measurements with GPS Data internally. Users can record large amounts of measurements without concern as the data is stored in non-volitile flash memory. Downloading of data is quick and easy through its universal USB 1.1. port.

The ACM-200plus does not require external data loggers. All you need for precise anthocyanin measurements are included in one lightweight, compact, affordable package.

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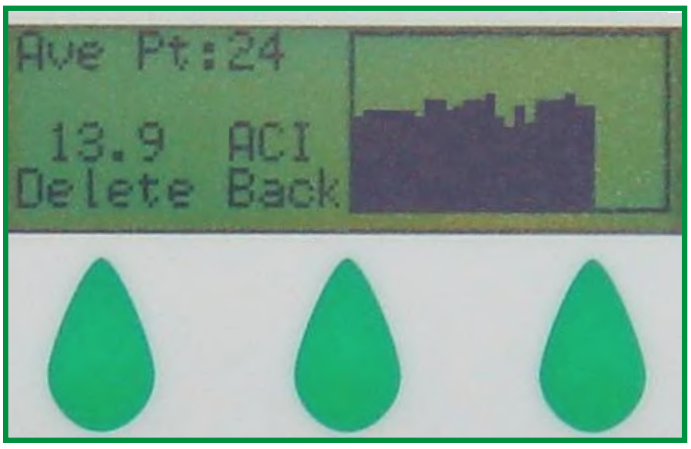
ACM-200 plus Anthocyanin Content Meter

Changes in anthocyanin content can occur over time. Research has shown that the anthocyanin meter can provide a reliable and fast estimate of anthocyanin.

Studies have been done on Sugar maples, Clitoria ternatea, Desniodium adscendens, Corchorus olitorius, Catharanthus roseus, and Hibiscus sabdariffa. Other research is on going.

Laboratory methods for determination of anthocyanin content are both time consuming and destructive to the sample. Typically, a sample must be detached, ground up in a solvent, then assayed in a spectrophotometer. With chemical testing, sample can be measured only once, precluding the cost effective monitoring of trends in anthocyanin content over the life cycle.

The ACM-200 plus accounts for both anthcyanin transmittance and leaf thickness.



Technical Specifications

Measured Parameters: Optical absorbency in two different wave bands (530 nm and 931 nm). Designed to measure chlorophyll content and compensate for leaf thickness

Measurement Area: 3/8" diameter circle, (0.71cm^2)

Resolution: +/- 0.1 ACI Unit

Repeatability: +/- 1%

Source: (1) LED (peak at 530nm)
(1) Infrared LED (peak at 931 nm)

Detector: Silicon photodiode with integral amplifier for absorptance measurement and source power monitoring for temperature compensation

Storage Capacity: between 94,000 and 160,000 measurements

Modes: single point measurement, 2 to 30 point averaging, 10 to 30 point averaging with elimination of fliers outside a two sigma range.

Comments: Alpha numeric comments be added with each measurement or only when there is a change that requires notes.

User Interface: 128 x 32 pixel display, 6 keys for control and data manipulation, beep signal for status and warnings

Output: USB 1.1 and RS-232 interface for GPS.

Temperature Range: 0-50 Deg C

Temperature Drift: Temperature compensated source and detector circuitry for minimum drift over full range.

Power Source: 9V Alkaline Battery

References

Morris J.B., Wang M.L. (2007) Anthocyanin and Potential Therapeutic Traits in *Clitoria, Desmodium, Catharanthus* and *Hibiscus* Species Acta Hort. *756,* ISHS 2007

van den Berg A.K., Perkins T.D. (2005) Nondestructive Estimation of Anthcyanin Content in Autumn Sugar Maple Leaves HortScience 40(3):685-686. 2005

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