OPTI-SCIENCES

ACM-200plus

Anthocyanin Content Meter

The ACM-200plus -Features

- Proven performance
- Non-destructive measurement
- Built-in data logging - will store up to about 160,000 measurements.
- Displays anthocyanin content index values
- Allows averaging of from 2-32 measurements
- Graphic display of averaging measurements
- Light weight
- One hand operation
- Affordable
- USB output
- Stand alone operation No PC required.

Applications

- *Floriculture quality control*
- Measure anthocyanin in leaves and flowers
- Monitor sugar maple senescence

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 correlates to chemical testing.

The ACM-200 plus is designed to be highly reliable and long lasting. Signal averaging of the 9.525 mm diameter measuring area minimizes the effects of small structure variations that can affect repeatability and reliability. The ACM-200 plus is the successor to the successful ACM-200 anthocyanin meter. The previous model was introduced in the year 2005.

The ACM-200plus does not require an external data logger. All you need for precise anthocyanin measurement is in one lightweight, compact, affordable package. The instrument can store up to 160,000 measurements or up to 94,000 measurements with GPS data. Users can record large amounts of measurements without concern as the data is stored in non-volitile flash memory. Downloading of data is also quick and easy through its USB port. Data is in a comma-delineated format for spreadsheet use.

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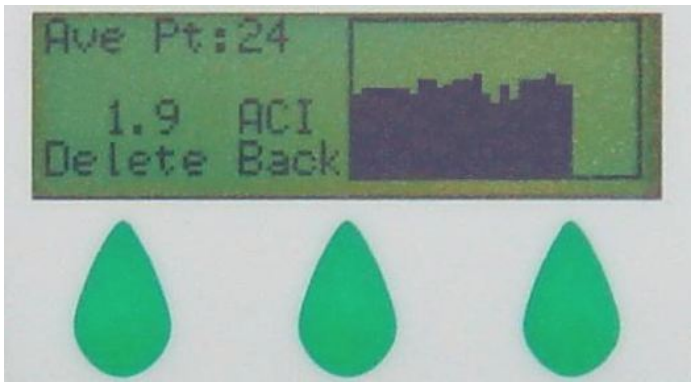
Changes in anthocyanin content can occur over time. Research shows that the anthocyanin meter can provide a reliable and fast estimate of anthocyanin in leaves that do not have high chlorophyll content (Van der Berg 2005).

Studies have been done on Sugar maples, Clitoria oternatea, Desniodium adscendens, Corchorus olitorius,Catharanthus roseus, Hibiscus sabdariffa, Poinsettias, red pak choi and other plants.

Laboratory methods for determination of anthocyanin content are both time consuming and destructive to thesample. 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.



Measuring display of values when averaging

Specifications:

Measured Parameters: Optical absorbency in two different wave bands (530 nm and 931 nm). Designed to measure anthocyanin 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 can 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 . with comma delineated data for spread sheet work. RS-232 interface for GPS only.

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

Journal references:

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