



PRESS RELEASE

Analyzing Meat Tenderness Using NIR Spectroscopy.

SPECTRAL EVOLUTION's SM-3500 provides fast, non-destructive analysis for beef characteristics.

Lawrence, MA – June 7, 2013 – Traditional meat grading by visual analysis of marbling can result in an inaccurate estimation of meat tenderness. Using the SM-3500 field portable spectrometer from SPECTRAL EVOLUTION can provide meat processors with a fast, accurate, and non-destructive tool for grading beef.

The increasing desire of health-conscious consumers to have more complete nutritional data on foods, including meat, makes the SM-3500 spectrometer an attractive tool for analyzing both raw and processed meat. Color, texture, and sensory appeal are important characteristics for the meat industry. Using VIS/NIR spectroscopy allows meat processors and packagers to conform to the latest consumer demands, market price pressures, and increasingly strict industry/government standards.

Using the SM-3500 with a specially designed contact probe, accurate categorization of meat can result in more products, like steaks, being categorized in a higher standard and sold at a higher price. The spectrometer is used to identify moisture, protein, and fat content. The SM-3500 has a three array detector configuration that covers the entire UV/VIS/NIR spectrum:

- 512 element silicon array – 3450-1000nm
- 256 InGaAs array – 970-1900nm
- 256 InGaAs array – 1900-2500nm

Using the field portable SM-3500 allows for capturing spectra in the plant and quickly analyzing a large number of beef carcasses non-destructively. The spectra can be compared against a library of spectra and accurate categorizations made.

The SM-3500 can also be used to:

- Detect and quantify adulterants in frozen/thawed ground beef
- Measure the effects of storage time and temperature on chicken breast tenderness
- Predict the sensory characteristics of lamb for sorting by quality
- Discriminate between fish meal, meat meal, and soya meal samples
- Analyze the chemical composition of meat for nutritional guides
- Evaluate the chemical lean value (fat content) of ground beef and meat trimmings

All SPECTRAL EVOLUTION field portable spectrometers include DARWin SP Data Acquisition software. This powerful software interface allows for the rapid collection of target spectra with a single click, offers a range of plotting options, and can overlay multiple scans for quick identification and comparison. The spectral data is stored in ASCII files for immediate use with third party analysis programs – there's no pre-processing required. Data can be further analyzed with many available chemometrics software packages.

For more information on SPECTRAL EVOLUTION's SM-3500 and other spectrometers, visit: <http://www.spectralevolution.com/spectrometers.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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