



## **Bulk Stable Isotope Analysis of Carbon from Solids and Liquids using an Elemental Analyzer Coupled to a Wavelength-Scanned Cavity Ring-Down Spectrophotometer**

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We report here on the novel employment of a small footprint Wavelength-Scanned Cavity Ring-Down Spectrometer (WS-CRDS) interfaced to an elemental analyzer for the measurement of the bulk isotopic carbon signature in plants and food products. The current system provides an inexpensive alternative with unparalleled ease-of-use as compared to standard methods using the more complex analytical instrumentation of isotope ratio mass spectrometry. A precision of carbon isotopic ratio measurements of less than 1 permil was achieved in minutes of measurement time. Such precision readily distinguishes the isotopic carbon signatures of a variety of environmental and agricultural products from different origins, providing information about food authenticity and climate changes effect on plant physiology.