RAPID ESTIMATION OF A SOIL-WATER RETENTION CURVE USING VISIBLE-NEAR INFRARED SPECTROSCOPY

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The Invention

UW-Madison researchers have developed improved methods and systems for characterizing soil using visible-near-infrared spectroscopy (vis-NIRS) data. Combining their spectrographic data with additional insights, the researchers improved the soil-water retention curve (SWRC), a function for modeling water flow and solute transport in soil. The pore size distribution, generated from the vis-NIRS data, was combined with an estimation of water potential to improve the overall characterization of the soil sample. This method could be implemented in a relatively simple and robust system, consisting of a soil collection system, a spectrophotometer, and computational equipment, which could be deployed in a variety of settings, including laboratories and in the field.

Key Benefits

- Able to leverage pre-existing vis-NIR data sets
- Rapid on-site sampling and modeling
- Reduced cost and time expenditures

Additional Information

For More Information About the Inventors

- Jingyi Huang
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Tech Fields

- Analytical Instrumentation, Methods & Materials : Spectroscopy
- Animals, Agriculture & Food : Precision agriculture

For current licensing status, please contact Michael Carey at mcarey@warf.org or 608-960-9867