

Characterizing soil with different organic amendments using infrared spectroscopy

Study project

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Question:

Can soils with different amendments of organic matter (Seaweed, manure, peat etc.) be differentiated by infrared spectroscopy?

Methods:

First, different organic matter used for amending soils in historical agricultural sites (Ridge and Furrow systems, RIFU) will be characterized chemically using FTIR-DRIFT spectroscopy. Then, artificial soil samples containing varying concentrations of the amendments will be created, (based on SOM free quartz sand) and analysed. Then, artificial samples containing mixtures of SOM types will be analysed the same way. The aim is to see if the different SOM types can be distinguished using spectroscopy, thereby enabling the forensic analysis of the origin of SOM in RIFU systems.

Requirements and special knowledge

Basic labwork and chemical understanding