Glomalin in Soil Organic Matter as a function of soil properties. (S02-sarkar130332-Oral)

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Abstract:
Glomalin is a newly discovered component of soil organic matter (SOM), produced by arbuscular mycorrhizal fungi. This glycoprotein is distinctly different from other components of SOM and comprises up to 30% of soil carbon. Glomalin has the characteristics of a soil glue, and despite its high abundance, the structure of glomalin remains unknown to date. To better understand the nature of glomalin in soils, the current study focused on glomalin concentrations as it relates to soil properties, such as total C, clay, OM, pH, and C:N ratio. Soils were collected from areas of same utilization history (undisturbed rangelands) and extracted for glomalin using a neutral to alkaline citrate solution at 121 degrees centigrade. Extracts were analyzed for easily-extractable glomalin (EEG), total glomalin (TG), and their respective immunoreactive fractions. Concentrations were determined using the Bradford assay for total protein and the enzyme-linked immunosorbent assay (ELISA) for the immunoreactive fractions. Preliminary results indicate positive correlations between total C and OM with TG and immunoreactive TG. The C:N ratio correlated only with the immunoreactive fractions of glomalin.

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