Soil Chemistry, a Vital Course of a Soil's Curriculum. (S02-tan175514-Oral)

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Abstract:

Soil chemistry, the youngest branch of soil science, has acquired its identity by establishing its boundaries only recently from chemistry and soil sciences, just as soil science has carved its identity from geology and chemistry. Considering soil chemistry as physical chemistry is like identifying soil science as geology. Electrochemical properties of soil inorganic and organic constituents provide the key elements of soil chemistry as a science. The subject matter is as essential as that of Soil Physics, Soil Fertility, Soil Taxonomy, and other branches of soil science for a strong and vibrant soil's curriculum. Most of the soil properties are chemical in nature, and can be comprehended better with a thorough knowledge of soil chemistry. The course can be offered stepwise: as general soil chemistry, followed by an advanced course. The general soil chemistry course is usually presented in a simple straightforward way, avoiding the use of complex chemical details without sacrificing scientific quality. This is the course that a majority of students use to take, which provides them with the only exposure to soil chemistry. The need of disseminating accurately the proper material is therefore essential, since misuse or applying incorrect principles creates confusion and havoc in the science of soils. Relating the subject matter to issues in soils and agriculture is useful and underscores its difference from pure physical chemistry. This general course is then followed by a soil chemistry course at a higher level of comprehension, targeted to students seeking the MS and PH.D degrees and in need for more details. Examples are

provided at two different levels of comprehension using the equilibrium constant and double layer theories.

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