Issues in Aggregating Carbon Sequestration Accounting Across Farms. (S05-smith134625-Oral)

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Abstract:

Buyers if greenhouse gas emission offsets are requiring reliable quantification of offsets. Offsets may be quantified by measurement or by estimating using a model. Strategies for optimizing measurement are presented. Commercially viable projects generating offsets by storing carbon in soil must encompass thousands of acres, across multiple farms. Different farms have different soils and histories and use different cropping systems and equipment. Carbon storage rates are likely to vary across farms and fields. Measurement costs limit the number of strata that can be measured separately. Soil carbon dynamics, cropping systems, and site histories suggest how to lump and split fields for sampling. Potentially useful criteria for stratifying sampling include total site productivity, amount of nutrient inputs, years of past highdisturbance tillage, and years of current low-disturbance tillage, and topographic position. Sampling costs, project size, and funding available for measurement can be used to estimate optimal stratification of sampling. If high confidence is not necessary and for projects of modest size, sampling without stratification may be the optimal strategy.

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