# A Comparison of Methods to Evaluate Biodegradable Dissolved Organic Carbon. (S03-gregorich214017-Poster)

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# Abstract:

Dissolved organic carbon plays an important role in ecosystem functions such as nutrient dynamics and transport, carbon sequestration, pedogenesis, soil and water quality. The objective of this study was to characterize biodegradable dissolved organic carbon from forest and agricultural ecosystems using six bioassay methods. Solutions were obtained from: aqueous extracts of agricultural soils near Bochum and Munich, Germany and of the litter layer and Oa horizon under Norway spruce in Germany; a throughfall collector under northern red oak and soil solution collected in a zero tension lysimeter set below the Oa horizon from plots at the Harvard Forest Long Term Ecological Research Site, USA. The bioassay methods included: short- (5 day) to long- (90 day) term incubations (some of which included comparisons with and without nutrient additions) and a once-through passage of the solution over an extensive biofilm growing on a bed of sintered glass beads. In general the different methods gave similar results for estimating biodegradable organic carbon (defined as the DOC lost during the bioassay). Results showing comparisons among the different methods will be presented and discussed.

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### **Presentation Information:**

Presentation Date: Monday, November 11, 2002 Presentation Time: 9:00-11:00 am Poster Board Number: 1706

### **Keywords:**

biodegradable organic carbon, dissolved organic carbon, bioassay, methodology