



Priming effect in agricultural and forest soils depending on glucose level and N addition

Thomas Splettstoesser, Amit Kumar, and Yue Sun

Dept. of Soil Science of Temperate Ecosystems, University of Goettingen, Germany, tsplett@uni-goettingen.de

Growing plants continuously release easily available organic compounds into the rhizosphere. By their interactions with soil microbial biomass (MB) these compounds result in changes of organic matter turnover rates. The understanding of this priming effect (PE) is important for the estimation of climate change impacts on different land use systems. In order to investigate the PE, we conducted a soil incubation experiment under laboratory conditions with two loamy soils: one under cropland and the second under a deciduous forest near Göttingen. ^{13}C and ^{14}C Glucose were added in four levels reaching from 10% to 300% of MB-C. Furthermore two nitrogen levels were established in order to investigate the effects of fertilization on PE. During the whole experiment CO_2 release was monitored by trapping in a NaOH solution. Nitrogen mineralization rate, activity of enzymes, and composition of MB were analyzed at the start, after one day, after one week and at the end of the experiment. The results on priming effects induced in agricultural and forest soils depending on N and glucose levels will be presented.