Partitioning Root, Rhizosphere and Non-rhizosphere Respiration during Wheat Growth. (S03-kocyigit112409-Poster)

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Abstract:

Soil CO2 constitutes a major component of the global carbon cycle and is one source for atmospheric CO2. In this study, the contributions of root, rhizosphere, and non-rhizophere respiration to total CO2 flux were determined through the growth stages of wheat under field conditions with two tillage systems (no-till and conventional tillage) and a greenhouse study. Soil CO2 flux was higher under conventional tillage than no-till during wheat growth due to disturbance effects of tillage. Total respiration gradually increased from early tillering through early-boot. The highest root respiration rates were observed at early boot stages in the both studies. Root-rhizomicrobial respiration accounted for 50-60 % of the total soil respiration in the both studies. Rhizomicrobial respiration accounted for 10-20 % of total respiration. Soil management can affect CO2 flux through impacts on the soil microbial activity which constitutes 50 % of the CO2 flux.

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