

Crop sequences and traffic pattern affect microbial biodiversity in no-tilled soils. (S03-diazzorita074356-Poster)

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Abstract:

Soil microbial parameters are modified by soil management practices and have been proposed as potential indices to assess soil productivity and soil quality. The aim of this work was to evaluate the effect on heterotrophic bacterial populations of crop sequences (Maize/Maize, Maize/Soybean, Maize/Wheat/Soybean, and Maize/Pasture), and traffic pressure on no-tilled Paleudalfs. Samples were taken after 9 and 10 years of continuous no-till in row and interrows with high and low traffic. Number of bacteria and number of fungi and community parameters (Shannon, Gini, evenness, richness, and activity) using Biolog-GNTM plates were evaluated. When soil water content was the highest, there were more activity, diversity and richness. Crop sequences including soybean showed the lowest diversity values. Diversity and richness were greater in rows than in interrows (rhizospheric effects). There were no differences in bacterial community parameters between traffic pressures. The presence of pastures contributes to improve microbial soil diversity. In no-tilled soils, greater effects on soil diversity parameters can be expected because of differences in crop sequences than in traffic patterns.

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