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Rhizosphere microbial communities associated with cover crops inoculated with *Azospirillum brasilense* and dried with glyphosate

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Cover Crops (CC) are an alternative to improve the soil quality. Inoculation with certain *Rhizobacteria,* contributes to the implementation, development and production of extensive crops. However, there is little information on its effects on forage crops. In order to evaluate the effect of inoculation with *Azospirillum brasilense* on Rhizosphere microbial communities (RMC), an experiment was conducted in the west of Buenos Aires with a factorial design. Main plots had two levels of fertilization 0 and 7-40-0-5 (NPKS). Rye (*Secale cereale* cultivar Quehue) and oats (*Avena sativa* cultivar Aurora) were sown in the subplots. In the sub-subplots, two inoculation treatments with *Azospirillum* brasilense were assigned Rhizosphere soil of two upper layers was sampled at three times (ST): Before glyphosate (BG), after glyphosate applied (AG) and soybean harvest (SH). Community level of physiological profiles (CLPP) and Shannon-Weaver index of diversity (H) were obtained by multivariate analysis of Principal Components. Analysis of variance and mean comparisons were performed. The CLPP of RMC showed significant differences between ST. CLPP of RMC of BG samples were different to the CLPP of RMC present in AG and SH samples. Fertilizer and depth caused changes in the CLPP of RMC. The H indexes of diversity of the associated RMC of ST BG and rye was higher than those of the other ST and oat respectively. Then, inoculation and fertilizer inputs should be better studied to understand how both management practices can have a significant effect on the sustainability of the agro-ecosystems.

Biography

Jhovana Escobar has obtained her Biology degree at the University of San Simon Bolivia. She currently holds Assistant Teacher Position at the Agricultural and Environmental Microbiology Unit of the Faculty of Agronomy-University of Buenos Aires, Argentina (FAUBA). She is a Doctoral candidate in the Plant Production of Postgraduate School of FAUBA. She was awarded with the scholarship of the National Agency for Scientific and Technological Promotion, (2011-2014). She was awarded with the Postgraduate Scholarship by the National Council for Scientific and Technical Research (CONICET) (2014 to till date). She has published four scientific articles, one book chapter and 27 papers at conferences. She is participating in several research projects and has collaborated with in the co-direction of final research projects of five undergraduate students.

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