

Abstract submission for the 14th International Symposium on Microbial Ecology, ISME14, in Copenhagen, Denmark, from 19-24 August 2012 :

Abstract category : Soil microbiology and heterogeneity

IMPACT OF DEPTH AND SOIL COMPACTION ON BACTERIAL DIVERSITY IN SOIL

Stroobants Aurore¹, Degruene Florine¹, Olivier Claire², Roisin Christian², Bodson Bernard³, Portetelle Daniel¹, Vandenbol Micheline¹

¹ Unité de Biologie animale et microbienne, Université de Liège, Gembloux Agro-Bio Tech, Avenue Maréchal Juin 6, 5030 Gembloux, Belgium, email: aurore.stroobants@ulg.ac.be

² Unité Fertilité des sols et Protection des eaux (U9), Centre wallon de Recherches agronomiques, Rue du Bordia 4, 5030 Gembloux, Belgium

³ Unité de Phytotechnie des Régions tempérées, Université de Liège, Gembloux Agro-Bio Tech, Passage des Déportés 2, 5030 Gembloux, Belgium

Bacteria are the most abundant and diverse microorganisms in soils. The amount of bacteria in soils can reach 10^{10} cells per gram of soil. These organisms are involved in various processes in agroecosystems such as nutrient cycling, contributing to plant nutrition, plant health and soil structure. The knowledge about this diversity is limited because only one percent of these organisms can be cultured by laboratory methods. During the last decades, many molecular-based techniques have been developed to assess the diversity of bacterial communities. The aim of this study was to determine the quantity and diversity of bacteria in two agricultural soils with different soil management practices (tillage and no tillage) at different depths (10, 30 and 45 centimeters) and different compaction levels (high and low). Quantity was evaluated by real time PCR and diversity was analysed by the DGGE (Denaturing Gradient Gel Electrophoresis) technique. The results show that soil management has an impact on bacterial quantity at 45 centimeters and quantity is higher in till soil. Compaction level affects the bacterial quantity in till soil, quantity is higher in low compaction. And finally, depth influences the bacterial quantity in till and no till soil. In both soils, quantity decreases with the depth. The results will be presented and discussed on the poster.