Abstract 2504
CONNECTING SOIL BIODIVERSITY TO FUNCTIONS AND ECOSYSTEM SERVICES: PRESENTATION OF CASE STUDIES AND OF THE EU FP7 PROJECT ECOFINDERS

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Text:*Soils provide essential ecosystem services such as primary production, regulation of biogeochemical cycles and their consequences on climate, water filtration, resistance to pests and diseases, and regulation of above-ground biodiversity. These services result from functions supported by soil organisms. Their abundance, diversity and activities vary according to environmental factors and Human activities. Despite progress made over the last decade in assessing soil biodiversity, the huge reservoir of biodiversity represented by soils remains superficially explored as do the relations between soil biodiversity and functioning. This lack of knowledge is related to the small size of most organisms, their hidden location, the matrix structure of the soil and the immense variety of environmental conditions. Knowing the range of biodiversity, its contribution to soil functioning and ecosystem services, and the impact of the variety of environmental situations on both parameters is thus a critical challenge to be addressed. This knowledge is required by the European Commission for defining a policy for sustainable management of soils with a view to adopt a legally binding Soil Framework Directive.*
Case studies on C and N cycling will be presented to illustrate the connection between soil biodiversity and functions. Also, data demonstrating the contribution of environmental filters as drivers of microbial communities will be shown. Finally, a brief overview of the EU FP7 EcoFINDERS will show how it can provide the EC with scientific, operational and economic information on biodiversity to design and implement strategies for ensuring sustainable use of soils.