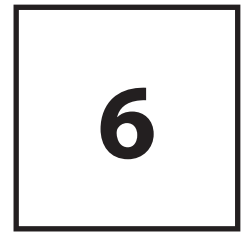


The MICROCLIM project: a global vision of the effects of climate change on microbial populations from contaminated agricultural soils



OHMi Estarreja

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Abstract

The IPCC predicts increasing air temperature and soil dryness by 2100, with soils being among the most affected components of terrestrial ecosystems. Soil microorganisms are key players in terrestrial ecosystem functions and services, quickly responding to environmental stresses. However, this situation may worsen in anthropogenic-contaminated areas where microorganisms have to deal with already unfavorable conditions.

MICROCLIM project aims at assessing how microbial populations of agricultural soils affected by the contamination derived from the Estarreja Chemical Complex may be affected under the current global warming perspective. To achieve this general objective the project will address two specific objectives : 1) assessing structural and functional changes in microbial populations of contaminated agricultural soils, with and without soil invertebrates presence, induced by single climate factors (soil moisture and air temperature), and their relation to changes in soil physicochemical parameters; 2) assessing structural and functional changes in microbial populations of contaminated agricultural soils, with and without soil invertebrates presence, under different climate scenarios simulated by climate factors combinations (soil moisture and air temperature), and their relation to changes in soil physicochemical parameters. Climate factors ranges will be established based on the future scenarios predicted by the IPCC by 2100. The project will rely on changes in soil microbial populations at structural (phylogenetic composition of bacterial communities) and functional (microbial metabolic activity) level and their relation to key soil parameters.