

Soil microorganisms as an useful tool for assessment of soil quality and health.

Worldwide, soils are being seriously contaminated as results of different agricultural, industrial and civil activities releasing pollutants into the environment. In the Union European more than 37% of the soils are contaminated. The long-term accumulation of these pollutants in the soil environment has an important consequence for the quality of food human chain, toxicity to plant and soil microbial processes.

Soil microorganism are considered critical in any ecosystem, by acting on the decomposition of soil organic matter, plant nutrient cycling as well as heavy metals, degradation of pollutants and affecting the soil chemical and physical properties, with direct effects on soil fertility and sustainability (Cardoso et al., 2013). However, higher concentration of heavy metals on soils can reduce the nutrient cycling and others functions such as mineralization of organic compounds and/or synthesis of organic matter since soil microorganism may be affected by the presence of this compounds (Moreno et al., 2009). Therefore, the determination and quantification of parameters like microbial biomass, respiration rate and microbial activities can be used as potential indicators to monitor health soil in areas contaminated with heavy metals (Smejkalova et al., 2003).