

METHODS FOR MEASURING SOIL MICROBIAL BIOMASS

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Abstract. In this review we describe and compare the most common modern methods and approaches for measuring microbial biomass in soil. These methods do not require professional training in microscopy, work with pure cultures of microorganisms and other specific skills within «traditional microbiology». The methods under consideration can be applied by a wide range of researchers interested in getting information on microbial biomass that represents the most active and labile fraction of soil organic substance. The methods are grouped into three broad categories: 1) biocidal methods; 2) methods based on the respiratory response of soil microbial community to the addition of glucose; 3) methods that use various biochemical markers. We specify the application areas and limitations of each method as well as typical errors and miscalculations that arise in practical work.

Key words: soil microbial biomass, fumigation-extraction (FE), substrate-induced respiration (SIR), microbial growth kinetics, phospholipid fatty acids (PLFA), biomarkers, ATP, DNA, conversion factors.