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ABSTRACT BOOK

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Soil microbiological properties in a soil with addition of Philoscia muscorum

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Soil organisms are an integral part of ecological environment and contribute greatly to the disintegration of the plant and animal based wastes, especially in agricultural areas. Moreover, they have importants effects on plant nutrition and soil fertility because they are actively involved in the biological processes and sometimes they direct these processes. Isopods mainly inhabit the litter layer; by fragmenting leaf litter, they facilitate litter decomposition and nutrient cycling. As a consequence, terrestrial isopods indirectly affect the activity and community composition of the soil microflora. The isopod Philoscia muscorum (Isopoda; Philosciidae) is a common and abundant member of the saprophagous soil macrofauna in Turkey. The objective of this study was to determine effect of Philoscia muscorum on microbiological properties in wheat straw as a carbon source for isopoda added clay loam soil. The microbiological properties and their activities due to addition of increasing number of Philoscia muscorum into the soil was measured over a short term (four-week) period under laboratory conditions. Incubated microcosms under standard conditions were inoculated with a natural assemblage of Philosciidae species. At the end of the experiment, the soil with a high number of Philoscia muscorum content showed higher microbiological properties such as microbial biomass C and microbial respiration than the soil with a low number of Philoscia muscorum content. Philoscia muscorum stimulated soil microbiological properties and altered the response of this biomass with addition of wheat straw into the soil microcosms.

Keywords: Soil, isopod, microbiological properties, wheat straw