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Microbial Activity and Communities in Soils of *Euphorbia paralias* and *Primula vulgaris spp. vulgaris* (Saimbeyli-Adana,Turkey) under the Effects of Different Soil Moistures

Erhan Yelekçi[1], Burak Koçak[1*], Şahin Cenkseven[2], Cengiz Darıcı[1]

[1]Department of Biology, Cukurova University, Adana, Turkey
[2]Department of Soil Science and Plant Nutrition, Cukurova University, Adana, Turkey
Email: erhanyelekci@gmail.com, bkocak@cu.edu.tr, scenkseven@cu.edu.tr cdarici@cu.edu.tr

Abstract

Understanding of effects of soil moisture on soil microbial activity under global warming is critical to contribute in predictions of feedbacks to atmospheric CO_2 concentrations from soil carbon. Soils of *Euphorbia paralias* (Sea Spurge) and *Primula vulgaris spp. vulgaris* (Primrose) Huds. were taken from Saimbeyli (Adana-Turkey) in June 2016 and some of their physical and chemical properties were determined. Soils were moistured at their 80% (FC80), 60% (FC60) and 40% (FC40) of field capacities and carbon mineralization (Cmin) were monitored for 63 days at 28°C. Total soil aerobic bacteria and fungi populations were determined 15th and 30th days of Cmin. At the end of incubation, Cmin was highest at FC80 and lowest at FC40 in all soils and there were found significant differences between all treatments in each soil ($p< 0.05$). In addition, soil aerobic bacteria and fungi population were decreased as moisture decreasing but they were higher on 15th day than 30th day. Significant differences were generally found between FC80 and FC40 on 15th day of soil microbial populations ($p< 0.05$). In this study, it's suggested that soil moisture is the regulating factor in soil organic carbon mineralization by affecting soil aerobic bacteria and fungi populations. This study was funded by Cukurova University Scientific Research Projects Coordination Unit with project number FYL-2016-7445.

Keywords: Carbon mineralization, Euphorbia, *Primula vulgaris*, Soil aerobic bacteria and fungi counts

(*) Corresponding author