Short term effects of prescribed fire on soil microbial biomass of black pine forests

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In this study, we were examined of changes microbial carbon (MBC) and microbial Nitrogen (MBN) after one month controlled fire. The study area consist of sloping and flat areas, high and low intensity of burnt areas and control areas (unburned) including (flat low intensity: FLI, flat high intensity: FHI, smooth low intensity: SLI, smooth high intensity: SHI and 0-5 cm and 5-10 cm depth soil). In terms of microbial carbon on the upper soil in the flat high intensity and upper and lower soil in the smooth high intensity, there was a significant differences between burning and unburning area. Also, microbial carbon has been reduced approximately 50 % in the burning area. İn terms of microbial nitrogen has been found a significant reduction between upper and lower soil in the smooth low intensity area. However, we found a significant increase in the lower soil on smooth high intensity area. With regard to microbial carbon were found a significant differences between the intensity of the effect of low and high fire in burning areas. There were a significant relationship between microbial carbon and microbial nitrogen and also organic matter. Microbial carbon was also found a positive correlation with Ph ($\alpha<0,05$). As a result, in the short term of fire reducing of microbial biomass on the top soil (0-5 cm). In addition, microbial nitrogen was increased and microbial carbon was reduced after fire. Additionaly, after fire microbial nitrogen was increasing in the lower soil and microbial biomass may decrease the usability of the organic karbon.

Keywords: Black Pine, Controlled Fire, Microbial Biomass, Soil Ecology.