

Interactive comment on “Wildfire effects on biological properties of soils in forest-steppe ecosystems of Russia” by E. Maksimova and E. Abakumov

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Dear Referee! Thank You very much for your detailed comments to my manuscript. I have change the manuscript according to your suggestions, the following comments I have made to your recommendations:

The term “microbial biomass” was changed to “soil carbon biomass” in all the text. Moreover, expressions “microbial activity” and “biological activity” was changed to “biological parameters or properties”.

Abstract The sentence was changed to “Soil biological properties as soil carbon biomass and basal respiration was measured by the fumigation method”. The terms

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“biogenic elements” and “biophile elements” was changed to “nutrients” in all the text.

Introduction The sentence was changed to “There are several parameters to study the microbial functioning including values of soil carbon biomass (C_{mic}) while the indicator of activity of microbial community functioning is microbial respiration (basal respiration, BR) of carbon dioxide (Umer, Vankova, 2011; Jenkinson, 1976; Vance, 1987)”.

Material and Methods Study materials This chapter was added by the following:

The plants forming the lower forest synfolium (a shrubby, grassy and moss cover) burn down in case of local fire. The riding fire covers the entire forest from a soil surface to tops of tree crowns or passes through the trees and an underbrush, herbage, moss layer and also fruits and seeds which are on a surface and in the solum, can avoid the fire influence.

Study methods The amount of plots was specified in paragraph 2.2 Study methods. The information about exact number of samples was added in this chapter: 9, 6 and 10 soil pits were sampled as well as 57, 36 and 50 individual soil samples were analyzed in 2010, 2011 and 2012 correspondingly. Table 1 was added by some data: sand content, gĉŰkg⁻¹ and organic carbon, %.

Laboratory analysis The sentence was changed to “All chemical and biological parameters were studied on fine fraction of soil after be sieved at 1 mm”.

Result and discussion The control hasn't been applied with any organic refuse. Identical sandy loam soils under the pine forest located about 1 km far from pyrogenic effect were studied as a control. Control soils means soils that are identical in a structure and properties, but were not affected by a forest fire. Control samples were burnt down only at postfire plots. There are data of ash content (gĉŰkg⁻¹) in control samples in table 2. This ash contents the impurities of carbon dioxide and mineral inorganic substances. The statistic data was included in tables 1, 2, 3. The content of organic carbon was determined and represented in table 1.

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Thank You very much!

With kind regards, Corresponding author Ekaterina Maksimova

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Interactive comment on Solid Earth Discuss., 6, 71, 2014.