



## Light SOM fraction in postpyrogenic soils

Ekaterina Maksimova and Evgeny Abakumov

Saint-Petersburg State University, Institute of Ecology of Volga basin, Russian Federation

Soils affected by forest wildfires in 2010 in Russia were studied on postfire and mature plots near the Togliatti city, Samara region. This investigation showed that wildfires cause the serious changes in a soil profile. A soil organic matter content as a key component of the carbon cycle of forest ecosystem is of special interest in pyrogenic soil-plant associations. The most intensive were the processes of soil organic matter losses that result from burning of a forest floor and sod (humic) horizon. The content of a humus in the top horizons of soils in 2010 at a local fire ( $2,08 \pm 0,85\%$ ) is less, than at riding ( $2,45 \pm 0,53\%$ ), and is much lower than in case of unaffected (control) site ( $3,35 \pm 2,32\%$ ). These data confirm the fact of a dehumification of soils after wildfires and proof the idea that more intensive losses of a humus are occurred under the local wildfire (which result in full burning out of a laying and the top horizon). The above mentioned processes were confirmed by results of the light SOM fraction evaluation. The light SOM fraction was studied in order to specify the origin of soil organic matter. This fraction is presented by free organic matter of slightly decomposed organic remnants either by black carbon fraction. Light SOM fraction was evaluated by density fractionation method. The content of light fraction in the solum in 2010 after wildfires was less, than in control plot. The average content of the light fraction in soil organic matter varies from 12 to 20%. It testifies that well-decomposed forms of humus predominate in the organic matter of the studied soils. The light fraction content in the solum in 2010 at a local fire (9-13%) is less, than at riding (12-16%), and is much lower than in case of unaffected (control) site (16-19%). Therefore, black carbon was possibly present in the light SOM fraction.

The light SOM fraction is the essential indication of SOM system in case of postfire demutation change. Data obtained shows that the light fraction is the most risky part of organic matter in dehumification process.

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