

Dynamics of dissolved organic matter (DOM) on two salt-affected soils

Tibor Filep¹, Tibor Tóth¹, Márk Rékási¹, Zdenko Lončarić², Vlado Kovačević²

¹*Research Institute for Soil Science and Agricultural Chemistry, Herman Ottó u. 15. H-1022 Budapest, Hungary (filept@rissac.hu)*

²*University of J. J. Strossmayer in Osijek Faculty of Agriculture, Trg Svetog Trojstva 3 HR-31000 Osijek, Croatia*

Summary

Changes in DOM with time and depth was investigated on two different type salt-affected soils. In 1998 and 2001, from a saline and a sodic sites of grassland, soil samples were taken with five depths (0-90 cm), and measured soil parameters (pH, organic matter, EC, pNa), as well as DOM concentrations.

Between soils, no significant differences were observed neither in dissolved organic matter content nor in the relative amount of DOM to SOM (DOM% of SOM \equiv DOMP). Seasonal dynamics of DOM showed a marked trend for the saline soil, DOM and DOMP reached the maximum at the beginning and at the end of both years, may be explained by a decline in microbial and root activity in this period. In case of the sodic soil there was no significant changes in DOM content during the years investigated.

Depending the soil type, a contrary trend has been obtained for studying the alteration of the DOMP values through soil profiles. For sodic soil, the DOMP significantly decreased, while for saline soil increased with increasing soil depth. It indicates a migration of soil solution though the soil profile for saline soils contrary to sodic ones.

Key words: dissolved organic matter, DOM, dynamics, salt-affected soil, soil profile