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Impact of Urbanisation on Soil Organic Matter Content in chernozems in Vojvodina region

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Vojvodina is the northern province of Serbia and the chief agricultural centre of the country. The main soil type in Vojvodina is chernozem (60% of total area), and it is under heavy anthropogenic pressure. Changes in soil organic matter amount resulting from switching from natural to urban ecosystems on Vojvodina's chernozem were not thoroughly researched in the past, which gave us unique insight in soil organic matter losses under human activity, namely urbanisation. The research has been carried out during July 2016 at Nature reserve Čarnok (as a control) and urban settlements Zmajevo, Vrbas and Kula, which are located 12 km from each other and Čarnok. Urban locations were lawns, chosen according to information from the owners (no known ploughing, no addition of sandy or clay material during last 70 years, no grass sowing and only direct human activity is trimming of grass). The results showed significant reduction of humus content in urban ecosystems: Čarnok (control, natural reserve) [U+0336] humus 5,33%, organic C 3,488%; Zmajevo [U+0336] humus 2,51%, organic C 1,963%; Vrbas [U+0336] humus 3,81%, organic C 4,216%; Kula [U+0336] humus 1,95%, organic C 1,517%. The differences in organic carbon also showed basically the same trend with notable exception of Vrbas. These differences in soil organic matter content is generally based on grass trimming practices. In Zmajevo, grass was trimmed monthly, with removal of biomass from the lawn, in Kula grass was trimmed twice per month with removal of biomass and in Vrbas trimming was performed once per week, with shredding of biomass and leaving it on the lawn. The conclusion was that land use change has advert impact on soil organic matter content in urban ecosystems, and that within it human practices such as trimming have significant impact on it.