

EGU2020-21898

<https://doi.org/10.5194/egusphere-egu2020-21898>

EGU General Assembly 2020

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Effect of secondary succession in abandoned fields on some properties of acidic sandy soils

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Abandonment of agricultural lands in recent decades is occurring mainly in Europe, North America and Oceania, and changing the fate of landscapes as the ecosystem recovers during fallow stage. The objective of this study was to find the impact of secondary succession in abandoned fields on some parameters of acidic sandy soils in the Borská nížina lowland (southwestern Slovakia). We investigated soil chemical (pH and soil organic carbon content), hydrophysical (water sorptivity, and hydraulic conductivity), and water repellency (water drop penetration time, water repellency cessation time, repellency index, and modified repellency index) parameters, as well as the ethanol sorptivity of the studied soils. Both the hydrophysical and chemical parameters decreased significantly during abandonment of the three investigated agricultural fields. On the other hand, the water repellency parameters increased significantly, but the ethanol sorptivity did not change during abandonment. As the ethanol sorptivity depends mainly on soil pore size, the last finding could mean that the pore size of acidic sandy soils did not change during succession.