

FYZIKÁLNE VLASTNOSTI PÔDY VO VZŤAHU K VYBRANÝM PORASTOM CUDZOKRAJNÝCH DREVÍN V ARBORÉTE MLYŇANY

SOIL PHYSICAL PROPERTIES IN RELATION TO SELECTED EXOTIC TREES IN THE ARBORETUM MLYŇANY

NORA POLLÁKOVÁ - VLADIMÍR ŠIMANSKÝ - JURAJ CHLPÍK - MARTIN JURIGA

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Abstract

Soil properties significantly affect the acclimatization, growth, health and naturalization of introduced trees. Therefore, the aim of our study was to find out which important physical and hydro-physical soil characteristics improve or restrict the welfare of selected exotic trees in the Arboretum Mlyňany. We examined soil characteristics for each of 10 cm layer in soil profiles under growths of Japanese cedars, Chinese junipers, Himalayan pines, white firs, western redcedars, sugar maples and cherry laurels. We revealed that soil was texturally medium-grained, so it fit to all studied trees. By clay enriched horizons were compacted and had increased values of bulk density and reduced porosity, mainly macroporosity and air-filled porosity. Beside Japanese cedars which were endangered by long-term dry conditions in the summer, other tree species found soil characteristics suitable, even though that severely reduced macroporosity in the profile under Chinese junipers does not allow rapid drainage of water and may cause rot the roots of these trees.

Key words: exotic trees, wilting point, porosity, aeration, available water supply

PodĎakovanie

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Adresa autorov

Slovenská poľnohospodárska univerzita, Fakulta agrobiológie a potravinových zdrojov, Katedra pedológie a geológie, Tr. A Hlinku 2, 949 76 Nitra, Slovensko, e-mail: nora.pollakova@uniag.sk, vladimir.simansky@uniag.sk, juraj.chlpik@uniag.sk, xjuriga@is.uniag.sk