

PHYSICAL AND CHEMICAL PROPERTIES OF KOSOVO VERTISOLS AND THEIR CLASSIFICATION ACCORDING TO WORLD REFERENCE BASES FOR SOIL RESOURCES

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Abstract

Kosovo still is using the old Yugoslavian Soil Classification (YSC) system. Therefore, the aim of this research is to classify the Vertisols of Kosovo according to World Reference Bases for soil resources (WRB) based on physical, chemical and visual properties.

A total of 4 profiles has been dug and collected 19 samples of genetic horizons. The profiles have been selected randomly from a soil map of Kosovo (1974). All the 4 profiles belong to a same soil type (Vertisols) based on WRB but with different prefix and suffix qualifiers, spread in different location throughout the country while in YSC belong to Smonica.

The physical and chemical properties such as structure and texture, pH, organic matter OM, calcium carbonate CaCO₃, cation exchange capacity CEC, base saturation BS and electrical conductivity EC, have been analyzed by standard methods.

Based on the analysis have been found that most of the profiles have blocky angular structure but first profile have subangulare structure above 40 cm and below 40 cm have prismatic structure. The soil texture of all profiles is clay and heavy clay.

The soil pH in H₂O mostly is weak acidic, basic and weak alkaline while the third profile below 90 cm have certain carbonate calcium (CaCO₃) content and the pH is increasing. The profiles are rich in organic matter (OM) and the OM is decreasing linearly with depth while the second profile have higher OM below 30 cm. The CaCO₃ is present only in third profile below 90 cm.

Based on the measuring of cation exchange capacity (CEC), the value can varies from profiles with 8.4 cmol/kg the lowest one on second profile while the highest one has third profile with 26.22 cmol/kg. Base saturation is more than 89.4 % in all profiles. The electrical conductivity (EC) varies from 71 mS/cm up to 545 mS/cm.

Keywords: *prefix, suffix, pH, CEC, EC*