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Hygroscopic Humidity as a Soil Hydrological Constant

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ABSTRACT

The approach to working out of new method for investigation of the soil hygroscopic moisture as the soil hydrological constant have shown at this article. The hygroscopicity of Ordinary Calcareous Chernozem was established. For this purpose, the determination of the soil hygroscopic moisture at different relative humidity of 35-40 %, 65% and 95% was carried out. The object of the study is Ordinary Calcareous Chernozem medium-sized heavy loam silt-coarse-dusty on loess-like heavy loam (Botanical Garden of the Southern Federal University). The study established that maximum hygroscopic moisture content is 1.5 times greater than hygroscopic moisture determined under standard conditions (Wm 65%), which in turn is nearly twice as high as hygroscopic moisture measured by conventional methods. It is proposed to maintain soil samples at controlled 60% relative humidity conditions when studying hygroscopic moisture as a soil hydrological constant. The investigated calcareous ordinary chernozem exhibits hygroscopic moisture content (at standard conditions) ranging from 7.70% in the A1 horizon to 6.07% in the C horizon.

Keywords: ordinary carbonate Chernozem, hygroscopic humidity, maximum hygroscopic soil moisture, air humidity

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