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Color estimation of forest-steppe soils by digital photography under laboratory conditions

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Abstract

© 2016, Pleiades Publishing, Ltd. Numerical values in the RGB, HSB, and L*a*b systems for the colors of structurally differentiated soils (Luvisols) in the Volga-Kama forest-steppe have been obtained using a digital camera. A high correlation has been revealed between the soil color and the content of humus in the range 0.39–6%. When the content of humus exceeds 6%, the color of humus horizon varies only slightly. A regression equation within the RRGB range from 85 to 173 has been calculated for the rapid determination of humus content in low- and medium-humus texturally differentiated soils of the Volga-Kama forest-steppe.

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Keywords

forest-steppe soils, humus, Luvisols, Munsell color chart, RGB system, soil color