
***

DIAGNOSING THE LOWER BOUNDARY OF THE OLD-ARABLE HORIZON IN FALLOW LIGHT-GREY FOREST SOILS

A.A. Shinkarev, K.I. Kuzmina, M.G. Subbotina, D.R. Nizamova

Abstract

The possibility to objectively and reliably diagnose the lower boundary of the old-arable horizon in fallow acid siallitic soils with an eluvial-illuvial-differentiated profile has been demonstrated experimentally by determining the hygroscopicity and color characteristics of their layerwise samples following the removal of the soil organic matter by hydrogen peroxide. The boundary is defined by an inflection point on the profile curves of hygroscopic moisture content and chromatic components (hue, saturation).

Keywords: fallow light-grey forest soil, organic matter removal, hygroscopic moisture, CIELAB chromaticity coordinates, non-silicate compounds of Fe.

References


Received September 23, 2014
Shinkarev Aleksandr Aleksandrovich – Doctor of Biology, Professor, Department of Soil Science, Kazan Federal University, Kazan, Russia.
E-mail: Ashinkar@mail.ru

Kuzmina Kseniya Igorevna – Biology Teacher, General Secondary Education School No. 35, Kazan, Russia.
E-mail: Ksusha177@bk.ru

Subbotina Mariya Georgievna – PhD in Agricultural Sciences, Senior Research Fellow, Laboratory for the Development of Agricultural Technologies, Perm State Agricultural Academy, Perm, Russia.
E-mail: Subbotina@mail.ru

Nizamova Diana Rimovna – Student, Department of Soil Science, Kazan Federal University, Kazan, Russia.
E-mail: Nizamova1992@inbox.ru