

**CURRENT STATE OF SOILS ON POST-IRRIGATION AND ADJACENT FALLOW LANDS OF OMSK
PRE-IRTYSH REGION AND POSSIBILITY OF THEIR USE IN AGRICULTURE**

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The analysis and assessment of the current state of a post-irrigation gray forest gleyic soil, as well as chernozem-meadow and meadow-chernozem soils from fallow lands of the Novotroitsk and Krasnoyarsk irrigation areas of the Omsk region were carried out. The soils were characterized by high humus content, which reached 5.49–7.25% in the A and A₁ horizons, and decreased to 2.09–5.63% in the AB and A₁A₂ horizons. The soils, according to the pH values, were in the range from slightly acidic to neutral. The soils absorbing complex was saturated with exchangeable calcium up to 60–80%, with exchangeable magnesium up to 10–30% and with a share of sodium from 0.9 to 5.2%. The bulk density of the soils varied from 1.08 to 1.33 g cm⁻³ in the humus layer, with higher numbers in AB and A₁A₂ horizons. The structural state of the soils was assessed as good, the content of agronomically valuable aggregates varied from 60 to 80%, the content of aggregate lumpy fraction in some soils exceeded the optimal level, reaching 33–36%. The aggregates had excellent and good resistance to the erosive action of water in A and A₁ horizons, while in AB and A₁A₂ horizons the aggregate water resistance decreased too poor and unsatisfactory. The soils did not contain readily soluble salts, but were subject to temporary waterlogging and occurrence of anaerobic conditions in wet years, as evidenced by the presence of iron ferrous compounds at the depth of 68–83 cm. The studied fallow lands can be used for arable agriculture after carrying out agrotechnical measures, choosing the optimal methods and terms of tillage, and crop selection. A field located on a slope with a steepness of 3.2 to 5.6° should be used for cultivated haymaking.

Keywords: organic matter, bulk density, aggregate composition, irrigation, post-irrigation soils.