

## INFLUENCE OF POLYMER GELS ON RANGE OF AVAILABLE MOISTURE OF SOD-PODZOLIC SOIL

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The usage of polymeric materials is of a particular importance due to the observed climate changes. Water-absorbing polymers allow developing of methods for control and regulation of soil water-physical properties. Water-absorbing polymer hydrogels are promising ameliorants for water regime improving, particularly in sandy and sandy loam soils. Introduction of a small amount of water-retaining polymer into the soil can significantly accelerate plant growth and increase yields of agricultural crops. The study of the effect of domestic hydrogels Ritin-10, Aquasin and B-415 K in comparison with the foreign-made polymer AQUASORB on the water-holding capacity of a sandy loamy sod-podzolic soil was carried out in a laboratory experiment. Two rates were used for the hydrogels introduction into the soil: 100 kg ha<sup>-1</sup> and 300 kg ha<sup>-1</sup>. The WP4-T Dewpoint Potentia Meter psychrometer was used to determine the soil water-holding capacity. As a result of the study, the range of plant available moisture was determined. The range of moisture absorbed by the hydrogels is from 10 to 25% of the wet soil with the gels. The ability of the domestic hydrogels to increase the range of available moisture in the sod-podzolic sandy loam soil was revealed when the hydrogels were applied at the rate of 300 kg ha<sup>-1</sup>. The interval of productive moisture increased from 10% in the control to 21-22.5% at a rate of the hydrogels of 300 kg ha<sup>-1</sup>. The water-retention capacity of the domestic hydrogels was slightly lower compared to the foreign-made hydrogel AQUASORB, but that was not critical and they still could be effectively used in agriculture for plant growth.

**Keywords:** hydrogel, soil moisture potential, sod-podzolic soil, psychrometer.