

THE EFFECT OF AQUASORB ON SOME SOIL PHYSICAL PROPERTIES UNDER PEDOCLIMATICAL CONDITIONS OF THE MOLDAVIAN PLAIN

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Abstract

Several series of tests were carried out to study the influence of a hydrogel (Aquasorb) on some soil physical properties (bulk density, total porosity, and moisture and water soil reserve) for maize and soybean crops. Aquasorb operates in absorption-desorption cycles of water and nutrients and has efficiency in soil up to five years. The experiment is a bifactorial one, AxB type, being placed in randomized multilevel blocks method, with three replications. The aimed factors of the experiment were the crop and the hydrogel dose. There were three variants: V₁ (control) untreated, variant V₂ - were administered doses of 15 kg ha⁻¹ of Aquasorb and variant V₃ - were applied 30 kg ha⁻¹. The hydrogel was administered in the spring, before seedbed preparation at 15 cm depth, being incorporated with a disk harrow. The results showed that there was a direct interaction between the dose of hydrogel and the analysed parameters, the differences being statistically significant. The evaluation of the results was done according to the official methodology of pedological studies proposed by ICPA (Research Institute for Soil Science and Agrochemistry, Bucharest). For the bulk density, the values have outlined that for the control variant (V₁) the soil may be framed as "weak loose" (BD between 1.19-1.31 g cm⁻³) and the treated variants can be considered as "poorly compacted" (BD between 1.32 to 1.45 g cm⁻³). The hydrogel administration improved the soil moisture, the values ranging between 0.6% and 1% for the maize crop and between 0.8 and 1% for soybean.

Key words: hydrogel, Aquasorb, physical indicators, maize, soybean.