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WATER HOLDING CAPACITY AND EVAPORATION OF CALCAREOUS SOILS AS AFFECTED BY FOUR SYNTHETIC POLYMERS

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ABSTRACT: Four soil conditioners, Broadleaf P4, Agrihope, Aquasorb, and Hydrogel, were used in a laboratory study to evaluate the effectiveness of these polymers on water holding capacity (WHC), evaporation, and water conserved in calcareous sand and loam soils. Four rates of these polymers, 0.0, 0.2, 0.4, and 0.6% (on dry weight basis), were added to these two soils. All treatments were irrigated weekly to 60% WHC for a total of 16 wetting-drying cycles. An increase in polymer applied increased the WHC, decreased evaporation, and as a result increased the amount of water conserved in both the soils. Broadleaf P4 was more effective even at lower rates. The effectiveness of the polymers used could be arranged in the following order: Broadleaf P4 > Aquasorb > Agrihope > Hydrogel.