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IRRIGATION WATER SAVING AND YIELD INCREASE WITH SUBSURFACE DRIP IRRIGATION

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ABSTRACT

This study was conducted to evaluate the surface and subsurface drip irrigation (SDI) application effects on sugar beet crop performance, under two levels (100% and 80%) of water application depth. The experimental design was a two by two factorial with four replications. Laterals were set every second crop row (1 m apart), with emitters spaced 1m apart. In the case of SDI laterals were buried 0.45 m under the ground. Soil moisture measurements were taken up to 75 cm depth, using the TDR method. The soil water content and the yield characteristics of each treatment were recorded. Irrigation method showed that affect crop performance significantly while water application level was less critical. The experimental results indicated that the subsurface drip irrigation leaded to a greater yield and higher sugar content making significant water saving in relation to the surface one.