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Effect of irrigation with effluent and three irrigation methods on sugar beet yield and plant indexs in semi arid region of korbal

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The present study was conducted to evaluate the effects of irrigation methods with municipal effluent based on root and top yield, total biomas, sugar content and white sugar content and molas sugar content in sugar beet (Beta vulgaris L.) plant. The study was conducted as a split plot design with three irrigation methods (furrow with hydro-flumes, surface drip and subsurface drip) and two water qualities (municipal treated effluent and fresh water) in 2005 and 2006 in Korbal plain, Fars province. Root yield, top yield and total biomas were increased with effluent irrigation comparing to fresh water. Micro irrigation methods also significantly increased root yield, top yield and total biomas comparing to furrow method. The highest root yield (79.7 ton ha-1) in subsurface drip with effluent and the lowest (45.4. ton ha-1) in furrow irrigation with fresh water was obtained. The statistical results showed that there was no significant difference in amounts of sugar content and white sugar content in plots irrigated with effluent and fresh water but molas sugar content were increased with effluent irrigation comparing to fresh water. The amounts of sugar and white sugar was increased with effluent comparing to fresh water and the highest amount obtained in surface drip and the lowest amount was in furrow method.

Keyword: Effluent, Surface drip, Subsurface drip, Furrow irrigation,Sugar beet

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