Effect of Drip Irrigation with Saline Water on Yield and Water Use Efficiency of Okra *(Abelmoschus Esculentus* L. *Moench)*

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ABSTRACT

A field experiment was conducted during summer season of 2015 at College of Agricultural Engineering, Bapatla on sandy soil to evaluate the effect of drip irrigation with saline water on yield and water use efficiency of Okra. The experiment was laid out in split plot design with three replications. The four salinity levels *viz,* M1 (freshwater with 0.42 dSm^{-1}), M2 (2 dSm^{-1}), M3 (4 dSm^{-1}) and M4 (6 dSm^{-1}) were considered as main treatments and three irrigation levels viz, S1 (100% CWR) *i.e.* irrigation at 100 percent of crop water requirement, S2 (80% CWR) and S3 (60 % CWR) were considered as sub treatments. The crop water requirement (ET_c) for the Okra crop during summer season was estimated as 460.4 mm. The results shown that freshwater M1S1 (0.42 dSm^{-1} of salinity at 100 % CWR) recorded higher yield (6.35 t ha^{-1}). The 100 percent CWR recorded significantly higher yields in all salinity levels of irrigation. Increased salinity levels caused yield reduction by 7.4 %, 42.0 % and 62.0 % in the treatment irrigated with salinity levels of 2 dSm^{-1}, 4 dSm^{-1} and 6 dSm^{-1} respectively as compared to the yield obtained by irrigation water salinity of 0.42 dSm^{-1}. The treatment M1S3 (0.42 dSm^{-1} of salinity at 60 % CWR) recorded significantly higher WUE as 0.20 t/ha.cm.

Key words : Drip irrigation, Saline water irrigation, Okra crop, Water Use Efficiency.