

Determining the Most Appropriate Model for Water Uptake Reduction in Rasht Hashmi Rice under Salinity and Water Stress Conditions

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Abstract

Water Uptake by the root under salinity and water Stress in unsaturated soils was investigated through mathematical equations in three Groups of additive, multiplicative and non-consumptive. This study was an effort to assess six water uptake functions of van Genuchten (additive and multiplicative), Dirksen et al., Van Dam et al, Skaggs et al, and Homaei, for Rasht Hashemi rice under salinity and water stress conditions. Based on field observations of Hashemi Rasht rice in 1386 and 1389, crop growth simulation model of SWAP was calibrated and validated with a correlation coefficient of 0.97 and 0.95, respectively. Water Uptake Reduction Models' parameters were determined by the simulated data using SAS statistical software. Results showed that for the anticipated reduction of Water Uptake in rice water and salinity stress conditions for Rasht Hashemi rice, Homaei model is best.

Keyword: Hashemi rice, Water and salinity, Water uptake reduction models, SWAP model.

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