Evaluation of Effective Parameters for Water Uptake through Roots of Trees

H. Salamat, P. Parsamehr, S. Besharat

CSBE08139

Root water uptake is an important process of soil, water and plant relationship and is important component for water balance in the field .This makes a quantitative means of describing root water uptake to be established for efficient water use. The objective of this paper is to evaluate the effective parameters for water uptake through roots of trees in order to improve soil water content.

Among the effective parameters in root water uptake, transpiration (T) had the most effect and was calculated by Penman-Montieth Equation so that, first Evapotranspiration (ET) was estimated and then by separating T and E, according to governing equation actual transpiration was estimated and actual root water uptake was obtained.

In addition to aforesaid experiments, the results of two other articles about water uptake through roots of trees presented by Gong et al and Vrugt et al were used. The results showed that with the optimized root water uptake parameters, measured transpirations were in excellent agreement for all root water uptake models. These results were used to increase water use efficiency.