

# **Water Requirements of Crops under Various Kc Coefficient Approaches by Using Water Evaluation and Planning (WEAP)**

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## **Abstract**

In this study, the Dual-Kc approach within FAO-56 paper was applied by water evaluation and planning (WEAP) to get the Kc parameters (Kcb and Ke) and to calculate the water requirement for various soil textures. The results compared with the outputs of Single-Kc approach for summer and winter crops in addition to trees. The results showed when applying Dual-Kc approach, the water requirements was more compared with the Single Kc approach, except the tomato, eggplant, and Broad bean crop, which decreased by 5%, 4%, and 17% respectively. Also, there was a different in values of coefficient when compare two approaches, it was increased in Dual-Kc approach for wheat by 62% with 20% during initial and end-stage while ranged between 26-58% for trees during all season with more different for other winter and summer crops. The water requirement of crops was different according to soil texture. The net water requirement of wheat was 429 mm and 433 mm for sandy loam and clay loam respectively, with different in irrigation intervals 11 and 12 respectively, while the silt loam was recording water requirement 417 mm with 8 irrigation intervals.