

ABSTRACT

DEVELOPING BASE CROP COEFFICIENTS FOR IRRIGATION MANAGEMENT OF LETTUCE IN RELATION TO CANOPY GROWTH IN THE SAN JOAQUIN VALLEY OF CALIFORNIA

To estimate the water use of head lettuce (*Lactuca sativa*) crop coefficients were developed using a crop production function of yield and applied water. There was a high correlation between applied water and yield. Surface and buried drip irrigation was used on the experiments conducted. Tension readings at depth of 6, 12, 18, and 24 inches were taken to monitor soil moisture tension. Percent canopy was measured using a tape measure and used to schedule irrigations. The polynomial equation that represents the K_c values developed for a crop harvested in the fall is $Y = (-) 0.0255x^2 + 0.2179x + 0.4373$ and an R^2 equal to .96. The polynomial equation that represents the K_c values developed for a crop harvested in the spring is $Y = (-) 0.0474x^2 + 0.2883x + 0.2411$ and an R^2 equal to .1. The K_c curves were developed using a method that a grower or irrigation manager can easily adapt.

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