

ABSTRACT

DETERMINATION OF CROP COEFFICIENT (K_c) OF SOME VARIETIES OF SOME SOYBEAN (*Glycine max* (L.) Meril)

By

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This study aims to determine the crop coefficient (K_c) of several soybean varieties. K_c values are needed to calculate the crop water requirement (ET_c). Crop coefficient (K_c) is the ratio of maximum evapotranspiration to potential evapotranspiration (ET_m/ET_o). K_c value is strongly influenced by the characteristics of the plant, at planting, and the phases of plant growth.

This research was conducted in November 2009 to January 2010, in a plastic house Lampung University. This research was conducted using completely randomized design (CRD) with 3 treatments and 6 replicates. The three treatments were soybean varieties, namely varieties Grobogan (V1), varieties of Willis (V2), and Variety Rajabasa (V3). Data obtained was analyzed by using Analysis of Variances (Anova) with F test and the continued with the Least Significant Difference Test (LSD) at significant level of 1% and 5% to compare the median values among the treatments.

The results showed the average plant height, seed weight and biomass weight of three varieties were not significantly different. Least Significant Difference Test at the average number of leaf, flower number, and number of pods were significantly different. The number of leaves were significantly different at week 4, the number of flowers were significantly different at week 6 to week 8, and the number of pods were significantly different to the 10th week.

The results also showed that the crop coefficients (K_c) in Grobogan variety during early growth, vegetative period, a period of maximum growth, and late growth respective were 0.35, 0.65, 0.94, and 0.21; on Willis variety of crop coefficients (K_c) at the initial growth period, vegetative period, a period of maximum growth, the late growth respective were 0.37, 0.66, 0.96, and 0.20; on the Rajabasa variety K_c values in the early growth period, vegetative period, a period of maximum growth, and late growth respective were 0.37, 0.63, 0.89, and 0.18.

Key words: potential evapotranspiration (ET_o), crop water requirements (ET_c), crop coefficient (K_c)