ABSTRACT

THE INFLUENCE OF DEFICIT EVAPOTRANSPIRATION TOWARD PLANTS GROWTH AND WATER USE EFFICIENCY OF THREE SOYBEAN VARIETIES (Glycine max (L.) Merril)

By

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The objective of this research is to find out the influence of evapotranspiration deficit toward plants growth and water use efficiency of three soybean varieties (Glycine max. (L) Merr.). This research was conducted in the greenhouse, integrated laboratory of Agriculture Faculty, Lampung University on November, 2013 to January, 2014. This research used a Rancangan Acak Lengkap (RAL) consisting of two treatment factors with three times repetition. The fisrt factor was evapotranspiration deficit (E) consisting of E1 (1.0), E2 (0.8), and E3 (0.6), and E4 (0.4). The second factor was variety (V) consisting of Tanggamus (V1), Kaba (V2), and Willis (V3). The result of research showed that evapotranspiration deficit and variety was significantly different whereas the interaction was not significantly different at all growth components, production and water use efficiency . The highest result production was Wiliis (V3) and Kaba (V2) on E1 (1.0) 12.33 gr/pot. The highest value of water use efficiency was Willis (V3). Value factor of Ky showed that Ky<1, it can be concluded that the plants using evapotranspiration deficit treatment was able to survive from drought and the smallest value Ky<1 was Willis variety (V3) on E1 (1.0) was 0.405. Koefisen stress (Ks) variety of Tanggamus, Kaba, dan Willis are 0,8.

Keywords : deficit evapotranspiration, Irrigation, soybean