

ABSTRACT

THE EFFECT OF WATER AVAILABILITY ON GROWTH, PHYSIOLOGICAL CHARACTERISTICS AND THE CONTENT OF SECONDARY METABOLITES OF GINSENG JAWA (*Talinum paniculatum* Gaertn.)

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Availability of sufficient water is very important to meet the water needs of plants. If the amount is too much, it will cause inundation stress, while if the amount is too little, it will often cause drought stress. Water stress can affect the decrease in productivity, but can increase the activity of secondary metabolites related to plant quality. This research was conducted at the Greenhouse, Faculty of Agriculture, Siliwangi University, Tasikmalaya from February to June 2022. This study used a randomized block design with 7 treatments, namely the level of water availability A(50%), B(60%), C(70%), D(80%), E(90%), F(100%), and G(110%) field capacity. Each treatment was repeated 4 times. Data were analyzed using variance with F test and continued with Duncan's Multiple Distance Test with 5% significance level. The results showed that Availability of water affects plant growth index, root weight, root length, content of alkaloids, flavonoids, saponins and tannins, but does not affect growth rate, relative water content, stomatal density, chlorophyll content and net assimilation rate. Availability of water 50%, 60%, 70% and 80% field capacity has a better effect on plant growth index, root weight and root length. Field capacity of 100% had the best effect on the content of alkaloids, flavonoids and tannins, while field capacity of 90% had the best effect on the saponin content of Javanese ginseng so that in this research drought stress did not stimulate the production of secondary metabolites.

Keywords: Water availability, ginseng jawa, secondary metabolites.