

## Increasing Soybean (Glycine Max L) Drought Resistance with Osmolit Sorbitol

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**Abstract :** Efforts to increase soybean production have been pursued for years in Indonesia through the process of intensification and extensification. Increased production through intensification of increasing grain yield per hectare, among others includes the improvement of cultivation system such as the use of cultivars that have superior resistance to drought. Increased soybean production has been through the expansion of planting areas utilizing available idle dry land. However, one of the constraints faced in dryland agriculture was the limited water supply due to low intensity of rainfall that leads to low crop production. In order to ensure that soybeans are cultivated on dry land remains capable of high production, it is necessary to physiologically engineer the soybean with open stomata. The study was conducted in the greenhouse of Balai Penelitian Tanaman Serealia (BALITSEREAL) Maros, Sulawesi, Indonesia with a completely randomized block design h factorial pattern. The first factor was the water stress stadia while the second was the amount of sorbitol osmolit concentration application. Results indicated that there was an interaction between the plant height growth and number of leaves between the water clamping time and concentration of the osmolit sorbitol. The vegetative stage especially during flowering and pod formation was inhibited when the water was clamped, but by spraying osmolit sorbitol, soybean growth in terms of its height and number of leaves was enhanced. This study implies that the application of osmolit sorbitol may enhance the drought resistance of soybean growth. Future research suggested that more work should be done on the application of osmolit sorbitol to other agriculture crops to increase their drought resistance in the drylands.

**Keywords :** DROUGHT, engineered physiology, osmolit sorbitol, soybean

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