In Vitro Selection of Soybean *(Glycine max* (L.) Merrill*)* Osmotic Resistant Using PEG 6000. Advised by Dr. Netty Ermawati, SP and Ir. Nantil Bambang Eko Sulistyono, M.Si.

Lita Kusumayanti
Seed Production Techniques
Agriculture Production Department

ABSTRACT

Drought stress is one of the most important environment stresses effecting agriculture productivity. Selection of the crops is an important stage to obtained the varieties which are tolerance to unfavorable conditions. The objective of this study was to select the osmotic tolerant of soybean varieties determinate using analysis of growth and protein patterns. The research was carried out using Randomized Block Design with two factors, first factor was concentration of PEG 6000 and the second was soybean varieties (Dering 1 and Wilis). The result showed that the additional of 15 % PEG 6000 in the media of Dering 1 was significantly increase in the rate of root emergence (42,51 %), high planlets (54,71 %), roots length (57,83 %), number of roots (54,04 %), colors of planltes (61,90 %) and number of leaves (57,14 %) compared to that the Wilis. Analysis on the soluble protein content show that the Wilis accumulated soluble protein slightly higher compared to the Dering 1 which tends to be more stable by increasing level of stresses. There was no difference in the protein patterns during osmotic stress in both of varieties. Morphologically Dering 1 showed more resistance to osmotic stress, however further physiologically analysis needs to be done to clarify it.

***Keywords*:** In-vitro, PEG 6000, soybean, osmotic resistance.