

## ABSTRACT

**Suprpto, Akhmad. 2011. Increasing Viability Tobacco Seed (*Nicotiana tabacum* L) by Osmoconditioning Polyethylene Glikol (PEG) 6000.**  
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Key Words: Polyethylene Glycol (PEG) 6000, Viability, Tobacco Seed (*Nicotiana tabacum* L).

To conserve a germplasm in a form of seeds (such as tobacco seeds), seeds are often conserved at low temperature to address the viability decline due to environmental flogging. But the low temperature storage frequently affects seed skin hardening, making the seeds impermeable to water. Skin seed impermeability often disturbs the seed germination. To solve these problems, the seeds can be immersed in an osmotic solution, such as PEG. This can improve the imbibition process so that the seed can germinate more quickly and improve seed germinability.

This research was being held in the Ecology Laboratory, Department of Biology, Faculty of Science and Technology, the State Islamic University of Maulana Malik Ibrahim Malang during the period of May up to June 2011. This research employed experimental quantitative research design using factorial experiment (FE) with 2 factors treatment and 3 replications. First treatment used a concentration of *Polyethylene Glikol* (PEG) 6000, as much as 0 ppm (L0), 5 ppm (L1); 10 ppm (L2), 15 ppm (L3) and 20 ppm (L4). Second treatment is the use immersion duration, i.e 3 hours, 6 hours and 9 hours. The parameters observed included Capacity Germination, Time Germination, Germ Length and Root Length. To determine if the effect was significant, the data of counted digestibility result were analyzed using One Way Anova. To assure if there was any real influence, the Duncan Multiple Range Test (DMRT) and Polynomial Orthogonal were employed at 5% level of significance.

This research result indicated that there was a viability increase of tobacco seed (*Nicotiana tabacum* L), i.e on germinability, accelerating germination duration, hypocotil length, and root length. At a low concentration up to 10 ppm, PEG can increase a tobacco seed viability. The best immersion duration treatment in PEG solution is 3 hours. In addition, the interaction of immersion duration and a concentration on seed viability is 5 ppm concentration with 3 hour immersion duration. The effect can be observed in increased germinability, hypocotil length and root length.