

## **ABSTRACT**

### **THE INFLUENCE OF MATURITY LEVEL AND RAPID AGEING WITH SATURATED ETHANOL VAPOR TO GREEN BEAN (*Phaseolus vulgaris* L.) SEED VIABILITY**

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Seed with high vigor is the ones harvested after obtaining maturity physiologically. The rapid ageing method using saturated ethanol vapor can see the difference of seed vigor by its maturity levels. This research objective is to find out the influence of maturity level and rapid ageing with saturated ethanol vapor to green bean seed viability.

The green bean seed harvesting was conducted in the field of State Polytechnic of Lampung that produces three levels of maturities. The green bean seed viability was tested in Seed Laboratory and Plant Breeding in Agriculture Faculty of Lampung University from June to September 2011. Treatments were ordered in factorial (4x3) in split plot of perfect randomized group design in three groups. The rapid ageing using saturated ethanol vapor as the main plot was conducted in 0, 20, 40, and 60 minutes duration. The maturity levels as the sub plot were 60, 67, 74 days after planting. An experiment contained 36 experiment units. Variance homogeneity amongst treatments was tested using Bartlett test and additional linear model was tested using Tukey test. If the assumption was fulfilled, data were analyzed for its variance, and median value was separated using honestly significant difference (HSD) in 5% level.

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The results showed that (1) the influence of rapid ageing using saturated ethanol vapor produced sprouting speed and the longest hypocotyls came from the 20 minutes rapid ageing, while the shortest hypocotyls came from 60 minutes of rapid ageing, (2) the influence of maturity levels produced the sprouting speed, normal and strong sprout, and the longest hypocotyls came from 67 days after planting maturity level, while the shortest hypocotyls came from 74 days after planting maturity level, and (3) the influence of interaction between rapid ageing using saturated ethanol vapor and the level of maturity showed that seeds with 67 days after planting maturity level in 20 minutes rapid ageing produced the highest length of primary root and dry weight of normal sprout.

Keywords: maturity level, rapid ageing using saturated ethanol vapor, green bean