

ABSTRACT

Hikmah, Dzaakiyatul. 2011. The Influence of Temperature and Long Storage to Viability of Cotton Seed (*Gossypium hirsutum* L). Thesis. Biological Department. Science and Technological Faculty. The State Islamic University of Maulana Malik Ibrahim Malang.

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Cotton is one of important fiber group plant in Indonesia. It is because cotton has many significant uses. The inclining of cotton production in domestic country caused by several factors, for example the low of cotton vigor so as the seed hard to sprout out. In this case, the storage of qualified seed using high technology is needed. Besides that, it is important to fulfill the need of seed for next cultivating supply and for long-time period purposes.

The technical storage of cotton seed can be done for examples cryopreservation technique (technical storage in the lowest temperature), this method important in long storage seed plasma. This research purposes to understand (1) The temperature influence to cotton seed viability (2) the long storage influence to cotton seed viability (3) the influence of temperature and long storage interaction to cotton seed viability. This research has done in June until August 2011 in Biological Laboratory, The State Islamic University of Maulana Malik Ibrahim Malang.

It is kind of experimental research with complete set random (RAL) factorial using 2 factors, 12 perpetration combination and 3-times repetition. First factor is temperature storage that insist of 4 levels those are deep freezer temperature freezer (-70°C), freezer temperature (-5°C), refrigerator temperature (3°C) and space temperature. Second factor is long storage that insists of 3 levels, those are: (L₁) 30 days, (L₂) 60 days and (L₃) 90 days. Both factors are combined and analyzed the influence into viability (sprout capacity, vigor, germination period and long-sprout). Data analysis technique using ANOVA in two lines and continued by advanced experiment using Duncan Distance Test (DMRT) in 5% level.

The result shows that (1) There is temperature storage influence into viability of cotton seed included sprout capacity, vigor, long-sprout and germination period. (2) There is long-period storage influence into viability of cotton seed included sprout capacity, vigor, long-sprout and germination period. (3) There is influence between temperature and long-period storage interaction into viability of cotton seed included sprout capacity, vigor, long-sprout and germination period.