ABSTRACT

MAIZE INBRED EVALUATION PIONEER AND SRIKANDI PEDIGREE OF SELF-12 GENERATION AT HIGH POPULATION DENSITY

By

Tri Ardini

The ultimate objective in any breeding program is the increased yield. Increasing yield can be achieved through the use of improved varieties. Inbred as a prospective elders is needed to establish improved varieties. Establishment and maintenance of inbred is important in plant breeding. Maintenance of existing inbred can be done by replanting and self pollinated. Inbred seed multiplication also needs to be done. Through this, the existing inbred expected to remain stable, so it can be utilized as germplasm for the benefit of a cross.

The research proposed to (1) find out the vegetative and generative performance of four inbred lines are grown at high density; (2) find out h^2bs and σ^2g of four inbred lines are grown at high density.

The treatments were arranged in Randomized Complete Design with three replicates . Planting material used were inbred seed of self-12 generation, that is UL1.02 (Lampung University 1.02), UL1.04, UL1.06, and UL4.01. Observational data are averaged, then Bartlett and the Levene test for homogeneity prior to analysis of variance. Data were analyzed using Analysis of Variance (Anova). All of observed variables was compared with standard inbred. The mean squares of the Anova are used to estimate σ^2g and h^2bs based on mathematical model Hallauer and Miranda.

The results showed that (1) four inbred lines are grown at high density will decrease the vegetative and generative performance when compared to previous generations planted at normal density. It is more due to the high density factor, rather than genetic factor; (2) four inbred lines are grown at high density will decrease σ^2g and h^2bs when compared to previous generations planted at normal density.

Key words: maize, inbred lines, high population density, genetic variability, broad-sense heritability.