

ABSTRACT

EVALUATION SEED VIABILITY, RESILIENCE AND RECOVERY PLANT CORN THE FOUR PEDIGREES INBRED SAVED MORE THAN TWELVE MONTHS

by

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One effort to increase the productivity of maize is to develop high yielding varieties of high yielding and adaptable to particular environmental conditions. Varieties development begins by establishing inbred strains or lines as potential parents. Inbreds are individual with a high degree of homozygote achieved through self repeatedly. Seeds that have been stored for 12 — 24 months decreased in their viability. Decrease in viability can be prevented by good seed storage techniques. To obtain seeds with high initial quality, cropping environments including soil cultivated in optimal conditions. One way is by fertilizing. Scarcity of fertilizers happened to cause the delay of fertilizer application in early plant growth. Thus, inbred need to be selected in order to withstand the absence of starting fertilizer at seedling stage for 25-30 days after planting (dap). Strong seedling vigor will be able to survive even in a state of no fertilizer. Recovery is necessary to look to increase seed vigor and

produce a normal crop. NPK fertilizer is expected to stimulate vegetative growth of plants that help plant recovery.

This study aims to (1) evaluate the viability of the seed corn that has been stored for more than 12 months; (2) determine plant survival without additional fertilizer until age 28 dap; and (3) evaluate the recovery of crops after the addition of fertilizer.

Treatments were prepared in Randomized Complete Block Design (RCBD) with three replications. Plant materials used were four inbred seeds : UL4.01 (Srikandi pedigree), UL3.03 (BiSi 3 pedigree), UL2.03 (Cargill 3 pedigree), and UL1.04 (pedigree Pioneer 4). Homogeneity of variation was analyzed using Bartlett's and Levene's test. Data for all the variables stem length, root length, number of root branches, number of leaves, dry weight stem, and root + the remaining seed dry weight were analyzed using Analysis of Variance (ANOVA) with Minitab 14. If the results obtained by the analysis of a variety were significant, then the inbreds were ranked using Honestly Significant Difference (HSD) 0,05. Growth rate was analyzed by the trend line using Microsoft Excel.

The results showed that (1) four pedigrees of inbred corn seed had a percentage viability > 86% in the order of: 95% UL4.01, 100% UL3.03, 94% UL2.03 and 100% UL1.04; (2) the four pedigrees of inbred maize will survive without fertilizer for 28 dap; and (3) after the application of fertilizers, the four pedigrees of inbred maize did not show the recovery.