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Influence of Priming, Dressing and Agroecologies on Storage of Selected Soybean Genotypes

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The demand for soybeans in Kenya is high yet production is negligible due to various challenges, one of which is lack of planting seeds during short rains. Soybean seed has been known to deteriorate rapidly in the tropics but the rates vary with the environment, initial quality of the seed and genotype. The current research aimed at determining the effect of priming methods on soybean seed storage shelf life in Meru South. A seed storage trial was done to assess the effect of agro-ecology, genotype, seed dressing and storage materials on soybean seed longevity and vigor. Soybean genotypes tested Gazelle and TGx 1740-2F(SB19) were dressed with wood ash and Apron star[®] and stored in sealed plastic cans and synthetic gunny bags in farmers stores at Kirege (UM II) and Igambatuntu (LM IV) in Meru South. Monitoring of seed quality during 8 months of storage was done by moisture content, germination, electrical conductivity and accelerated ageing tests at Muguga Labs. The effects of osmo and hydro-priming seed invigoration techniques on soybean seed quality and storability of primed seed was assessed. The seed storage study showed that hermetic storage in sealed plastic Jeri cans, seed dressing with wood ash and storage in cooler agro-ecologies (UM2) was found to be effective and low cost seed storage method for enhancing soybean seed viability and vigor. Soybean genotype SB19 had higher viability, longevity and vigor than Gazelle. Priming enhanced seed vigor by reducing seed leachates, but reduced germination. We conclude that seeds should be produced in low altitude and stored in higher altitude and best way was to prime with PEG -1.0

Key words: hydro-osmopriming, electrical conductivity, genotype, seed viability, longevity, vigor,