Abstract

The objectives of the study were to evaluate seed storability and vigor of upland, lowland and swampy rice genotypes. The experiments were conducted in the Seed Science and Technology, Bogor Agricultural University from April to August 2011. Preliminary experiment indicated that the appropriate duration of rapid aging with 40-45°C and 100% RH, for testing seed storability (VDS) were 40, 60, and 48 hours for lowland, upland, and swampy rice seeds respectively. The appropriate methods for testing vigor to drought were UKDdp using strawpaper treated with Polyethylene Glycol (PEG-6000) -2.0 bar (VKt kekeringan (PEG) method) and UKD method using stencil paper placed on 2 cm depth standing water, where the seed located at 30 cm above water surface (VKt kekeringan (ketinggian) method). VKt kekeringan (ketinggian) method was the best one since the method was simpler and cheaper than the other. The appropriate method for testing vigor to salinity was UKDdp using strawpaper treated with 4000 ppm NaCl (VKt salin (NaCl)). Rice seed of 50 genotypes consisting of 10 lowland, 20 upland, and 20 swampy were evaluated with the appropriate methods for storability, vigor to drought and vigor to salinity. There were no significant coefficient correlation among storability, vigor to drought and vigor to salinity. In other evaluation, no similarity was observed on the best five genotypes for VDS and VKt kekeringan (PEG), VKt kekeringan (ketinggian), and VKt salin (NaCl). Genotype with highest storability were B12539-7-SI-1-1-MR-2-PN-3-1, B12154D-MR-22-8, and B13109-5-MR-3-KA-1 for lowland, upland, and swampy respectively. Genotypes with the highest vigor to drought were Sintanur and B12653-MR-8-2-PN-3-1 for lowland, B12154D-MR-22-8 for upland rice, whereas genotype with the highest vigor to salinity for swampy rice was B13120-19-MR-2-KA-1.

Keywords: rapid aging, vigor, rice genotypes, Oryza sativa L.