

ABSTRACT

Developing hybrid maize varieties with early maturity and high productivity is one solution to increasing maize productivity in dryland areas. Plants with early maturity character will avoid stressful conditions on dry land, thus producing maximum maize production. The research was conducted in three districts on Madura Island, East Java Province, Indonesia: Bangkalan, Pamekasan, and Sumenep. Each research location used a non-factorial randomized block design with one treatment, namely genotype. The genetic material used in the research comprised 20 genotypes, including 18 hybrid maize candidates and two comparison varieties (Bisi-X and Pioneer-X). Each treatment was replicated three times, resulting in 60 experimental units. The results of the AAMI variance analysis for harvest age and production per hectare for 18 hybrid maize candidates and two comparison varieties showed that there were very significant effects of environment, genotype, and genotype by environment (GxE) interaction. Four candidate hybrid maize varieties had stable harvest ages in three locations (Bangkalan, Pamekasan, and Sumenep): G3, G14, G17, and G18. In contrast, five hybrid maize candidates had stable production per hectare in three locations: G2, G4, G5, G8, and G10. Three candidate hybrid maize varieties recommended for release were G2, G4, and G5. These three candidate hybrid maize varieties had early maturity (<95 days), high yield per hectare (exceeding those of the two comparison varieties), and high stability across all location