

Abstrak

Morphological characterization and identification of drought-stress resistance in maize germplasm are the initial steps toward developing maize varieties with high yield and drought stress resistance. This study used a non-factorial randomized block design with one treatment (genotype) and was repeated three times. The genetic material used in the research consisted of 22 genotypes, comprising 20 pure lines and two comparison varieties (Bisi-X and Jakarin). Twenty maize lines were characterized using 58 morphological characters and tested for drought resistance. The research results showed that the dendrogram of morphological characters in the 20 tested lines was classified into two groups, with a similarity coefficient of 0.47-0.95, indicating a diversity of 0.05 - 0.53. The average DSI value indicated that 12 maize lines were drought-stress-resistant, namely G1, G2, G3, G4, G6, G7, G8, G10, G11, G12, G13, and G20. Four maize lines (G14, G15, G16, and G17) had high production character. G1xG16, G1xG17, G2xG16, G2xG17, G3xG16, G2xG17, G8x16, and G8xG17 were cross combinations that can be used to produce hybrid maize varieties with high yield and drought resistance, as they are morphologically distant.