

Grain quality performance and heritability estimation in selected F1 rice genotypes

Abstract

A total of 17 rice genotypes consisted of 12 F1 progenies and five parental lines were evaluated for performance of grain qualities, yield and yield components and vegetative traits at the Malaysian Agricultural Research and Development Institute (MARDI) Research Station in Seberang Perai, Penang. Except grain length, all other grain quality characters, yield components and vegetative traits varied significantly among the genotypes. Among the studied characters, the highest heritability value was observed in plant height with 99.75% followed by panicle length having 96.90% and grain shape with 56.70% which could be successfully inherited to the next generations. The rest of the traits had low heritability values and ranged from 20.24 to 35.88%. This indicates that the characters are mainly influenced by environmental factors such as geographical effects and climate. However, in the quantitative traits such as grain qualities and yield components, they are usually difficult to inherit to the next generation due to low heritability values. The combinations of Q76 and MR84 had the highest in amylose content while Q76 and MRQ74 had the lowest. Several selected F1 indica rice genotypes from this evaluation are useful for future breeding programme and biotechnological research for the improvement of valuable grain quality traits.

Keyword: Grain quality characters; Heritability; Indica rice genotypes; *Oryza sativa* L.