

Performance of yield and yield contributing characteristics of BC₂F₃ population with addition of blast resistant gene

ABSTRACT

The study was carried out in the University Putra Malaysia (UPM) Rice Research Centre to evaluate the yield performance of newly developed selected blast resistant plants of BC₂ F₃ generations derived from a cross between MR263, a high yielding rice variety but blast susceptible and Pongsu Seribu 1, donor with blast resistant (Pi-7(t) and Pi-d (t)1, Pir2-3(t) genes and qLN2 QTL), Malaysian local variety. On the basis of assessed traits, the plants 12, 6, 7, 5, 21, 22, 5, 26, 11, 8, 10, 13 and 15 had the higher yield, blast resistant and good morphological traits. More than 70% heritability was found in days to maturity, plant height, tiller numbers per hill, and panicle per hill, 80% heritability was found in filled grain and yield per hill and more than 90% heritability was found in grain length, grain width and seed weight. Cluster analysis based on the traits grouped 30 plants along with MR263 into seven clusters. According to PCA, the first four principal components account for about 69.3% total variation for all measured traits and exhibited high correlation among the characteristics analyzed.

Keyword: Yield; Rice; Fungi resistance