

Identifikasi Marka Polimorfik untuk Pemuliaan Padi Toleran Defisiensi Fasfor

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Abstrak

Identification of Polymorphic Markers for Breeding of Rice Tolerant to Phosphorus Defficiency. Joko Praseti- yono, Hajrial Aswidinnoor, Sugiono Moeljopawiro, Didy Sopandie, and Masdiar Bustamam. Information on poly- morphisms among rice parents are very important in rice breeding for tolerance to phosphorus defficiency. A study was conducted at the Molecular Biology Laboratory, Indonesian Center Agricultural Biotechnology and Genetic Resources (ICABIOGRAD) from October 2006 to July 2007 to identify polymorphism markers from 6 rice genotypes. The rice genotypes, i.e., Dodokan, Situ Bagendit, Batur, Kasalath, NIL-C443, dan K36-5-1-1 were analyzed for polymorphisms using 496 SSR markers, which cover the rice genomes. Seven of the 496 markers were used as foreground and recombinant selection markers, and the rests (489 markers) were used as background selection markers. PCR amplifi- cations were separated on a 5% polyacrylamide gel and colored by the silver staining method. Three different mar- kers among the seven foreground and recombinant selec- tion markers were selected from each crossing, which are tightly linked with Pup1 gene and have a distance less than 5 cM. These markers are Dodokan vs Kasalath (RM277, SSR3, RM519), Dodokan vs NIL-C443 (RM277, SSR3, RM519), Dodokan vs K36-5-1-1 (RM277, SSR3, RM519), Situ Bagendit vs Kasalath (RM28102, SSR3, RM519), Situ Bagendit vs NIL-C443 (RM28102, SSR3, RM519), Situ Bagendit vs K36-5-1-1 (RM511, SSR3, RM519), Batur vs Kasalath (RM277, RM1261, RM519), Batur vs NIL-C443 (RM277, RM1261, RM519), and Batur vs K36-5-1-1 (RM28102, SSR3). Variations in back- ground selection primers were found in each chromosome and in each parent combinations. Primers on chromosome 4, 5, and 12 showed the lowest polymorphisms; more primers are needed for these chromosomes.