Karakterisasi Kemiripan Genetik Koleksi Inbrita Jagung berdasarkan Marka Mikrosatelit

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Abstrak

Microsatellite Marker-based Genetic Characterization of Indonesian Maize Inbred Collections. Marcia B. Pabendon, M. Dahlan, Sutrisno, and M. L. C. George. Information on genetic relationships among available crop germplasm such as maize inbred lines, has important implications to breeding programs. A set of 26 maize inbreds togeher with six standard lines from CIMMYT (CML51, CML292, CML202, CML206, CML236, dan CML396), was characterized using 26 SSR markers, which were coverage of the maize genomes. The objective of this study was to analyze genetic diversities among the Indonesian maize inbred collections. Polymorphism Information Content (PIC) value and the observed genetic distance indicated the existence of large variabilities among the inbreds. Cluster analysis based on 27% of the Jaccard's similarity coefficient placed the inbreds into three groups. Genetic distances among all the possible pairs without the standard maize lines varied from 0.32 (KSX360F2-5-1-3-1v vs KSX2601F2-5-1-1-v) to 0.88 (PT963298-1-B-B-Bv vs Mr13). Cluster and Principal Coordinate Analysis of the genetic distances, revealed a clear differentiation of the inbred lines into groups according to their source populations. This clustering were consistent with those of the known pedigree records of the inbreds based on their morphological characters. These results support the use of morphological traits in the production of maize hybrids. The SSR markers proved to be effective to characterize, identify, and demonstrate genetic similarities among the maize inbred lines.