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Genetic Diversity Revealed by SSR markers in 243 Korean Rice Varieties

Me-Sun Kim[1], Sothea Ouk[1], Franz M. Nogoy[1], Kwon-Kyoo Kang[2], Sun-Hee Woo[1], Yong-Gu Cho[1]*

[1]Department of Crop Science, Chungbuk National University, Cheongju 28644, Korea
[2]Department of Horticulture, Hankyong National University, Ansung 17579, Korea

[Introduction]
Molecular markers are useful tools for evaluating genetic diversity and determining cultivar identity. In this study, we examined the genetic distance among Korean rice varieties using allele frequencies and a genetic diversity analysis with Simple Sequence Repeats (SSRs) markers.

[Materials and Methods]
The analysis of the genetic diversity and genetic relationships of 243 Korean rice varieties was varied out using 20 SSRs markers.

[Results]
A total of 268 alleles were detected, ranging from 6 to 32, with an average of 13.45 alleles per locus, and averages of gene diversity (GD) of 0.5554. Seven SSR markers were selected as key markers for discrimination among Korean rice varieties. As the results, 243 varieties (100%) were discriminated by using acrylamide gel and fragment analyzer-based markers. In conclusion, this study provides useful basic data that can be utilized in Korean rice varieties breeding and development. In addition, we will have to manage and conserve as a valuable genetic resource, without losing diversity of Korean rice varieties.

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*Corresponding author: Tel. 043-261-2514, E-mail. ygcho@cbnu.ac.kr