

**ANALYSIS OF INTROGRESSION FROM A TETRAPLOID WILD SPECIES,
Oryza minuta, INTO CULTIVATED RICE, *O. sativa***

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ABSTRACT

Oryza minuta, a tetraploid wild relative of cultivated rice, is an important source of resistance genes to bacterial blight (BB). Advanced backcross progenies (monosomic alien additional lines, MAALs and introgression lines) have been derived from interspecific cross, *O. sativa* × *O. minuta* using *O. sativa* as recurrent parent. Fifty-nine putative MAALs and 158 introgression lines have been examined for the presence of resistance gene(s) from *O. minuta*. Chromosome analysis, screening for BB resistance, isozyme analysis and microsatellite or simple sequence repeat (SSR) analysis were carried out to detect alien introgression. Seventeen plants were detected with an extra chromosome through cytogenetic analysis and have been identified as MAALs. Of 158 introgression lines, 17 were found to be resistant to race 1 (PXO61) of BB of Philippines, but none of the putative MAALs were resistant. Isozyme analysis of 110 backcross derivatives did not reveal introgression from *O. minuta* in all isozymes studied (AMP, SDH, ADH, ICD, GOT, MAL and PGD). However, 11 progenies showed allele 2 of *Adh1* and four progenies showed allele 2 of *Pgd1*, while another 17 progenies showed allele 2 in both *Adh1* and *Pgd1*. All these alleles were not found in both parents. Unfortunately, none of these progenies were resistant to race 1 of BB of Philippines. Introgression was detected using SSR marker. SSR markers showed about 28% polymorphism between *O. sativa* and *O. minuta*. Of the 76 polymorphic SSR markers used, 28 markers detected introgression from *O. minuta*. SSR analysis of the putative MAALs and introgression lines indicated that small segments from *O. minuta* had been transferred into *O. sativa*. The results from this study showed SSR markers are efficient markers for detecting introgression.

