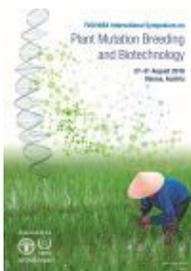


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INITIAL SURVEY OF MUTANTS ASSOCIATED WITH BACTERIAL LEAF BLIGHT RESISTANT GENES IN RICE BASED ON LINKED MARKERS

In Vietnam, bacterial leaf blight is one of the most destructive diseases in rice. A set of 138 mutant rice lines obtained from the original variety by ion beam irradiation was surveyed for mutations associated with Xa4, Xa7 and Xa21 genes based on linked markers MP1-2, P3 and pTA248. When checking PCR products of materials with these markers, the original variety presented the positive control bands at detail size: 170 bp (by MP1-2); 300 bp (P3) and 1000 bp (pTA48). In the set of 138 mutant rice lines, results of PCR by marker MP1-2 showed that there were 95/138 lines (68.8%) at positive control band (170 bp, the same with the original type) and 43/138 lines (31.2%) at negative control band (150 bp, different from the original type). By marker P3 linked with Xa7 gene, results showed 80/138 lines (42%) at positive control band (300 bp) and 58/138 lines (42%) at negative control band (250 bp). By marker pTA248 marker linked with Xa21 gene, there were 60/138 lines (43.5%) at positive control band (1000 bp) and 78/138 lines (42%) at negative control band (800 bp). Ratios of mutants associated with bacterial leaf blight resistant genes in the initial survey based on linked markers are: 31,2% mutants associated with Xa4 based on MP1-2; 42,0% mutants associated with Xa7 based on P3) and 56,5% mutants associated with Xa21 based on pTA248. It is indicated that there were different effects of ion beam on different gene regions. In other side, this result is also helpful to select the mutant rice line remaining the resistant genes for breeding program.

Country or International Organization

Vietnam

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