

## GENE PYRAMIDING OF FOUR BLB RESISTANT GENES (XA4, XA7, XA13 AND XA21) FROM IRBB65 INTO MAHAMAYA USING MAS.

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**Abstract:** Bacterial blight (BB) of rice (*Oryza sativa*) caused by *Xanthomonas oryzae* pv. *oryzae* (Xoo) is currently one of the most important diseases limiting rice production and it has become widespread in India. This disease was first noticed by the farmers of Japan in 1884 (Tagami and Mizukami 1962). Enhancing genetic resistance has proven to be the most effective control method for controlling the disease. Four bacterial blight (BB) resistance genes, *Xa4*, *Xa7*, *xa13* and *Xa21*, were introgressed into an elite rice cultivar. Marker assisted selection was done using linked molecular markers for genes *Xa4*, *Xa7*, *xa13* and *Xa21*. The ability to quickly and reliably select desirable material and to eliminate individuals that contain deleterious alleles is critical to the success of the plant breeding program (Dubcovsky 2004). We report here in two gene pyramids *Xa7+ Xa21* in 5 lines and *Xa4+Xa7* in 1 line. Genes in combinations were found to provide high levels of resistance. Besides pyramids a set of 8 genotypes with only *Xa7*, 2 genotypes with only *Xa13* and 5 genotypes for *Xa21* were also found in this study. High resolution maps generated *in-silico* around *Xa4*, *Xa7*, *xa13* and *Xa21* can be useful for the precise placement of a gene of interest, analysis of regional and sub regional rates of recombination and appropriate combinations of markers for marker assisted selection.

**Keywords:** Gene Pyramiding, Bacterial blight, Resistance genes, Polymerase chain reaction, Marker Assisted Selection *Xanthomonas oryzae* pv. *oryzae*, MAS, Pyramiding

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