

MOLECULAR - MARKER - ASSISTED SELECTION FOR BLAST RESISTANCE IN RICE BC₃F₁ POPULATION OF *POKURU SAMBA* x TETEP CROSS

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Rice blast is a serious disease caused by the fungal pathogen *Magnaporthe grisea* (anamorph - *Pyricularia grisea*), which limits rice yield in the major rice growing regions of the world. Complete genetic resistance (vertical resistance) is conferred by major blast R genes named as *Pyricularia* genes or *Pi* genes. The study aimed at selecting blast resistant plants in BC₃F₁ population of *Pokuru samba* x Tetep cross. This study reports the introgression of rice blast resistance genes from Tetep into *Pokuru samba* rice cultivar, leading to the development of blast resistant lines through marker assisted selection (MAS). Individual plants in BC₃F₁ population were selected using simple sequence repeat markers. The SSR markers RM206, RM224, which are linked to the blast resistant genes *Pikh* and RM246 linked to the blast resistant genes *Pit(p)* in the variety Tetep, were used to select blast resistant plants in BC₃F₁ population. Out of viable plants obtained from BC₂F₁ x *Pokuru samba* cross (108) in the study population, only 40 plants were selected based on morphological characters. Only ten plants of these 40 showed blast resistance gene with marker RM224. Significantly large number of heterozygous plants were obtained for the marker RM224. Therefore among three markers RM224 marker is more suitable to select blast resistant plants of BC₃F₁ population. The selected ten plants in BC₃F₁ population by RM224 can be used for advancing the breeding programme.

Keywords: Blast resistance, *Magnaporthe grisea* (anamorph - *Pyricularia grisea*), Marker assisted selection, Molecular markers, Tetep