

PHENOTYPING OF ADVANCED BACKCROSS PROGENIES DERIVED FROM TELLAHAMSA AND MTU1010 RICE VARIETIES FOR BB RESISTANCE

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ABSTRACT

Bacterial blight (BB) and rice blast are the two most important diseases causing significant yield loss in rice, and they are endemic to several rice growing states of India. In Telangana, the yield loss is very severe due to BB and blast. In order to address the above said issues, the efforts have been made and developed MTU1010 (BC₄F₅) and Tellahamsa (BC₃F₄) introgression lines with bacterial blight (*xa13* and *Xa21*) resistance genes by Institute of Biotechnology, Hyderabad, Rajendranagar. GPP2 was used as a donor for bacterial blight resistance genes (*xa13* and *Xa21*). In continuation to a DBT funded research project the present research study entitled “Phenotyping of advanced backcross progenies derived from Tellahamsa and MTU1010 rice varieties for BB resistance” has been designed. 25 Progenies were screened for BB resistance along with resistant donor parent, GPP2; susceptible check, TN₁ and recurrent parents, MTU1010 and Tellahamsa. A highly virulent isolate of *Xoo* (IX-020) from Indian Institute of Rice Research (IIRR) was used for BB screening. Out of 25 progenies, 23 progenies recorded resistance score of “1” where as two progenies were moderately resistant with a score of “3”. These genes were found to be very effective in all the genetic backgrounds (23 out of 25 showed resistance, while 2 were with moderate resistance). The results revealed that *xa13* and *Xa21* genes individually and together offered high level of resistance compared to recurrent parents. However it is always preferred to use pyramided lines rather than lines with single resistance gene to avoid break down of resistance genes.