

**Research Article** 

## Reaction of rice (Oryza sativa L.) cultivars to blast population

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## **SUMMARY**

The research work was undertaken at College of Agriculture, Raipur, in association with College of Agriculture and Research Station, Ambikapur and Jagdalpur Chhattisgarh India, with the objectives of identifying functional resistance conferring genes in Chhattisgarh state, monitoring resistance in some genotypes/breeding lines and detecting variability in the blast population over the years. The experimental materials consisted of (a) a set of thirty one blast monogenic / differential lines along with seventy nine other genotypes including breeding lines, resistant and susceptible checks, were tested at blast 'hot spots' Ambikapur for three years (2007-2009) and Jagdalpur in 2007. The blast population in the Northern Hilly Region proved highly unpredictable and comprised of more than two highly virulent races. Breakdown of many resistant strains and genes occurred during the study, which could be attributed to changes in the frequency of pathogenic races prevailing over the years. Among the blast differential genes (monogenic lines) tested, only '*Pi*-*z*<sup>5</sup>' gene consistently imparted complete resistance against the blast population in the Northern Hilly Region of Chhattisgarh, *Pi*-*z*, *Pi*-9 and *Pi*-*k*<sup>h</sup> provided variable level of resistance. On the other hand four genes *Pi*-*z*<sup>5</sup>, *Pi*-*z*, *Pi*-9 and *Pi*-*k*<sup>h</sup> were functional in Bastar Plateau (Jagdalpur). The severity of blast disease was considerably higher at Ambikapur station than at Jagdalpur so only one centre (Ambikapur) could be reliably used to conduct screening trials. The race of the fungus at these two sites seems to be different. Eight strains *viz.*, R 1518-762-3-564-1, R 1519-781-5-598-1, R 1540-1888-1278-1, R 1558-2423-3-1445-1, B 6441-FMR-6-0-0, F 7-10, IR42221-145-2-3-2 and 5173 showed consistently stable resistant reaction over the years.

Key Words : Rice, Blast, Resistance

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