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Identification and validation of a microsatellite marker for the seedling resistance gene *Lr24* in bread wheat

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The background of PBW343, the high yielding and widely cultivated bread wheat cultivar of the Indian sub-continent was utilized. We were able to identify specific microsatellite markers for *Agropyron elongatum* derived seedling resistance gene *Lr24*. The two markers, Xgwm114 and Xbarc71 were mapped at a distance of 2.4 cM from *Lr24* locus. They can be unquestionably utilized as landmarks for identification of these genes. An F₂ population segregating for *Lr24* and *Lr48* in the background of PBW343 was utilized for this study. Though phenotypic reaction of the plants of the progeny populations to leaf rust infection was recorded in the seedling stage, it was difficult to perform the same in the adult plant stage as more than one gene effective against the same pathogen act mutually, thus, making it difficult to interpret and differentiate the resistance reaction of each of the two different genes. This is a major aspect of concern for many plant breeders in various gene pyramiding experiments since differentiating virulences of pathogens for each and every gene utilized cannot be available within all geographic locations. Molecular markers play a significant role in all such cases.

Biography

I am Anupam Singh, a postgraduate in Biotechnology from Guru Ghasi Das University, Bilaspur, India. I submitted my thesis on "Molecular marker assisted selection for leaf rust resistance in wheat (*Triticum aestivum* L.)" for the award of Ph.D. to G.G.S. Inderprastha University, Delhi, India. Presently, I am working as a Senior Research Fellow in a research group led by Dr. K. V. Prabhu (JDR) at Indian Agricultural Research Institute, New Delhi in the project "Biotic Stress- Rust(Ug99)" funded by the ICAR (Indo-Australian Project).

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