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Improvement of rice variety PAU 201 through marker assisted selection for grain color and bacterial blight resistance

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PAU 201, a very high yielding medium duration rice variety was released for cultivation in Punjab state in 2007, however, due to red pericarp color; the variety did not meet the specification of Food Corporation of India and was officially withdrawn in the year 2010 for cultivation in Punjab. Due to high yield potential, this variety covered more than 20% area in Punjab in two years after its release. In addition to red pericarp, this variety had only one bacterial blight resistance gene xa13. The red aleurone is due to single gene, designated as Rc7 and is located on chromosome 7. Both these genes are cloned and gene based primers have been designed. Due to consistent demand from farmers for improvement of this variety, we have improved this variety through MAS by replacing Rc7 allele with recessive allele *rc*7, and additional bacterial blight resistance gene *Xa*21. A set of BC_2F_4 progenies selected for white grain color and bacterial blight resistance having more than 90% of the recurrent-parent genome were evaluated for yield and yield components. Lines that significantly out-yielded the recurrent parent and the check cultivars in station trials are evaluated at multiple locations in national-level nurseries for identifying the lines that could be released as varieties. These lines, in addition to being released as cultivars, can also be used as immediate donors for further improvement of rice cultivars.

Speaker Biography

Ms. Rupinder Kaur is a Project Fellow with Department of Fruit Science, Punjab Agricultural University, Ludhiana 141 004, India. She is presently working with the objective of Standardization of high density planting and canopy architecture for high productivity and better fruit quality in low chill peach. Previously her research was concerned with the Varietal development for biotic stress resistance and yield improvement in rice through marker assisted selection. Ms. Rupinder attended the conferences and presented posters. She has published three scientific papers, five abstracts and one review paper in national and international journals of repute.

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