

**Poster**

**SOMACLONAL VARIATION FOR RICE IMPROVEMENT**

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**ABSTRACT**

Somaclonal variation is the occurrence of variants among plants derived from *in vitro* cultures. It is a way of generating genetic variation and is a powerful tool for the production of favourable traits. Seeds of Bg 250 (a short duration rice variety cultivated mainly as drought or flood escape purpose in both flood and drought occurrences) were cultured on callus induction in MS medium supplemented with 2.5 mg/l of 2, 4-D, and 0.5 mg/l Kinetin. Induced calli were transferred for regeneration in MS medium supplemented with 1 mg/l Benzyl Aminopurine, 1 mg/l Kinetin and 0.5 mg/l Napthalene Acetic Acid. Five plants were regenerated and they were subjected to selfing. Progenies of 15 selected plants from M3 generation and M4 generation were selected considering phenotypic characters such as plant architecture, age and the seed shape. Occurrence of genetic variation was observed using agarose gel electrophoresis using RM 208 SSR marker which is a linked marker for seed shape. Most of the selected mutants exhibited variations in plant architecture and grain quality characters over the respective parent Bg 250 in phenotypic analysis. Except one line, 14 lines showed higher plant height than 80 cm, while the average height of Bg 250 is 75 cm. Line Numbers 13TC1, 13TC2, 13TC 8, 13TC11, and 13TC13 showed the long slender seed shape. Even though Bg 250 is a white pericarp variety, line number 13T01, 13TC10 and 13TC15 showed red pericarp seed colour. Line 13TC2 which is having long- slender seed shape was selected for the preliminary yield trial. Interestingly any of the rice lines could not be included in the age group of the respective parent and all showed longer ages than their parent. In the agarose gel electrophoresis, some lines showed differences in bands of SSR markers against Bg 250. This study confirms that somaclonal variation is one of the easiest methods in rice breeding to generate genotypic variability in tissue cultured plant population.