B-135 Anther culture response in rice *(Oryza sativa* L.)

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Doubled haploid methodology is now widely used to increase the efficiency of breeding of several crop species. It has ben reported that the method has limited application in Indica rice breeding due to poor response of this sub-species to anther culture. Therefore identification of responding genotypes and improvement of methodology is important for application of the technique to tropical rice breeding.

8 Indica rice varieties were compared for anther culture response with 6 Japonica varieties. Anthers at uninucleate stage were surface sterilized and extracted on to sterile petri dishes and kept at 8°C for 10 days before plating on callus induction media.

4 callus induction media were tested (SK1, SK2, SK3 and N6). The plated anthers were cultured at 25 ± 2°C in total darkness for 2 months. After 2 weeks on callus proliforation medium, the calli were transferred to 2 regeneration media based on MS salts and the cultures were exposed to a 12 h photoperiod using white fluorescent tubes. About 12 - 18% anthers plated were contaminated. The highest callusing % was observed in SKI medium (containing SK salts, 2,4-D, NAA and Kinetin). Of the 7 varieties which responded to the callus induction media used, 4 were Indica genotypes. However, the highest % of callusing (7.61%) was observed in Fujisaka, a Japonica variety. Nevertheless, 'Mahasen' (BG 403) and IR 58 recorded greater % of green plants among regenerated plants. Plant regeneration in MSR2 medium of calli derived on SK2 medium recorded the highest % of green plants in most of the responding genotypes. While testing other Indica genotypes for anther culture respone, 'Mahasen' is now being used in crosses for obtaining doubled haploid homozygous breeding lines to achieve various breeding objectives.

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