

**B-87: Callus induction and plant regeneration in indica variety (BG -450) of rice
(*Oryza sativa* L.)**

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Anther culture and protoplast culture have proved to be useful methods for rice crop improvement. However, very little work has been done in indica varieties. The

objective of this study was to develop a suitable protocol for callus induction and regeneration of a 'samba' variety to be used in a gene transformation project.

Explants such as 2 cm long immature rice leaves, roots, epicotyls and embryos were obtained from improved 'samba' variety, BG 450. The explants were cultured on basic Murashige and Skoog, 1962 (MS) medium supplemented with 2,4-D (4 mg/l) and kinetin (2 mg/l). All explants used, except leaves produced callus. After 7 weeks of incubation the callus induction in explant from embryos, was 85%.

Medium 'A' (Ko et al, 1983) was found to be superior to medium N6 (Chu, 1978) or MS in callus induction in embryo explant, when used with the above levels of hormones.

The best callus formation occurred in medium 'A' supplemented with 2,4-D (4 mg/l) and kinetin (0.5 mg/l). No callus formation was observed with any of the different combinations of IBA and BAP tested.

Medium 'A' supplemented with IAA (0.2 mg/l) induced roots in 3 week old callus. Shoot regeneration (100%) in callus was observed on the medium containing tryptophan (10 mg/l), 2,4-D (1 mg/l) and kinetin (0.2 mg/l) after 35 days of incubation of the embryo explant.

Plantlets were successfully acclimatized on vermiculite and produced fertile seeds when transferred into soil plots.