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Callus induction ability of selected genotypes in *indica* rice through another culture

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Anther culture is considered as an important biotechnological technique in plant breeding as it offers great potential of obtaining genetically diverse and homozygous diploid plants within a short time period compared to conventional breeding. The objective of this study was to find out highly responsive rice varieties for anther culture. Genotypes of Bg 358, Bg 379-2, Bw 361, Bw 363, Bw 364, Bw 267-3, Bw 272- 6b and At 306 were selected for this study based on their yield and other desirable characters such as grain quality, tolerance to iron toxicity, resistance to pest and disease etc. Two different culture media which have been prepared by modifying N6 medium with two concentrations of NAA (2.5 mg/l and 2mg/l) with 2mg/l of 2, 4 – D and 0.5 mg/l of Kinetin were used. Calli were formed in Bg 379/2, Bw 361, Bw 363, Bw 267-3, Bw 272-6b and At 306 varieties after 6 – 8 weeks of culturing in both NAA concentrations. Among them highly responsive varieties were Bg 379/2 and Bw 272-6b, which showed 2.667 and 7.0 mean callus formation frequencies respectively. The variety Bg 358 and Bw 364 did not form callus even after 9 weeks of culturing. All responsive varieties had higher callus initiation ability in medium with 2.5mg/l of NAA. Though concentrations of NAA were significantly affected for the callus initiation, there was no significant (P = 0.2855) interaction between NAA concentration and variety. Therefore further studies on optimum concentration of NAA and effect of different combinations of NAA, 2, 4-D and Kinetin for callus initiation is needed.

Keywords: anther culture, callus, NAA, *Indica* rice, culture medium