

Promotive factors for callus initiation and plant regeneration in upland rice

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ABSTRACT

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Factors promotive to the initiation of embryogenic callus and regeneration of plants in upland rice were investigated using mature dehulled seeds. The objectives are to enhance the production of embryogenic callus and increase regeneration of plants. In upland rice, light incubation as well as 30 g/L sorbitol and 50 mg/L tryptophan were promotive for the formation of embryogenic callus and green shoot buds when added in the rice callus initiation (RCI) medium during the initial culture stage. Likewise, the combinations of 0.5 mg/L NAA and 0.5 mg/L BAP or, 0.5 mg/L IAA and 0.5 mg/L BAP supplement in the rice plant regeneration (RPR) medium enhanced the production of green shoot buds and plants from callus that were precultured in RCI medium containing 1.0 mg/L abscisic acid. The upland rice regenerants exhibited phenotypic variation from their parental counterparts in the field.

Keywords: callus initiation, culture medium, plant regeneration, promotive factors, upland rice

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