

### DII 03 Anther culture response of selected traditional rice varieties in Sri Lanka

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Anther culture (AC) in rice breeding is a powerful tool for the rapid production of haploids and pure lines and allows selection of fine strains in early generations. Exploitation of AC technique in research is limited due to very low regeneration frequency of indica cultivars when compared to japonica sub species. Extent of success of haploid induction by AC depends on a number of factors; genotype, developmental stage, cultivated conditions of plants, components of culture medium, pre treatments etc. The transfer of AC traits from traditional to improved varieties is important in rice breeding. In this study, we examined four traditional rice varieties (Beheth heenati, Dahanala, Sudu heenati and Suwandal) and compared with two improved rice varieties (AT306 and BW272-6b) for the high frequency of callus induction. Plants were grown in pots under green house conditions following the recommended management practices. Panicles were harvested at the early booting stage (late uninucleate stage) and cold pre treated at 10<sup>o</sup>C for 7-10 days and anthers were cultured in agar solidified modified N6 medium supplemented with 2.0mg / L 2-4 D, 0.5mg/L kinetin and 2.5mg/L NAA. AT306 showed the best callus induction frequency (3.887) with the duration of 34 days, but not significantly different from the other callus produced varieties. Mean calli frequencies of Sudu heenati, Suwandal and BW272-6b were 3.659, 3.326 and 2.340 respectively with the duration of 34, 31 and 29 days. Calli were not formed in Beheth heenati and Dahanala during the period of observation even up to seventy days showing genotypic specificity on AC response.

**Keywords:** Anther culture, traditional rice, callus induction