# PLANT REGENERATION FROM ANTHERS OF INDICA RICE

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Anther culture technique enables the production of haploid plants from immature or mature pollens. In plant breeding these haploids or microspore - derived plants help to shorten the breeding procedure by immediate fixation of homozygosity. In addition the technique helps to increase the selection efficiency and variability. This study was initiated at International Rice Research Institute using Indica rice varieties Tetep, IR 54 and IR 58 with the aim of developing culture protocols for traditional and improved rice varieties of Sri Lanka.

Panicles at the reproductive stage were collected and stored at $8^{o}C$ for 8 days. Anthers at the medium uninucleate to early binucleate stage were selected and plated in four different media (FJ 1, FJ 4, L 1 and L 8), solidified with agar (0.8% w/v) for callus induction. These culture media were based on $N_6$ medium (Chu et al.,1975). The plated anthers were incubated in the dark at $25^{o}C$ for callus establishment. Following incubation period of 1-2 months, embryogenic calli, formed were transferred to three media (S% 11, M 1 and M5), solidified with agar for regeneration of plants. These three media were based on Murashige and Skoog (1962) medium. These callus cultures were maintained under fluorescent light (2000-3000 Lux,16h) at $26^{o} \pm 1c$. Green shoots and plants were formed from the calli within 2-3 weeks of transfer to regeneration media. Shoots produced roots following transfer to Murashige and Skoog medium (solidified with agar) lacking hormones.

Using these anther cultures as model systems further studies are being conducted with traditional and improved rice varieties of Sri Lanka.

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