B-117: Plant regeneration from leaf explants of Innala

D P Rajapakse, M H Mendis, A Hettiarachchi, P Ganashan

(Plant Genetic Resources Centre, Gannoruwa)

Tubers of innala *(Solenostemon rotundifolius* (Poir.) (J.K. Morton) are consumed as a cooked vegetable in Sri Lanka. The plant is propagated vegetatively, by cuttings or tubers and requires a period of 6 months to reach maturity. Genetic improvement of innala via conventional breeding methods is limited, due to poor or no seed set and lack of genetic variability. Somaclonal variation, induced in tissue culture, is expected to help to achieve the genetic variability necessary for crop improvement. The objective of this study was to establish a media protocol to regenerate plants from cultured tissues of innala.

Leaf tissues (explants) were obtained from 2 - 3 week old plantlets established in growth regulator-free MS (Murashige and Skoog, 1962) medium. Leaf explants were cultured on solid media prepared with basic MS salts, organic constituents of Nitsch and Nitsch (1967), 4% w/v sucrose and growth regulators (BAP and NAA). BAP (0.1 - 6 mg/1) was added alone or in combination with NAA (0.2 - 5 mg/1). Leaf explants cultured in petri dishes were incubated (26 $\pm$ 1°C) under fluorescent light (2000 lux, 16 h).

Callus formation from cultured leaf explants was observed within 2 - 3 weeks of incubation. Calli developing in media containing only BAP were white with green patches and those formed in the presence of NAA were with dark necrotic regions. Shoot regeneration (100%) occurred in calli formed in BAP(0.8 - 1 mg/1) within 4 - 5 weeks of culture. High levels (5 - 6 mg/1) of BAP were required for shoot formation, when NAA (0.2 - 0.5 mg/1) was present in the medium.

The regenerated shoots formed roots (within 2 - 3 weeks) following transfer to growth regulator - free MS medium. These plants produced tubers after planting in soil.