B-46 : APPLICATION OF TISSUE CULTURE TECHNOLOGY TO INNALA (*Solenostemon rotundifolius* Poir)

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Development of tissue culture technique for vegetatively propagated crops is important for conservation as well as safe and easy exchange of germplasm. The technology can be applied in developing new varieties of cultivars of the crop. Innala (*Solenostemon rotundifolius*) is an indigenous root crop in Sri Lanka. No reports are available on tissue culture studies of this crop. This study was conducted to establish tissue culture technique for innala to achieve the above objectives.

Shoot tips (2-4 mm) of innala (cv. C4) were aseptically cultured on MS (Murashige and Skoog, 1962) medium modified with auxins and cytokinins. Growth response of ex-plants to all possible combinations of auxins (5.0 mg/l) and cytokinins (3.0 mg/l) in the culture medium was observed. A medium free of growth regulators was used as the control. The auxins used in the study were 1 - naphthaleneacetic acid (NAA), 3 - indoleacetic acid (IAA) and 3 - indolebutyric acid (IBA). The cytokinins combined with auxins were 6 - benzylaminopurine (BAP), kinetin and zeatin. Each medium (pH 5.7) was solidified with agar (0.8 % w/v). Cultures were maintained under fluorescent light (2000 lux for 10 hours) at 26 $\pm 1^{\circ}$C.

Results indicated all combinations of auxins and cytokinins favoured callus formation and in the absence of growth regulators, this medium promoted growth of the shoot - tip into complete plants.

The calli were hard, shiny and compact. Calli formed in the presence of BAP were light green in colour and produced shoots when sub cultured on MS medium with NAA (1.0 - 2.0 mg/l). Complete and healthy plantlets were obtained from these shoots within 3 - 4 weeks on subsequent transfer to growth regulator - free MS medium. These plants were successfully established in soil which was a mixture of sand, cattle manure and top soil (3:2:1).