B-48 : *IN VITRO* CONSERVATION OF TARO (*Colocasia esculenta*) UNDER AMBIENT TEMPERATURE

D P Rajapakse, M H Mendis, A Hettiarachchi, P Ganashan, S D G Jayawardena
Plant Genetic Resources Centre, Gannoruwa.

In vitro culture methodology can be used to produce, conserve, multiply and exchange disease - free planting material. For conserving germplasm in vitro, possible methods of prolonging the culture period have to be examined.

A study was conducted to establish a media protocol to reduce growth rate (under ambient temperature) of Taro (Colocasis esculenta) by subjecting the plants to a high osmotic stress in the culture medium.

Shoot-tips (3-5 mm) of Taro (cv. Weliala) were aseptically cultured on hormone-free MS (Murashige and Skoog, 1962) medium supplemented with sucrose (0 - 12% w/v). Subsequently the medium (MS) was supplemented with sucrose (3% w/v) and

mannitol (0 - 4 % w/v) for culturing shoot-tips. All cultures were incubated under fluorescent light (2000 lux 10h) at 26 $\pm$ 1°C.

Severe retardation of growth of cultured shoot-tips were observed in the absence of sucrose. At lower levels (1 - 2 % sucrose) and at higher levels (8 - 10% sucrose) the growth rate was slow. Rapid and prolific growth of the culture was observed at moderate levels (4-6%) of sucrose. Sucrose concentrations above 10% was deleterious to cultured shoot-tips. Mannitol suppressed growth of all cultures. Slow growth and poor root system was observed when 3-4% of mannitol was incorporated in to the culture medium.

Based on these results the MS medium supplemented with 2 % (w/v) sucrose and 3 % (w/v) mannitol was selected to minimize growth of shoot-tips of four accessions of Taro (cv. Weliala, Thadala, Kandala and Kurundu-ala). These cultures maintained their viability and regeneration potential for 6-8 months *in vitro* and produced healthy plants upon transfer to MS medium with sucrose (4% w/v).

The established method is being used to conserve the four accessions of Taro in *in vitro* gene bank of the Plant Genetic Resources Centre.