

**Mass propagation of *Lycopersicon esculentum* cv Shirley (Irish tomato) through tissue culture**

*Lycopersicon esculentum* cv Shirley (Irish tomato) is an economically important crop in export marketing. This is an imported variety of Sri Lanka and only grown in poply-tunnels in large scale. Regeneration of plant is by seeds. The major problem encountered with regeneration by seeds is the high cost of commercially available seeds. Therefore, tissue culture based propagation techniques were investigated using different explants.

Selected explants were cultured in Murashige and Skoog (MS) medium supplemented with cytokinin and auxin at different concentrations for callus formation. The highest callus formation was observed with leaf discs in 2.0mg/1NAA and 1.0mg/1BAP in light at  $24 \pm 1^\circ\text{C}$  with 7 days. Observations were made after 5 weeks and mean callus diameter was  $10 \pm 0.8\text{mm}$ . The fresh and the dry callus weight was  $989 \pm 0.3\text{mg}$  and  $47 \pm 0.7\text{mg}$  respectively.

Shoots were induced from the fragile callus in 2.5mg/l NAA and 4.0mg/l Kinetin (6 shoots per callus). Shoots were directly initiated through apical meristems in 0.175mg/l IAA and 2.25mg/l BAP after 20 days (3 shoots per explant). Both shoot elongation and multiplication were achieved in the same medium.

Multiple shoots were transferred into a rooting medium. Roots were initiated in 1/2 MS supplemented with 0.1mg/l IAA in light after 5 days of incubation. The mean number of roots was 9 and the mean root length was  $43 \pm 1$  mm.

Rooted plantlets were acclimatized in a humid chamber for two weeks and transferred into sterile coir dust: sand (1:2) and to Knopp's solution. Best performance was observed among the plants grown in hydroponics.