

IN VITRO TISSUE CULTURE FOR MASS PROPAGATION
OF PASSION-FRUIT (PASSIFLORA FLAVICARPA)
USING MERISTEM TIP CULTURE

A.H.S. Senanayake and C.J. Lekamge
CTC Foliage Ltd., Kalagedihena.

Meristems of axillary buds from 6 month old vines served as the best source of explants in contrast to those of younger seedlings and older vines. Initiation of growth of meristems was possible in many media viz. Murasighe & Skoog (MS), 1/2 MS, Nitsch Gamborg, N₆, Woody, Anderson and PG, all supplemented with cytokinin BAP, Zeatin or Kinetin (0.5 - 2.0 mg/l) and auxin NAA, IAA or IBA (0.5-2.0 mg/l), Adenine sulphate (0.1 g/l) and casamino acids (0.5 g/l). 24D (2 mg/l) caused callus formation of explants. Further progress in growth of meristems resulting in expanding leaves and shoots was possible only in Anderson and PG media (supplemented with cytokinin and auxin). All other media failed to give enlarged shoot formation and the leaves and shoots did not exceed 5mm in length.

Although good growth could be achieved in Anderson medium, the leaves showed some marginal chlorosis and hence the media composition was modified to rectify for deficiencies of some ions. This modified Anderson medium is even better than the PG medium for successful growth and development of passion fruit. Roots were produced at the base of these shoots. Rapid micro propagation could easily be achieved from these shoots by the system of nodal cuttings. Multiple shoot formation from the explant was possible by adjusting the cytokinin : auxin ratio 3:2. This is the first report of good establishment of passion fruit cultures in modified Anderson and PG media.

There was no superiority of agitated liquid media of same composition over the solid cultures.

The rooted plantlets were established well in coir dust as well as a mixture of sand and compost in little pots under high humidity in a plant propagator and are growing well with newly produced expanding leaves.