

Improvement of strawberry tree micropropagation in liquid culture media

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ABSTRACT

Strawberry tree (*Arbutus unedo*, Ericaceae) is a shrub or tree growing around the Mediterranean basin. It is well adapted to stress conditions, and has potential for fruit production and as an ornamental. However, this potential has not been fully exploited and the species is even considered a Neglected or Underutilized Crop. Trying to make this species more attractive for producers and stakeholders we have been working on an intensive propagation and breeding program. Several genotypes with interesting characteristics have been selected and micropropagation protocols were established. Although micropropagation has several advantages over other propagation techniques, it is imperious to reduce the production costs. To improve the propagation rates we have investigated the potential of liquid cultures for micropropagation on media containing different concentrations of cytokinins. Compared to the propagation in solidified media, the multiplication rates of the shoots in liquid media are 2-3 times higher allowing the production of a higher number of plants in a short period. Also, when compared to the temporary immersion systems, there is no need for expensive equipment. There are, however, some drawbacks since hyperhydricity is recurrent on the shoots obtained in liquid media. Nevertheless, when these shoots were post-cultured on solidified media, they became phenotypically normal. Therefore, the culture in liquid media with permanent immersion is a good complement for the propagation of the strawberry tree in solidified media, when used as a transitory step. Shoots obtained in liquid cultures rooted at rates identical to those obtained in solid medium.