

The Use of Somatic Embryogenesis in Artificial Seeds Production in Cauliflower (*Brassica oleraceae* var. *botrytis*)

M. Al Shamari, H.Z. Rihan, **F. Al Swedi** and M.P. Fuller School of Biomedical and Biological Sciences Faculty of Science and Technology University of Plymouth PL4 8AA United Kingdom

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Abstract

A reliable method was investigated for high production of cauliflower artificial seeds through somatic embryogenesis. Optimum Embryogenic callus proliferation was obtained using friable callus derived from hypocotyls and root explants on semi-solidified MS (Murashige and Skoog, 1962) media containing 0.15, 0.5 mg/L of 2,4-D and 0.5, 1.0, 2.0 mg/L kinetin. This callus induction medium (CIM) was used to maintain callus tissue by subculturing every 21 days. However, the initiation of liquid cultures from chopped embryogenic clusters and the high production of somatic embryos SEs were established on somatic induction medium (SIM) consisting of MS agitated liquid medium supplemented with 0.05 mg/L IAA, 0.5 mg/L kinetin and 20% sucrose after 20 days. The highest germination and conversion rate 60 and 100%, respectively, was achieved after one month when somatic embryos cultivated on MS medium without hormones. Mature somatic embryos were encapsulated in Ca-alginate beads to produce artificial seeds. The ability of cauliflower SEs to regenerate complete plantlets was discovered.

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