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Somatic embryogenesis in *Pelargonium sidoides* DC: An important African traditional medicinal plant

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Pelargonium sidoides is a high value medicinal plant that is endemic to South Africa. Establishing an efficient regeneration system through somatic embryogenesis is necessary for both its conservation and cultivation. Embryogenic callus was obtained using Murashige and Skoog (MS) basal medium supplemented with 2.0 mg L⁻¹ picloram, 0.5 mg L⁻¹ thidiazuron (TDZ) and 20 mg L⁻¹ glutamine. Different developmental stages of somatic embryogenesis (SEs: globular, heart, torpedo and cotyledonary shaped embryos with radicles) were obtained and further matured from callus originally obtained from leaforigin by subculture on the same medium. The highest frequency of somatic embryos (25.89±1.50) was obtained after 6 weeks. Scanning Electron Microscopic (SEM) analysis confirmed the initiation, development and germination of somatic embryos. Mature somatic embryos germinated and developed into plantlets after 4 weeks on half-strength MS medium. High plant regeneration frequency (94.4%) was achieved on half-strength MS medium supplemented with 1.0 mg L⁻¹ gibberellic acid (GA₃). Well-developed plantlets were transferred to vermiculite: Sand 1:1 (v/v) growth medium and successfully acclimatized in the greenhouse. The protocol developed is helpful in reducing stress on natural habitats provides a viable system for germplasm conservation, clonal mass propagation, isolation of bioactive compounds and genetic transformational studies.

Biography

Vijay Kumar has completed his PhD from Birla Institute of Technology, India and is continuing Post-doctoral studies under the supervision of Professor Johannes Van Staden at the Research Centre for Plant Growth and Development, University of KwaZulu-Natal, South Africa.

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