

**SOMATIC EMBRYOGENESIS IN *DYCKIA DISTACHYA* HASSLER (BROMELIACEAE) – AN
ENDANGERED BROMELIAD FROM SOUTH BRAZIL**

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REFERENCES

- Bach A. (1992). Somatic embryogenesis from zygotic embryos and meristems of *Freesia hybrida*. *Acta Horticulturae*, 325: 429-434.
- Castillo B., Smith M. A. L. (1997). Direct somatic embryogenesis from *Begonia gracilis* explants. *Plant Cell Reports*, 16: 385-388.
- Chen J.-T., Chang W.-C. (2000). Efficient plant regeneration through somatic embryogenesis from callus cultures of *Oncidium* (Orchidaceae). *Plant Science*, 160: 87-93.
- Dineshkumar V., Kirti P. B., Sachan J. K. S., Chopra V. L. (1995). Picloran induced somatic embryogenesis in chickpea (*Cicer arietinum* L.). *Plant Science*, 109: 207-213.
- Dodeman V. L., Ducreux G., Kreis M. (1997). Zygotic embryogenesis versus somatic embryogenesis. *Journal of Experimental Botany*, 48 (313): 1493-1509.
- Fehér A., Pasternak T. P., Dudits D. (2003). Transition of somatic plant cells to an embryogenic state. *Plant Cell, Tissue and Organ Culture*, 74 (3): 201-228.
- Fehér A. Pasternak T. P., Otvos K., Miskolczi P., Dudits D. (2002). Induction of embryogenic competence in somatic plant cells: a review. *Biologia*, 57 (1): 5-12.
- Guerra M. P., Handro W. (1988). Somatic embryogenesis and plant regeneration in embryo culture of *Euterpe edulis* Mart. (Palmae). *Plant Cell Reports*, 7: 550-552.
- Guerra M. P., Torres A. C., Teixeira J. B. (1999). Embriogênese somática e sementes sintéticas. In: Torres A. C., Caldas L. S., Buso J. A. (Eds.). *Cultura de tecidos e transformação genética de plantas*. Embrapa, Brasília: 533-568.
- Heringer H., Montenegro M. M. (2000). Avaliação e ações prioritárias para a conservação da biodiversidade da Mata Atlântica e Campos Sulinos. Ministério do Meio Ambiente, Brasília, 40 pp.
- Herrera A. (1999). Effects of photoperiod and drought on the induction of crassulacean acid metabolism and the reproduction of plants of *Talinum triangulare*. *Canadian Journal of Botany*, 77 (3): 404-409.
- Little E. L., Magbanua Z. V., Parrott W. A. (2000). A protocol for repetitive somatic embryogenesis from mature peanut epicotyls. *Plant Cell Reports*, 19: 351-357.
- Litz R. E., Jarret R. L. (1991). Regeneración de plantas en el cultivo de tejidos: embriogénesis somática y organogénesis. In: Roca W. M., Mroginski L. A. (Eds.). *Cultivo de Tejidos en la Agricultura – Fundamentos y Aplicaciones*. Centro Internacional de Agricultura Tropical, Cali: 143-172.
- Lopes R. J. (2005) Hidrelétrica ameaça bromélia em SC e RS. *Jornal folha de São Paulo*, São Paulo, Published in 06/11/2005.
- Malda G., Suzán H., Backhaus R. (1999). *In vitro* culture as a potential method for the conservation of endangered plants possessing crassulacean acid metabolism. *Scientia Horticulturae*, 81: 71-87.
- Michalczuk L., Cooke T. J., Cohen J. D. (1992). Auxin levels at different stages of carrot somatic embryogenesis. *Phytochemistry*, 31: 1097-1103.
- Mohamed S. V., Wang C. S., Thiruvengadam M., Jayabalan N. (2004). *In vitro* plant regeneration via somatic embryogenesis through cell suspension cultures of horsegram [*Macrotyloma uniflorum* (Lam.) Verdc.]. In

- vitro Cellular and Development Biology – Plant, 40 (3): 284-289.
- Morel G. M., Wetmore R. H. (1951). Fern callus tissue culture. *American Journal of Botany*, 38: 141-143.
- Murashige T., Skoog, F. (1962). A revised medium for rapid growth and bio-assays with tobacco tissue cultures. *Physiologia Plantarum*, 15: 473-497.
- Nato A., Fresneau C., Moursalimova N., De Buyser J., Lavergne D., Henry Y. (2000). Expression of auxin and light-regulated arrestin-like proteins, G proteins and nucleoside diphosphate kinase during induction and development of wheat somatic embryos. *Plant Physiology Biochemical*, 38 (6): 483-490.
- Pompelli M. F., Guerra M. P. (2004). *Ex situ* conservation of *Dyckia distachya*: an endangered bromeliad. *Crop Breeding and Applied Biotechnology*, 4 (3): 273-279.
- Pompelli M. F., Guerra M. P. (2005). Micropropagation enables the mass propagation and conservation of *Dyckia distachya* Hassler. *Crop Breeding and Applied Biotechnology*, 5 (1): 117-126.
- Rout G. R., Samantaray S., Mottley J., Das M. (1999). Biotechnology of the Rose: a review of recent progress. *Scientia Horticulturae*, 81 (3): 201-228.
- Sage D. O., Lynn J., Hammatt N. (2000). Somatic embryogenesis in *Narcissus pseudonarcissus* cvs. Golden Harvest and St. Keverne. *Plant Science*, 150: 209-216.
- Sass I. E. (1951). Botanical microtechnique. Iowa State College Press, Iowa, 228 pp.
- Schäffer W. B., Prochnow M. (2002). Mata Atlântica. In: Schäffer W. B., Prochnow M. (Eds.). *A Mata Atlântica e Você*. Associação de Preservação do Meio Ambiente do Alto Vale do Itajaí, Brasília: 12-44.
- Schultheis J. R., Chée R. P., Cantliffe D. J. (1990). Embriões somáticos e sementes sintéticas. In: Torres A. C., Caldas L. S. (Eds.). *Técnicas e aplicações da cultura de tecidos de plantas*. Imprensa Nacional, Brasília: 533-568.
- Stefanello S., Dal Vesco L. L., Ducroquet J. P. H. J., Nodari R. O., Guerra, M. P. (2005). Somatic embryogenesis from floral tissues of feijoa (*Feijoa sellowiana* Berg). *Scientia Horticulturae* 105 (1): 117-126.
- Thorpe T. A. (1980). Organogenesis *in vitro*: Structural, physiological and biochemical aspects. In: Vasil I.K. (Ed.). *Perspectives in plant cell and tissue culture*. Academic Press, New York: 71-111.
- Torné J. M., Rodriguez P., Manich A., Claparols I., Santos M. A. (1997). Embryogenesis induction in petals of *Araujia sericifera*. *Plant Cell, Tissue and Organ Culture*, 51: 95-102.
- Van Der Linde P. C. G. (1990). Hormone action and sensitivity: possible relation to aging. In: Rodrigues R., Sanches M., Tames R., Durzan D. J. (Eds.). *Plant Aging: Basic and Applied Approaches*. Plenum Press, New York: 285-292.
- Wang J., Seliskar D. M., Gallagher J. L. (2004). Plant regeneration via somatic embryogenesis in the brackish wetland monocot *Scirpus robustus*. *Aquatic Botany*, 79: 163-174.
- Yeung E. C. (1995). Structural and developmental patterns in somatic embryogenesis. In: Thorp T. A. (Ed.). *In vitro* embryogenesis in plants. Kluwer Academic Publishers, Dordrecht: 205-247.