

## CONSERVATION AND PROPAGATION OF AMERICAN BEECH (*FAGUS GRANDIFOLIA* EHRH.) THROUGH SOMATIC EMBRYOGENESIS

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### REFERENCES

- Ahuja M. R. (1983). Somatic cell differentiation and rapid clonal propagation of aspen. *Silvae Genetica*, 32 (3-4): 131-135.
- Barker M. J., Pijuit P. M., Ostrey M. E., Houston D. R. (1997). Micropropagation of juvenile and mature American beech. *Plant Cell, Tissue and Organ Culture* 51: 209-213.
- Becwar M. R., Nagmani R., Wann S. R. (1990). Initiation of embryogenic cultures and somatic embryo development in loblolly pine (*Pinus taeda*). *Canadian Journal of Forest Research*, 20: 810-817.
- Bonga J. M., von Aderkas P. (1993). Rejuvenation of tissues from mature conifers and its implications for propagation *in vitro*. Chapter 12. *In: Ahuja M. R., Libby W. J. (Eds.). Clonal Forestry I. Genetics and Biotechnology*, Springer-Verlag, Berlin: 182-199.
- Gaj M. D. (2004). Factors influencing somatic embryogenesis induction and plant regeneration with particular reference to *Arabidopsis thaliana* L. Heynh. *Plant Cell Growth Regulation*, 43: 27-47.
- Gyves E. M., Royani J. W., Rugini E. (2007). Efficient method of micropropagation and *in vitro* rooting of teak (*Tectona grandis* L.) focusing on large-scale industrial plantations. *Annals of Forest Science*, 64: 73-78.
- Houston D. B., Houston D. R. (2000). Allozyme genetic diversity among *Fagus grandifolia* trees resistant or susceptible to beech bark disease in natural populations. *Canadian Journal of Forest Research*, 30: 778-789.
- Houston D. R. (1994). Major new tree disease epidemics: beech bark disease. *Annual Review of Phytopathology*, 32: 75-87.
- Klimaszewska K., Smith D. R. (1997). Maturation of somatic embryos of *Pinus strobus* is promoted by a high concentration of gellan gum. *Physiologia Plantarum*, 100: 949-957.
- Koch J. L., Carey D. W. (2005). The genetics of resistance of American beech to beech bark disease: knowledge through 2004. *In: Evans C. A., Lucas J. A., Twery M. J. (Eds.). Beech bark disease. Proceedings of the Beech Bark Disease Symposium*. Gen Tech. Rep. NE-331. Newtown Square PA, USDA Forest Service, Northern Research Station: 98-105.
- Kunitake H., Nakashima T., Mori K., Tanaka M. (1997). Normalization of asparagus somatic embryogenesis using a maltose-containing medium. *Journal of Plant Physiology*, 150: 458-461.
- McCown B. H., Lloyd G. (1981). Woody plant medium (WPM). A mineral nutrient formulation for microculture of woody plant species. *Hortscience*, 16: 453.
- Loo J. A., Beardmore T. L., Simpson J. D., McPhee D. A. (2007). Tree species of concern in New Brunswick, Canada. I. Current status and threats. *The Forestry Chronicle*, 83 (3): 393-401.
- Loo J., Ramirez M., Krasowski M. (2005). American beech vegetative propagation and genetic diversity. *In: Evans C. A., Lucas J. A., Twery M. J. (Eds.). Beech bark disease. Proceedings of the Beech Bark Disease Symposium*. Gen Tech. Rep. NE-331. Newtown Square PA, USDA Forest Service, Northern Research Station: 106-112.
- Naujoks G. (2003). Somatic embryogenesis in beech (*Fagus sylvatica*). *Biologia*, Bratislava, 58 (1): 83-87.
- Park Y. S. (2002). Implementation of conifer somatic embryogenesis in clonal forestry: technical requirements and deployment considerations. *Annals of Forest Science*, 59 (5-6): 651-656.
- Park Y. S., Pond S. E., Bonga J. M. (1993). Initiation of somatic embryogenesis in white spruce (*Picea glauca*): genetic control, culture treatment effects, and implications for tree breeding. *Theoretical and Applied Genetics*, 86(4): 427-436.
- Vallardes S., Toribio M., Celestino C., Vietez A. M. (2004). Cryopreservation of embryogenic cultures from mature *Quercus suber* trees using vitrification. *Cryoletters*, 25: 177-186.