

Application Of Somatic Embryogenesis In The Production Of Christmas Trees

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A growing area of interest within the forestry industry is the production of Christmas trees and decoration greenery. *Abies lasiocarpa* is one of the *Abies*-species which is suitable for Christmas tree production due to their long-lasting greenery. In Norway, the trees in the populations of *A. lasiocarpa* show a great diversity in morphology and growth. The lack of uniformity between individuals has thus prompted for the use of efficient clonal propagation methods for enabling the exploitation of valuable genotypes in plantation forestry of this species. In vitro propagation by somatic embryogenesis has been successfully achieved for many coniferous species. The use of somatic embryogenesis for plant propagation of *A. lasiocarpa* was evaluated. Protocols, and in particular the culture media, for somatic embryogenesis in conifers has predominantly been developed for *Picea*-species and today plantlets can readily be produced from most species. The obstacles earlier encountered with the *Abies*-species, indicate differences in embryo physiology in *Abies*-and *Picea*-species. We have designed a novel growth medium for initiation of somatic embryogenesis based on the natural environment of the zygotic embryo. The interactions between the media composition, the developmental stage of the explants, and the influence of the genetic background were tested. We have also explored the positive effects of microbial compounds on growth and development of plantlets derived from somatic embryos.