

GENE TRANSFER IN CONIFERS

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Conifers are a major group of crop plants, accounting for much of the World's supply of pulp and solid and composite wood products. Genetic improvement is slow due to the long breeding and testing cycles for these plants. If methods are developed specific for conifers, the tools of molecular biology have the potential to accelerate genetic improvement. One of the critical tools under development in our laboratories is gene transfer. We report here our progress in using the biolistic microprojectile DNA transfer system to transform three conifer species: loblolly pine, norway spruce and Fraser fir. The target tissue and culturing system used with each species is different. The meristematic tissue produced when cotyledons are incubated on cytokinin containing medium is being used with loblolly pine (see accompanying poster abstract). Bombardment of somatic embryos is being used to explore transformation in norway spruce. Both of these systems have yielded stably transformed cell cultures. Experiments are in progress to obtain transgenic plants. Work with Fraser fir has only begun and we have shown transient expression in bombarded expanding apical meristems. This presentation will focus on the strategy for obtaining transgenic conifers using microprojectile bombardment.