

Faster evaluation of induced floral sterility in transgenic early flowering poplar

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Abstract

A major concern over the use of transgenic trees is the potential for transgene dispersal through pollen and seeds. The incorporation of sterility inducing genes into transgenic lines of trees has been proposed to reduce or even avoid gene flow of transgenes into non-transgenic interbreeding species. The evaluation of strategies for the induction of sterility in transgenic forest tree species has been hindered by their long vegetative phases. In this study an early flowering 35S::*Leafy* poplar line was used for the faster evaluation of the sterility construct C-GPDHC::*VstI*. The combination of two transgenic approaches, one to induce early flowering and a second for the induction of sterility, allowed evaluation of this sterility strategy two years after transformation. This is a very short period of time considering the long vegetative period of seven to twenty years common in forest tree species. This approach opens opportunities for the assessment of sterility mechanisms for this plant group.