Conversion of Douglas-fir somatic embryos to organogenic shoot cultures and the development of a rooting protocol

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BOOK OF ABSTRACTS

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The potential to use micropropagation protocols in combination with a nursery production system via stool beds is attractive. Somatic embryogenesis protocols would amplify high value control-pollinated seed and organogenesis of the resulting mature somatic embryos (SE) would provide a large number of uniform shoots for initial production of stool beds. SE material held in liquid nitrogen could then be used to provide a supply of juvenile stool beds over a number of years.

Successful results have been obtained with initiation and proliferation of Douglas-fir embryogenic cultures at Scion. These protocols have been developed using modified *Pinus radiata* media and methods and provide Scion with protocols for the micropropagation of Douglas-fir.

Mature somatic embryos (from 5 cell lines) had their bases removed and were placed on *Pinus radiata* organogenic media (LPch) to establish shoot cultures. Shoots were sub-cultured every 4-6 weeks, transferring to jars when elongated. Whenever possible, stem segments were isolated from the elongated shoots and transferred to petri dishes for multiplication. Multiplication data was collected for 30 weeks.

Thirty organogenic shoots from each of the five SE cell lines were used to test four different pre-rooting treatments. Shoots were transferred to the nursery propagation house after 11 days. The results of these pre-rooting treatments on the ability of the shoots to produce roots will be presented and future work discussed.

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