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Poster Abstract – E.10

GENETIC TRANSFORMATION OF ELITE *P.* X *CANADENSIS* CLONES WITH A MORPHOLOGICAL MARKER GENE.

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Interspecific hybrid poplars (*P. deltoides x P. nigra*) usually known as *P.x canadensis* are intensively cultivated worldwide for very interesting commercial wood properties. Despite their importance, relatively few research works have reported successful results *in vitro* culture and genetic engineering to *P x canadensis* hybrid clones (Confalonieri et al., 2003). Actually it is very difficult to establish and manipulate *in vitro* culture tissues of most of these clones for their high recalcitrance (Busov et al., 2005). In this work we show the results *in vitro* manipulation of clones *P .x canadensis*, selected by C.R.A. - Poplar Research Institute of Casale Monferrato and largely used in intensive poplar cultivations around the world. We tested a number of regeneration protocols using different media and phytormone combinations until we obtained a single regeneration protocol with an efficiency close to 100%. Afterwards we have conducted some genetic transformation experiments employing disarmed vectors carrying either reporter or selective marker genes (*uidA, bar, nptII*). We also employed a monitoring vector (MAT-type) carrying a morphological marker gene (*ipt*) in our transformation experiments. PCR analysis to assess the presence of the *nptII* gene were performed. We obtained positive results only with MAT-vector system. Moreover we selected putative transgenic lines through observation of anomalous phenotypes (*ipt*-type) and through GUS histochemical assays. We observed 6,7 % and 8,9 % of *ipt*-phenotypes in Neva and I-214 clones, respectively. Molecular analysis and genetic transformation experiments with other *P. x canadensis* clones are currently under way to confirm our preliminary results. Considering the commercial importance of hybrid *P. x canadensis*, these results are very interesting to obtain transgenic plants without antibiotic resistance genes, for a possible use in the open field cultivation, in compliance to the current law on OGM.