SOMATIC EMBRYOGENESIS IN TISSUE CULTURES OF AMERICAN CHESTNUT

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Cultures were initiated from developing ovules and excised embryos of American chestnut *[Castanea dentata* (Marsh.) Borkh.), collected from 5 source trees on three dates during early and middle stages of embryo development. Ovule and embryo explants were cultured initially on semisolid induction medium containing 0.25 mg BA/1 and either 6 mg NAA/1 or 4 mg 2,4-D/1, for 1 or 2 weeks. Cultures were then transferred to either hormone-free medium or medium with 0.25 mg BA/1, or were maintained on the original induction media. Ovules collected approximately 6 weeks postanthesis from 3 of the 5 trees produced embryogenic cultures. Those pulsed for 1 or 2 weeks on auxin-containing media and subsequently transferred to media without auxin produced multiple embryos directly from the radicle end of the zygotic embryo. Cultures maintained on auxin-supplemented media initially produced proembryogenic masses, which formed globular and heart-stage embryos as they aged. Transfer of clusters of somatic embryos from auxin-supplemented media to hormone-free medium promoted maturation of embryos to the cotyledon-stage.