

SOMATIC. EMBRYOGENESIS IN BLACK LOCUST

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Black locust (Robinia pseudoacacia L.) is a nitrogen-fixing leguminous forest tree species native to the southeastern United States and extensively cultivated in many parts of the world. Developing seed pods were collected from three black locust trees at weekly intervals from one week following anthesis (May 6) until early fruit maturity (July 8). Developing seeds were excised aseptically from pods and cultured on solid media containing 0, 2 or 4 mg/l 2, 4-dichlorophenoxyacetic acid (2,4-D) and 0 or 0.25 mg/l 6-benzyladenine (6BA). Seeds cultured on media containing hormones remained on these media for either 1 or 3 weeks prior to transfer to hormone-free media, or were cultured on hormone-supplemented media for the entire study. One immature seed explant collected 4 weeks following anthesis produced somatic embryos by direct embryogenesis, following culture for one week on a medium supplemented with 4 mg/l 2,4-D and 0.25 mg/l 6BA and transfer to hormone-free medium. The culture produced approximately 100 somatic embryos, mostly via secondary embryogenesis from the radicles of cotyledon-stage somatic embryos. Most somatic embryos were well-formed, with two cotyledons. Many embryos germinated precociously while on hormone-free medium, producing plantlets that were initially weak. However, most later gained vigor and over 90 percent have produced seedling-like plants following transfer to soil mix and acclimatization to greenhouse conditions.