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**Somatic Embryogenesis from Immature Cotyledons of Apomictic and Non-Apomictic Seeds in Walnut (*Juglans regia* L.)**

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**Abstract:** Somatic embryogenesis from immature cotyledons of apomictic and open-pollinated seeds in some walnut (*Juglans regia* L.) genotypes was investigated. To obtain apomictic seeds, female flowers were bagged and/or pollinated with pollen of the apple cv. 'Golden Delicious' (*Malus x domestica* Borkh.). The best cotyledon stage for somatic embryogenesis was determined in open-pollinated seeds of 10 walnut genotypes. Immature cotyledons were cultured 8, 9, 10, 11 and 12 weeks after anthesis. As a result of this experiment, cotyledons of seeds thought to be of apomictic origin were cultured 8 weeks after anthesis. Driver and Kuniyuki walnut (DKW) medium supplemented with 1 mg l<sup>-1</sup> 6-benzylaminopurine (BAP), 2 mg l<sup>-1</sup> kinetin, 0.01 mg l<sup>-1</sup> indole-3-butyric acid (IBA) and 250 mg l<sup>-1</sup> L-glutamine was used in initial cultures. Explants were transferred to DKW medium without growth regulators and L-glutamine in subcultures. The percentage of embryogenic cotyledons that originated from apomictic and non-apomictic seeds ranged from 3.6% to 25% and the number of embryos per cotyledon ranged from 1 to 9.7 at the end of the fourth subculture. A repetitively embryogenic embryo line originating from immature cotyledons of apomictic seeds of the Tokat-1 walnut genotype was maintained by secondary embryogenesis.

**Key Words:** Walnut, *Juglans regia* L., somatic embryogenesis, immature cotyledon, apomictic seed

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