

MATING PARAMETER ESTIMATES OF BLACK WALNUT
BASED ON NATURAL AND ARTIFICIAL POPULATIONS

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Abstract: Horizontal starch gel electrophoresis was performed on six polymorphic loci in black walnut (*Juglans nigra* L.) embryos from open-pollinated nut collections made in 1987 in a Missouri half-sib progeny test, and Indiana seed orchard and a natural population in southern Illinois. Allozyme data disclosed very high levels of variation (75.0-87.5%), mean heterozygosity (0.198-0.215) and outcrossing (0.880-0.928 in all three seed populations. Mating parameters from seed orchard populations were not significantly different from those of the natural population. The mean fixation index was less than 0.1 in all three seed populations, suggesting very low rates of inbreeding in this species in seed orchards as well as in a natural setting.

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