

BLACK WALNUT GROWN IN TARPAPER CONTAINERS

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In the autumn of 1978 black walnut (*Juglans nigra* L.) seeds were collected in Indiana, Michigan and Manitoba. Following hulling all nuts were stratified in moist sand at 0.5°C. In April, 1979 half of the nuts were sown in a nursery while the other half were sown into tarpaper containers, one nut per container, and grown in a greenhouse. The containers consisted of open-ended, tarpaper tubes 6.5 cm in diameter and 20 cm high. The growing medium was 75% peat and 25% loam without amendments. The containers were stored in Coca Cola boxes with walls 10 cm high, 28 containers per box. The seedlings were grown under an extended photoperiod of 16 hours and a temperature of approximately 18°C (night) and 28°C (day). After 6 weeks the seedlings were transferred to outdoor shadeframes for 2 weeks of conditioning. In mid-June the containerized seedlings were planted by spade into a well drained loam in a fully cultivated field near Parkhill, Ontario. At the time of outplanting the seedlings were 20 cm high and actively growing.

In April of the following year the seedlings grown in the nursery from the same seed sources as the containerized seedlings were planted by spade in alternate rows between the rows of containerized seedlings. Weed control was maintained by annual spring applications of 5.0 kg/ha of simazine and spot treatments of 2.0 kg/ha of glyphosate.

At the end of the first growing season from germination the average height of the 1-0 nursery-grown and containerized seedlings was 36 and 27 cm, respectively (Table 1). However, in the second year outplanting shock restricted the average height increment of the 1-0 seedlings to 13 cm while the containerized seedlings grew 51 cm. In the third year the 1-0 seedlings grew 63 cm while the containerized seedlings grew 83 cm.

Although the cost of production, transport and planting of containerized seedlings will probably always be greater than that of 1-0 nursery-grown seedlings, containerized seedlings might have a place in the establishment of seed orchards, progeny from plus trees or other high-value plantations.

Table 1. Height of two black walnut stock types by years from germination.

Seed source	Stock ^a type	Total height(cm)		
		1st year	2nd year	3rd year
Indiana	N	41	56	134
36C	C	29	87	189
Indiana	N	33	53	122
41C	C	24	84	165
Indiana	N	35	49	112
44C	C	29	86	171
Indiana	N	37	53	130
55C	C	27	89	176
Indiana	N	36	52	132
95C	C	28	84	176
Indiana	N	39	52	116
118C	C	31	90	191
Indiana	N	37	51	122
122p	C	29	77	165
Michigan	N	43	52	99
Jackson Co.	C	22	72	162
Manitoba	N	20	26	43
Morden	C	23	33	54
Mean	N	36	49	112
	C	27	78	161

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^aN = nuts seeded in a nursery bed and outplanted as 1-0 seedlings.

C = nuts seeded in containers and outplanted in containers 8 weeks after seeding.