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GREAT LAKES FOREST RESEARCH CENTRE
P.O. BOX 490
SAULT STE. MARIE, ONTARIO
P6A 5M7

Planting and Tending Recommendations for Black Walnut

Where to plant: For optimum growth plant in deep (topsoil 20 in. (50 cm) or deeper), fertile, moist but well drained loams or clay loams. This species is very sensitive to soil and drainage conditions and will not grow well on shallow or poorly drained soils.

Where not to plant: In infertile, eroded or poorly drained soils, on dry, sandy or gravelly exposed ridges and in any soil with a topsoil depth of less than 12 in. (30 cm).

Site preparation: In August before spring planting spray 1/2 U.S. gal/ac (4.7 L/ha) of Roundup over the total plantation area or spray in strips at least 6 ft (1.8 m) wide. One week after spraying plow and disk or rototill the sprayed area. On sites where mechanical site preparation is not possible or desirable, spray 1/2 U.S. gal/ac (4.7 L/ha) of Roundup in August in strips at least 6 ft (1.8 m) wide or in circular spots with a diameter of at least 5 ft (1.5 m).

Species mixtures: On intensively managed, highly productive sites, it is generally most economical to plant only the most valuable species. Such plantations may best be compared to fruit orchards. On less productive sites and for purposes other than that of high-quality timber production, it might be most desirable to plant a mixture of several species. However, all of these must have compatible growth rates and must be suitable for growing on the site.

The Ontario Ministry of Natural Resources at present advocates the planting of black walnut seedlings at specified intervals in mixture with white pine (*Pinus strobus* L.). The white pine provides the shelter during the early years after planting and is expected either to die of Juglone poisoning or to be cut when the walnut trees require additional growing space. However, the success of this method depends on a relatively low rabbit population and the maintenance of effective weed control around the walnut seedlings.

Spacing: There is no ideal spacing for planting all species on all sites. Spacing is therefore determined mostly by a compromise involving the growth requirements of the species, the purpose of the planting, the wishes of the plantation owner and the economics of plantation establishment and tending. It is known that trees grown at wide spacings generally grow faster in diameter while trees grown at narrow spacings generally produce stems of better form, but spacing has little effect on height growth.

At present a spacing of 10 ft (3 m) between rows and 5 ft (1.5 m) within rows is recommended. This spacing requires planting 870 trees/ac (2200 trees/ha). It allows the passage of a medium-sized tractor between rows of trees for

chemical or mechanical weed control, promotes reasonably early canopy closure to shade out the competing vegetation, and allows for possible mortality and trees of poor form. The disadvantage of this spacing is that it necessitates at least one pre-commercial thinning.

Planting stock: 1 + 0 seedlings. Seeding of nuts may be successful if squirrels and weed competition are controlled. However, the planting of nursery-grown seedlings generally guarantees greater success than does seeding.

Time of planting: In spring as early as site conditions permit, but never later than the middle of May. Autumn seeding of nuts requires no seed stratification (cold treatment) but pilferage by squirrels is generally greater than in spring seeding. For spring seeding the nuts must be stratified.

Method of planting: Machine planting or spade planting using the wedge method. Nuts are seeded by hand in holes made with a spade or mattock.

Weed control after planting: Shortly after planting spray 5.0 lb/ac (5.6 kg/ha) of Princep 80W on loam soils or clay loam soils. Spray the entire area, strips or spots. In October of the first and second year or April of the second and third year after planting spray 6.0 lb/ac (6.7 kg/ha) of Princep 80W over the same areas. Where necessary continue spraying after the third year until the tree seedlings have outgrown the weed competition.

Rodent control: The best protection against rodent damage is the elimination of the weed cover. This deprives the animals of shelter and food and makes the plantation a hostile environment for rodent survival and reproduction. Also, the elimination of weed competition increases the growth of the planted seedlings and fast-growing trees are less vulnerable to rodent damage because they soon outgrow the danger.

Plastic tree guards provide excellent protection. Their only disdvantage is high cost. However, for plantations with small numbers of valuable trees the protection provided may fully justify the cost.

Pruning: During the first 3 years after planting prune one side of forked leaders or individual branches annually to improve stem form. Thereafter remove the lowest branches every 3 to 5 years. However, always leave a crown of two-thirds to one-half of the total height of the tree.

F.W. von Althen

Copies of this leaflet can be obtained from the Centre's Information Office.

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Additional information on this subject is contained in "A guide to hardwood planting on abandoned farmland in southern Ontario" by F.W. von Althen.