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

## Planting and Tending Recommendations for Bur Oak

*Where to plant:* For optimum growth plant in deep, fertile, moist, but well drained loams or clay loams. This species is also very tolerant of a wide range of soil and moisture conditions and will grow in soils ranging from dry sand to poorly drained clay.

*Where not to plant:* In excessively dry, wet or shallow soils.

*Site preparation:* In August before spring planting spray 4.7 L/ha ( $\frac{1}{2}$  gal/ac) of Roundup over the total plantation area. One week after spraying plow and disk or rototill the sprayed area. On sites where mechanical site preparation is not possible or desirable, spray 4.7 L/ha ( $\frac{1}{2}$  gal/ac) of Roundup in August on strips at least 1.2 m (4 ft) wide or in circular spots with a diameter of at least 1.2 m (4 ft).

*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 with fruit orchards. On less productive sites and for purposes other than that of high quality timber production, it might be most desirable to plant bur oak in mixture with black walnut, white ash, silver maple, basswood, white oak or other hardwood species suitable for the soil and drainage conditions of the planting site.

Bur oak should not be grown in mixture with conifers, because the conifers provide an ideal habitat for rabbits which will browse the tops and gnaw the bark of the hardwood seedlings. In plantations with even relatively low rabbit populations the browsing and bark gnawing will prevent most hardwood seedlings from producing stems of acceptable size and quality.

*Spacing:* There is no ideal spacing for planting all species on all sites. Spacing is therefore determined mostly by a compromise involving the growth requirement 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 3 m (10 ft) between rows and 1.5 m (5 ft) within rows is recommended. This spacing requires planting 2200 trees/ha (870 trees/ac). 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.

*Planting stock:* 2+0 seedlings.

*Time of planting:* In spring as early as site conditions permit but never later than the middle of May.

*Method of planting:* Machine planting or spade planting using the wedge method.

*Weed control after planting:* Shortly after planting spray 5.6 kg/ha (5.0 lb/ac) of Princep Nine-T over the total area, strips or spots prepared for planting. In October of the first and second year or April of the second and third year after planting spray 6.7 kg/ha (6.0 lb/ac) of Princep Nine-T over the same areas. Where necessary continue spraying after the third year until the tree seedlings have outgrown the weed competition.

*Rodent control:* On sites with dense rabbit populations it may be necessary to protect the young seedlings from browsing by intensive hunting, by fencing the total plantation area, by spraying the seedlings each autumn with a repellent, or by placing wire screens around individual seedlings. Where stem girdling by mice is a problem, eliminate weeds or place plastic tree guards around the stems.

*Pruning:* During the first three years after planting prune the side of forked leaders or individual branches annually to improve stem form. Thereafter remove the lowest branches every three to five 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.

January 1983

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

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