

# **MARYLAND WALNUT GUIDELINES**

PRODUCED BY THE MARYLAND CHAPTER OF THE WALNUT COUNCIL

## **Black Walnut Management in a Nutshell**

There is a lot that is known about the establishment and management of black walnut in the eastern United States – far more than could be covered in a few pages. In fact much of what we have learned about the planting and early management of other hardwood trees is based upon the large amount of scientific research and practical experience with walnut over the last 50 years. This document is intended to provide some of the key points about black walnut. Those who are interested in learning more can investigate further, and would benefit from membership in the Maryland Chapter of the Walnut Council.

### **“Location, Location, Location”**

The most important thing about establishing or managing black walnut is the growing site. While walnut can survive in many areas with less than optimal conditions, it will only grow well in the right kind of location. The ideal site would be on a gentle lower slope, stream valley or level area, with good soil moisture but never very wet during the growing season. The soil should be at least 24 inches (more is better) of deep of fertile, loamy soil without any restriction of bedrock, hardpan, high water table, etc., have a pH of between 5.5 and 8.0 (6.0 – 7.5 is better), and have a mostly silt loam or silty clay loam texture. Heavy clay, gravel, sand, and shale are not good. The site should have full sunlight, with no trees at all overhead. If you have sites not suitable for walnut, plant other hardwoods or pines in consultation with a Forester.

### **Planting Stock**

You can purchase good quality one-year-old walnut seedlings from Maryland’s John S. Ayton State Nursery for a very reasonable price. Since these are from seeds collected from a large number of trees and sites in Maryland, genetic diversity and adaptability to local conditions are virtually assured. There are also “genetically improved” seedlings that you can purchase from sources out of state that possess (in some cases this is doubtful) improved characteristics for straightness and growth rate. They are usually much more expensive than seedlings from the state nursery. Experience here has shown that usually these do not do as well as walnut trees from local seed sources.

### **Direct Seeding**

You can also grow your own seedlings for transplanting, or plant the nuts directly where you want the tree to grow. In the fall of the year, pick up some nice healthy-looking nuts (crack a few open to check the kernel) from vigorous and well-formed trees. It’s nice if the donor trees are straight, but walnut trees grown out in the open will almost always be forked and limby, regardless of the

genetics, unless pruned and tended by a knowledgeable person. Collected nuts can be husked or not, but must go through a cold stratification period before they can germinate. This is usually accomplished by planting them in the field in the fall, so they undergo this process naturally and emerge in the late spring. One problem with this is that squirrels and other rodents will often find and dig up the nuts. Another option is to store the nuts in a soil pit outdoors over winter, or in a plastic bag filled with moist sawdust in a refrigerator, and then plant them in spring. Aside from the rodent and germination issues, direct-seeded nuts are more susceptible than planted seedlings to damage from all sources of problems the first year, especially weeds. Those that grow through the first year will do just as well as (but probably not better than) properly planted, good quality walnut seedlings from a nursery. As they grow, direct-seeded walnuts will usually average a little smaller than seedlings planted the same time since they are one year younger. The cost of direct seeded walnuts is much lower than nursery seedlings (not counting your time and trouble), so you can afford to plant a large number of them if desired.

## **Planting**

The spacing for walnut plantings ranges from 8 ft. by 8 ft., up to 20 ft. by 20 ft., with 10 ft. by 10 ft. or 12 ft. by 12 ft. (or variations thereof) being most common in Maryland. This is about 300 – 450 trees per acre. While walnut has traditionally been planted in pure stands, more and more people are planting them in mixed-species plantings. One common scenario is to plant several different species of hardwoods mixed together, such as black walnut, red oak, white ash, and tulip-poplar. There is good evidence that the trees benefit from this interaction, and the risk of the failure, due to poor site adaptability or some other problem with any one species, is decreased. Another option commonly used in other states is to plant the walnut trees (and/or other hardwoods) in alternating rows with white pine. This helps shade out the grass and other weed competition, and helps “train” the hardwoods to grow straight and free of large limbs.

## **Protection**

While black walnuts, like most native trees, have the usual complement of insects and diseases, none is typically much of a problem. Deer damage, however, is a significant problem. Deer will eat the leaves and shoots in summer and the twigs in winter, and bucks will rub the bark in autumn. While reducing the deer population helps, the remedy most people use is the tree shelter. Typically, four-foot-tall translucent plastic tubes are staked into place over the seedling, which protects it from deer damage. The shelter also acts as a greenhouse (until the seedling emerges) helping it grow taller faster (though over time walnut grows just as fast without tree shelters, if it is damaged it may never have the chance). The shelter also marks the location of the seedling, and protects it from incidental mechanical damage and contact with herbicides. Tree shelters do need to be maintained and removed at the appropriate time, and are not cheap (about \$2 each, plus stake). If there are no deer, the other benefits of tree shelters usually do not justify the added expense.

## **Weed Control**

The “number two” reason (behind poor location) for poor results in establishing walnut is lack of adequate weed control. Walnut trees, and most other hardwood trees, will not grow well with heavy root competition from weeds. Generally grass is the worst weed, and cool-season sod-forming grasses (like your lawn) are among the worst of all. Obviously, since mowing helps establish and maintain the dominance of grasses, mowing is not weed control. Other weeds can be problems too, such as multiflora rose, honeysuckle, and thistles (especially Canada thistle). Weeds should be controlled in the year prior to planting, and during the first five years after planting – or until tree canopy closure begins to shade out the grasses and broadleaf weeds. Even older stands of hardwoods benefit from weed control if a grass sod is present. Mowing can be used in combination with cultivation or use of herbicides. Herbicides represent the most effective means of controlling weed competition and improving tree growth. A typical herbicide treatment would be glyphosate (such as Roundup) and simazine (a pre-emergent that helps prevent new weed seedlings from growing) applied as a directed spray around the trees each spring.

## **Pruning**

In order to grow good quality timber trees, it is necessary to prune field-planted walnut (and other hardwood) trees to help them growing straight and free of large limbs and knots. This pruning is typically done once a year in late winter. Extra terminal shoots are usually removed, leaving only one to grow in the coming year, and some of the side limbs are removed each year as the tree grows, to gradually create a clear, straight trunk at least 17 feet tall. Over-pruning and poor pruning cuts can cause problems, so the techniques need to be learned by the novice.

## **Thinning**

When walnut and other hardwood trees are large and fully mature, there will be only about 20 – 40 per acre. Since we may have planted 300-500 seedlings per acre, most of those lost the battle in one way or another. In unmanaged stands this mostly happens through competition, where the larger trees gradually shade out the smaller ones. Since this process slows down the growth of the surviving trees, and those that survive are not always the best ones for timber, wildlife, etc., in managed stands (either planted or natural) thinning is usually done to select the better trees and remove the less preferred ones. In planted walnut, this thinning may first take place at about 15 years of age, and continue every 15 years thereafter. There are specific ways that walnut and other hardwood stands are thinned to achieve the desired results – so again, the techniques need to be learned by the novice.

## **Nuts**

Some people may be interested in producing walnut nuts as a crop. Unfortunately, at this time there is no well-established market for black walnuts

on the east coast. A mid-western nut processor previously purchased walnuts here, at a fairly low price, but they have since discontinued buying here. While there are some folks who crack out and sell black walnut kernels locally, most people who collect the nuts do so for their own use. You can crack and pick out the nutmeats yourself with the proper tools and some patience, and the results in the form of black walnut kernels for baking and other culinary endeavors are often thought to be worth the effort. Some people collect nuts for growing more walnut trees, and some are collected to send to the State Nursery for the same purpose.

### **Lumber and Veneer**

Most people who establish and manage black walnut trees have in mind that the trees will be valuable some day. Most trees cut out in early thinnings will be the smaller, poorer ones with value only as firewood. Later thinnings may yield some small sawlogs for personal use, or for sale if you're a creative marketer. The most valuable trees – used for high-grade lumber and veneer – need to be at least 60 years old, or more, provided you have them growing on a good site and do a good job in managing them.

Black walnut is arguably the most useful and beautiful of our native hardwood trees. It has also always been among the most valuable. From the 1950's through the 1970's black walnut was in especially high demand and the supply of high quality trees was depleted. With the remaining trees of poorer quality and higher price the manufacturers and consumers gradually turned to other woods. While still valuable and in demand, black walnut prices overall did not keep pace with the increase over time with other hardwoods. Hardwood lumber prices and preferences tend to fluctuate and change due to consumer tastes and domestic and foreign markets, and recently the demand for walnut wood has increased. High quality trees bring an excellent price, especially when a large enough volume is sold at one time, and when the timber is sold competitively to the best advantage to the seller. It makes no sense to grow a tree for 50 to 100 years and then sell it cheaply due to ignorance. If you have trees to sell, consult a Forester about the best way to go about selling them to get you the best price and leave behind woodland that will produce quality trees in the future.

### **Further Information**

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