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GROWING BLACK LOCUST

E. J. Lott, Extension Forester

Why Grow Black Locust?

Black locust is a suitable tree for stakes and poles and one of the most durable woods for fence posts. It grows rapidly on good soils; it will also grow on poor soils. Its spreading root system and rapid growth make it especially desirable for control of soil erosion.

Planting Stock

One-year seedlings are best for planting. They should be at least 18 inches high and have basal diameter of 0.2 inches or more.

Planting the Trees

The most satisfactory method is to dig a hole for each tree. The hole should be large enough to accommodate the roots when they are spread out. The tree should be set in the hole at the same level or at a slightly lower level than the tree grew in the nursery. The seedlings should be wrapped in wet burlap or carried in a pail with water during the planting operations. At the time of planting, only one seedling should be removed from the pail at a time. Black locust is also well suited to machine planting.

Spacing the Trees

A 6-foot by 6-foot spacing is best for most plantings. This spacing accommodates 1210 seedlings an acre.

Fertilizing the Seedlings

On soils of low fertility the growth of black locust can be increased by using fertilizer. If the trees are planted by hand, a tablespoon of 12-12-12 or other commonly available general fertilizer can be placed in the hole at the time of planting. It is not necessary to mix soil and fertilizer together. This will assure rapid initial growth of the seedlings.

To obtain continuing rapid growth on soils deficient in phosphorus (a common soil nutrient deficiency in the residual soil areas of southern Indiana) apply 1/4 to 1/2 pound of 0-45-0 to the ground surface around the planted seedling. Such localized application is preferred over a more general broadcasting of the fertilizer because of a tendency for clay soils to "tie-up" fertilizer nutrients.

If trees are planted with a machine, a complete general fertilizer such as 12-12-12 can be dribbled into the bottom of the opened furrow using a fertilizer attachment adapted for the purpose. Or, an application of 200 to 400 pounds of 0-45-0 fertilizer (or equivalent) can be applied around the seedlings on the disturbed soil of the furrow immediately after planting.

Experiments have shown that the height growth of fertilized seedlings is more than twice that of non-fertilized seedlings. The root development of fertilized trees can be as much as five times that of non-fertilized seedlings.
Figure 1. **Black Locust** 2 years after planting on residual soil area in southern Indiana. Both were planted at the same time and were 1-0 seedlings. Those right were treated with phosphorus (0-45-0) on the top of the ground around the seedling at the time of planting, using about 1/4 pound of the fertilizer per tree. Those above were untreated.

Figure 2. Effect of one tablespoon of 2-12-6 fertilizer on the growth of black locust seedlings at the end of the second growing season. The fertilized tree on the right has a diameter of 1.3 inches; the unfertilized tree on the left has a diameter of 0.6 inches. The diameter of the roots on the fertilized tree was three times that of the unfertilized tree.

**Protection of Plantings**

The plantings must be protected from all domestic livestock, fire, and insects. The most serious insect pest of black locust is the locust borer (*Megacyllene robiniae*), which causes severe tunneling in the wood, both in the trunk of the tree and the branches. The borings often become so abundant that breakage of branches or the entire trunk may occur. Presence of the locust borer is evidenced by:
1. Holes with wood dust associated in trunk or limbs.
2. Knotty swellings on the trunk.
3. Wet spots on the bark in the spring.
4. Accumulated wood dust at the base of the tree in spring (with heavy infestations).
5. Broken portions with honey-combed wood.

The adult beetles appear from August to October and are recognized by a black body and distinct bright yellow bands on the wings. The adults are 3/4 inch long. The larval grub stage is found in the trees as white grub-like forms, 1 inch long when fully grown. It is in this stage that the damage is done.

Slow growing trees on poor sites are most susceptible to severe attack by this insect. Where heavy infestations preclude growth of merchantable or usable poles or posts, clearcutting provides a means of control where sprouts develop at a rapid rate and are thinned. The trees that develop from selected sprout origin are more resistant to injury. Also, the more thrifty trees in any stand are more resistant.

If chemical control is desired, excellent results can be obtained with Lindane (2 quarts of 20% emulsifiable concentrate for each 100 gallons of water). If applied with a hydraulic sprayer in early September, it will provide control from these borers for 2 to 4 years. Spring applications, in April or May at the first sign of wet spots, are also successful. The basal area of the tree is a favored attack site and must be sprayed thoroughly.

When trees have been protected for several years and finally attain thicker bark, chances of infestation become more remote. Thus early protection can be profitable, and the trees probably will not require further treatment after reaching about 5 inches in diameter.

Source of Seedlings

Black locust seedlings are sold each year by the State nurseries at cost. Since black locust are legumes, they have the ability to "fix" nitrogen if their roots have been inoculated with nitrogen-fixing bacteria. Seedlings obtained from the State nurseries have been so inoculated. As a result, the absence of nitrogen nutrients in soils does not limit the continuing growth of black locust trees. Orders for the seedlings are usually taken from late September to February. Order blanks can be obtained from your county Extension agent or nearest forester.