

Seeding and Growing Black (Yellow) Locust Trees

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Black (or Yellow) Locust is a very desirable tree for Kentucky farms because of its many excellent qualities.

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This circular is a revision and enlargement of Circular 333, "Growing Black Locust Trees" (out of print). It also replaces Leaflet 42 "How to Grow Black or Yellow Locust Seedlings."

Seeding and Growing Black (Yellow) Locust Trees

By W. E. Jackson

The Black locust (sometimes called Yellow locust) is one of the most desirable trees on the farm because of its dense, durable wood which is excellent for many farm uses. Also, plantings of the tree are useful for controlling erosion.

Growing tree seedlings from seed in a prepared bed on your farm provides a readily available supply of young trees for transplanting at the proper season when other farm work permits. Seedlings can be drawn from the bed in whatever quantity needed for the period of time which you may have for transplanting them. Also, growing your own supply gives you the advantage of having fresh-dug seedlings. In the case of purchased seedlings, sometimes their roots become dried out from exposure during shipping.

ADVANTAGES OF SEEDLINGS OVER SPROUTS

A tree seedling, originating from a seed or nut, has roots of its own which enable it to draw food and moisture from the soil when it is transplanted. This self-sufficiency enables the seedling, when planted correctly, to live and grow quickly into a healthy tree.

Tree sprouts are off-shoots from roots or underground stems of older trees and may not have roots of their own. Lack of roots is usually the cause of large losses in newly transplanted sprouts. Another disadvantage of sprouts is that, because they are usually of various sizes, a plantation of them makes an unsightly and irregular growth.

GROWING LOCUST SEEDLINGS

How to Get the Seed

Get your locust seed for planting from the trees or buy it from a reliable dealer. If you get your seed from trees, gather the pods

containing the seed in late summer or fall after they are mature and dry. Hull the pods and carefully pick out the larger, better-filled, plump seed. Growing good, strong locust seedlings from home-grown seed depends on planting good seed. Results are likely to be disappointing if the seed is not carefully selected and too many small, imperfect seeds are planted. Locust seed which has been carefully selected and recleaned is highly fertile and germinates 60 to 80 percent—and even higher if normal moisture conditions prevail during the first 30 days after the seed is planted.

The number of black locust seed to the pound varies according to the plumpness and size of the seed. One pound will average from 22,000 to 24,000 seed. The area a pound of seed will sow depends upon the width of the rows and the distance the seeds are apart in the row. On an average one pound of seed will be sufficient for planting about 1/10 acre, or 7 rows, 100 feet long, with 18 inches between the rows.

Preparation of the Seedbed

Select a deep, sandy loam, fertile and well-drained location with a northern exposure. Plow, harrow and smooth the soil, getting it into a good, fine, workable shape just as carefully as if it were a tobacco seedbed. Make shallow rows, about 2 inches wide and $\frac{3}{4}$ inch deep, 18 inches apart, running lengthwise of the bed. Unlike the preparation of a tobacco seedbed, do not burn the bed, or place a cotton canvas over it, or use phosphate or any commercial fertilizer before or after the seeds are planted.

The small, tender locust seedlings do not grow well and may die if overtopped by other trees, weeds, and grasses. Therefore, do not broadcast or scatter seed on the field site where the locust trees are to grow. The best way to establish a good plantation is to transplant seedlings grown in a bed.

Planting the Seed

Plant seed from April 15 to May 15. Good seedlings have been grown from seed planted in June, but earlier planting is much better. Use either dry seed or those soaked in lukewarm water 3 to 4 hours. Avoid over-soaked seed because they are so

To Grow Good Locust Seedlings —

1. *Prepare the seedbed well. Pulverize all clods. Give the soil as fine tilth as a tobacco bed.*
2. *Plant the seed between April 15 and May 15—no earlier, no later.*
3. *Don't plant the seed too deep. From $\frac{1}{4}$ to $\frac{3}{8}$ inch is best. Firm the soil well, but don't pack it.*
4. *Keep the bed free of grass and weeds.*
5. *Don't make a seedbed on a dry site, such as on a ridge or an exposed hillside. Such soil is inclined to dry and bake, thereby preventing the seeds from germinating and growing.*
6. *Protect the roots in transplanting. More seedlings are killed from exposure of roots to sun and wind when transplanting than from any other one cause.*

soft that they dry out too readily when placed in the ground. Drop the seed about an inch apart in the row and cover them $\frac{1}{4}$ to $\frac{3}{8}$ inch deep with woods or sandy loam soil, which will not crust or bake in the sun after a rain.

Care of the Seedbed

Make the soil over the seeds firm by laying a plank on the row and tapping it along its length with a shovel or hoe. **DO NOT WALK ON THE BOARD OR ROW.**

Keep a light mulch of clean straw or leaves over the bed to maintain sufficient moisture and warmth in the soil during the normal germination period (14 to 21 days). Mulched seed germinates much more quickly than other seed. Remove most of the mulch as soon as the plants show through the ground. Pull the remaining mulch to the space between the rows, thereby better conserving moisture in the bed.

Place poultry netting of sufficient height around the bed if the young seedlings are threatened by chickens or rabbits.



Fig. 1.— It is important to keep the locust seedbed free of grass and weeds.

Cultivation of Seedlings in Seedbed

Cultivate the surface of the ground between the rows during the growing season, keeping the seedlings free of grass and weeds. If the growing season is normal, with enough moisture, the seedlings should reach a height of 24 to 36 inches by fall.

Seedlings 12 to 18 inches high are the best sizes to transplant, and will stand a better chance of surviving after transplanting than taller ones. If the seedlings are more than 24 inches high, cut off their tops 6 to 8 inches above the ground before you transplant them. Cutting back the tops of taller seedlings gives a smaller top stem to be fed from the roots while the roots are getting established in their new location.

Grow only the best planting stock possible—a plant having a medium-height top and a well-developed, fleshy main root shaped something like a long white radish. Discard seedlings that do not have a fleshy main root.

Removing the Seedlings from the Bed

After the seedlings have dropped their leaves in the fall, they are dormant and may be safely removed from the growing bed for transplanting. Use a garden fork or a long-handled shovel for this purpose. Press the digging tool well into the soil, so as to cut off any holding roots, but protect the main stem of the seedling. A small turning plow may be used to break the seedlings loose from the soil, if care is taken to keep the point of the plow away from and to one side of the center of the seedling row.

Grading the Seedlings

Grade the seedlings as to size as you take them from the bed. Cover the roots as soon as you dig the plants so as to protect them from the sun and drying wind while you are grading the plants. Tie the seedlings into bundles of 50 to 100 (depending on size) and place them in a "heeling in" trench to prevent their roots from drying out. Place no soil on the seedling tops. Keep the soil over the roots moist by watering, if necessary, while the plants are "heeled in."

CARE OF PURCHASED SEEDLINGS BEFORE PLANTING

If the seedlings to be planted were not grown on your place or were received from a distant nursery, inspect them as soon as possible to make sure that they have not become heated while in the shipping bundle. If they cannot be planted at once and must be held several days, open the bundles and "heel in" the seedlings in a shady place, in a shallow trench dug with one sloping side. The roots of the seedlings should be carefully spread out and covered immediately with fine soil, and watered if the soil is dry.



Fig. 2.— As soon as locust trees are received from the nursery, the bundles should be opened and the trees heeled-in. Put them in a trench deep enough to cover the roots; if the soil is dry, water the trees.

PLANTING LOCUST SEEDLINGS

When to Plant

Early spring before the leaf buds begin to swell is the best time to plant Black locust seedlings. Trees set in the fall on open, worn soil sites are likely to be killed or injured by the alternate freezing and thawing of the soil. If the tree seedlings are set out late in the spring, those having a deficient root system or which have begun leafing out should be cut back to approximately 8 inches in height above the ground line.

Preparation of the Ground

If the land is level or gently sloping, furrows made 6 feet apart may be plowed, running with the contour of the site, in which to set the trees (Fig. 3). Deepen each planting spot with a digging tool, if the soil is hard. Take care to have the holes wide and deep enough that the roots of the seedling can be spread out in a natural manner.

Before planting trees in a severely gullied area, it is advisable to break down the tops of the gully ridges (Fig. 4) and to build check dams of logs, mill slabs, stones or brush across the gully bottoms (Fig. 5).



Fig. 3.— Plow furrows, 6 feet apart, running with the contour of the site, are a good means of laying out rows. Rows of this type help to keep back weed growth and provide a means of catching and holding water.



Fig. 4.— In gullied areas, the tops of the banks should be broken down before planting black locust trees.

The Use of Fertilizer

As has been already stated, locust trees produce the fastest and best growth on above-average fertile soil sites. There have been many plantation failures in the past where locust trees have been planted in poor, wornout soils. Such sites may be improved

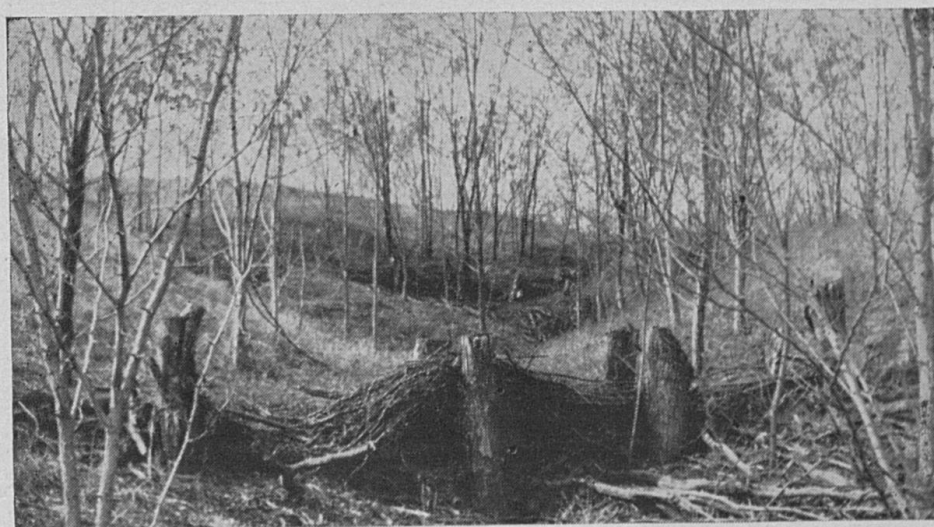


Fig. 5— Before locust trees are planted, check dams of logs, mill slabs, or stones should be constructed at right angles to the direction of the gully. This once-gullied area has regained a more normal physical condition because of the planting of forest trees.

before the trees are planted by spreading over the area ground limestone at the rate of 2 tons per acre. Also, place about a table-spoonful of a general fertilizer, such as 3-10-3, in the planting hole of each tree. If plow furrows are made in which the trees are to be set, the fertilizer may be distributed along the furrow by hand or by the use of a fertilizer distributor.

How to Plant (Fig. 6)

Place the trees in the bottom of the furrow or planting hole, slightly deeper than they were in the nursery with the roots

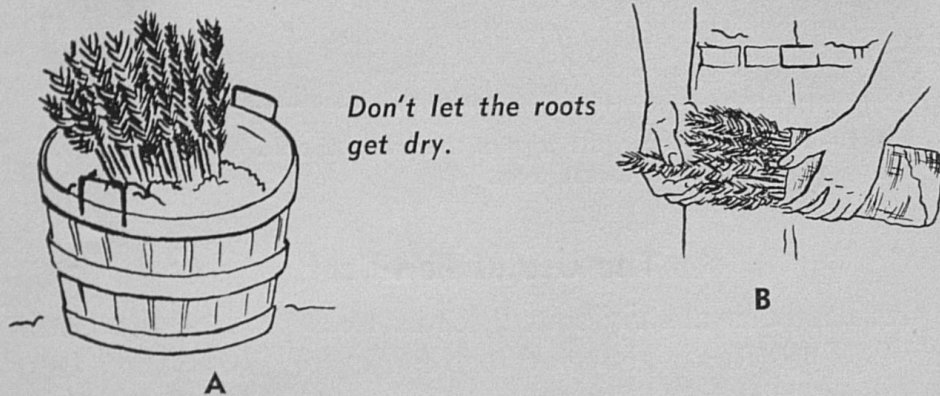


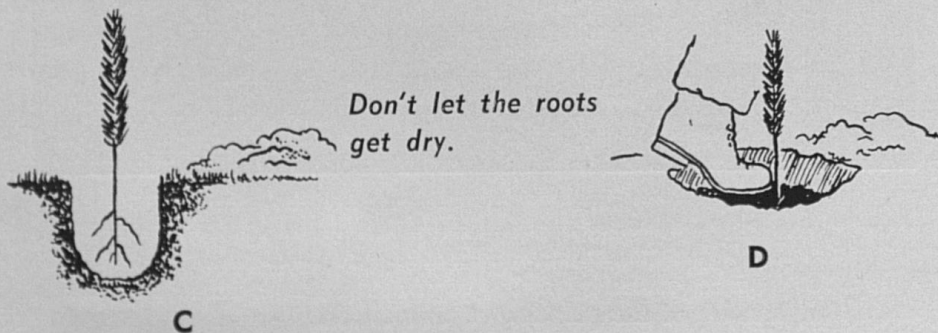
Fig. 6.— These suggestions will help you in planting your Black locust seedlings.

(A) Transport the trees from the heeling-in trench or seedbed to the planting site in a bucket or basket containing enough soil to keep the roots covered.

(B) Carry the trees along the planting row, wrapped in a wet burlap bag or in a bucket containing water and soil.

(C) With a mattock or grub hoe, dig a hole large enough to allow full spread of the roots. Place the tree in the hole at the same depth it stood in the nursery or seedbed.

(D) Replace a small amount of topsoil around the roots and pack tight. Then push in the remaining loose soil.



spread out and loose soil pulled over and around the roots and firmly tamped. Very long roots should be cut back about one-fifth. At all times during the planting work, take care to protect the roots from the sun and wind. Carry trees along the planting row with their roots wrapped in wet burlap or in a bucket containing water and dirt. Do not take a tree from the bucket or other carrying receptacle until a place has been made ready for it in the soil so that its roots may be immediately covered and protected. Seedlings 12 to 18 inches high have a better chance of surviving than taller ones. Cut back seedlings that are more than 24 inches high before planting them.

Spacing

The purpose for which the planting is made should determine how far apart the trees should stand. A good spacing is 6 feet apart each way. This requires about 1,200 trees to the acre. In gully erosion control, no regularity of spacing should be observed, and enough trees should always be set to stop further washing of the soil as quickly as possible. A spacing of 2 to 3 feet apart for this purpose is not too close. After the out-wash of the gully has been checked, the stand may be thinned to gain better growing space for the trees retained. As soon as possible, replace trees which die. This keeps the tree plantation full and provides for taller and straighter trees through competition, one with another. Irregular rows and spacing of trees, help to prevent washing between the rows on steep slopes.

CULTIVATION AND CARE OF LOCUST PLANTATION

The locust tree is a member of the legume family of plants and, thus, does best in a good, fertile soil. The better the quality of soil in which the locust is planted, the quicker will be its growth and the better its ability to withstand disease and insect attack. Cultivation where possible in the early stages of its growth is beneficial.

It is very important that the plantation be well fenced against livestock. Young locust trees are very attractive to grazing animals, and one or more head of livestock can greatly damage or ruin a planted site in a very short time. If danger from grass fires

exists, several plow furrows may be run around the planted area. Pruning the lower branches promotes the growth of the trees but, on the other hand, keeping the stems of the trees shaded helps to keep the borer beetle away.

HARVESTING THE TREE CROP

In growing locust trees on the farm, an overall plan should be developed so that the trees are removed as rapidly as they reach a suitable use size. Every acre should be kept completely stocked with young trees for the next crop. Selective cutting is the best method of harvest, and a good job of timber stand improvement should accompany it. Selective cutting is removing the oldest and largest trees for use on the farm or for market. They may be individuals or groups. Timber stand improvement means removing all trees of inferior species or quality which have no opportunity of growing into better wood products, for such trees take up room and use moisture and fertility which should go to other trees.

Locust trees may be cut at any time of the year. However, the wood should be allowed to go through a drying or seasoning period of 6 months before it is placed in contact with the soil.

Owing to the density of the cell structure of locust wood, which naturally offsets rot from fungi action to a great extent, it is not economical to use chemical preservatives in efforts to prolong the use of the wood.

Many acres of locust trees planted in the past have been permitted to grow too long before cutting. They have become stagnated, and the trees have begun to die off. Even those that are still alive may be borer-infested or otherwise damaged. It should be realized that locust trees grown on the farm are one of the crops and must be harvested at the right time to be profitable. Unlike many other trees, the locust will sprout from its stump and provide for another harvest without the necessity of re-planting.

INSECTS AFFECTING LOCUST PLANTATIONS

The Locust Borer

The grubs of this insect injure locust trees by boring into the wood, not only impairing the growth of young trees but also

affecting the quality of timber being produced. The grubs come from eggs laid by a black-and-yellow beetle which is frequently found on the flowers of the tall goldenrod, feeding on the pollen. The beetle is about $\frac{3}{4}$ inch long and is characterized by zigzag, bright yellow stripes across its body. It deposits eggs in the bark of locust trees. In a few days grubs emerge and bore through the bark to the surface of the sapwood where they stay over winter. They then bore into the wood, feeding on the wood and growing through the intermediate stages until they become mature beetles and come out of the tree about the time the tall goldenrod blooms. The beetles do not place eggs on trees smaller than about an inch in diameter, and they seem to avoid shade, so that plantings of small trees are not molested at first. The destruction of goldenrod, especially the tall variety, tends to drive the beetles away from the plantation in search of food elsewhere.

Hardly any success has been had in the past in combatting the locust borer by spraying or dusting with the familiar chemical agents generally used against tree insect infestations.

Weed growth in locust groves and plantations after the trees have become well established is very desirable as it discourages borer infestation due to the shade provided.

Treatment of Borer-Infested Plantings — Locust plantings which are found to be so seriously infested with the borer that height and diameter growth has stopped may be renewed from sprout growth. All infested trees should be cut off close to the ground and removed from the plantation. If the soil is acid and low in phosphorus, the area should be given an application of ground limestone at the rate of 2 tons per acre, and of 20-percent superphosphate at the rate of 400 pounds per acre, or an equivalent amount of some other phosphate. Then the area should be harrowed with a cutting harrow. This treatment should cause the stumps and roots of the old growth to sprout vigorously. After the sprouts have made a year's growth, the straightest and strongest should be selected to remain, spaced as nearly as possible 6 feet apart each way; the others should be destroyed or transplanted to another suitable location.

The Locust Twig-miner

This insect is especially injurious to young trees. The larvae of a small moth bore into and mine the twigs and branches, causing a tendency to break. Young locust trees growing on very poor land seem to be most susceptible to infestation by the twig-miner. Application of fertilizer high in phosphorus to depleted soils tends to give planted seedlings added vigor to overcome the insect infestation.

Leaf-miners and Skeltonizer

The larvae of a small black and yellow beetle and of several species of moth burrow between the upper and lower surfaces of the leaves of the locust. Sometimes the foliage is almost entirely killed so that the trees turn brown and seem to be dying. This insect attack usually comes about in late summer or early fall season, when the tree is beginning to become dormant for the winter season; consequently, the insect infestation damage to the tree's welfare is assumed to be of small importance. Successful control has not been worked out, but one good practice is to rake up and burn all fallen leaves and trash under the trees.

*Remember — It Takes Good, Fertile
Soil to Grow Worthwhile
Locust Trees*