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# Fence Post Production

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# Fence Post Production

## On Oklahoma Farms

By HARRY P. RIGDON  
*Extension Farm Forester*

### A POSTLOT WHY AND WHAT

Any farm on which livestock is raised is incomplete without fences. A well-planned crop rotation requires permanent fields separated by fences. The increase in contour farming and terracing develops irregular fields. This generally means more rods of fencing on a given farm. The cost of this improvement rises and falls with the price of livestock and crops. If a farmer doesn't grow his own posts, he must buy them. A farmer who takes cash from livestock or crops to buy fence posts may be overlooking the profit of producing his own.

Records in the regular farm account book should be kept on post production the same as any other crop. These records will take the guesswork out of this kind of timber crop.

The name postlot is generally given to an area producing fence posts as its major crop. Some secondary material such as fuel wood, poles and piling may also come out in lesser quantities. Furthermore, it may serve as a windbreak, as a wildlife habitat, or as a means of erosion control.

### Native Postlots

Several native trees will produce more value in the form of fence posts than in any other product. The most abundant kinds are: Post oak, native cedar, Osage orange, Kentucky coffee tree, wild mulberries, and others. Black locust "gone wild" and sassafras thickets may be handled as natural timber areas. An over-all plan should be developed by which fence posts are removed as rapidly as they have reached their maximum value. In so doing every acre should be left completely stocked with young trees of usable species 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 applied to the procedure of removing the oldest and largest trees. 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 products but utilizes space, moisture and fertility. The

first and foremost management job is protection against fire. If stock graze on these areas, care should be taken that the land is not overgrazed. The removal of livestock in the spring at the time the trees are budding is essential. Livestock will damage post timber any time of the year and the loss of the timber is apt to be greater than the profit from grazing.

### Postlot Plantations

Many acres of postlots planted in the past have been permitted to grow too long. They have become stagnated and trees have begun to die off. Even those that are still alive are borer-infested or otherwise damaged. We should realize that post trees are simply one of the crops on the farm, and like others, they must be harvested to be profitable. Unlike many other crops, they will sprout from the stump and make another harvest without the necessity of planting. Each year we enjoy an increased interest in planting and managing trees for fence posts. This bulletin pertains largely to planting, care, management, and harvest of post plantations instead of native postlots. We have learned a great deal about species, spacing, pruning and other simple management factors in the last several years. A careful plan of the plantation before it is established will simplify the handling and increase the profit.

### SOILS

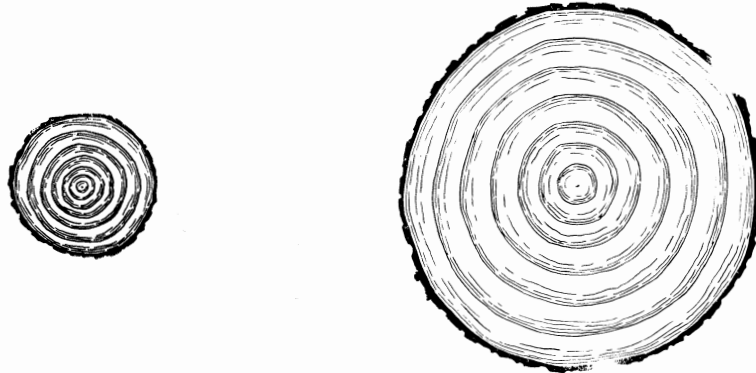
In general, postlots have been considered one crop that would grow on inferior soils. **THIS IS NOT THE CASE.** That impression should be corrected. Post trees will respond to the moisture, fertility, and physical make-up of soils very much as any other crop. The best results will be obtained by planting on bottom lands.

In the area of 25-inch rainfall or less, our forest trees should be limited to sandy soils with a low clay content and to fertile soils which are sub-irrigated or on which supplemental moisture can be provided. In areas of 25 to 35-inch rainfall, any land that will produce corn or alfalfa can grow a reasonable crop of post trees.

The character of the soil is not as important as the texture and permeability of the sub-soil. In areas of at least 35 inches of rainfall, trees can be grown on upland or hillsides providing the subsoil is porous and the plantations are given good care. Post trees may live on eroded land but they generally will not thrive, will be slow in growth, have poor form and short life. The same results may be expected where trees are planted on shallow soils, underlaid with rock strata or tight sub-soils. The fact that trees will start to grow on a piece of land is no assurance that they will grow to maturity and be profitable.

Good bottom land subject to overflow may be an ideal tree site. Many post species will withstand occasional over-flow so long as they are not washed out or damaged by debris. Catalpa is probably the

Diagram A.—Represents cross section of seven year-old catalpas grown within 100 feet of each other. One-fourth normal size.



Cross section of catalpa grown on eroded clay soils.

Cross section of catalpa on silted flood land.

choice flood land post tree. The area where cotton root rot occurs presents a special problem. It is discussed below.

### COTTON ROOT ROT

Cotton root rot is not new, it has been known in Oklahoma for at least 50 years. This disease is most prevalent in dark colored clay soils where the climate is warm and moist. In Oklahoma cotton root rot is found in all the southern tier of counties except Harmon. Occasionally infected spots have been found in the second tier of counties and elsewhere. Certain forest trees are susceptible to this disease. Of the species discussed in this bulletin, only three seem resistant enough to withstand the disease. They are the only species which should be risked in infected areas. These trees are: red cedar, Kentucky coffee tree, and Osage orange with some question on the last two. This disease is not easily spread. On non-infected land within the cotton root rot area, trees may be grown with reasonable safety. It is generally more desirable to seek out the field on an individual farm that is free from rot than to attempt to grow resistant species on infected land. This may be done by planting cotton or annual legumes on the land for one year to determine the presence or absence of the disease.

### LOCATION ON THE FARM

In determining the best location on a farm for a postlot, the first consideration is soil that will produce a greater return in trees. Where trees are planted primarily for erosion control, the case should be studied to see if a post species will do the erosion control job. On severely eroded land, not much can be expected in post returns.



Testing soils in post plantation.

Windbreaks may be strengthened by an adjoining acre or two of post trees. The location is each individual farmer's problem, but the selection of good producing tree land will bring the best results. Small plots of land in the bends of creeks are desirable areas. They may be difficult to use in growing other crops because of their location, their small size, and the difficulty in getting to and from them with farm machinery. These fields may or may not be "overflow" land.

#### TIME TO PLANT

In Oklahoma the tree planting season is rather long. Trees may be planted from about the first of December throughout the winter until they begin to grow in the spring. December planting is not desirable in an exceptionally dry fall. Rabbits cause trouble in some areas, particularly with catalpa if planted in the fall. Recognizing these possible dangers, the earlier the post trees are planted after they become dormant in the autumn, the better the growth and survival.

The roots of fall planted trees become firmly anchored by spring. This means that they will have a stronger root system when the top starts to grow in the spring. This earlier establishment makes a hardier tree and one with a better developed root system to withstand the drought of the following summer.

The soil should be reasonably moist at any time of the year that trees are planted.

Trees planted in March have three months less time for the root to become established than those planted the December before. Therefore, they have a harder time going through the August drought.

Another important factor in favor of winter planting is that the work can be done out of the heavy crop season on the farm.

#### LAND PREPARATION

After plantation has been established, the land will not be completely plowed again for a good many years. For this reason it is desirable to work up the crop residue on the surface and plow it as deeply as possible. For tree planting it is desirable to plow several inches down

into the sub-soil, even though this is not good practice on farm crops. In the drier sections of the state, if the land can be summer-fallowed a full year, or at least from harvest until the fall before planting, additional moisture will accumulate. This will be beneficial to the newly planted trees. The land should be plowed long enough before planting that it is thoroughly settled and contains no air holes.

In blow-areas the land should be worked up in accordance with regular practices found satisfactory in the community. All post plantations will produce much more if well cultivated for the first few years. Cultivation procedures should be such that increased soil blowing will not result.

### HOW TO HANDLE AND PLANT TREES

Careful handling of trees from the time they are dug until they are planted is most important and the following suggestions should be observed:

1. Be sure to get as much root system as possible if you dig your own trees. Do not scar or damage the roots. Trees other than evergreens should be dug with roots one foot in length for each inch in diameter of the tree trunk. For example, a one-inch tree should have roots a foot long in each direction.

2. Keep all tree roots carefully wrapped in wet sacks or burlap, wet straw, or covered with soil to keep them from drying out. They may be kept in a pail or tub of water while handling. Just as soon as trees from a nursery are unwrapped, they should be handled in this manner until planted.

3. Evergreens are more delicate than broad-leaved trees. Small bare-rooted evergreens should be placed in a pail of water rather than in a damp packing. Large evergreens balled and burlapped are not recommended for postlots.

Trees should be carried for planting as described above without permitting the roots to become dry. The hole for planting should be a little wider and a little deeper than is necessary to accommodate the roots. Any damaged or broken ones should be cut away with a sharp knife. Twisting of roots in the hole should be avoided while planting. The tree should be planted one or two inches deeper in the soil than it grew originally. Only good fertile top soil should be used about the roots of the tree. Straw, trash, or tufts of sod should not come in contact with the roots since these will establish air spaces and prevent the roots from coming in close contact with the soil. Material of this kind should be shaken out of the soil and placed about the base of the tree after it is planted. The soil should be firmed about the tree, the planter tamping with a spade handle or stamping with his heel. It is desirable to add a liberal amount of water after the planting.

There are various makes of tree planting machines on the market, most of which will do an acceptable job under the conditions for which they are built. The operator should exercise caution to be sure the machine is in the ground deep enough, that the trees are carefully placed in the open slit without the root being folded, and the packing wheels close the trench and pack the soil at the bottom of the trench. Loose soil at the top will do much less damage than at the bottom. With proper caution, machine planting does a better job than the average shovel planting.

### SIZE OF PLANTING STOCK

Generally, one-year old broadleaf seedlings are most desirable for post plantations. One-year suckers from locust thickets are acceptable. Two-year old stock of red cedar is usually more desirable than one-year seedlings. It is best to get the larger size of one-year old nursery-grown trees. Exceptionally large ones are difficult to handle, but if properly planted they are very good. The grades of broadleaf trees that the commercial nurserymen list as 12 to 18", 18 to 24" and 24 to 30" are the sizes that are not expensive, yet which have vigor enough to grow well.

Comparatively uniform planting stock is easier to handle than mixed sizes, since in the latter case, the planter is likely to make holes too large for the small trees and holes too small for the large trees. Machines need to be set for one size stock. Uniform size of planting stock is even more important when being planted by machines.

### SPACING

There is no ideal spacing of trees in postlots applicable to the entire state, nor even to different sites on the same farm. Several factors govern the spacing:

- a. The type of a crop desired makes a difference. If larger products are desired and a longer time between harvests is planned, wider spacing is desirable.
- b. The moisture available and fertility of the soil is the most important consideration. The wider spaced trees stand a better chance of withstanding a drought than more closely spaced ones.
- c. The type of implements to be used in cultivating plantations will determine the width between rows. If tractor tools are to be used, the rows must be wide enough to permit their use without damaging trees. Narrower rows will serve where horse drawn implements are to be used.

The spacing of trees within the row may be adjusted to the row width so as to get the desired number per acre. See chart, page 9.

Recommendations for stand per acre as follows:

1. In the Panhandle 600-800 trees per acre. Plant only on sub-irrigated valley land or supply additional water.



2. In the west part of Oklahoma (exclusive of the Panhandle) 600 to 1000 trees per acre. Plant only on sandy soil with porous sub-soil.

3. In the east part of the state 800 to 1500 or more per acre. Fifteen hundred or more only on moist bottoms or flood land.

Good posts are being produced with a wide variation of spacings. The foregoing discussion should enable the farmer who knows his land and weather to form very good judgment as to what number of trees to plant per acre.

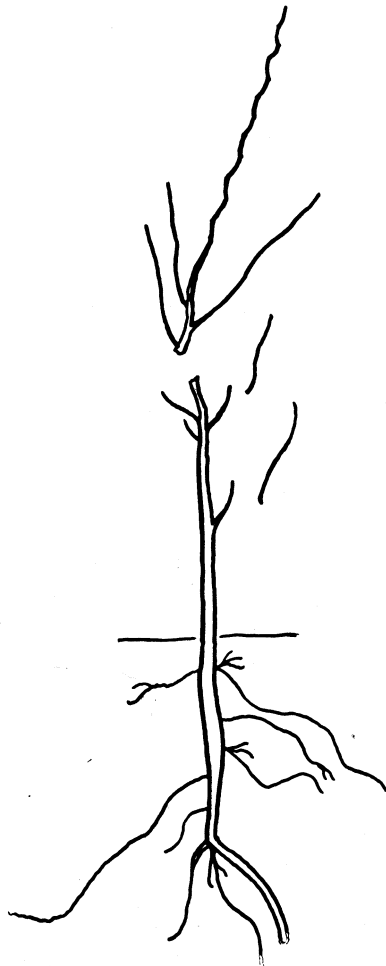
### Trees Per Acre for Various Spacings

Spacing in feet	Trees per acre	Spacing in feet	Trees per acre
5 x 5	1742	6 x 12	605
5 x 6	1452	7 x 7	889
5 x 8	1089	7 x 8	778
5 x 9	968	7 x 9	691
5 x 10	871	7 x 10	622
5 x 12	726	7 x 12	519
6 x 6	1210	8 x 8	681
6 x 7	1073	8 x 9	605
6 x 8	908	8 x 10	545
6 x 9	807	8 x 11	495
6 x 10	726	8 x 12	454

### PRUNING

Generally, broad-leaf (not red cedar) seedlings will start better if a portion of the top is cut off at planting time. The seedlings should be left a foot to 16" high, because they can be seen easily for early cultivation. When the tree begins to grow, it uses up the stored food in the roots. If the tree starts with a smaller top, there is a better chance for the roots to become well anchored before the food supply is used up. After the tree has begun to function, the leaves return this food to the roots. The cut back tree will be just as large at the end of the first growing season as if it had been left its full length when planted.

Seedlings that have been cut back sometimes fork, but forking can be prevented by pinching out the tips of all side branches during the first year. This can be done when the twigs are tender enough to be pinched off with the fingers. During the first summer preferably, but not later than the second, the one strongest central leader should be selected and all other branches so handled as to give it the best chance to grow. Side branches need not be removed, but should be cut back to about one-half of their length. The side branches that have a tendency to make a fork may be cut back to the main stem. It is better not to cut all of the way back to the main stem the first year, as this



Properly cut back seedling at planting time.

Many good plots produce only low-grade posts when a small amount of pruning could have converted them into high quality products bringing a much larger return.

sometimes weakens the tree. The same pruning procedure should be followed the second and third year, always with the one main leader left to stay straight and out-grow the others.

No crotch or fork will ever be any higher from the ground than it was when it formed. So if straight, useful trees are expected, crotches and even side limbs will have to be pruned off. If postlot trees are carefully pruned the first three years of their lives, they probably will not need any additional pruning. By early pruning, the limbs can be removed with a pocket knife or hand pruners. The larger the leaf surface of a growing tree, the more growth can be expected. Therefore, small lower branches along the trunks that do not create forks can be left until they shade out and die off themselves. All the time they are alive, they will help grow timber.

Remember that leaves feed the trees. Be lazy and take off only as much as needed to insure a well-formed tree.

The time of the year best suited for pruning postlots is now, regardless of what date the calendar shows. Summer pruning results in fewer sprouts from pruning scars than does winter pruning. But the difference is so little that it is practical to prune anytime the other farm work will permit—summer or winter, hot or cold, wet or dry.

### CULTIVATION

On newly established plantations cultivation is important. The orchardist has known for many years that cultivation will increase his fruit crop but the forester and farmer are just now learning that



**Good cultivation**

cultivation will increase a forest tree crop. On all planted areas cultivation should be continued as long as it is possible to get through without breaking limbs of the trees. After the tops grow together and shut out the sunlight from the ground, cultivation may be stopped. It is desirable to space the rows of trees far enough apart so they can easily accommodate the machinery of the farm, then no special implements are necessary. The spring-tooth harrow and tandem disc make ideal cultivation implements. The plow, lister, and cultivator are also effective. In areas subject to wind erosion, use the methods of cultivation that have proved satisfactory for handling other row crops. When the plantation has closed so that no more cultivation is possible, it is still wise to cultivate a strip surrounding the postlot. This will make a good fire guard.

### **PROTECTION**

Postlots and native woodlands will produce much more if they are completely protected against fire and livestock. Animals trample the ground around trees to such an extent that the rain will run off instead of soaking in. Stock rubbing on trees will break small roots and oftentimes actually break the tree off at the ground line. Sheep and goats will eat the bark, completely killing the trees. Cattle and horses damage the trees, badly bruising the limbs and eating the foliage. A fully stocked area of post timber has practically no grass or forage for livestock. Therefore, to put livestock in a postlot is paying a terrible price in timber crops for little or no forage.

Protection against fire is necessary for any type of successful tree production. Even though the fire is small and not very hot, it burns the residue from the ground. This in turn destroys both the soil's fertility and its water holding capacity. Often the heat will damage the growing layer of a tree even when the flame does not actually touch it. Good cultivation as long as possible will reduce fire hazards. Also, a fire guard

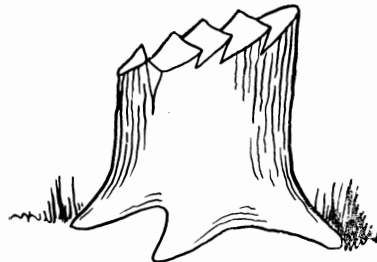
around the plantation after cultivation is discontinued is good insurance. It is sometimes necessary to protect against insects and diseases. These cases are rare and no attempt will be made to discuss them here.

The damage from rabbits is sometimes serious. Various methods of control are available among which are hunting, trapping and poisoning of the animals, and wrapping the trees. The former procedures are not very effective without the united effort of the entire neighborhood. Trees may be wrapped with two or three thicknesses of newspaper and thus be protected for one winter. The newspapers should be tied with string that will decay and fall off as the tree grows and expands.

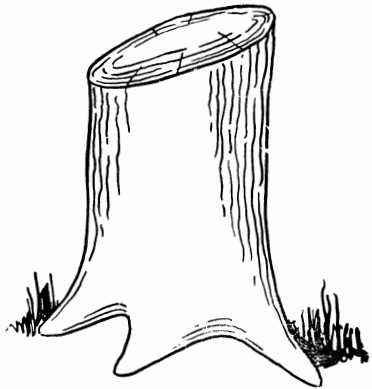
### WHEN TO CUT

The question of when to harvest in relation to the age of a block of post timber is difficult to answer. Since heartwood makes better quality posts than sapwood, it is desirable to let post trees reach an age at which the heartwood has developed reasonably well. If trees are permitted to remain until the growth slows down, the quality of posts will be increased. Slow grown ones are more durable than fast grown ones. This can be learned by cutting a sample tree now and then. The heartwood practically always shows a darker color than the sapwood and it extends out from the center to within a few years growth of the bark. However, some trees may be damaged by borers if permitted to grow too long. By measuring a few trees each year with a tape measure, it is not difficult to figure out how much the timber is increasing in volume annually. Probably an average of 10 years of growth on most post species in Oklahoma would be a good figure. That will mean that on some ideal sites, they might be ready in 7 years, a great many will be ready in 8 or 10 years, and some will need to grow longer. If clear cutting or block method is followed, a pretty good plan to follow is to permit the postlot to grow until at least one-half of the trees would be large enough to make split posts. Then even the smallest trees will probably make usable posts. At this stage many will produce two post cuts and some trees will furnish three post lengths. Most trees will carry a reasonable amount of heartwood. These figures, however, are only a guide and the decision of how much to hasten or delay the cutting job is left up to each owner.

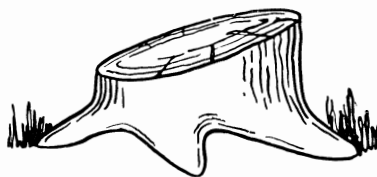
There is some difference in opinion as to the best season of the year for post harvest. Experiments have shown that posts differ very little in quality when cut at different times of the year; however there is a difference in the vigor in which new sprouts start. Summer harvested postlots produce much weaker sprouts than those cut in the winter, yet practically all species discussed in this bulletin will sprout with enough vigor regardless of time of harvest. More posts are harvested in the winter since better sprouts are obtained, and since winter harvest fits into the farmer's labor load better. Posts harvested in the winter cure more slowly and accordingly do not check as badly as those harvested in the summer.



Poor stump.



High stump.



Proper or good stump.

In cutting posts it is desirable to cut stumps as low as is practical to work a saw. Bow saws or cross-cut saws with fine teeth are better implements than the ax in the hands of an inexperienced woodsman. Chain and other power saws are ideal when available or the harvest is large enough to justify the investment. The stumps should be left with a slight slope so that water will run off. Stump decay is retarded when smooth, sloping cuts are made.

### HARVEST METHODS

There are three major methods of harvesting post timber. Many variations or combinations of these procedures may be worked out.

1. **Clear Cutting**—Clear cutting is probably practiced more than any other one method. It permits the entire second crop to start growth at the same time, thus producing a block of trees all the same age. It reduces the number of trees that may be suppressed or culled in future operations. This method makes the simplest procedure in harvesting in that either teams, trucks or tractors can work over the whole area to move out posts or brush.

All material as well as the good products should be removed. Much of material too poor for posts can be used for fuel wood.

This clear cutting method has several disadvantages:

- (1) There may be many posts ready for use before it is profitable to harvest the block as a whole.
- (2) Waiting for a profitable time for clear cutting may delay the first returns from a plantation.
- (3) The removal of all trees leaves no protection from wind for the sprouts which start from the stumps.



Clear cutting in foreground, selective cutting in background.

When the clear cutting method is used the posts taken out will vary greatly as to size, form and quality. For this reason it is usually profitable to grade them for use or for sale.

2. **Selective cutting**—This method is the selection and harvesting of mature and suppressed trees which do not have a possibility of growing into more value. Smaller, thrifty trees would, accordingly, be left to grow on and fill the gaps. This type of procedure is probably the best for native woodlands. While there is no definite diameter limit or exact number of trees per acre to leave, just good judgment will select those that are worth the most now, but lack the ability to increase in value. Generally speaking, it is desirable in this procedure to leave at least 75 to 80 percent of the stand at any cutting. Additional harvest would then be necessary in a few years.

Farmers who use the selective cutting plan automatically have a good opportunity to improve their stand of post timber. They can remove inferior trees which do not have the ability to grow into more value, even though they have not reached usable size. The stand of timber left after one harvest and one stand improvement cutting should



**Strip or block method of cutting.**

all be thrifty and well spaced with ability to increase in value. This type of management will adjust easily to price markets. It is good practice to cut more heavily in times of high prices and to cut more lightly in times of low prices. Practically all post lots of native timber are adapted to selective cutting but post plantations may or may not be adapted to this method.

3. **Strip or Block Cutting**—This method of procedure is a combination of clear cutting, selective cutting, and crop selection. Blocks of mature timber may be selected for harvest irrespective of size or shape. The areas chosen are then clear cut. Intervening areas between these blocks are left for future cutting; they will accordingly provide wind protection. By the time uncut blocks are ready for harvest, sprouts in the first cuttings will have grown large enough to serve as a wind buffer for them.

### **BRUSH DISPOSAL**

Post species are generally durable and do not decay rapidly in contact with the soil. This same characteristic applies to the tops and branches of post trees. The brush accumulated in harvesting fence posts will not readily rot if left scattered in the field. Generally, the next crop of posts will be ready for harvest before the brush has decayed. Facing these facts it is desirable to work up tops using all material possible for fuel wood, and removing remainder from the growing area. The brush should be burned or piled in gullies. It should not be burned near stumps or trees as the heat will kill either. In case of thorny brush such as bois d'arc and black locust it is desirable to eliminate

as much handling as possible. This type of brush is very hard to pull out of a pile and handle the second time.

### MANAGEMENT PLAN

The method of harvesting of any postlot should be worked out on the basis of the species involved, the size, age, and condition of the trees to be harvested, the needs on the farm and the possible markets. Foresters are not in a position to prove that any one method is better than any other. So in developing a harvest program it is wise to look for merchantable or usable material. Small trees that have a chance of growing into more value should be left. The ground should be cleared of all the crooked, diseased, forked, and otherwise worthless trees. Many of these culls can be used for fuel. The area should be left in condition that will enable it to start growing another crop immediately. If all these factors are thoroughly considered, the average farmer's methods of harvesting will be workable and profitable.

If a large plantation is planned, provision for roadways and brush burning spots should be made. If irrigation is to be used in drought periods, rows should be arranged so that water will get through the plantation easily. Water may be diverted into woodlands from adjacent fields.

A border of shrubs around each block of trees will help in making a wildlife shelter.

Shows many sprouts as they start at the stump.







Shows sprouts reduced to one per stump.

### HANDLING SPROUTS

After a crop of posts has been harvested, sprouts will come from the old stumps (except for red cedar). The tendency is for many sprouts to originate either at the top of the stump or near the ground line. The lower down the stump, the freer the sprouts will be from heart rot. The sprouts grow quite rapidly because of the strength of an old and large root system. The care they are given will determine the quality and quantity of the next post harvest. It is usually well to let all sprouts grow at least until about mid summer of the first growing season (in a region subject to wind damage it is best to wait one year longer). At that time the strongest and straightest sprouts should be selected and retained for the next crop. This will require the removal of all the others. At this time it must be decided whether to grow one or two or more posts per stump. A common mistake is to grow too many. If a market exists for poles at a better price than for fence posts, it may be desirable to reduce to only choice sprout and on less fertile land one sprout may be the best decision even for fence posts. On moist fertile areas two or three sprouts may be left profitably. In case of bois d'arc even more may pay.

The number per stump should be uniform, that is, one, two or three on each stump. To prevent damage from the wind, sprouts should not be removed the first year. In fact, undesirable sprouts probably should never be completely removed. They should have the tips cut back enough to permit the selected sprouts to outgrow them.



**Shows sprouts reduced to two per stump.**

The extra sprouts will furnish leaves to help feed the tree and will eventually be shaded out. A post crop grown from sprouts on the old stump will require less pruning than the original seedling.

One good method of handling seedlings is to grow them one or two years without pruning, then cut them back to the ground. Sprouts will come from the stump and they should be handled as sprouts from harvested stumps. Straighter posts are produced with less pruning by this method than from seedlings not cut back.

### **REJUVENATING OLD POSTLOTS**

There is no definite rule to be followed in rejuvenating any plot of post timber. Each postlot and each plantation is a problem in itself, and the owner must develop his own answer to it. Many plantations have been permitted to stand past the period of profitable harvest. When the trees have begun to die out due to old age, damage by livestock, fire, or any other cause, it is late, but not too late, to do something about it. If many of the trees are still thrifty when unthrifty ones begin to show up, the simplest and easiest method may be to clear cut and start over with sprouts from the stumps. At any rate, it is not good business to wait and permit more of the trees to die. In a stand of post timber of mixed age, the removal of mature and cull trees will release those remaining so that they will again begin to grow. This is selective cutting. In some plantations it is possible to cultivate with a tandem disc and thereby help to increase the vigor of the trees.

Normally, it is not advisable to attempt to plant trees in an old stagnated grove or plantation. If a profitable crop cannot be produced from the trees already established, it is better to cut the plot clean and establish a new plantation elsewhere. This does not apply to our

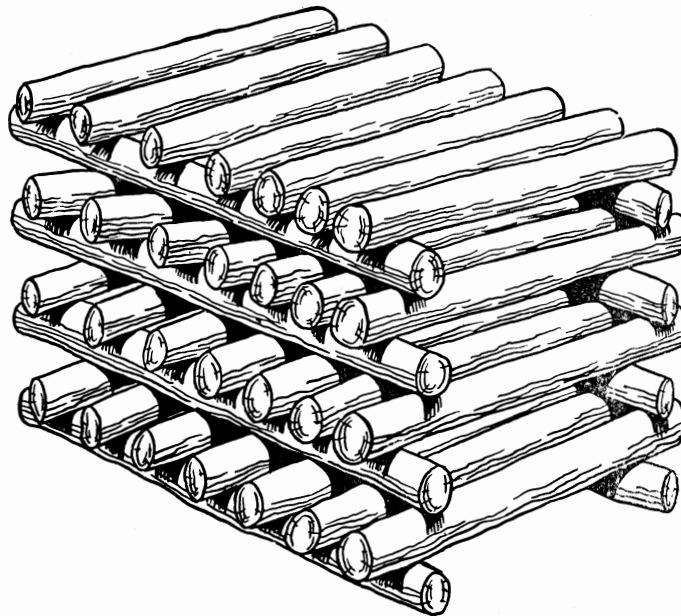
mixed woodlands. In some cases there may not be any definite procedure for rejuvenating an old postlot but certainly there is no excuse for permitting it slowly to die out. It should be harvested so that everything of value can be utilized. Trees are a crop; they reach old age and die off the same as other plants.

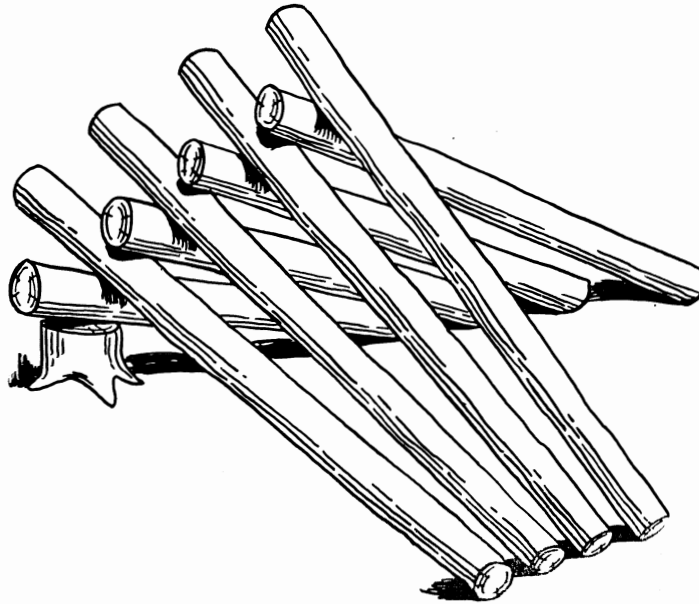
### HOW TO CURE FENCE POSTS

Experiments have failed to show that a cured fence post is any more durable than a freshly cut one. There are, however, several reasons for curing. A properly seasoned post will not check as badly as one set green. Cured posts are lighter to handle. If quantities are to be shipped, the saving in freight is considerable in favor of cured products. Staples will generally hold better in a seasoned post.

In curing fence posts, care should be taken to dry them slowly enough that they do not check badly. This is more easily accomplished in winter than in summer. In summer it may be necessary to pile the posts in the shade or to cover the top of the pile with straw or brush. The air should be allowed to circulate uniformly around each post. See pictures below and on page 20 which show effective methods of piling posts for curing.

This shows one method of piling for curing.





**This shows another method of piling for curing.**

### **GRADING POSTS**

In grading posts, those of uniform size, shape and quality should be put in groups to themselves. Straight, uniform size smooth posts make the most attractive fence but may not always be the best ones.

Durability is determined not by straightness but by the amount of heartwood, the density of annual rings as well as freedom from loose knots, borer holes, windshake, soft or decayed spots. The rate of growth of the post tree is vital in the durability of post. For instance a four-inch fence post with 16 annual rings is much more durable than one on the same species and size with only 8 rings.

The Ohio Experiment Station Bulletin 219, "The Relative Durability of Post Timbers" gives accurate data on durability of posts based upon examining 47,620 fence posts of known age in fences. Some of these fences were in Oklahoma, Texas and Kansas. They found a direct relationship to the closeness of annual rings (rate of growth of the tree) with durability.

In some cases posts with closely spaced rings last as much as five times as long as those with wide rings in the same fence and coming from the same source and of the same species.

### **PRESERVATIVE TREATMENT**

For a good many years fence posts and other timbers have been treated chemically to increase their durability. Treatment with creo-

sote is today probably the most widely used method. Nondurable woods pressure-treated with creosote are very good posts as are also those treated with the hot and cold bath (creosote). These only painted or dipped have the appearance of being creosoted but only have the surface blackened and may not be worth any more than untreated posts. Probably the most satisfactory method for farmers to use in treating non-durable fence posts on the farm is cold solution of a 5 percent pentachlorophenol in light fuel oils.

### **Warning**

There are to be found on the market posts that have been treated with road oil and other materials that give them a black color but add very little to their durability. These are often mistakenly purchased for pressure-treated creosoted posts. When a farmer is offered a black post at any price considerably less than retail lumber yards charge, he should view the offer with caution. Most established, dependable post processing plants give a written guarantee of the amount of preservative used. Many other chemicals will add to the life of posts and complete information may be found in the following bulletins: "Treated Fence Posts," Circular No. 541, Oklahoma Extension Service; "The Preservative Treatment of Farm Timber," F. B. 744; "Chemical Impregnation of Trees and Poles for Wood Preservation," USDA 717; and "Longer Life for Poles and Posts," AIS No. 36, all from the U. S. Department of Agriculture, Washington, D. C.

### **MARKETS FOR POSTS**

There are commercial outlets for most types of posts. These markets are best served if the posts are graded, and uniform sizes handled together. The farmers who produce fence posts should look first to his own farm needs and second to the needs of his neighbors. The nearer home the posts are sold, the smaller the expense involved. Most lumber yards will take locally grown posts at a reasonable price if they are graded. Local consignment auctions sell fence posts to a very good advantage a great part of the year. Any farmers having a surplus of good posts on hand can generally find a good market by contacting truckers who will move them into a field of higher price markets.

An advertisement in the local newspaper will generally bring buyers to the farm. Local markets for good posts exist over much of the state. This is one market that is not overstocked. This farm crop is one of the easiest for the producer to sell directly to the consumer. The greatest demand for posts exists in the winter.

### **SPECIES**

There are a number of species of trees in Oklahoma that make good fence posts; without preservative treatment, however, they vary somewhat in their durability. Quality of posts should not be the only

factor in deciding the species to plant. The planting site should be given the first consideration. Some species will do well on one type of land while others will be very disappointing.

As untreated posts the most widely used species in this state are catalpa, osage orange (bois d'arc), black locust, mulberry, Kentucky coffee tree, red cedar, post oak and sassafras. White oak and walnut are occasionally used but better uses for these species exist. Almost any tree will make usable posts when properly treated with preservatives. The following is a list of species of untreated fence posts ranging from most durable to the least:

Osage Orange (bois d'arc)	Kentucky Coffee Tree
Red Cedar	Sassafras
Mulberry	Walnut
Black Locust	White Oak
Catalpa	Post Oak

This arrangement is based on the judgment of many farmers, and not on real experiments.

There is a variation in durability of posts within each species. The larger the amount of heartwood and the closer the annual rings within the heartwood the more durable are the posts.

White oak, post oak, walnut and sassafras may be managed in native timber so as to produce fair returns in fence posts. However, it seldom is wise to plant any of these species for the final or end crop of posts. In developing post plantations, black locust, catalpa, osage orange, mulberry and Kentucky coffee tree are probably the most profitable species. They all do better on rich, bottom land, but osage orange will thrive on reasonably good prairie land. Black locusts will start quickly on almost any kind of land, but unless it is on good soil, it will fail to live long enough to make fence posts. Catalpa will stand the most flooding. Red cedar and osage orange will also thrive in wild stands which may be managed for post production.

#### WHERE TO SECURE PLANTING STOCK

1. Division of Forestry of the Oklahoma Planning Board, Capitol Building, Oklahoma City. Trees from it provided at less than cost of production to encourage stock. They may not be used for ornamentation or resold. Any product grown is saleable.
2. Soil Conservation Districts provide technical guidance for postlot planting.
3. Fish & Game Department. This department provides some trees for fence post planting when the plantation has a dual purpose including wildlife production.

4. Commercial Nurseries. No restrictions on stock from this source.
5. Collect Wildlings. Generally not satisfactory.

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