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Agriculture and Natural Resources

FSA5030

Making Sense of Loblolly Pine Seedling Varieties

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In the old days, many things were much simpler than they are now. As technology has progressed, so have the options available to us. One of the fields in which we see this is communications. Few would have read a fact sheet like this on-line in 1990. It probably wouldn't have even been available on-line. Now fact sheets can be read on paper, downloaded and read on the computer screen or even downloaded and read on one's cell phone. Similar changes have occurred in forestry. In 1990 only three or four types of loblolly pine seedlings were available. Since that time, industrial research has produced a broad and confusing array of loblolly pine seedlings tailored to specific situations and sites. Many of these seedlings are now available to family forest landowners.

The forest industry has changed in the last five years too. There are now fewer industrial landowners, and several seedling nurseries produce loblolly pine seedlings for the open market. You, as a family forest landowner, can now purchase top-of-the-line loblolly pine seedlings; however, you must take care to select seedlings that are suitable for your land and your forest management and investment strategy.

The increase in number of varieties of loblolly pine seedlings available to you has a goal: increased production. Researchers are trying to develop seedlings that will grow faster and straighter and will produce more merchantable wood for the landowner in less time. Loblolly pine breeding programs have been the main tool used to improve the productivity of loblolly pine, just as breeding programs have improved soybeans, tomatoes and livestock. The term *"varieties"* will be used often in this fact sheet. Bear in mind that they are all pure loblolly pines. The different varieties of loblolly pine are like the different varieties of tomato available for your garden. Each has unique characteristics, but they are all loblolly pine.

So, what is the right seedling for you? This fact sheet is designed to help you make an informed choice based on your goals and resources (Figure 1).

Figure 1. A wide and confusing variety of loblolly pine seedlings is available to forest landowners. *(Photo: Dave Powell, USDA Forest Service)*

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Seedling Terminology

Seventy years ago one term described the only loblolly pine seedlings available, because all seedlings were collected from the wild or were grown from seed collected from wild trees. In the 1950s, tree improvement programs were begun to try to boost the productivity of loblolly pine. Trees were selected based on growth rate, stem form, crown characteristics and disease resistance. Thirty years ago only three or four terms described the available loblolly pine varieties. Now, after more than 50 years of loblolly pine improvement, more than 20 terms are used to describe the different loblolly pine seedlings available to landowners. There is some overlap in some of the terms. Don't worry if you find it all a bit confusing. Most people do.

Terminology

The following entries define some of the more common terms used to describe loblolly pine seedlings. Use these definitions to better understand what seedlings the various vendors are selling.

1-0 Bare-Root Seedlings – These are seedlings that were grown in the seed bed for one year before being lifted from the bed and packaged for shipment, as indicated by the "1." The "0" indicates that the seedlings were not transplanted from the seed bed to a nursery bed. These loblolly pine seedlings are the most common in the South. **Do not confuse this term with 1.0 generation seedlings.**

1.0 (1st) Generation – Loblolly pine improvement efforts began with collecting cuttings from superior wild trees and grafting those cuttings onto seedling root stocks in orchards. Seedlings produced from these trees are called 1.0 generation seedlings. **Do not confuse this term with 1-0 bare-root seedlings.**

1.5 Generation – Tests on 1.0 generation seedlings showed that some trees selected from the wild were better than others. **Cuttings** from those best of the 1.0 generation trees were grafted onto seedling root stocks to establish better seed orchards. Seedlings produced from these new orchards are called 1.5 generation seedlings.

2.0 (2nd) Generation – The best trees from the 1.0 generation were **crossed** to produce the 2.0 generation orchards. This generation differs from the 1.5 generation in that intentional crosses were made rather than just selecting the best individuals of the 1.0 generation to populate new orchards.

2.5 Generation – This generation is similar to the 1.5 generation. The 2.5 generation orchards were populated with **cuttings** from the best trees in the 2.0 generation orchards.

3rd Generation – The trees in this generation were produced from **crosses** of the best trees from 2.0 generation orchards. The same principle applies to subsequent generations, as well.

Bare-Root Seedlings – "Bare-root" indicates that they have been packaged and shipped with bare roots. The roots are often coated with a protective gel to prevent the roots from drying during storage and shipment. These seedlings are fragile and must be handled carefully. See U of A Division of Agriculture fact sheet FSA5007, *Storing, Handling and Planting Southern Pine Seedlings,* for more information on handling bare-root seedlings.

Containerized Seedlings – "Container" indicates that each seedling is grown and shipped in its own container. The container is usually a small disposable tube that protects the seedling's roots during shipment and handling. Containers may be made of biodegradable materials such as paper, ground wood, peat or plastics. These are often planted with the seedlings. Some containers are reusable and are not planted with the seedlings.

Family – A group of seedlings derived from defined parents. These can be full-sibling or half-sibling seedlings, depending upon whether one or both parents are defined.

Full Sibling – These are seedlings produced from the seed cones of a selected tree and pollen from another selected tree. They are produced through mass control pollination. It is possible to produce full-sibling seedlings from open pollination, but it is impractical to distinguish these from the half-sibling seedlings produced at the same time. Seedlings marketed as full-sibling seedlings are produced through **intentional** crosses of selected parents.

Half Sibling – These are seedlings produced from the seed cones of a selected tree and pollen from unknown sources. These seedlings are the product of open pollination.

Improved – Loblolly pines that have been selected and bred to grow faster, to develop straighter stems, to develop crowns that self-prune better and have better branch angles, and to have better disease resistance. Other factors such as drought and cold tolerance are sometimes included in the mix. Loblolly pines that have been bred to improve these characteristics are called improved loblolly pines.

Mass Control Pollination (MCP or sometimes CMP) – The process of manually pollinating the seed cones of pines. This is accomplished by bagging the seed cones before pollination occurs and injecting each bag with pollen from a selected tree (Figure 2). MCP produces full-sibling seedlings.

Open Pollinated – These are seedlings produced from uncontrolled crosses. The pollen provided for the cross is pollen that rode in on the wind both from within the seed orchard and from outside.

Progeny Test – Testing particular characteristics of offspring to determine the value of one of the parents as breeding stock. Progeny tests use offspring as a proxy to measure the value of the parents. In loblolly pine improvement programs, progeny tests are used

to determine whether one or the other of the parents can transfer a specific desirable characteristic to the next generation. Progeny testing is necessary because one cannot judge a tree solely by its appearance. Many great trees have just average genes, but they were lucky enough to grow on a great spot.

Rouging – The process of removing inferior trees from a seed orchard.

Rust Factor – A rating of susceptibility to fusiform rust. The rating is expressed as "R50 =" a number. It can be a little hard to understand at first, but here is the definition. R50 is the predicted percentage of trees infected with fusiform rust under conditions that would result in unimproved trees having a 50% incidence of rust infection. Lower R50 values indicate higher rust resistance.

Seedlings – Trees produced from seed by sexual reproduction.

Seed Orchard Mix – A collection of seedlings assembled from all of the families represented in a seed orchard. Since some families of loblolly pine are better than others, some seedlings in the batch will be the best, but many will be from lesser-performing loblolly pine families.

Varietal Pines – These are loblolly pines produced through cloning. Cloning bypasses sexual reproduction and seed production. All of the clones produced from one genetic source will be genetically identical. One would expect that these clones would produce trees that are identical, but microenvironmental conditions will influence the final form of individual trees. Even though they are often called seedlings, they are not grown from seed and are not truly seedlings. They are clones. Note that throughout this fact sheet, the word "seedling" will include clones to simplify the discussion.

Woods-Run – These are the native unimproved loblolly pine seedlings. Since these have been completely replaced by improved loblolly pine on commercial forestlands, they have become difficult to find in nurseries.

Now that you have seen the terminology used to describe loblolly pine seedlings, what seedlings are the best for you?

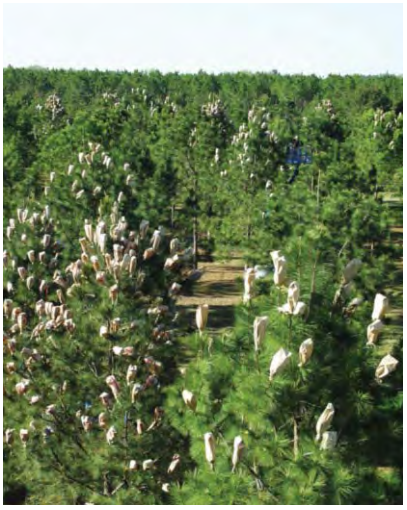

Figure 2. MCP seedlings are produced by crossing selected loblolly pine parents. Cones in these trees have been bagged and pollinated manually. *(Photo: Victor L. Ford, University of Arkansas Division of Agriculture)*

Through the 1990s, your choices would have been limited. Loblolly pine seedlings were produced by the major industrial timberland owners for use on their own lands. Since they grew seedlings mainly for themselves, they took the best-quality seedlings for their own lands. Family forest landowners got what was left. It was like going to a clearance sale on the last day. Bargains were available, but the merchandise had been picked over.

Decision Guide

Making good decisions about the loblolly pine you will purchase requires that you consider several factors. To ensure that you invest your money wisely, you must consider where and when seedlings will be planted, the purpose of the plantation and the amount of money you can invest in the plantation. These factors are discussed below.

Regional Variations in Loblolly Pine

Plants that have wide geographic distributions have regional races that are adapted to local climatic conditions. Like many other plants, loblolly pine has these regional races that differ in growth rates, disease resistance, cold tolerance and drought resistance (Figure 3). In general, Atlantic coastal plain loblolly pines from the Carolinas grow more

Figure 3. The natural range of loblolly pine includes most of the Southeast and covers a wide variety of climates and habitats. *(Source: Baker and Langdon, USDA Forest Service Agriculture Handbook 654)*

rapidly, western gulf coastal plain loblolly pines are more resistant to fusiform rust and are more drought tolerant, southern gulf coast loblolly pines are more crooked and northern loblolly pines are more cold tolerant.

These regional variations have implications for loblolly pine seedling selection and the appropriate site selection for a particular variety. When one moves Atlantic coastal loblolly pine varieties to the western end of loblolly pine's natural range, fewer sites may be suitable for that variety. On good sites in Arkansas, Atlantic coast varieties may be a good

choice because enough water will be available to allow them to express their greater potential for height growth. On poorer sites, however, drought may limit height growth of Atlantic coast varieties. The Atlantic coast variety may still outgrow the western gulf coast variety, but the extra growth may not be enough to justify the extra cost on poorer sites.

Some industrial forestland owners have been planting Atlantic coast loblolly pine varieties in southern and western Arkansas on carefully selected sites. Research has shown that the Atlantic coast varieties can grow 8 to 12 feet taller during 25 years than the western gulf coast varieties **on the best sites**.

Seedling survival can be a problem with Atlantic coast loblolly pine varieties in Arkansas too. Research has shown that survival rates of Atlantic coast varieties will usually be lower than survival rates of western gulf coast loblolly pine; but, on good sites, Atlantic coast varieties of loblolly pine survive well enough to produce an adequately stocked stand.

Bare-Root or Container?

Landowners may choose between bare-root seedlings and containerized seedlings. Each one has advantages and disadvantages. Bare-root seedlings are still much more common than containerized seedlings in Arkansas, but use of containerized seedlings is growing.

Containerized seedlings offer two main advantages to landowners. First, since the roots of the seedlings are protected within a container during handling and transport, very little damage occurs during the shipping and transplanting processes (Figure 4). Even less damage occurs when the container is planted along with the seedlings. As a result, the seedlings are ready to grow as soon as they are planted, which may shorten the rotation by a year. However, survival rates with bare-root seedlings are quite good when planted by an experienced crew under appropriate conditions.

Planting season is extended for containerized seedlings as well. Planting season for bare-root seedlings in Arkansas typically runs from December through mid-March.

Figure 4. Containerized seedlings are grown in individual tubes that protect the seedlings' roots during shipping and handling. *(Photo: Thomas D. Landis, USDA Forest Service)*

Figure 5. Bare-root seedlings are shipped with roots protected only by a gel or slurry. They are fragile. *(Photo: Dave Powell, USDA Forest Service)*

The planting season for containerized seedlings is much longer. The only conditions that restrict planting containerized seedlings are drought and freezing weather. Freezing weather becomes a greater issue on clay soils. In these situations, frost heaving can push containerized seedlings out of the planting hole. If you are planting on clay soils, plant a few weeks ahead of frost danger in the fall or after frost danger has passed in the spring. Frost heave is also an issue for bare-root seedlings, but less so than for containerized seedlings.

Bare-root seedlings have two main advantages over containerized seedlings (Figure 5). First, bare-root seedlings cost about one-fourth as much as containerized seedlings because they require less manual labor to produce. Second, bare-root seedlings are easier to ship and handle than containerized seedlings. Because of these significantly lower costs, bare-root seedlings may be cheaper to buy and plant.

So, should you choose bare-root seedlings or containerized seedlings? Bare-root seedlings are usually the most economical choice. They will be your best choice if you can plant during the normal planting season, on a moderate to good site and with adequate competition control. If you must plant trees under conditions that are less than ideal, for example, before or after the normal planting season, on severe sites or when you need to minimize competition control, then you should consider containerized seedlings.

Cost-Share Program Requirements

Some people plant loblolly pine to meet the requirements of a government program such as the CRP program. The rules of those programs will dictate spacing of the pine seedlings. When the initial rules of these programs were made, some of the varieties of pine seedlings available now did not exist. The tree spacing mandated in the rules was tailored to varieties of loblolly pine in use at the time the rules were made. Some of the newer loblolly pine varieties grow in height and develop large crowns very rapidly. At the close spacing mandated by some program rules, the canopy will close rapidly and stand growth may stall before the trees reach minimum merchantable size.

If you are planting a stand of loblolly pine for a government program, make sure the loblolly pine seedlings you select are appropriate for the tree spacing mandated by the program rules. Ask your

county Extension agent, an Arkansas Forestry Commission county forester or a consulting forester for help with choosing an appropriate loblolly pine variety and spacing pattern for your site.

Site Preparation

Growing a crop of trees isn't too different from growing a garden, except the time period is measured in years instead of weeks. Would you plant a garden without preparing the soil? Most people wouldn't. Site preparation helps pine seedlings just as much as it helps your garden. Pine seedlings will survive and grow without site preparation, but survival and growth will be greatly improved with good site preparation. For more information on site preparation for loblolly pine, see U of A Division of Agriculture fact sheet FSA5002, *Site Preparation Methods for Establishing or Reestablishing Pine Stands*.

The better the site preparation, the better the seedlings' survival and initial growth will be. Generally, site preparation provides a volume of loose soil into which the young trees can more rapidly develop a good root system. The only question you as a landowner need to answer is, how much site preparation is financially justifiable? That will depend upon your particular circumstances. Talk to a consulting forester to find out what type of and how much site preparation you need.

Your choice in site preparation has implications for your choice in loblolly pine seedlings. If you plan to invest in site preparation, then expensive loblolly pine seedlings may be a good investment for you. Good site preparation enhances seedling survival, which reduces the number of trees you need to plant. The savings from purchasing fewer seedlings can be used to offset some, or maybe most, of the cost of the site preparation.

Weed Control

What is weed control? It is exactly what the name says – controlling weeds so the crop can grow unimpeded. Weed control has been used for years in row crop agriculture and is used in some form by almost all home gardeners. Foresters also have recognized the importance of weed control to the survival and productivity of pine plantations. Foresters usually use the phrase "competition control" instead of "weed control," but it is the same principle. In any discussion of competition control in a forestry context, two broad categories of weeds, competing vegetation, must be considered: herbaceous competition and woody competition. Herbaceous competition and woody competition have different impacts on the plantation and are treated differently.

Competition control is important because loblolly pine is in a group of trees that foresters call "intolerant." That doesn't mean that the trees dislike different trees; instead, it means that the trees do not grow well in the shade. They are intolerant of shade. Most trees are intolerant of shade to some degree or at some stage of life. Loblolly pine is very intolerant throughout its life and grows very slowly, if at all, in the shade.

Loblolly pine's intolerance to shade has implications for plantation establishment. Good competition control is necessary as long as the trees are short enough to be overtopped by competing vegetation. For a loblolly pine plantation, this means that competition control is necessary for at least the first two years after planting. Some research indicates that good competition control increases growth rates until the stand canopy closes, thus providing a measure of natural competition control (shade). The number of years until canopy closure will depend on initial spacing of the seedlings and how rapidly they grow.

When one does not control the competing vegetation, two bad things happen. First, seedling survival will be reduced, which may result in an understocked stand and reduced merchantable wood production. Second, the slower growth rates of the seedlings will increase the rotation length by two or three or more years. That will be at least two or three more years that the landowner must wait to get a return on his investment, i.e., at least two or three more years that the landowner must pay interest on the costs of plantation establishment instead of earning interest on the profits.

Competition control can be accomplished through several means, but timing and specific treatment will depend upon what competition you are battling (Figure 6). Woody competition is best controlled through effective site preparation before the trees are planted. Herbaceous competition usually is controlled after the trees are planted. Mowing and herbicide application are the two most practical means of herbaceous competition control. Herbicide application is the simplest and cheapest method of competition control, but herbicides can have some undesirable effects on native ecosystems. Some sites contain native plants that are rare and need to be

Figure 6. There are many ways to apply herbicides. Select application equipment based on site and timing. *(Photo: James H. Miller, USDA Forest Service)*

protected. Broadcast herbicide applications may extirpate these plants from the site and potentially from the state. Several alternatives to broadcast applications exist. See U of A Division of Agriculture fact sheet FSA5002, *Site Preparation Methods for Establishing or Re-establishing Pine Stands*, and MP44, *Recommended Chemicals for Weed and Brush Control in Arkansas*, for more information on using herbicides for site preparation. Be aware that improper herbicide application may degrade our environment and may destroy your pine plantation. **Always follow label instructions when you use herbicides.**

Your choice relative to competition control has implications for your choice in loblolly pine varieties. If you plan to invest in competition control and can commit to competition control for the first several years of the rotation, then expensive loblolly pine varieties may be a good investment for you. On the other hand, if you cannot or choose not to invest in intensive competition control, expensive loblolly varieties may not be a good investment for you. Without the competition control necessary to keep the seedlings free to grow, the advantage of increased growth rate provided by the more expensive varieties will be lost.

Site Quality

Site quality is another factor to consider. Loblolly pine seedling costs can range from a relatively cheap $50 per 1,000 seedlings for 1st Generation or Improved Seedlings to over $400 per 1,000 for 3rd Generation or varietal trees. This does not include planting costs. If the site quality is low, the trees may not grow rapidly enough to justify the investment in the more expensive loblolly pine varieties.

Foresters have developed a gauge of site quality that is useful to landowners. It is called **site index**. Site index is an estimate of the number of feet a tree can grow in height in a specified number of years, usually 50 years, but often 25 years for faster growing species such as loblolly pine. You would see it expressed as – loblolly pine SI 60 at a base age of 25. That means that, on average, in 25 years, unimproved loblolly pine should grow to 60 feet in height on that site in the absence of site preparation and competition control. Site index reflects the height of dominant and codominant trees; that is, trees that, on average, make up the main canopy of the forest. Many things such as site preparation, improving drainage on wet sites, fertilizing sites that have nutrient-poor soils, controlling weedy competition, planting improved loblolly pine varieties and planting containerized seedlings can improve site index. Site index is a simple tool that tells us about relative productivity, but it is produced by a combination of soil and environmental factors. A consulting forester can help you learn ways to use and interpret site index values to get the most from your forest land.

So, how does one determine site index? There are two ways to determine site index. First, we'll look at the easy way. Fortunately, the Natural Resources Conservation Service (NRCS) has already determined site indices for many of the soils in Arkansas. These site indices are determined for the soil series but are not specific to your land. Past land use practices may have affected the actual site index of your land, but the site indices reported by the NRCS will serve as a good starting point for selecting appropriate loblolly pine varieties.

NRCS has an on-line tool called a Web Soil Survey that can provide information about soils, including site index. The Web Soil Survey provides good information and is not overly complicated to use. However, be careful. The site indices in the Web Soil Survey are at a base age of 50 years. Foresters usually discuss site indices for loblolly pine in terms of a base age of 25 years because most loblolly pine rotations are 25 to 30 years. One can crudely convert 50-year site indices to 25-year site indices by multiplying the 50-year site index by 0.66, then adding 7 feet to the result.

There is one thing you should note about the site indices provided by the Web Soil Survey. They are **expected** site indices for those soil series based on the assumption that the soils have not been abused. They are not specific to your land. Examine your land carefully. Unusually dry sites, serious erosion or land use history may indicate that your site index is lower than the average for that soil series.

If no reliable site index information exists, the landowner must calculate site index. To do this, determine age of the stand and measure height for several dominant and codominant trees **of the desired species**. There are two things to keep in mind when you determine the age of the stand. First, experience has shown that the age of the trees needs to be at least half of the rotation age. The site index curves in Figures 7 and 8 begin at 10 years, but you may need to use older trees. If you don't have an idea of the typical rotation length for your land, talk to a consulting forester. Second, if you are determining stand age based on when it was planted, add one year because the trees were already a year old when they were planted. If you determine the age by boring the trees at breast height and counting the annual rings, add the two years the tree grew before it got to breast height. If no trees exist on your land, pick an adjacent forested site with the same soil series. The more trees you measure, the more accurate the calculation will be. Ten or so will be enough to get you close to the site index.

Calculate the average height and the average age for the trees you measured, then turn to Figure 7 or Figure 8. These are site index curves from a U.S. Forest Service publication (*Site Index Curves for Forest Tree Species in the Eastern United States*, General Technical Report NC-128). These curves are for a region that includes Arkansas. Use Figure 7 if

you are calculating site index for a natural loblolly pine stand, or use Figure 8 if you are calculating site index for a loblolly pine plantation. Curves are available for other regions in the Southeast as well. Select your average tree height from the left side of the graph and follow the line toward the right. Also select average tree age from the bottom of the graph and follow the line upwards. At some point on the graph, the height line and age line will intersect. The sloping line nearest the intersection is the approximate site index for the site where you collected the tree data.

There are two things you need to be aware of when you calculate site index by this method. First, these site index curves for loblolly pine were developed for a base age of 25 years. Do not try to compare site indices derived from these curves directly with site indices reported by the NRCS Web Soil Survey. Second, if you are checking site index for an existing loblolly pine plantation, your data will reflect the site index for improved loblolly pine and any silvicultural practices that have been applied to the site. This site index will be higher than the site index for native loblolly pine and should not be used with the site index guidelines presented in this fact sheet. You may need to calculate site index for a nearby similar site containing native loblolly pine.

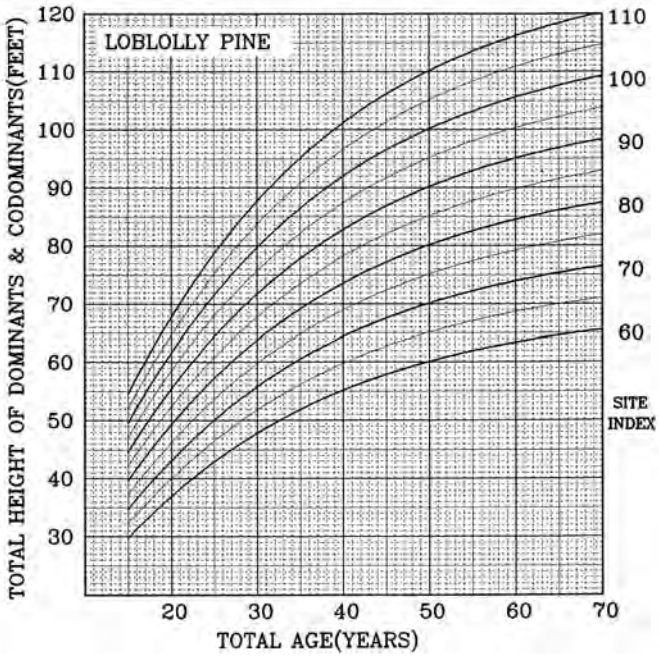

Figure 7. Use this site index curve for a natural loblolly pine stand. Select the average height from the left side of the graph and follow the line towards the right. At the same time, select an age from the bottom of the graph and follow the line upwards. Find the point where the average height line and age line intersect. Move to the curved line nearest that intersection and follow the curved line to the right edge of the graph. Read site index from the right edge of the graph. This provides the site index at a base age of 50 years for natural stands only. *(Source: Carmean, Hahn and Jacobs, from USDA Forest Service GTR-NC-128, page 127)*

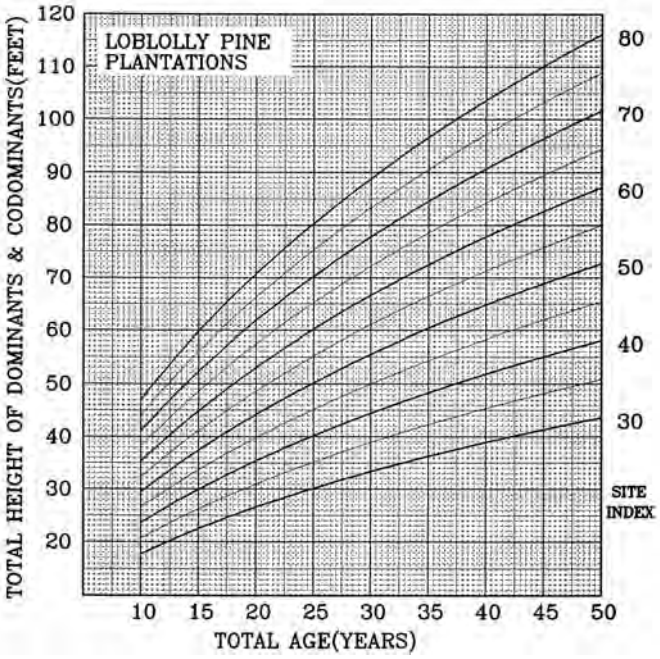

Figure 8. Use this site index curve for loblolly pine plantations. Select the average height from the left side of the graph and follow the line towards the right. At the same time, select an age from the bottom of the graph and follow the line upwards. Find the point where the average height line and age line intersect. Move to the curved line nearest that intersection and follow the curved line to the right edge of the graph. Read site index from the right edge of the graph. This provides the site index at a base age of 25 years for plantations only. *(Source: Carmean, Hahn and Jacobs, from USDA Forest Service GTR-NC-128, page 136)*

Site index for loblolly pine can range from 55 or 60 feet in 50 years (44 to 47 feet in 25 years) to 110 feet in 50 years (80 feet in 25 years). Site indices of 70 or greater in 50 years (54 feet in 25 years) would justify purchasing expensive varieties if you plan to invest in site preparation and good weed control. If the site index of your land is only 50 to 60 feet in 50 years (40 to 47 feet in 25 years), expensive varieties may not be a good investment. If the site index of your land is between 60 and 70 feet in 50 years, the investment in expensive loblolly varieties is iffy. Talk to a consulting forester before you proceed.

If you need help determining the site index of your land, contact your county Extension agent, your local Arkansas Forestry Commission county office or your local NRCS office.

Fusiform Rust Problems

Atlantic coast loblolly pine varieties often are more susceptible to fusiform rust than western gulf coast varieties of loblolly pine. The presence of high levels of fusiform rust in your area should be considered in your choice of a loblolly pine variety.

Figure 9. If fusiform rust is a problem in your area, be sure to purchase trees from families with proven resistance. *(Photo: USDA Forest Service, Region 8, Southern Archive, USDA Forest Service)*

If fusiform rust has been a problem in the past, select a variety from the western gulf coast or an Atlantic coast variety from loblolly pine families known to be resistant to fusiform rust. If you are unsure about the risk of fusiform rust in your area, contact your county Extension agent or your local Arkansas Forestry Commission county office and ask.

Conclusion

The array of loblolly pine varieties available to landowners can be confusing. Don't buy whatever seedlings are in fashion at the time. Carefully consider why you are planting trees and the resources available to you for growing those trees. Choose the loblolly pine varieties that meet your goals and available resources. If you feel that you can't make a good choice on your own, get help. Your county Extension agent, AFC county forester or a private consulting forester can help you navigate through the process of choosing appropriate loblolly pine seedlings with the best genetics for your land and goals.

Sources of Loblolly Pine Seedlings

Loblolly pine seedlings are available from several vendors. Some vendors offer only one variety, but others may offer several different pine varieties. The University of Arkansas Division of Agriculture does not endorse any of the vendors listed below. We provide this information only to help you find the variety of loblolly pine seedlings you want. We urge you to comparison shop among the various vendors to find the varieties that are the best deal for you. Most of these vendors will want to hear from you several months to a year before you plan to purchase seedlings so they can make sure they have enough seedlings on hand to meet demand during the planting season.

Arkansas Forestry Commission
3821 W. Roosevelt Road
Little Rock, AR 72204
(501) 296-1940
www.forestry.state.ar.us

ArborGen Fred C. Gragg SuperTree Nursery
191 Nevada 420
Bluff City, AR 71722
(800) 222-1270
www.arborgen.us

CellFor Inc.
P. O. Box 10192
Conway, AR 72034
(501) 336-8553
www.cellfor.com

Weyerhaeuser Company Magnolia Nursery
2960 Columbia 11 East
Magnolia, AR 71753
(800) 736-9330
www.weyerhaeuser.com

Additional Reading

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