A Practical Guide To
Handling & Growing Bareroot Trees

Femrite Nursery Company

Wholesale Grower of
Bareroot Shade & Flowering Trees

ABOUT US

The Femrite Nursery Company is an 87-year old family owned bareroot nursery located on 320 acres in Oregon's Willamette Valley. We grow approximately 200 varieties of bareroot shade and flowering trees and sell to customers throughout the United States and abroad.

We are committed to growing the highest quality trees and providing the highest quality service to our customers. If you have any questions about the information in this publication, our trees, or our policies, call us and we will be pleased to help you.

IN THIS PUBLICATION YOU'LL FIND TIPS ABOUT

WHY BAREROOT?

When you purchase bareroot trees you realize a substantial savings in initial plant costs and freight costs versus B&B or containerized trees. Bareroot trees are less expensive because we dig by machine and handle in bundles.

Freight costs are lower because bareroot trees are not packed in dirt or heavy pots. As a result, they are lighter and three to four times more can fit in a given space on the truck. Since they are light weight they are also easier to handle, and since they are bundled in groups of five or ten you will need fewer trips to get them into the field.

WITH BAREROOT TREES YOU GET

Low plant cost
Low freight cost
Ease of handling

RECEIVING YOUR TREES

OUR SHIPPING SCHEDULE

We begin harvesting your trees in late October and early November. We then grade, tie, tag, and store them at the nursery. They're shipped to you from February to May in a dormant state, well watered and covered with packing material in temperature-controlled trucks.

When the truck arrives check your load list to ensure you take all of your trees and only your trees.

When we begin routing trucks we will call you and give you your estimated delivery date. Then, when the truck carrying your order leaves our nursery we will call you again to tell you it's on the way. Twenty-four hours before arrival you will get another call from the driver informing you when to expect delivery.

WHEN THE TRUCK ARRIVES

When the truck arrives check your load list to ensure you take all of your trees and only your trees. Our trucks typically carry more than one order. Yours will be well marked and separated from others by plastic sheeting and a stop sign.

We harvest your trees from late October until January.

***ABOVE** - Trees are carefully loaded and all orders clearly separated in temperature controlled trailers.*

***LEFT** - Please check the quantity and condition of your trees when unloading them. Notify us if there are any problems.*

CHECKING YOUR SHIPMENT

If we could not ship your full or exact order we will notify you in advance and the load list will reflect this change. If your count and the load list do not agree, note the difference on the bill of lading. If any of your trees are broken or damaged, indicate that also on the bill of lading. Some minor breakage of limbs is to be expected, and these limbs should be pruned when preparing for planting.

Don't refuse to unload your shipment. If there's a problem with your order, note it and call our office or your sales representative.

CARE AFTER UNLOADING

After unloading, your trees should be thoroughly watered and protected from sun, wind, and potentially freezing temperatures. If the temperature is near or below freezing when the trees are delivered they should be protected as soon as possible as freezing will kill the roots.

STORING YOUR TREES

Bareroot trees require minimal care to remain healthy and viable when held in the proper environment. The primary concern is that they will die if their roots freeze or dry out.

STORAGE ABOVE 25^0 F

When temperatures exceed 25^0 F, trees may be stored outside as long as their roots are completely covered in a moist insulating media (sawdust, wood chips, sand, etc.) and the tops are protected from extreme wind, sun, and late season frosts. If the trees are heeled-in the tops can be exposed to mild weather.

STORAGE BELOW 25^0 F

Below 25^0 F special handling is required. Temperature and humidity controlled buildings are preferred. An insulated warehouse with sawdust for heeling in and water to keep trees moist is recommended.

Spraying with Moisturin and copper protects trees during storage and shipping.

HEELING IN

Heeling in is strongly recommended if plants are to be held for more than a few days prior to transplanting or containerizing. This involves placing the trees upright in trenched ground. Tree roots should be thoroughly watered to settle the media around them. When removed from the heeling-in media for transplanting or containerizing tree roots should be protected from drying out.

SWEATING

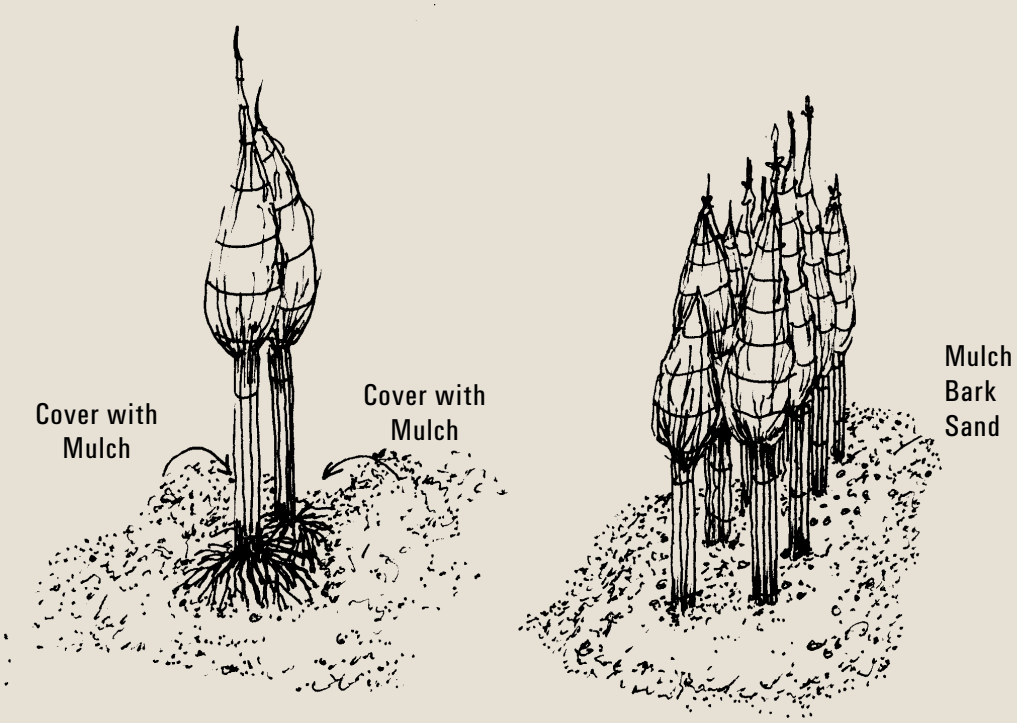
Some varieties of bareroot trees will require sweating in a warm humid environment to achieve bud break. This is done by laying the plants down in a building and covering them with moist packing material (e.g., straw or shingletoe) and a tarp or piece of plastic. Sweating temperatures ideally range between 45^0 and 70^0 F, and the trees should remain moist at all times. Sweating may require several weeks. Once buds begin to swell and break the roots can effectively take up water and the trees will be ready to plant or containerize.

We recommend the following plants be sweated: Amelanchier, River Birch, Redbud, Hackberry, Hawthorn, Mulberry, Plum, Pear, Oak, and Elm.

HYDRATION

Trees that have been held in cold storage will take longer to show signs of new growth after they have been exposed to warm outdoor temperatures.

When removing trees from storage, and prior to planting in the field or in containers, they should be hydrated. This can be accomplished by making a fresh cut on the roots and then soaking the root system in water for several hours. A large tank or pond is ideal for this. Rehydration helps in the transition from dormant storage to active growing. Trees that have been held in cold storage will take longer to show signs of new growth after they have been exposed to warm outdoor temperatures. Protection from too much sun is important during this time. Pruning will also help in the transition.



When buds begin to break in the spring bareroot trees should be transplanted in the field or containerized. In both cases, fertilization and spraying to protect from disease and pests are critical steps. Because fertilization and spraying requirements vary widely from region to region, we recommend past experience, assistance from local agricultural extension services, agricultural suppliers, and other advisors as your best guide.

Fertilizer can be incorporated in soil mix or top dressed after the trees are planted. A balanced slow release product is recommended. Foliar feeding during the summer months is also helpful. Fertilizer use should be reduced in late summer so the trees will harden off for the winter.

FIELD TRANSPLANTING

SOIL PREPARATION

It is important to transplant bareroot stock into soil with a fine consistency that will allow the dirt to sift between the roots and reduce air pocketing. To achieve this we recommend deep sub-soil and surface plowing followed by disking and rototilling. Once this is done the soil should be tested and nutrients added as needed.

PLANTING

Trenches or individual holes for the trees should be dug large enough to accommodate the roots without additional pruning or bending. Planting should be at the same depth as the trees were grown, and there should be enough room for the roots to spread naturally in all directions without cramping. Typically this is a depth of 12” to 18”.

WATERING

Trees should be thoroughly watered immediately after planting. Attaining the right balance of watering requires special attention, and there is no exact rule. Light sprinkling is not adequate as the water must reach the bottom of the hole to evacuate all the air pockets. Over watering can cause root rot. In general, keeping the ground moist and allowing the trees time to absorb the moisture between watering will prove successful.

STAKING

Many trees require staking to maintain a straight trunk, allow their root system to establish a proper anchor, and withstand windy conditions. We recommend the tree be tied to the stake using flat plastic tape that will expand with the tree and not constrict it as it grows.

Cherry Standard tied with flat plastic tape to 3/8" fiberglass stakes.

ABOVE GROUND CONTAINERIZING

POT SIZE

Pots should be sized so that few, if any, roots need to be pruned. The chart below provides a guideline for selection.

SOIL MIX

Soil mixes are widely available from retail and wholesale companies in bulk or bag quantities—many formulate custom mixtures for specific environments and applications. In making a selection we recommend light weight mixes with good drainage. A common formula for those who choose to make their own mix is equal quantities of sand, peat, and sawdust or bark dust.

WATERING

Water requirements for containerized trees are determined by rainfall, humidity, temperature, wind, sunshine, and the type of soil and potting mixes used. In all cases, however, containerized trees should be thoroughly watered after potting and kept moist, but not drenched, to ensure they do not dry out. Overhead mist is beneficial in providing a proper environment for bud break while the roots are becoming established.

WIND PROTECTION

Adequate protection from heavy wind is essential to newly potted trees to ensure satisfactory growth. This can be accomplished by placing them in a cold greenhouse, plastic hoop house, or lathe house until they are well established.

SUGGESTED POT SIZES*

Tree Size	Pot Size
3′ branched	13″ x12″
4′ branched	13″ x 12″ or 15″ x13″
5′ branched	15″ x 13″ or 16″ x1 4″
6′ branched	18″ x 12″ or 18″ x 16″
1″ branched	20″ x 14″ or 21″ x 16″
1.25″ branched	21″ x 16″ or 22″ x 14″

**These pot sizes are averages. Differences in root systems and the age of the plant make this a guide only. Larger or smaller sizes may be needed.*

POT-IN-POT CONTAINERIZING

With this method of containerizing, "socket pots" are buried in the earth and containerized trees in smaller pots are inserted into them. This approach requires good drainage and careful preparation of the area before the socket pots are put in.

Pot-in-pot containerizing combines the advantages of above ground containerization with in-ground protection. These advantages include:

- Trees will have more stability to withstand strong winds
- Root zones are insulated from extreme temperatures
- Trees can be wintered in place
- Shipping costs are less than with B&B trees
- Trees can be harvested and shipped year around
- Labor costs for harvest are reduced

Pot-in-pot containerizing

Photos Courtesy of Oregon Turf & Tree Farm.

PRUNING YOUR TREES

Pruning is essential to ensure successful growth of your bareroot trees. When we harvest your trees for shipment it is inevitable that feeder roots will be left in the ground. To regain the balance between tree height and root size it is necessary to prune. If this is not done the root system will not have enough strength to maintain a vigorous top. Pruning also ensures that the correct branches are encouraged to grow. All crossed branches, for example, should be removed.

PRUNE HEAVILY

New research is beginning to show that terminal buds may have some relation to root regeneration. However, our experience is, in general, the harder a tree is pruned back when it is transplanted the more vigorously it will ultimately grow. We heavily prune our trees when we plant them in the spring. By fall their new growth has surpassed their previous growth. When pruning a branch, make a clean slanted cut approximately 1/4 inch above a bud pointing in the direction you want the branch to continue growing.

FLOWERING TREES

Remove 1/3 to 1/2 of each branch, cutting to an outside growing bud.

WEEPING TREES

Remove 1/3 to 1/2 of each branch.

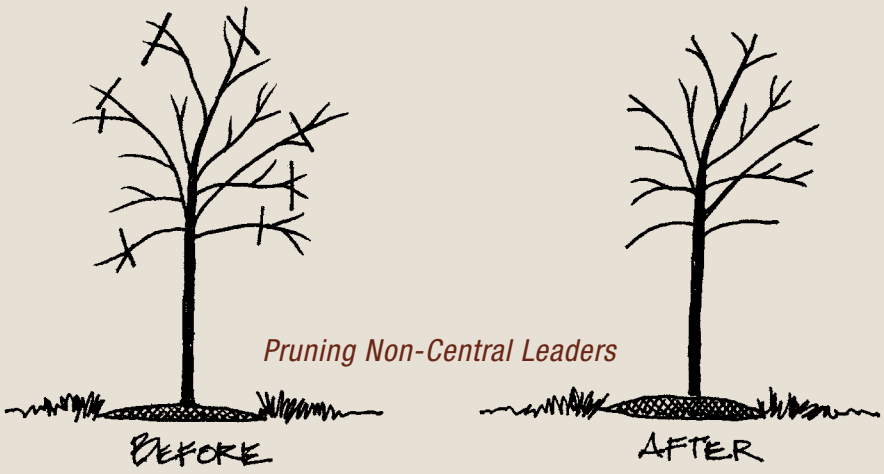
SHADE TREES

Remove 1/4 to 1/3 of each side branch on easily transplanted varieties (e.g., maple, ash); remove 1/2 to 2/3 of each side branch on more difficult to transplant varieties (e.g., locust, elm).

TRIMMING CENTRAL LEADERS

Central leaders on shade trees may or may not have been trimmed at the nursery during the growing season. Leaving leaders untrimmed encourages the tree to form a more upright shape. Should you choose to shorten the central leader due to top terminal bud damage, or for special pruning practices in your region, cut it above the bud you want to train into the new leader and tape the new bud to the stub with masking tape. This will create a straight leader.

An example of how to properly prune a central leader tree.



Pruning Non-Central Leaders

Pruning Weeping Trees

Pruning Central Leaders

CUSTOMER SERVICE

At Femrite Nursery Company we pride ourselves on our customer service. If at any time you have questions about our trees, would like to place an order, or would like to receive our catalog, quarterly newsletter, or other publications, please let us know.

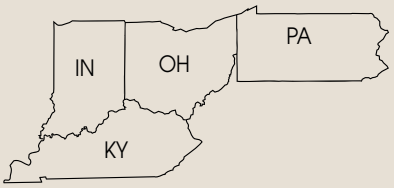
Doug, Kathie, Rob, and Tom Femrite *Owners*
Lance Lyon, *General Manager*
Dave Sheline, *Sales Manager*
Jim O'Brien, *Inventory Manager*

YOU MAY REACH US A NUMBER OF WAYS:

- Call us at (800) 547-2161 or (503) 678-1261
- Email us at trees@femrite.com
- Go to our webpage: www.femrite.com
- Fax us at (503) 678-5083
- Contact one of our sales representatives
- Visit us at one of the trade shows we attend each year:

JANUARY	Western	Kansas City, KS
	MANTS	Baltimore, MD
	Mid-American	Chicago, IL
	CENTS	Columbus, OH
	PROGREEN	Denver, CO
	IPM	Essen, Germany
JULY	PA Green Expo	Harrisburg, PA
	PANTS	Atlantic City, NJ
AUGUST	SNA	Atlanta, GA
	Farwest	Portland, OR

SALES REPRESENTATIVES



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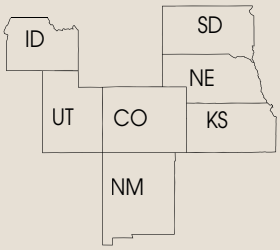

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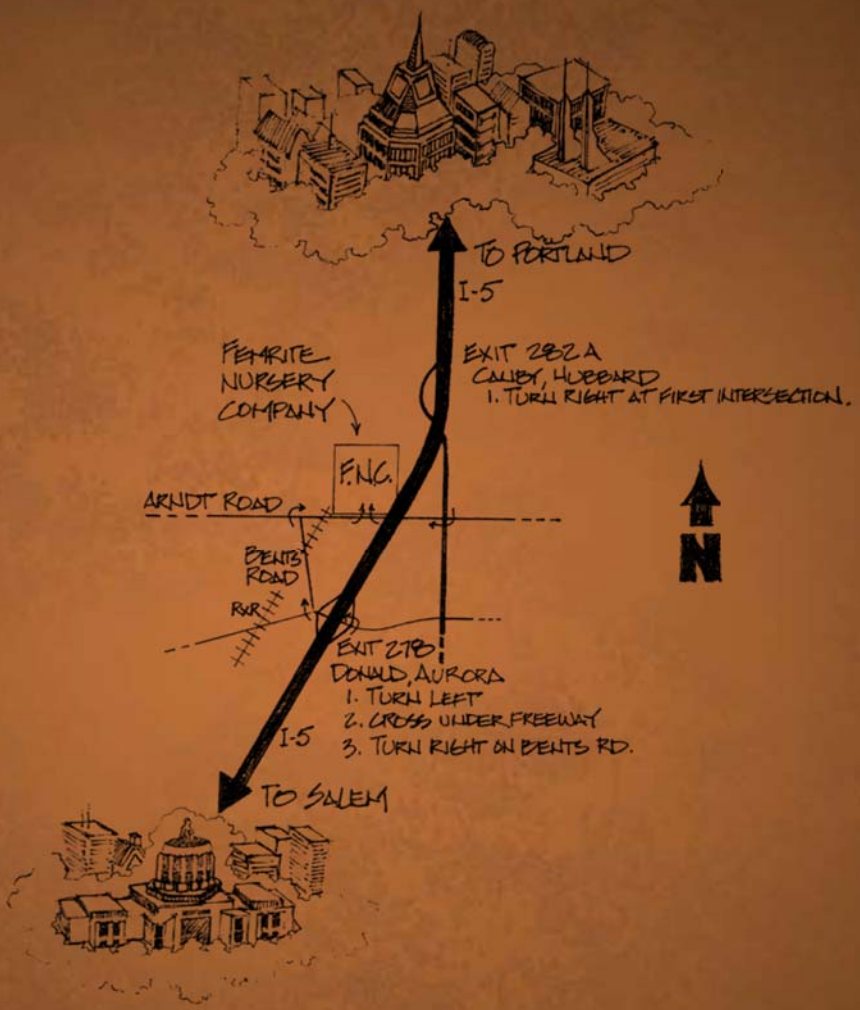
In trusting us to supply your trees you've chosen to buy the best, because at Femrite Nursery Company quality is grown in. We hope you will find these tips on handling and growing your trees helpful. As always, when you need to talk with us we are just a phone call away.

Femrite Nursery Company…Quality Grown In



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