

## Caring for Bareroot Nursery Stock:

Bareroot plant material needs to be handled carefully in order to insure the best survival rate and growth of your plants. Paying close attention to keeping the stock cool, the roots moist and protection from direct sunlight, wind, and extreme temperatures will ensure the best results. Several situations require specific attention and they are listed below.

### **Planting Bareroot Stock:**

You should start preparing for transplanting before your order of nursery stock arrives. Preparing the ground for field grown stock or obtaining pots and soil mix for potting stock are essential.

Soil tilled through two consecutive seasons will help provide weed control and provide good tilth for your new stock. Pots must be large enough to fully extend the root systems and allow them room to grow.

When your stock arrives, you should have your transplanting plan prepared. Roots of broadleaf plants should be soaked a minimum of 4 to 6 hours before planting to ensure proper hydration. Conifers should only be soaked for 20-30 minutes. If possible, continue to keep roots moist while transplanting. Plants should be transplanted within 1 to 2 days of receiving them, conditions permitting.

The first two weeks after planting will be the most crucial to survival. So keep your plant material properly irrigated. Additional shade and wind protection may benefit certain species.

### **Transplanting Broadleaf Evergreens:**

Problems with transplanting broadleaf evergreens and some conifers usually result from desiccation (drying out) of the stock after transplanting. This includes Arctostaphylos, Mahonia, Gaultheria, long needle pines, and others. Your results with these species may be improved by utilizing the following procedures:

- For broadleaf species, remove or clip off most leaves prior to transplanting. This may seem severe, as the plants are often purchased for their foliage. Removal of leaves will help survival by reducing transpiration. As stock begins new root growth, new leaf buds will push and grow.
- Soak the root systems for 4 to 6 hours before transplanting to make sure that the plants are properly hydrated.
- Keep your transplanted material under shade and irrigate with mist or overhead irrigation frequently. If possible, feed the plants consistently a very light nutrient level during establishment, which may take 2 to 6 weeks.
- Once new leaves emerge and root systems have re-established, remove any covering and irrigate and care for the plants as you would any other newly transplanted deciduous stock.

### **Storing Stock:**

If you must store your plants prior to planting, be sure the selected storage area maintains the correct temperature, has good ventilation and plants will be protected from drying out, heating or freezing. Remove the plants from their boxes and keep roots moist and the tops dry. Do not store stock near fresh produce or cut flowers, both of which release ethylene gas which is deadly to live plant material.

### **Broadleaf Deciduous Nursery Stock:**

Inspect the plants to see if they have broken dormancy (plants will often 'sweat' in transit). If buds are swelling or stretching, the plants should not be stored for more than one or two days prior to planting.

If deciduous plants are still in dormant condition, they can be kept in temperature controlled cold storage until approximately May 1st as long as temperatures are maintained between 34-38°F, relative humidity is kept above 85% and with good air circulation, stock must be kept properly hydrated without excessive surface moisture.

### **Broadleaf Evergreen Nursery Stock:**

Process and plant these species immediately. Do not attempt to store them for more than 2 days. Keep plants cool, moist and shaded until ready to plant.

### **Conifer Nursery Stock:**

Conifers can be held for short periods if placed in storage immediately upon arrival at 34-38°F. Their roots should be kept moist, tops shaded, and planted within 1 to 2 days.

## **About your Zone:**

USDA Hardiness Zones are based upon the best available information and are provided as guidelines only. Elevation, microclimate, topography and other factors will influence your coldest minimum temperatures within a zone. Use appropriate judgement relating to your specific area when selecting plant material.

# **BAREROOT NURSERY STOCK HANDLING GUIDE**

## **Sweating of Nursery Stock:**

Most tree and shrub species can be stored bareroot all winter under refrigeration and develop normally once transplanted out in the spring. There are a few species though, whose buds become extremely dormant during refrigerated storage. These species must be forced into breaking bud before they are planted, or they will simply remain dormant in the ground, and eventually die.

The process to force species out of dormancy and into bud break before planting is called "sweating". The main goal is to increase the humidity and temperature surrounding the stock to force the buds to swell. There are three methods commonly used.

**Method 1** - Place the plants in a warm, humid environment such as a greenhouse until they break bud. If you do not have access to such a facility method 2 or method 3 are equally effective.

**Method 2** - Use straw or burlap. Place one or two layers of burlap, straw, or similar material on the floor of a garage or shed that can be maintained at a temperature between 60-70°F. Even a shady location outside can be used if the proper temperature range can be maintained.

- Lay the plants side by side on the burlap or straw and moisten them if they appear dry. Avoid letting the plants become too wet.
- Completely cover the bundles with several layers of damp burlap, straw or similar material and moisten the covering with water.
- Check the plants daily to see if they have broken bud. Also check to see that the covering is kept moist and that no mold has developed. (If mold develops, rinse off with clear water, and shake off excess moisture.)

**Method 3** - Use the shipping box your plants arrived in.

Unpack order upon arrival, saving wet packing material and the poly sheet used to line the box.

- Soak roots of the species requiring sweating in water overnight. Hold the sweating box in an area protected from sun, wind, heating and freezing, ideally with temperatures between 60°F and 70°F.
- Place the poly sheet back in the box, remoisten packing material and place in box. Shake excess water off plants and place them on top of wet packing material.
- Secure poly sheet over the plants to hold moisture in, close box and check every day or so, keeping packing material moist and watching for bud swell and mold formation. If surface mold begins to form, rinse off with clear water, shake off excess water and return plants to box.

Plant your stock when the buds begin to swell or after about 14 to 21 days depending on temperatures (lower temps delay bud break). Sweating plants before planting is relatively easy and usually only takes a few days.

Far more important to the plants survival is when to begin sweating. Sweating forces new growth, after which the plants may be vulnerable to frost damage and to drying out. Species requiring sweating should be kept in a cool place that doesn't freeze, until the danger of frost has passed and adequate irrigation is available in the field. If sweated plants are transplanted too early or when it is too dry, all the care taken to break their buds may be wasted as the new growth freezes or dries.

***\* Please keep in mind that plants may be partially or completely sweated during shipment if temperatures are warm while stock is in transit. If buds have begun to swell on arrival, indicating that plants have broken dormancy, further sweating is not required.***

***Species that may need sweating***

Acer	Betula	Crataegus	Morus	Quercus	Syringa
Amelanchier	Carpinus	Fraxinus	Potentilla	Salix (weeping)	
Berberis	Celtis	Malus	Pyrus	Sorbus	

**Container Size Guidelines:**

The following list suggests container sizes for transplanting bareroot nursery stock. Keep in mind that actual root mass and length is variable and the substitution of one or two pot sizes may be necessary. Fast growing trees such as willows or poplars will require larger pots.

The number of seasons that you plan on growing the stock will also be important, as shifting up to a larger size pot after one season may be necessary. Avoid crowding, twisting or circling roots at time of potting. Note that heights given are size ranges of stock from the soil line or root collar and up and do not include the root length.

Grafted Trees (Pomes & Stone Fruits, Flowering Crabapples)

7/16"	#2 pot or #3 pot
9/16" - 11/16"	#5 pot or #7 pot
7/8" +	#10 pot or #15 pot

Seedling Conifers (1-0, 2-0, plugs, etc.)

1"-3"	2 1/4" to 4" pot
3"-12"	#1pot
9"-18"	#2 pot or #3 pot
18"-36"	#5 pot

Transplant Conifers (1-2, 2-2, P-2, etc.)

6"-12" #1 pot

9"-15" #2 pot

15"-36" #5 pot

Deciduous Seedling Shrubs & Trees (1-0, 2-0, etc.)

3"-18" #1 pot

6"-24" #2 pot or #3 pot

2'-6' #5 pot or #7 pot

5'-8' #10 pot or #15 pot

Deciduous Transplant Shrubs & Trees (1-2, 2-2, etc.)

6"-18" #1 pot

12"-24" #2 pot or #3 pot

18"-48" #5 pot

3'-6' #7 pot or #10 pot

5'-8' #15 pot