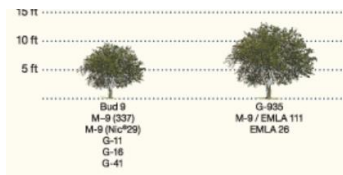


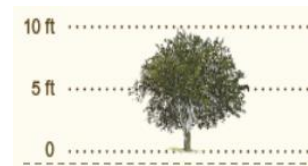
The fruit trees rootstock information is below, please refer to the rootstock while reading the instructions.



Apple Rootstocks: Ambrosia: G-11 : It has moderately high resistance to fire blight, good resistance to Phytophthora root rot, but is not resistant to woolly apple aphids. It does not express the virus sensitivity of G-16. G-11 is similar to M-9, it produces intermediate trees similar to EMLA 26. Advantages include a well anchored, collar rot-resistant EMLA 111 tree, with the dwarfing and precocity of the M-9 interstem.

Crimson Crisp:G-16: A dwarfing rootstock , G-16 produces a tree similar in size to trees on M-9 clones. Its desirable characteristics include high yield efficiency and resistance to burr knots and root suckers. G-16 shows strong resistance to fire blight and some tolerance to apple replant disease. Due to virus sensitivity, G-16 is available only with certain scion combinations.

Pear Rootstocks: Bartlett and Shenandoah Pear: OHxF87: For growers who wish to plant a higher density pear orchard, we recommend planting trees on OHxF87. These can be planted at 5' in row and 12-14' between rows.



Preparation for Planting

How do I choose a good site for my trees? Fruit trees prefer well-drained soils. Avoid low areas subject to frost. Elevated sites that are sloped are ideal. If possible arrange rows to run North to South. Northern aspects are generally more frost tolerant. Fruit trees should be planted in full sun.

How big of a hole should I dig? A minimum 18" x 18" hole is recommended.

What do I need to know about soil type? Fruit trees do not require fertile soils. Soils that are well-drained with some gravel or shale are ideal. Fruit trees struggle in heavy clay and poorly-drained soils. In situations where only, these types of soils exist, ridging the planting to elevate the tree above the existing soil plane helps to rectify this problem. Your pH should be somewhere near 6.2 - 6.5 (neutral). Mend with lime if necessary.

Planting & Caring for Trees

How far apart should fruit trees be planted? Semi-dwarf apple trees should be planted at 12-14 feet and large semi-dwarf apple trees should be planted 16-18 feet apart. Domestic pear should be spaced 12-14 feet apart.

Do I need to cut back my trees when I plant them? We strongly recommend cutting back fruit trees after they are planted. When the trees are harvested from the field there is some root loss due to mechanical harvesting, and therefore the trees may be too big for the root systems to support. Cutting back the trees will help rebalance and invigorate them. Trees planted in the fall should be cut back in the spring.

Do I need to stake (provide support for) my trees? Dwarf apple trees require support. Dwarf rootstocks include G-11, G-16. When using wood to support trees, a minimum 2.5" diameter pressure-treated pole is suggested. Pears do not require staking.

Should I put fertilizer in the hole when I plant the tree? We do not encourage putting fertilizer in the hole at planting. More young trees die from over-fertilizing than anything else. We recommend fertilizer application 4-5 weeks after planting. No more than 4 ounces of 10-10-10 fertilizer should be applied around the drip line of each tree. Do not apply directly against the base of the tree. Allow the roots to grow to the fertilizer.

How much water do trees require? A common-sense approach should be taken to watering fruit trees. In times of drought, trees should receive a minimum of five gallons of water every ten days. Dwarf apple trees are less tolerant to drought conditions. Under drought stress, they require a minimum of five gallons per week. One method of watering trees is to drill a pinhole in a five-gallon bucket and allow the water to drip into the root system. Be careful not to over-water fruit trees.

I am concerned about winter injury. What can I do to help avoid this? To help prevent winter injury we recommend that you paint the base of the tree up to the first set of scaffold branches. Use a basic white, latex paint for this.

How do I prevent deer damage? For situations where deer pressure is light to moderate make Irish Spring Soap Bags. The soap mimics the scent of a human and in turn acts as a deterrent. Unfortunately, in many cases deer pressure is too heavy, and a scent deterrent may prove ineffective. In this case fencing is the ideal solution. Fence the entire area, or you may choose to individually cage the trees. For this process the ideal post to use is a 6' T post. Use a minimum of 3 posts per tree, located 4' out from the tree. Posts should be hammered one foot into the ground. The cage should stand at least 5-6' high. Use 3-4" square woven wire, turkey wire, snow fence or plastic mesh (used for erosion control) for the fencing material. Put down crushed stone (limestone or pea) inside the cage to enhance weed control. The stone provides excellent vole control as well. Bark mulch is not recommended for fruit trees because it can create a habitat for voles and mice.

Fruit Tree Pruning

Is there a guide for pruning? Pruning recommendations are given in the [PSU Fruit Production Guide for Home Gardener](#).

When should I do my annual pruning? Young apple should be pruned a minimum of one month before bud break in late February or March.

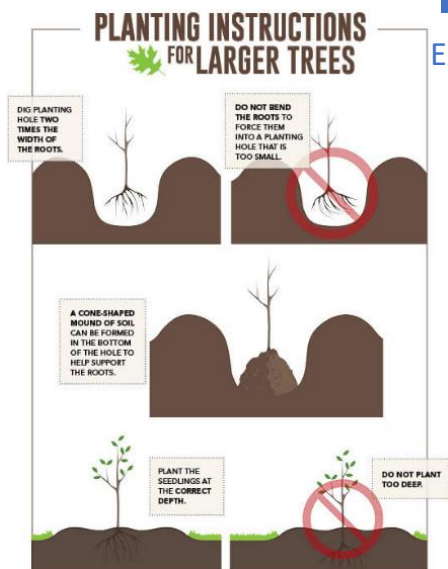
PLANTING INSTRUCTIONS FOR CONIFER AND HARDWOOD BARE ROOT SEEDLINGS

To optimize survival, plant seedlings immediately upon their arrival from the nursery. If this is not possible, the seedlings can be stored for several days in a cool, dark place. Water the seedlings periodically to ensure the roots are well moistened. It is critical that the roots never be allowed to dry out; exposure to the air for even a few minutes can kill your seedlings. Trees that are not planted within several days of delivery should be heeled-in. Heeling –in is the temporary planting of seedlings by covering the roots and lower portions of the stems with moist soil.

**** Smaller seedlings may even be better potted and transplanted at a later time as they grow bigger. ****

Steps for Successful Planting:

- If you cannot plant seedlings immediately, store the bundles in a cool, dark place and water the bundles periodically to ensure the roots are well moistened.
- Dig a hole at least twice as wide and only as deep as the root system.
- You may need to prune off dead or excessively long root tips.
- Spread the roots out so they are evenly distributed in the planting hole. A cone shaped mound of soil can be formed in the hole to help support the roots.
- Do not bend the roots to force them into a planting hole that is too small.
- It is very important to plant the seedlings at the correct depth. The upper roots should be just under the surface of the soil. Do not plant too deep.
- Place the soil back in the hole and gently tamp to remove any air spaces. Roots should not be exposed above ground.
- You will need to provide a deep soaking watering for each seedling at the time of planting and once each week for the first two growing seasons. Lack of water is the number one killer of newly planted trees!
- Seedlings will need very little pruning, if any, at the time of planting. Only dead, damaged or diseased branches should be removed.
- Do not "shape" or attempt to balance the branches to the root system. Reducing the leaf area will only further stress the trees and reduce the capacity for growth.
- Do not add fertilizer or other soil amendments. Fertilizer is not tree food! Fertilizer can often do more harm than good.
- Your seedling will probably not need to be staked. If support is needed, place wooden stakes on opposite sides of the tree and support with wide, flexible material. Do not use wire or other rigid material. The seedlings must be able to flex to promote strong trunk development.



EXAMPLE OF PAST FRUIT TREE ROOTS: WILL NEED AT LEAST 2FT BY 2FT HOLE.

