

Planting and Maintenance of Apple Trees

A Quick Reference Guide for the Novice

Century Farm Orchards, David C. Vernon

1614 Rice Rd. , Reidsville, NC 27320

336-349-5709 or david@centuryfarmorchards.com

Planting demonstrations available on our website:

www.centuryfarmorchards.com

Apple trees require care and attention if they are to grow well and produce quality fruit. Many old apple trees exist without such care, but countless others died prematurely. Following the few guidelines set below will help one grow more healthy and productive apple trees.

WHEN TO PLANT

The best time to plant apple trees in southern climates is late fall or early winter. The trees should be dormant (without leaves) and the ground not frozen. It is also acceptable to plant them in late winter, but sudden cold spells without adequate soil compaction can lead to root damage. Planting in early spring may require more watering during the summer. If planting in northern climates or above 3000 ft. in elevation in the South, early spring planting is recommended.

TREE SIZE AND SPACING

The size a grafted apple tree will reach is determined primarily by its rootstock (roots). Unless a customer specifically requests a special rootstock, all trees are grafted with an MM111, semi-dwarf rootstock.

Below are some of its qualities:

- quite disease resistant (not immune)
- can withstand wet spells (but can still be drowned)
- can withstand moderate drought conditions
- produces a tree about fifteen feet tall (manageable for most purposes)
- will usually produce fruit in three to six years (two or three years before “standard” rootstock for most trees)

Trees on MM111 (semi-dwarf): Trees on this rootstock should be given an area of fifteen by fifteen feet in which to grow. If planting more than one or two trees, they should be planted in rows with fifteen feet between trees and twenty feet between rows. (Note: These spacings are the minimum needed. Twenty feet between trees and twenty four feet between rows would be the maximum.)

Dwarf Trees (Bud-9 rootstock): Trees grafted onto dwarf rootstock should always be given permanent support with a heavy duty stake or trellis system. They should be given about eight feet between trees and fifteen feet between rows, unless using a trellis system.

Full-size Trees: Semi-dwarf or dwarf trees can become standard size, full grown apple trees if they are planted with the graft a couple of inches beneath the soil. They will create new roots above the rootstock that will give the tree more vigor.

SITE SELECTION

1. Trees should be planted where they can receive sunlight for most of the day. In most of the South, gently sloping hillsides facing northeast or east are optimum.
2. Plant in soil that drains well (ie. water should not stand for more than a few hours after heavy rains). Definitely avoid floodplains.
3. Plant in soil that does not have a root-inhibiting layer. Rocky soils are acceptable as long as the rocks are not so extensive as to limit the tree roots to the top foot or so of soil. Also be careful to avoid large bodies of sandrock underlying soil or a grayish, dense clay. Both of these can inhibit water drainage.

SITE PREPARATION

If Planting Only A Couple Of Trees:

1. Weeks before planting, kill all vegetation in a circular area four feet in diameter. This can be done with a herbicide such as Round Up.
2. The soil should be tilled thoroughly to a depth of one foot with a shovel and a mattock. When completed, the soil will be looser, enabling the tree roots to grow better during its first three years.
3. Spread about three pounds of lime and one-quarter to one-half pound of bone meal over the fresh soil and work it into the area as evenly as possible.

Note: It is advisable to have soils tested to determine the best application rate for lime and other micronutrients. Ask your local agricultural extension service for more information.

If Planting Many Trees (a small orchard):

1. Weeks or months before planting, the area should be plowed or tilled thoroughly. The area should then be harrowed until smooth before planting.
2. The area should be reseeded with a non-invasive grass to prevent soil erosion. Fescue is a good choice.
3. Lime should be added to the newly tilled soil. A general rate of ten pounds of lime per 100 square feet is acceptable in most soils.

Note: The above directions for planting a small orchard are just recommendations. One could follow the simpler directions for planting only a small number of trees noted above and most likely have positive results. Some people choose to use an auger to dig the holes that the trees will occupy. This technique is acceptable, but keep in mind that the soil in the hole will settle a great deal, so the tree must be planted as to avoid sinking too far into the hole in the months after being planted. The hole may also have to be expanded outward with a shovel if the auger is too small.

Note: It is advisable to have soils tested to determine the best application rate for lime and other micronutrients. Ask your local agricultural extension service for more information.

PLANTING

Please see diagram at the end of manual

1. **After receiving the apple trees, plant them as soon as possible in their prepared sites.** If for some reason you cannot plant them immediately, the trees may survive for a few weeks in their original containers (this does not apply to trees that are shipped) as long as the roots are kept moist (not wet) and do not freeze. If this advice is not followed, one could kill the tree before it is planted.
2. Dig a hole 12 to 14 inches deep and 18 inches wide. With a shovel, break up the removed soil so that it is loose and free of clods. Place some of this soil into the bottom of the hole.
3. **REMOVE THE TAG.** Trees are sold with a metal tag or a white plastic tag. All tags should be removed after planting. Tags can either choke and kill the tree (wire tags) or provide a place for insects to hide and damage the tree later. It is recommended that apple tree growers map their orchards immediately after planting.
4. Place the tree into the hole at or slightly deeper than the level of its current roots. Make sure that it is planted with the graft union above the ground. If the roots are circling outside of the root ball, loosen them with your hand. Do not knock off too much soil, and do not cut the roots with a knife.
5. Holding the tree vertically in the hole, place dirt around the root ball mixing in about one cup of lime and two thirds cup of bonemeal as the hole is filled.

DO NOT ADD FERTILIZER or MANURE NOW!!!

Avoid using peat moss as this will decompose quickly and will not benefit the tree after the first couple of years. Water the soil in the hole, but try not to wash off the original dirt from the roots.

6. When the hole is filled with dirt, gently pack the dirt with your foot. If the soil settles later, soil should be added so that a depression is not visible.
7. Water the area once again.

VOLE NOTE: If your location has voles, it is recommended that you mix in gravel with your soil as you plant the tree, especially around the trunk. The gravel should be the about 3/4 inches long. Voles will find digging and eating more difficult in the presence of the gravel.

WATERING NOTE: If a tree is planted properly, it is not always necessary to water them when planting. If one does not water, it is absolutely necessary to make sure that the roots are moist before removing from the container and that when planted, the soil around the roots is free of air pockets and

well packed. Doing this should prevent the roots from drying out or freezing. However, if it does not rain shortly after planting, one should water the tree generously.

What Happens After The Tree is Planted?

DEER

Deer can destroy an apple tree in many ways. They can eat the new young leaves and limbs, even when dormant. They can also ruin a tree by rubbing it with their antlers. It only takes a few minutes for a deer to cause severe damage. For this reason, a grower must take precautions. Here are some recommendations:

1. The best option is to build a fence around the orchard. There are many different types so please ask for more information if you are considering this option. Fences are time consuming, difficult to build, and expensive, but they work.

2. **For growers with only a few trees-** One should place a small woven wire hoop around each young tree. It must be five feet tall and pulled tightly to the ground. This option deters deer, but is not deer-proof.

3. Other options which have temporary success include:

- a peanut butter fence (A single strand of electric fence wire is put around the orchard at a height of about two to three feet. A mixture of peanut butter and vegetable oil is spread on small strips of aluminum foil that are wrapped to the wire every forty feet. Connect the wire to an electric fence box. The deer are attracted to the peanut butter, receive a shock, and usually do not return.
- Enclose a strong smelling soap(ie. Irish Spring) in cloth and hang in the tree
- Commercial spray products such as "Hinder" and "Pepper Sprays" also work, but must be reapplied after heavy rains.

OTHER ANIMAL PESTS

Rabbits, mice, and voles eat apple-tree bark. It is best to enclose the tree trunk in a commercial wrap, but be careful to read its directions. Some must be removed during certain seasons. A small screen wire cage two feet high could also be used to encircle the trunk as long as it does not inhibit its growth. Some growers use a black corrugated pipe to protect their trees. It should be two feet high, contain holes for air circulation, and be cut along its entire length to enable the tree to expand as it grows. Voles can also eat the roots of apple trees creating a major problem. Use a rat bait material to kill the voles, but use extraordinary caution since family pets may be attracted as well.

WATERING/MULCHING

Apple trees should be watered weekly during dry periods, especially during the first two years after planting. Water well enough to wet roots that may be several inches deep. If watering is not feasible, soil moisture can be conserved through mulching and/or weed control. Place four to six inches of leaves, pine needles, pine bark, or similar weed-free material around the tree in a four foot diameter circle. Do not use oak or other hardwood bark because it can release weak acids that rob the soil of nitrogen and weaken the tree. It is important to keep all mulch several inches from the trunk because it invites some smaller animal pests to attack the trunk.

WEED CONTROL

It is possible for a young apple tree to grow quite well without watering or mulching as long as grass and weeds are controlled. For the first three to five years, grass and weeds, should not get within three feet of the tree because they can deplete soil moisture rapidly and may hinder tree growth. A herbicide such as Round Up can be used to control grass and weeds but it is important to note that it can also damage or kill trees if sprayed on the **leaves** or the **trunk** of a young tree. If one chooses to use a black corrugated pipe as described earlier, it will protect the trunk from herbicides as well as small pests.

TREE SUPPORT

An MM111 rootstock should enable a tree to eventually be free-standing. However, when the tree is young, support may be necessary. Most damage is done when a period of rainy weather is followed by strong winds from a thunderstorm or tropical system. It is recommended that a strong stake be driven into the ground to a depth of one to two feet. The material holding the tree in place should not constrict growth, be sharp enough to harm the bark, or deteriorate in less than one year.

FERTILIZATION

In the South, apple trees may be fertilized up to three times a year if there is adequate soil moisture present. There are many kinds of fertilizers one can use, including manure. It is recommended that you use the one that you feel most comfortable with. However, a slow release fertilizer should not be used if one cannot water the tree. Slow release fertilizers may continue to release nutrients even during dry periods when root damage would occur. It is recommended that 10-10-10 fertilizer be applied using the amounts listed below in these months:

MARCH ----- mid-JUNE (smaller amt.) ----- early-SEPTEMBER

(do not fertilize if experiencing a drought or dry period!!!)

Year one: one tablespoon or no fertilizer

Year two: one half to one cup of 10-10-10 (at each month above)

Each successive year, increase the amount of fertilizer by a half cup to a maximum of 6 cups for a mature tree. Spread the fertilizer out from the trunk evenly to just beyond the reach of the limbs.

Remember, too much fertilization (especially during dry periods) may damage or kill the tree.

SPRAYING

Some apple trees are more resistant than others and will require little or no spraying. However, this is the exception and one should consider the use of some sprays to control insects, fungal diseases, etc. Note that some organic-oriented methods are also available to the consumer.

Most insect damage and fungal infections occur early in the growing season, usually just before or after blooming. One may decide to use chemical sprays during this period and then discontinue use.

Never spray insecticides when trees are blooming as this will kill the bees and insects that are pollinating the trees.

Do not let Japanese Beetles or caterpillars defoliate young trees. It can happen over a span of a few days and cause permanent stunting of the tree. A 20-30% loss of foliage is acceptable. Beyond that point, one has to spray.

Dormant oil (an oil for fruit trees available at garden centers) mixed in water should be sprayed on the tree on a warm, sunny day in February. It will effectively smother mites and insect eggs that would emerge later to cause damage. It is inexpensive, completely non-toxic, and quite effective.

Cedar apple rust is a fungal disease transmitted in the spring from cedar trees to apple trees. It can blemish leaves and fruit with a rusty colored spot. If a case is bad enough, it can weaken the tree through a reduction in photosynthetic processes. Fungal sprays are effective, but not always necessary.

For more specific spraying instructions, it is best to contact your local agricultural extension agent for the proper sprays and the best schedule to use them.

Thanks for your business!

David C. Vernon

DIAGRAM OF PLANTING AN APPLE TREE