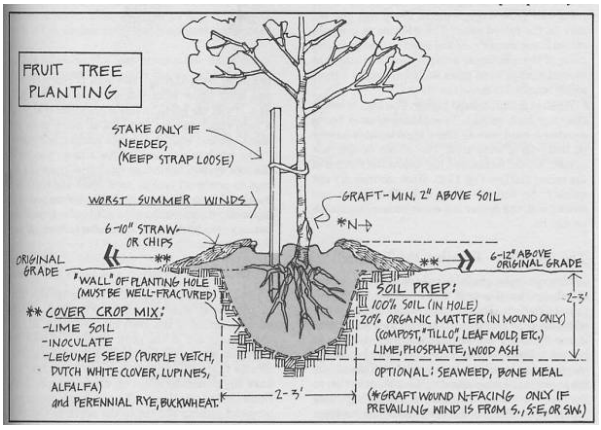
Royal Oak Farm Orchard Fruit Tree Planting Instructions

READ BEFORE PLANTING! If you read it, they will grow!

Seasonal Information. Apple trees are quite tolerant, withstanding most conditions, including wind and cold. It is recommended that bare root apple trees be planted in spring. Container trees can be planted in the spring through fall.

Location. Full sunlight and good air circulation are the most important concerns to think about when selecting your planting location. While apple trees can tolerate a wide range of soil types, they will not thrive in areas with poor drainage or high acid levels. Be sure to space your trees according to the size rootstock your tree has..

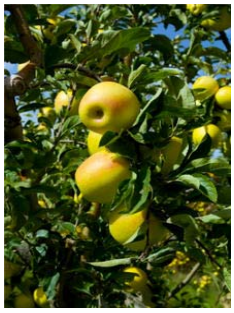
Pollination. Apple trees benefit greatly from cross-pollination, as they are not self-fertile trees. If you do not have a flowering crab apple tree within 50 feet of your apple tree location, you will need to plant at least one other variety that blooms at the same time as your apple tree nearby.



Planting Instructions. **Potted Tree:** Begin by digging your planting hole the same size as the container of your tree. If the tree is in a root pouch, cut the container up the side about 3" to 4" in length spaced about every 3" apart. If the roots have filled the container or are winding around, use your fingers to gently pull the roots apart a bit through the slices, or poke into the root ball with a pointed instrument and wiggle about a bit to loosen the roots and compacted soil. Be sure to leave the soil intack. If the tree is in a plastic container, cut the container bottom out and discard. Once the tree is in the planting hole, cut the container up the side and slip it completely out. **Bare Root Tree:** Set bare root trees on top of a small mound of soil in the middle of the hole. Spread the roots out evenly. The roots should be directed out and downward when you plant. The very top of the roots (crown of the plant) should be at or just below the soil surface when you are done planting. Keep the graft union 2" above the soil line. Fill the hole in with soil and pack firmly. Be sure to water the tree, as this will permit the roots to make good contact with the soil right away. Add a tree stake to maintain the proper growing angle the tree.

Watering. Your apple tree will need to be watered regularly to make certain that the root system becomes well established. The soil surrounding your tree should be moist, but never saturated. Light green leaves can be a sign of over watering, while drooping leaves can be a sign of both over or under watering.

Fertilization. Add one cup of a good 10-10-10 or 13-13-13 fertilizer mixed thoroughly with the soil while planting your tree. Your apple tree will benefit from being fertilized annually with a 10-10-10 formula.



Weed Control. Any weeds that are present around the area of your tree should be removed immediately. Insulate the tree with 3-4 inches of mulch, and be sure to replenish as needed.

Pests & Disease. The best defense is a healthy tree. Good soil, proper feeding and adequate water are vital to its prosperity. Consult Royal Oak Farm Orchard's web site for proper pest and disease control for your tree

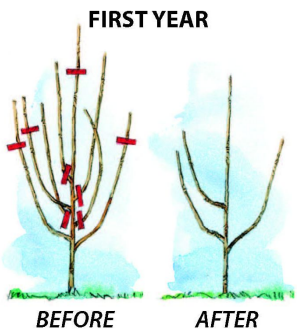
Pruning. Your apple tree will need very little pruning during its first year. In year two you can consult Royal Oak Farm Orchard's web site for proper pruning techniques. Mature apple trees will require annual pruning.

Establishing a central leader apple tree

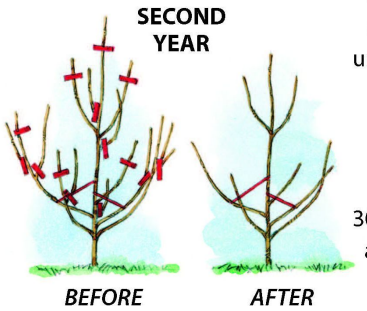
The standard central leader tree training system is ideal for medium density plantings of semi-dwarf apples. This system establishes two or three tiers of permanent scaffolds rather than the temporary scaffolds utilized in the French axe or slender spindle tree.

To establish central leader trees:

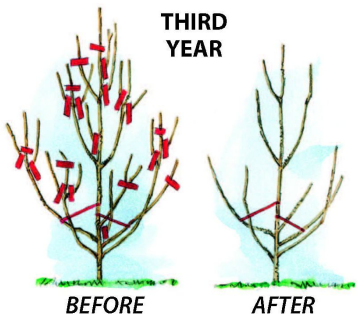
FIRST YEAR: Head at planting time to 30" to encourage development of the first tier of scaffold branches at a height of 20-30". If wide angle branches are available at planting time, select four and tip lightly. Remove the rest. If all existing branches are undesirable, remove them, leaving ¼" stub, so as not to damage latent buds at base of branch. In early summer, widen crotch angles of potential scaffolds by spreading with clothespins when shoots are 3-4" long.



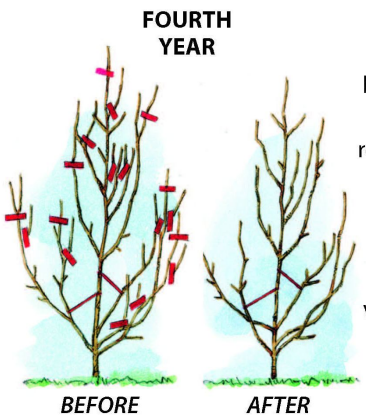
SECOND YEAR: Complete first tier as stated for first year tree. Remove all unwanted, poorly positioned or narrow angled branches. If central leader has obtained enough height, tip 36-42" above first tier to encourage second tier of 4 wide angled branches at 30-36" above first tier. Tip central leader and scaffolds to stiffen and encourage branching. Limb spreading to 45° off vertical should begin at this point.



THIRD YEAR: Remove all unwanted branches from central leader and treat established scaffolds similarly to the leader (single up forks, remove uprights, and tip) to develop more horizontal wood. If possible, tip to promote third tier 30-36" above second tier. Continue spreading as necessary.



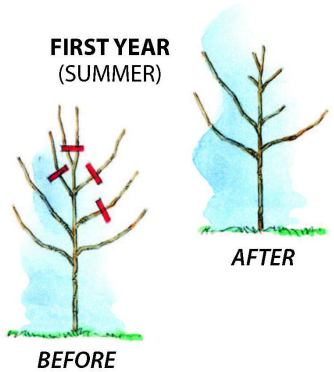
FOURTH YEAR: Complete second and third tier as stated for 3 year tree if necessary. Central leader will eventually be headed severely, probably into 2 year wood, to bring it into balance with the rest of the tree. As trees fill space allotted and approach bearing age, make fewer heading cuts and more thinning cuts. Shorten limbs reaching into drive isles or other trees by thinning back to less vigorous side branches. Maintain central leader and pyramidal form on into maturity. Never allow an upper tier to shade out or outgrow lower limbs.



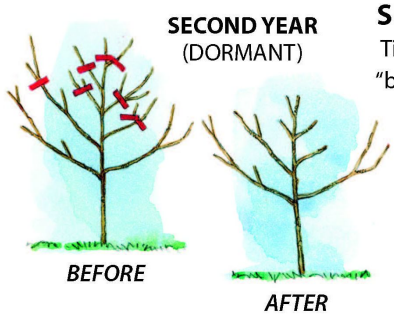
Establishing an open vase peach tree

Open center or vase is the most common method of pruning peach and nectarine trees. Peaches will not produce fruit buds in shade, so a very open pruning system is required for best light and air circulation. In addition, most peach varieties are naturally spreading in their growth habit.

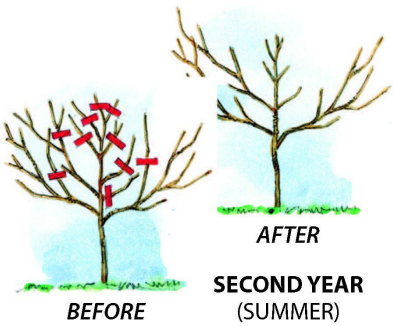
FIRST YEAR (SUMMER)**:** Head at planting time to 30" and "whip" the tree by removing all branches to a ¼" stub, so as not to damage latent buds. Early in the first growing season, strip lower shoots, leaving the top six to eight shoots. The top three to four shoots, near heading cut, will be upright and should be summer tipped by removing half the growth. This will encourage lower branches to form wider angles.



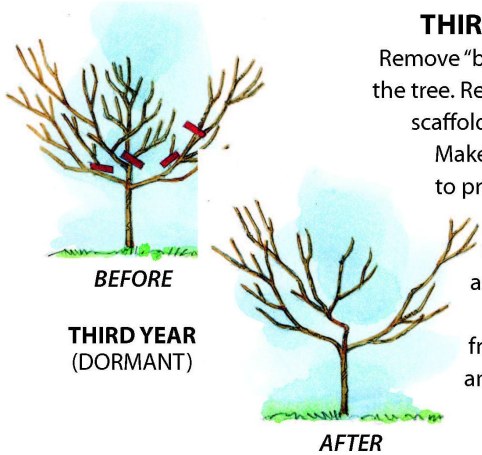
SECOND YEAR (DORMANT)**:** Tip upper branches again to retain "bush" in top center of the tree and promote spreading of scaffolds. Choose two or three scaffolds avoiding branches headed into the southwest. Only tip scaffolds which are too dominant.



SECOND YEAR (SUMMER)**:** Tip again on "bush" to promote vigor in selected scaffold limbs. Severely tip any upright growth which initiates within 15" of the trunk to promote vigorous extension of the scaffolds. Summer pruning during the first and second years may be required more than once.



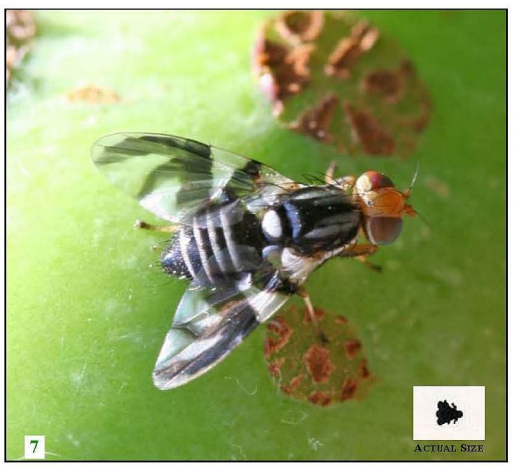
THIRD YEAR (DORMANT)**:** Remove "bush" from upper center of the tree. Remove uprights from main scaffold and "single up" any forks. Make heading cuts as required to prevent dominant scaffolds. Continue thinning and remove vigorous uprights as tree matures. Encourage renewal of first year's fruiting wood by tipping to an outward growing lateral.



Wisconsin's Lake Superior Eco-Apple Network

Managing Pests in Our Orchard

Meet the Enemy



Codling Moth

Codling moths have two life cycles a year beginning at petal fall. Female moths lay eggs on or near developing apples. After hatching, larvae continue their development as they tunnel into the center of the apple. As the larvae feed, "frass", or fecal matter, is pushed out and may accumulate around the entry hole. The larval entrance holes, called stings, allow bacteria and fungi to enter the apple, resulting in fruit rot during storage.

Apple Maggot

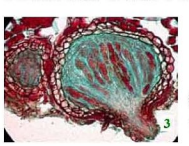
Apple maggot flies emerge from June to September. The female fly deposits eggs just under the skin of the apple, causing the fruit to take on a dimpled, lumpy appearance. Maggots hatching from these eggs feed on the fruit, leaving brown trails through the flesh of the apple. As the maggots mature, the tunnels begin to decay, causing the apple to soften and rot. If left uncontrolled, the apple maggot will build up to large populations, devastating an orchard.

Plum Curculio

Adult plum curculio beetles, pictured above, emerge in the spring, around apple bloom, to feed on apple buds, flowers, leaves and young fruit. Female beetles cut holes in the young fruit and deposit one egg in each cavity. These sites are easily identified by their crescent shaped cuts. Unlike codling moth, the larvae of plum curculio rarely cause damage to the fruit. The fruit is primarily damaged superficially by the egg-laying and feeding by the adults.

Apple Scab

Apple scab is the most common and economically damaging apple disease in the Midwest. In the spring, apple scab fungal spores germinate in water on the surface of apple fruits and leaves. Brown to olive green spots appear at the site of infection. If left untreated, these 'scabs' will mature, produce more spores and likely reinfect the tree. With enough moisture, the cycle will continue through the growing season, with the potential to destroy an entire crop.



Fruit Development Stages

All tree and small fruit have several distinct growth stages as fruit matures. Identifying growth stages is important because recommendations for pesticide applications and cultivation practices are frequently linked to specific growth stages. The next few pages show the common growth stages for the fruit crops described in this publication.

TREE FRUIT

Apple

Dormant

Silver tip

Green tip

Half-inch green

Tight cluster

Pink

Bloom

Petal fall

Fruit set

Apple Spray Guide

Table 7. Apple Spray Guide

Time to Spray	Pest(s)	Pesticide	Remarks
Delayed dormant (when leaf tips start to protrude from buds)	scales, aphids, mites	superior oil	If these pests were not a problem last year, omit this spray. **Bonide All Seasons Horticultural Spray Oil**
	fire blight	copper	Cease application before half-inch green or fruit will russet. When using oil, do not apply copper or captan within two weeks of the oil application. **Bonide Copper Fungicide**
Half-inch green (1/2 inch of green tissue has grown)	apple scab	captan	
	both insects and disease	MPFS[1]	Insects are not usually a problem before petal fall. MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed. **Bonide Fruit Tree & Plant Guard**
Tight to open cluster (when fruit buds are visible)	apple scab	captan *or* myclobutanil [2]	Myclobutanil (Immunox®) is best for early season scab control and supplies rust control. Captan alone is not effective against rust.
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed. **Bonide Fruit Tree & Plant Guard**
Pink (when blooms are showing pink but not yet open)	apple scab	captan *or* myclobutanil[2]	Myclobutanil (Immunox®) is preferred material if cedar rust or powdery mildew have been a problem.
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed. **Bonide Fruit Tree & Plant Guard**
Bloom (when 50% of blossoms are open)	apple scab	captan *or* myclobutanil[2]	Do not use MPFS during bloom.
	fire blight	streptomycin	If fire blight has been a problem, use streptomycin according to label directions (see Purdue Extension purblication BP-30-W, *Fruit Diseases: Fire Blight on Fruit Trees in the Home Orchard*). **Fertilome Fire Blight Spray**
Petal fall (when 75% of petals have fallen)	plum curculio	acetamiprid	Pesticide application at this time is very important for plum curculio control. To prevent fruit drop, do not use carbaryl (Sevin®) within 30 days after full bloom. Picking up and disposing of fallen fruit will reduce problems with plum curculio, other insects, and many plant diseases. **Ortho Flower, Fruit & Vegetable Spray**
	apple scab, sooty blotch, fly speck, rust	captan *or* thiophanate-methyl *or* myclobutanil[2]	Myclobutanil (Immunox®) does not protect against fly speck or sooty blotch, but is very good against rust. Thiophanate-methyl is sold under several trade names, including Thiomyl Systemic Fungicide 3336®.
	fire blight	streptomycin	If fire blight has been a problem, use streptomycin according to label directions (see Purdue Extension purblication BP-30-W, *Fruit Diseases: Fire Blight on Fruit Trees in the Home Orchard*).
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed. **Bonide Fruit Tree & Plant Guard**
First cover (7-10 days after petal fall)	plum curculio, codling moth	captan plus spinosad[3] *or* acetamiprid	Important spray for codling moth control during first cover. To prevent fruit drop, do not use carbaryl (Sevin®) within 30 days after full bloom. **Capt. Jack's Dead Bug Brew/Ortho FFV**
	apple scab, sooty blotch, fly speck	thiophanate –methyl plus captan *or* myclobutanil[2]	Will provide the best management for sooty blotch/fly speck. Myclobutanil (Immunox®) does not protect against fly speck or sooty blotch.
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed. **Bonide Fruit Tree & Plant Guard**
Second cover (7-10 days after first cover)	plum curculio, codling moth, apple maggot	same as first cover spray	Apple maggot flies begin to emerge about mid-June. Use red sticky balls to tell when maggot flies are present. **Capt. Jacks dead Bug Brew/Ortho FFV/Captan**
	apple scab, sooty blotch, fly speck	same as first cover spray	
	both insects and disease	same as first cover spray	
Additional cover sprays (apply at two week intervals until harvest restriction date)	codling moth, apple maggot, Japanese beetle	carbaryl (Sevin®) *or* spinosad[3]	Read container labels for number of days between final spray and harvest. carbaryl (Sevin®) provides Japanese beetle control. **Capt. Jacks Dead Bug Brew/Ortho FFV/Pyrethrin**
	apple scab, fruit rots, sooty blotch, fly speck	captan *or* thiophanate –methyl	Read container labels for number of days between final spray and harvest.
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed. **Bonide Fruit Tree & Plant Guard**
End of season	apple scab, sooty blotch, fly speck, rots	none	Rake and dispose of infected leaves or mulch fallen leaves with a lawnmower. Apply a solution of 5% urea to fallen leaves to hasten decomposition, which reduces overwintering fungi. Pick up and dispose of fallen fruit.

[1]MPFS = multipurpose fruit spray.
[2]Do not apply myclobutanil (Immunox®) more than 10 times per season.
[3]Observe limits on the amount of spinosad and acetamiprid that can be applied per season.

CONVENTIONAL (C) AND NATURAL (N) SPRAY PRODUCT RECOMMENDATIONS

All Seasons Horticultural Spray Oil - A superior type paraffinic oil that may be used as a growing season spray, dormant spray (no leaves) or delayed dormant (green tip) spray to control overwintering eggs of red spiders, scale insects, aphids, bud moths, leaf roller, red bug, codling moth, blister mites, galls, whitefly, mealy bugs and other insects and diseases. Highly recommended for use on fruit trees, shade trees, shrubs, ornamentals, roses and vegetables. Safe and pleasant to use for Organic Gardening.. **(C) (N)**

Copper Fungicide RTU - Copper Octanoate for controlling early and late blight, apple scab, leaf spots, downy mildew, anthracnose and certain other fungal diseases on various vegetables, flowers, ornamentals and fruits. Won't burn plants and approved for organic gardening. **(C) (N)**

Captan - Multipurpose fungicide for ornamentals and fruits. Controls damping-off, powdery mildew, botrytis blossom blight, anthracnose, rust, brown rots, early blight and late blight on various plants. Unlike many other fungicides, Captan has never indicated a disease resistance problem! **(C)**

Spectracide Immunox - Multipurpose fungicide for ornamentals and fruits. Controls scab, black spot, blight, crown rot, leaf spot, powdery mildew, rust and scab. It provides systemic protection to leaf tissue and last up to two weeks. It also has a reach back of up to 96 hours and, once dry, cannot be washed off. **(C)**

Serenade - This broad spectrum, preventative bio fungicide is recommended for the control or suppression of black spot, powdery mildew, rust, gray mold, late blight and scab. It may be used on roses, vegetables, fruits, nuts, flowers, houseplants, foliage, trees, shrubs located in residential landscapes and may be applied any time of day, in full sun and high temperatures, without stressing or burning foliage. It can be applied up to and including the day of harvest and can be used on the day of harvest and on all fruits and vegetables used in canning. For Organic Gardening. **(N)**

Captain Jack's Deadbug Brew RTU - Captain Jack's Deadbug Brew® contains Spinosad (spin-OH-sid), a product first isolated from a naturally occurring soil dwelling bacterium that was collected on a Caribbean island from an abandoned rum distillery. Deadbug Brew® kills bagworms, borers, beetles, caterpillars, codling moth, gypsy moth, loopers, leaf miners, spider mites, tent caterpillars, thrips and more! Use on fruits, vegetables, berries, citrus, grapes, nuts and ornamentals and approved for organic gardening. **(C) (N)**

Thuricide Bacillus Thuringiensis (Bt) Conc. - BT Kurstaki 15% A liquid formulation of bacteria. Controls caterpillars, loopers, cabbageworms, hornworms, leaf folders and leaf rollers. One pint treats up to 10,875 sq. ft. Won't harm beneficial insects and approved for organic gardening. **(C) (N)**

Citrus, Fruit & Nut Orchard Spray RTS - This all natural, all in one, insect and disease control concentrate is perfect for those customers that prefer a natural choice. Great for citrus, fruit and nuts, and also vegetables, ornamentals, houseplants and lawns. Truly effective and all purpose. Use as little as 2 1/2 oz./gal. Available in convenient, no-mix ready-to-spray bottles for easy application to trees and larger areas. Contains sulfur plus pyrethrin, natural organic compounds normally derived from Chrysanthemum flowers that have potent insecticidal activity. **(N)**

Ortho® Flower, Fruit & Vegetable Spray RTU - This is a ready to use product that contains .006% acetamiprid, a synthetic organic compound of the family of chemicals that acts as neonicotinoid insecticides. Acetamiprid is a contact insecticide for sucking-type insects and can be applied as a foliar spray or a soil treatment. Acetamiprid acts on a broad spectrum of insects, including aphids, thrips, plum curculio, apple maggot and Lepidoptera, especially codling moth. It is approved for use on apples, aubergines, cherries, house plants, lettuce, ornamental garden plants, pears, peppers, plums, potatoes and tomatoes. **(C)**

Tanglefoot Red Sphere Trap - Red Sphere traps protect your fruit trees from apple maggot flies.The fruit shape and color attract egg laying pests which are then caught in the sticky TangleTrap coating. Effective pesticide free system for apple, pear, apricot and plum trees and spheres are re usable, lasting for several years. Kit includes 3 red spheres and 8oz can of TangleTrap coating plus hangars. **(N)**

CONVENTIONAL PACKAGE PRODUCTS – (C)
NATURAL PACKAGE PRODUCTS – (N)