NEW AND UPDATED 2024

Whiffletree
FARM & NURSERY

Planting For Success

519-669-1349 | 7156 Wellington Rd. 17, Elora, ON N0B 1S0

Contents

REMEMBER:

The success or failure of a new planting is in your hands. The better you care for your trees, the sooner they will reward your efforts.

When Trees Arrive (Mail Order)

- Open box and check to confirm that all plants on packing slip have arrived in good condition. Sometimes small seedlings or plants are almost hidden among the larger tree roots. Notify us of any discrepancies within 7 days of receipt of order.
- Ideally – plant as soon as possible. If the frost is out of the ground and your site is reasonably dry, you can go ahead and plant. Dormant trees and plants will be fine even if the temperature drops to -8°C afterwards. If you have fully leafed out plants in pots on your order you should wait until after the latest frost date to plant them out.
- Some people think they are doing their new bareroot trees a favour by planting them in pots until the weather is warmer. We DO NOT recommend this! A tree that breaks dormancy and begins growing in a pot will suffer from terrible transplant shock when replanted in the permanent site. It may even die if the potting soil falls away from the roots in the process.

IMPORTANT

Keep the roots **well covered and moist** up to the moment you plant

If Not Suitable to Plant Immediately:

- If the following directions are heeded, you can store them temporarily (up to a week) until you can plant. We do our best to keep your bareroot trees as dormant as possible until you receive them. Even if they have began to bud out in transit, they should be stored in a cool, dark place (basement, cooler) until you can plant them. Ideally they would be stored as close to 2°C or 35°F as possible. Check the roots for moisture– if they seem dry, take them out and soak the roots in a bucket for ½ hour, then repack in bags with the damp sphagnum moss they were shipped in. Seal bag so no air can get in.

How To Plant

- An ideal planting day is calm, overcast and even drizzly. If the weather is very warm and breezy it is better to delay until late afternoon if possible.
- **IMPORTANT** - keep the roots well covered and moist until they are planted. You can temporarily mound soil or compost over the roots and pull out one at a time when ready to plant. Or use a tub with enough water in it to cover the roots with your trees standing in it. Soaking the roots before planting is beneficial, but DO NOT exceed 24 hours or they will drown. Pear tree roots, in particular, will benefit as they do not have many fine feeder hairs.
- If you are using Root Rescue or similar root dip you will likely want it mixed in a separate bucket that you can submerge your tree roots in just before planting.
- Remove all sod and weeds around the hole area. Any grass will steal moisture and nutrients from your newly planted tree.
- Dig your hole more than wide enough to accommodate the spreading feeder roots of your tree, but only slightly deeper than the roots. The bottom and sides of the hole should be well fractured so the roots can penetrate easily.

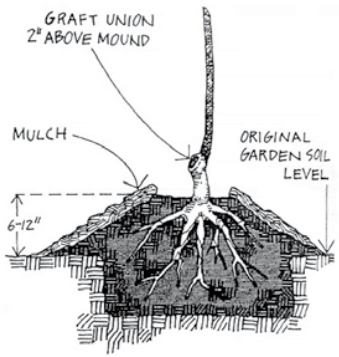
How To Plant (continued)

- Make a little mound in the bottom of the hole and spread the roots so they are facing outwards and slightly downwards. Trim off any broken roots.
- Grafted trees should have the graft union (that crooked knob above the roots) approximately 3 – 8 cm (1 – 3 inches) above the finished soil level when backfilled. Laying your shovel crosswise over the planting hole, beside the tree trunk, is a simple way to gauge this.
- If you are planting in Zone 3 you may want to consider the advice of Dr. Ieaun Evans of Edmonton. In his experience, the winter survival rate is better if you plant with the graft 7-12cm (3-6") below the soil surface. In other words, if the tree freezes back at -40°, you can likely regrow it from a shoot from above the graft.
- Shovel the soil back into the hole tamping it firmly around the root system while adding water to eliminate all air pockets.
- If your planting site has poor or gravelly soil, you may want to amend your backfill soil with some compost or triple mix but don't overdo it. Two shovel fulls is lots. Do not add any fresh manure or chemical fertilizer. It could burn the feeder roots.
- If your soil is well drained, make a shallow basin around the tree to retain water. If it is not well drained, refer to "Problem Soil" (see below).
- Water slowly and thoroughly after planting – up to 20 litres for trees, and approximately 10 litres for shrubs and small fruit. Dormant trees should usually not be watered again until they leaf out. **Too much water in dormancy can reduce root development or even drown the tree.**
- After leafing out, your tree should receive a good soaking twice weekly: 15 – 20 litres. Adjust accordingly to rainfall and soil type. Mulching is very helpful to retain moisture.
- Trees should be supported or staked for better growth, especially in the first season (permanently for dwarfs). If you are training your tree to a central leader, a stake is needed to keep the leader straight.

Problem Soil

Clay and soggy soil can be a major problem. If planting in heavy soil is your only option, you may want to use the following method:

- Dig only a shallow hole and place some loose, sandy topsoil into it approximately 4-5" thick.
- Set the roots on this topsoil layer, mound soil 6- 12" above the original soil surface over the entire area of the planting hole. The soil mixture for the mound should be a higher percentage of compost to provide good drainage and fertility. Cover the mound with mulch so it won't dry out too quickly.



'PLANT HIGH IN CLAY SOILS'

*Photo reference: Designing & Maintaining Your Edible Landscape Naturally

Pruning Apple and Pear Trees at Planting

- If you purchased a bare root tree through mail order, it may already have been cut back. If not, it is a good idea to do it immediately after planting.
- The long range plan is to prune and train to maintain a 'central leader' type tree (shaped like a Christmas tree).
- If no branches are present (single whip), trim one year old whips of dwarf trees at 28 - 30 inches, semi- dwarf and standard whips at 42 - 48 inches or 10 inches above the point where the lowest branches are desired. Make the cut just above a strong, fat bud. This pruning cut will force side branches to develop.
- Leaving the whips untrimmed may result in branching out too high.
- Let all new shoots grow till early to mid June, or until they are 4 to 6 inches long. At this time, three to four side lateral shoots, well distributed at the proper height, are selected to become the main framework. All others are removed or pinched back to reduce their growth and competition with the selected shoots. The shoots remaining for the main scaffold branches should have wide crotch angles, preferably 45 to 50 degrees. Clothespins can be used to ensure wide angles. Check the trees a month later to follow-up.

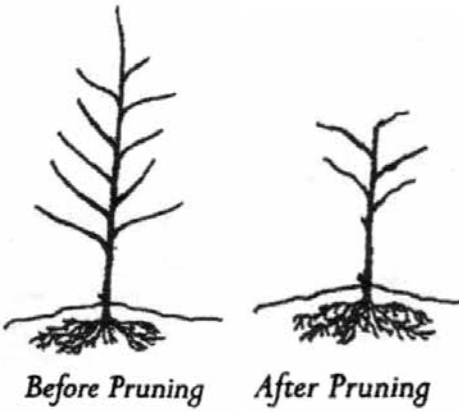
Before deshooting (left). After deshooting (right) with a central leader and three to four well-distributed lateral shoots remaining to develop into the first tier of scaffolds for a central leader tree.

Branched trees (apple and pear):

- Completely remove the two branches which are below the leader. These branches generally make narrow angles and can cause splitting of your trees later on.
- Cut back leader to 18 inches above upper most branches you want to keep.
- Shorten branches to 12 inches long, making sure the last bud is always facing out.
- Wait till the second year when the tree is established to train down branches
- For 'central leader' trained tree, it is important to remove half of the new growth at the top of the tree each spring when they are dormant. This creates a more sturdy self supporting tree. Continue till the tree reaches its desired height.
- An important pruning principle is that if a side branch becomes more then 50% bigger in diameter then the main trunk, it's too big and should be cut back to a 4 cm (1.5 inches) stub to regrow and retrain a new branch. This is called a "Dutch Cut".
- If you encounter a branch that is 50% bigger growing from a main side branch it needs to be removed entirely.
- 'The Pruning Book' by Lee Reich contains a very helpful section on espalier pruning and training.

Pruning Peach, Nectarine, Japanese Plum and Apricot Trees at Planting

- Most stone fruit trees, as well as pawpaws and persimmons, are usually pruned to create an 'open center' or vase shaped tree. The idea is to keep the center of the tree open for light and air penetration.
- Whips (unbranched trees) should be trimmed back to approximately 40 cm (36").
- For 2 year old branched trees, branches that are too close together should be totally removed. Keep wide angled, well positioned branches. Trim these back to 3 or 4 buds. This is important, especially with peach trees, which might dry out if the top is not reduced.



- Although the tree may look unpleasant after pruning, it will grow and thrive far better than if it had been planted with its branches intact.

Starting a Modified Central Leader Tree

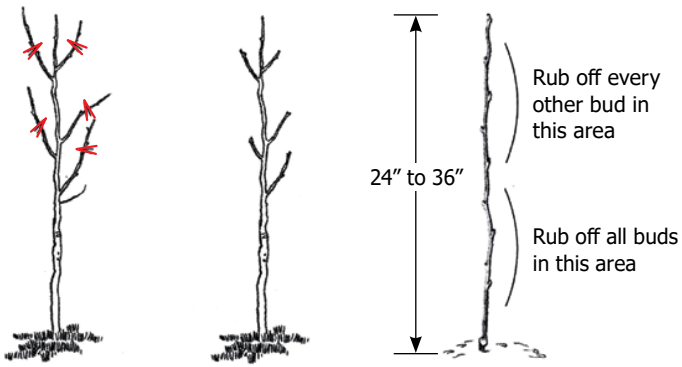
Ideal for tart and sweet cherries and European plums.

AT PLANTING

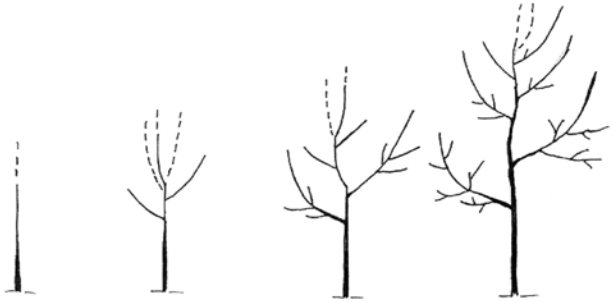
A modified central leader tree should be trained to have multiple strong leaders. The central leader is not removed entirely at first like the open center. Several branches with wide crotch angles should be selected and all others removed.

Sometimes a sweet cherry tree is not branched in the nursery. Then selection of the desired branches can be made by heading off the top of the unbranched whip at 24" - 36" (depending on the desired height of the first set of branches) and rubbing off alternating buds on the top 12". All buds below the top 12" of the whip can be rubbed off entirely.

Cut back all branches leaving 3-4 good buds on each one. Remove the ones not needed for the tree form, so that several main ones remain with good wide angle crotches.



Training and pruning trees to the modified leader form during the first four years (left to right). Dotted lines represent portions of the tree that should be removed by pruning during the late winter.



Cherry trees have a tendency to grow long shoots without side branches. If the shoots have grown 2 ft or more before Aug. 1,select the main scaffold branches with wide crotch angles, (up to 4) and prune off the growing tip to stimulate side branches. The resulting side branches should not be closer then 15 inches from the main trunk.

If these shoots are not growing vigorously it is better to wait and dormant prune these shoots.

As the tree grows older,especially with dwarf cherry trees,it is important to cut branches back to stimulate new fruiting wood near the center of the tree.

Important, only prune in dry periods to avoid canker infections. Bigger pruning cuts are recommended after harvest.

For more information on cherry tree training systems please see ***https://extension.oregonstate.edu/catalog/pub/pnw-667-cherry-training-systems***. Two training systems we also like are the Spanish Bush system for semi-dwarf trees and the Vogel Central Leader system for dwarf trees.

Pruning in Year Two and Beyond

- Many people prune their fruit trees in early spring. However, unless you are in a very cold region (Zone 3 or less) you should really consider doing your pruning in July or August. Spring pruning stimulates more vegetative growth which means even more pruning for next spring. Summer pruning slows the growth of the limb being pruned and actually causes some of the buds to change from vegetative buds into fruit buds for the next season. Any pruning done before the tree starts to bear should only be to train the tree for its proper desired shape. Pruning that stimulates aggressive growth will only delay production.
- Some homeowners periodically do root pruning to help keep their trees more compact. This can be done by using a sharp spade to stab straight down in a circle around the outside of the tree about 5-6' from the trunk.
- For further helpful pruning or training advice, especially summer pruning, we highly recommend consulting one of the following books:
    - *Grow a Little Fruit Tree* by Ann Ralph
    - *Pruning Fruiting Plants* by Richard Bird
- Some online resources with more pruning advice as well as all sorts of other useful information include the following:
    - *Orchard People* (Susan Poizner) ON
    - *Miracle Farms* (Stefan Sabkowiak) QC
    - *The Fruit House* (Mike Chase) WA

Training Young Trees

- Unless trained otherwise, young trees will often grow too vertical in shape. 45-50 degree angles are ideal for branch growth. This not only makes stronger branches, it also induces the tree to start producing at a younger age.
- Your young tree should have several years of growth to get established before producing much fruit, so most orchardists suggest waiting 2 or 3 years before training the branches. The photo to the left demonstrates how to use Treeform V-Spreaders®. Be gentle when installing them to avoid splitting the branch at the main trunk. Grip the tree trunk just under the branch with one hand while you press down the outer end. Various other training techniques include clothes pins, tying down branches or hanging weights on them.

Orchard Aftercare

We cannot stress enough the importance of grass and weed control on young trees. Grass can rob young trees of nutrients as they struggle to become established and grow. Also, tree roots are prevented from moving into soil that is controlled by grass roots. Trees are stunted by the competition and the results are apparent for several years, if not longer. Prevent this from happening by following these instructions:

- Spread mulch of deciduous (trees that lose their leaves) wood chips around the tree, not thicker than 2" thick and about 2-3 feet out. Spoiled hay, shredded leaves, shredded bark, composted manure etc. also work great.
- Avoid mounding it up against the trunk, as it attracts rodents and the trunk area beneath the mulch remains too moist, rotting the trunk's bark. For that reason some people keep the mulch back from the tree 6"-10" and use pea gravel in the space to keep weeds down.

Mulch offers such a great advantage that it would be a mistake not to use it with your orchard and berry plants. In addition to enhancing the structure of the soil and providing fertility as it rots, it suppresses weeds and grasses that steal soil nutrients, prevents erosion from wind and rain, keeps soil cooler, helps delay spring bloom in cold climates, and helps retain soil moisture. It also encourages earthworms along with other soil organisms and protects against rapid freezing and thawing of the ground.

- Hemp fibre mats are a new product that can be used with or without mulch. Although fully biodegradable they are rugged enough to last several seasons. These mats are 45 cm (18") square and 13 mm (½") thick with a split in one side to fit around the base of your tree. Weight it down with a few rocks or a layer of mulch.

Document

Most tree tag labels go missing in the time between planting the tree and picking the first fruit, so use a map or chart to record plant names, dates and any other information such as where you bought the plants. A record of your plantings will not only identify the fruits when they start to bear, but will also help if you need to replace any trees.

- We suggest moving the tree tag from the main trunk to a side branch by year two or it can actually strangle the tree as the trunk expands. Aluminum tags are a more durable option than the original plastic tags.

Preparing for Winter

We recommend protecting the graft for at least the first few winters. There are several ways of doing so:

- You can mound up some sand or soil around the base of the tree so that the graft is buried. The graft should be uncovered again in the spring.
- Dr. Evans of Edmonton cuts the bottom out of plastic 10 gallon pot and places it around the tree when he plants it. He leaves half the height of the pot above the ground level and fills that portion with peat moss.
- We have recommended mulching your fruit trees, but in doing so you have created the perfect habitat for mice. In the fall rake the mulch back 6-8" to discourage rodents from setting up their winter home near the tree's trunk.
- If you are using the white spiral tree guards, we recommend removing them for the summer. Leaving the guards on creates a damp environment in behind the guard and the tree trunk. This can cause cankers and other health issues. In addition, earwigs and other bugs make their home behind the guard.
- Your tree needs to be protected from wildlife. A white Flexguard tree guard will offer protection from mice and rabbits. However, often snow becomes high enough that the rabbits have access to unprotected areas of the tree above the tree guard. If you know you have rabbits, the most fool-proof method is creating a cage around each tree using a wire mesh that is ideally 6ft/2m high. A couple of stakes will stabilize the cage. This method will also protect against deer. This may seem like a lot of work but not compared to the frustration of having your trees ruined by wildlife. You can count on them finding your fruit trees!

Growing pawpaws

1. Plant in a place with lots of light, but during the first 2 years, provide shade from June to mid August.
2. Pick a spot where the soil drains well. There should be no standing water after a downpour.
3. Pawpaws have large leaves and like relatively sheltered spots.
4. Space the trees 8-10 feet apart if you want to have a row. If you plant them too far apart (20+ feet) pollination will not be as good.

5. Pawpaws love soil rich in organic material. If your soil is quite compacted, dig a tapered hole at least 20 inches deep (12 for the height of the pot, and another 8 to provide an easy to penetrate layer under the tree), and mix compost or peat moss in with the soil you dug out from the hole. Back fill until the hole is about 10 inches deep, and compact. If the seedling root ball is 12 inches tall, this leaves 2 inches for settling and the tree will be level ground over time.
6. Remove the tree from the container. **The roots of the seedling will NOT hold soil together very well**, so be careful to hold the tree upright when placing the tree in the hole. Carefully back fill to support the root ball from falling apart. Compact the soil as you back fill.

7. Water thoroughly to make the soil settle as much as possible.

8. Mulch

9. Place a 2 ft cage made of chicken wire around the tree to protect the tree from rabbits and to be able to fasten shading material. If the tree is planted in sunny spot, attached a piece of white plastic on the top of the cage on the South side and adjust the shade and/or cage so shade is provided from 10 am-3 pm in July. At some point, as the tree gets bigger, the leaves may start rubbing against the cage. Make sure the cage is not sharp where the leaves rub, and move the cage so that the tree is rubbing least.

10. No need for any fertilizing, but of course adding compost and/or compost tea is great.

11. The only pruning needed is to maintain a proper tree form. With grafted pawpaws, in particular you want to trim off any shoots coming up from the base.

Pawpaws like deep loamy soil. So if you don't have that, the bigger the hole and the more compost you work in, the faster the tree will grow and you will get fruit in 4 instead of 6-7 years. In an area with only 12 inches of top soil, and solid clay underneath, pawpaws can still thrive when a deep (20 inch) hole is dug and backfilled with half compost/half topsoil.

When planted in a shady place with limited direct sunlight, the tree will grow slowly, and it will take many more years before you get fruit. The trees will also grow much more sparse. In direct sun, the tree will have dense foliage and have more fruit.

Once the trees are bigger, they are not so sensitive to too much water and sun. However, deer may damage 3-4 year old trees with their antlers, breaking branches and rubbing off bark.

Plant Out or Repot?

In most cases we recommend planting bare root fruit trees as soon as you get them. If you have picked up a Pawpaw in a 3 gal pot it should be ready to plant out. However, the small trees in 1 litre or even 1 gal pots will often benefit from spending a few more years in a pot. This applies to Pawpaws, Persimmons and Jujubes. We suggest you repot in a 2 or 3 gallon and grow them for several seasons. Pawpaws, in particular, will appreciate this, as the tender young trees do much better if you can keep them out of direct sunlight. This way you also have the option overwintering them in your garage until they are bigger and stronger.

Growing Blueberries

Here are three different ways to plant blueberries at your home:

IN A PLANTER (most recommended for small quantities):

For smaller spaces, on decks, or anywhere in your front or back yard, blueberry bushes can thrive in a planter. This is the easiest way to provide an acidic soil base. You will need a planter at least 10 gallons or a large plastic pot. Clay pots are not recommended as they could crack while outside over the winter months. In most cases blueberry bushes in pots can remain outside for the winter with no damage to the roots. Some growers have great success using the following soil mix in containers:

- 35% coarse sphagnum peat moss
- 35% red pine bark (or similar)
- 20% sand
- 10% compost or worm castings

IN A RAISED BED:

Dig up a small amount of your existing soil, a couple of inches deep, and then lay landscape cloth in the space where you want to create the bed in order to discourage weed growth and to stop leeching of your existing soil in the peat. Put wet Canadian spaghnum peat moss around your bushes, about 10 inches deep, and 24-36 inches wide. Blueberry bush roots do not penetrate deep, but do like to spread out a bit We would recommend covering the peat with a mulch of your choice so the peat doesn't dry out too quickly, and again to keep weed growth down.

IN THE GROUND:

If you have sandy, acidic soil, planting the blueberry bushes right in the ground is an option. If you have heavy clay or soils with a pH over 6.0, this is not a recommended option because the clay could leach into your peat moss and affect its acidity. If you choose to plant directly into the ground, excavate the existing soil at least 10 inches deep and 36 inches around each bush. Again, landscape fabric is a good way to help keep the soils separate. **Another option is to put a large plastic or wooden pot right into the ground and then you can be sure that the original soil will not leach into your Canadian Spaghnum peat moss.** Cover the area with wood chips or mulch, along with the rest of your garden, and you have a seamless incorporation of an acid-loving plant.

FERTILIZER, WATERING, PRUNING:
We suggest using Blueberry Booster every spring to help maintain low soil pH. However additional fertilizer such as Turkey Trot (or equivalent) should also be applied every spring. Local gardeners are seeing impressive growth with the Organic Pro 8-3-3 fertilizer when paired with the Blueberry Booster. Apply early in the growing season. To round out your blueberry fertility program we suggest using our low nitrogen Fall Feeder 2-8-6 fertilizer which gets applied in September. It will help fortify your blueberry defenses before winter sets in. A simple average rule of thumb for both spring and fall fertilizers is approx. 100g (¼ lb) per young plant and up to double the rate for mature plants.

During the first year of planting, watering is important to help establish the root system. Bushes should be watered once a week, and maybe more if the weather is particularly hot and dry. However, over-watering is a concern. If you have mulch on your bushes, you may only need to water every other week. If the soil is moist, that is enough water.

In the beginning, your bushes will not need to be pruned. After about 5-7 years, it is important to remove 1-2 of the older canes each year to promote new growth and increase the amount of blueberries produced.

Through these simple practices, blueberries can grow and thrive for many years.

Growing Grapes

SELECTING AND PREPARING THE PLANTING SITE:
Choose an area with rich loam or sandy loam soil. Work up the area well so there is ample loose soil. Provide good drainage. Slightly ridging up or berming the planting row is beneficial.

SPACING:
Plants should be spaced 6' to 8' apart. Row should be 8' to 10' apart

PLANTING:
The roots can dry out very quickly. Never allow them to become dry at any time. If possible, soak the roots briefly before or during planting. Keep moist during planting. Grapes do best when planted in the upper topsoil level with roots outstretched. This is better than placing the roots in a deep hole that drops into the subsoil. Dig a small trench and spread out the roots. The roots can be planted at an angle in the topsoil area.

PRUNING AT PLANTING:
Immediately after planting, cut down to 2 or 3 active buds. Within a few weeks, select the most vigorous of these and allow only a single vine to grow upward, removing all others throughout the first growing season. Train the shoot upward, using a stake or trellis system.

FERTILIZING:
Do not fertilize the first year. Apply 1 cup (225g) fertilizer (Turkey Trot or equivalent) per plant the year after planting. Apply approximately 2 cups (500g) per plant annually thereafter.

MULCH AND WEED CONTROL:
Do not allow grass or weeds to compete with grape plants. Use a layer of composted mulch over the root system area.
Grapes bear fruit on current year's growth and must be pruned to stimulate fruiting.

Pruning Grape Vines

Pruning should be done very early in the spring to avoid excessive "bleeding" of sap from the pruning cuts. Some midsummer thinning can also help to ripen fruit by opening up for more sunlight.

Four-Arm Kniffin System (Cane Pruning)

Requires 2 wires stretched between posts, approx. 3' and 5' from the ground.

First Year

Maintain only a single vine during the first year by removing excess shoots as they develop. Continue to tie young growing vine to bottom wire, stake or trellis

Second Year

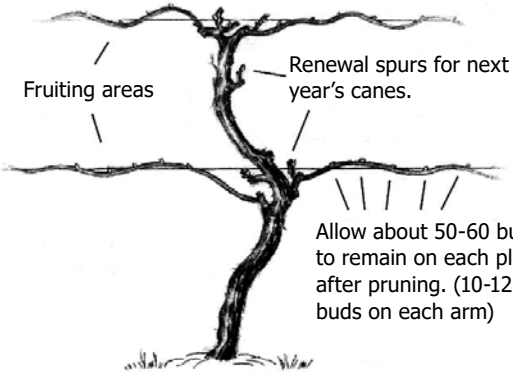
Tie the plant to the wires. Leave 4-6 buds near each wire and remove any others.

Third Year

Select 8 canes, 4 for each wire and remove the rest. Tie 2 canes to each wire, 1 in each direction. Cut the remaining 4 canes back to 1-2 buds each.

Later Years

In early spring remove last year's fruiting canes. The canes which were pruned back to 1-2 buds last year are now this year's fruiting canes. Tie these to the wires and select 4 new canes to cut back to 1-2 buds for next year's fruiting canes. Remove all other canes.



If maximum fruit production is not considered important you can also grow grapes in a less formal setting. They can easily be trained to climb up on arbors or pergolas or even be planted next to a tree to use as a support.

Winter Protection Strategies

Some homeowners successfully grow Zone 5 rated grapes in Zone 4 or even Zone 3. If you remove the vine from the trellis so you can lay it on the ground, it enables you to cover the vines with a light layer of soil or mulch for winter protection. To do this, plant your grapevine at a 45° angle. Train new shoots horizontally for at least 1 foot. Then curve shoots upward to form a J shape. This creates a flexible hinge, allowing you to lay down the vine at the end of the season.

Another cold climate insurance policy is to train your vines to 2 or more main trunks rather than a single one. This increases the odds of at least one trunk surviving a harsh winter.

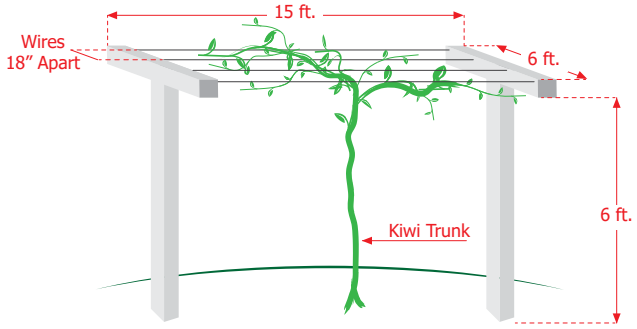
Growing Hardy Kiwi

SELECTING AND PREPARING THE PLANTING SITE:
The ideal planting site for kiwis is sandy-loam soil that is well drained. However they also benefit from irrigation in their establishment years (Years 1-4) as they are sensitive to drought. If your soil is heavy or slow-draining, consider creating a raised bed.

Planting sites that are prone to consistent high winds should be avoided. A northward facing slope is preferred, if available, to extend the period of vine dormancy in the spring. This helps to reduce risk of late-spring frost damage. Consider using Plantra Tubes for the first season for added protection from the wind and intense sunlight.

POLLINATION:
One male will pollinate up to 6 females if they are within 30'.

SPACING:
Arguta Kiwis should be spaced 15' apart in the row. Kolomikta Kiwis should be spaced 10' apart in the row.



PLANTING:
Please refer to Grape Planting

FERTILIZING:
Kiwis are another plant that prefers a more acidic soil. We recommend using the Blueberry Booster. At planting time topdress with ½ cup (125g) around each plant and lightly rake in before soaking with water. The following years it can be increased to 1 cup (250 g) and then at maturity, 2 cups (500 g). This should be applied very early in the spring so the spring rains can soak it in.

TRAINING AND PRUNING:
On a trellis: Train a single vine to the trellis wires and then train 2 permanent 7-10' cordons (arms) off the trunk. Each winter or early spring remove at least 70% of old growth, leaving a dozen or so one year old laterals. Fruit will develop on fruit spurs growing off these one year old canes.

On an arbor or gazebo: Once established, prune 70% of the old growth each year and leave some new canes for this year's fruiting.

Summer pruning may also be required (especially for arguta kiwis) to keep extremely rampant vines in check. 'The Pruning Book' by Lee Reich is an excellent reference for pruning kiwis.

Growing Raspberries & Blackberries

SELECTING AND PREPARING THE PLANTING SITE:
Choose an area with rich loam or sandy loam soil. It is ideal to add composted mulch or organic matter to the site. Work up the area well so there is ample loose soil. Provide good drainage. Slightly ridging up or berming the planting row is beneficial. The pH of the soil should be in the 5.6 to 6.5 range. Avoid a site where tomatoes, potatoes, peppers, or eggplant grew within the last 4 years. It is best not to have red and black raspberries in the same immediate area. The reds are more disease resistant so they can be a host to common plant viruses. These might infect the blacks which are less resistant.

SPACING:
Red raspberries space 18"-24". Black raspberries space 24"-30" apart.
Blackberries space 36"-48" apart. Allow 6'-10' between rows.

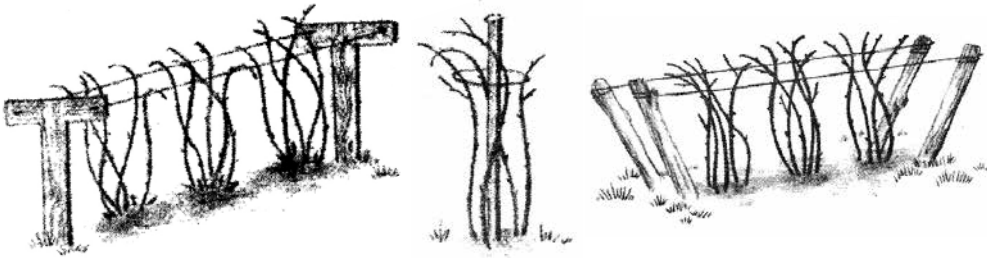
PLANTING:
The roots can dry out very quickly. Never allow them to become dry at any time. If possible, soak the roots briefly before or during planting. Keep moist during planting. Do not plant too deeply. Generally about 1-2 inches deep is correct. **Water well immediately after planting.**
At planting, cut down the cane portion. Red raspberries and black raspberry transplants can be cut down so that only 8 to 12 inches remain. Black raspberry rooted tips can be cut to just above ground level. The top portion may not leaf out. What you want is new shoots that emerge from the root clump.

IRRIGATION:
Water or irrigate 2 or 3 times weekly. (1" to 2" rainfall each week) Mulch newly planted raspberries with a thick layer of wood chips or similar material to retain moisture.

FERTILIZING:
Do not fertilize at planting. Apply 5 lbs. per 100' row (Turkey Trot or similar) 6-8 weeks after planting. The second year use 10 lbs per 100' row.

SUPPORT SYSTEM:
A support system using staking or wire is recommended for black raspberries and blackberries.

Black Raspberry Trellis Recommendations



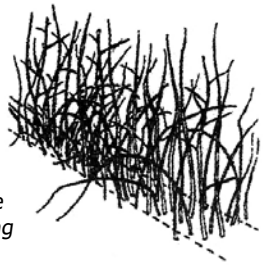
PRUNING:

Brambles must be pruned to maintain a healthy, productive plant. Because of different plant habits, red and black raspberries are pruned with different methods. Blackberries are pruned similar to black raspberries, except they are allowed to grow higher and have longer side shoots.

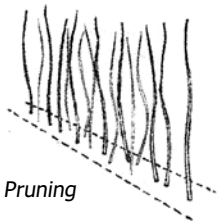
PRUNING RED AND YELLOW RASPBERRIES:

Summer Bearing (Floricane) Varieties

In the fall, after the harvest, remove all the 2 year old (brown and woody) canes. Thin out excess 1 year old (green and succulent) canes until you are left with approx. 3-6" spacing between the remaining canes.



Before Pruning



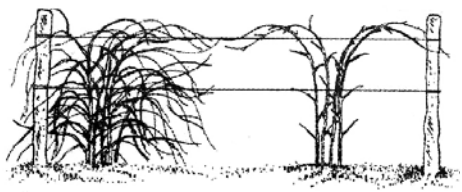
After Pruning

Fall Bearing (Primocane) Varieties

Everbearing red and yellow varieties can be mowed off right down to the ground or as low as possible to eliminate any hand pruning. This removes all the old floricanes and you will have fruit only on the new growth in the following fall.

Pruning Blackberries

Thornless Blackberries often suffer winterkill on the young growth. Prune out all dead stalks. Remove the laterals that hang onto the ground or are within 18 inches to the ground. Head the laterals back to 12 to 18 inches long. Thin out small diameter canes and leave only four to six per plant. Tie them together to form them onto a support or wire.



Thornless blackberries before and after dormant pruning.

PRUNING BLACK RASPBERRIES:

Black Raspberries produce a crop for only one season on each cane. Remove the cane right after it has fruited, or you can wait to remove it until the following spring. (It will then appear as a dead cane.) Shorten the long young laterals that come off the main cane to 6"-10" stubs or about 8-12 buds. Thin out or reduce the number of canes to 4-6 strong growing stalks per clump or plant.

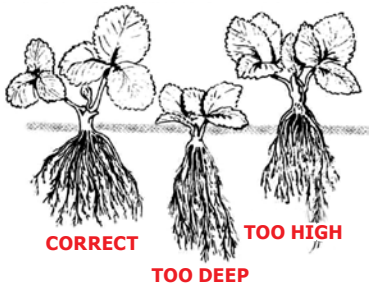
Summer Tipping

To increase lateral growth for next year's crop, pinch off the growing tips of the new canes during June through August once they reach the desired height of 3.5'-5' tall.

Growing Strawberries

SELECTING AND PREPARING THE PLANTING SITE:

Avoid planting strawberries in the same space where any of the following crops were grown in the previous year: strawberries, raspberries, blackberries, potatoes, tomatoes or peppers. Choose an area with rich loam or sandy loam soil. In clay soils, add composted mulch or organic matter to the site. Work up the area well so there is ample loose soil. Avoid poorly drained areas. Ideal soil pH is 6.5 to 6.8.



SPACING:

Space plants 12" to 18" apart. Rows 3' to 4' apart.

PLANTING:

Plants can be stored in a cold area (refrigerator, etc.) if you are not ready to plant immediately. If possible, soak the roots briefly before or during planting. Keep moist during planting. Extra long roots can be trimmed down to 5" or 6" with a scissors rather than curling them up into the planting hole. Do not plant too deeply. Tamp soil firmly around the plant. Water well at planting.

IRRIGATION:

Newly established strawberry plants need continued moisture all summer long.

FERTILIZING:

Do not fertilize at planting. In July or August following planting, apply foliar fertilizer (such as 'Rose and Strawberry 10-52-17') or ½ lb of Turkey Trot fertilizer (or equivalent) per 100 sq. ft. The second year use foliar fertilizer or 1 to 1½ lbs of Turkey Trot per 100 sq. ft., applied during July or August.

WEED CONTROL:

After planting, remove weeds by cultivating weekly. Do not allow weeds to compete with the new plants.

MULCHING:

Mulching is necessary, especially in northern regions. Mulch keeps fruit clean, conserves moisture, and suppresses weeds. Straw is ideal. Avoid wet, heavy, or decaying mulch. After several hard frosts in fall, apply a layer of straw directly over the plants. A few plant leaves may still be visible. In spring, uncover plants, raking straw into the aisles.

THE FIRST SEASON:

Removing Blossoms.

Most plants will form blossoms within the first month after they are planted. Removing the entire active blossoms and the stem where they are attached will allow the plants to become better established. June bearing varieties should not be permitted to bear fruit the first summer. Everbearing or fall bearing varieties can start producing the first fall. The blossoms should be left to mature on the mother plants after the first of July.

MAINTAINING WEED CONTROL:

The primary work of a new strawberry patch is to keep it free of weed competition. Herbicides, hand hoeing, or mechanical cultivation is needed.

ROW SYSTEMS:

Plasticulture

Setting the plants on strips of plastic eliminates the need of intense weed control. On the other hand, runner control and irrigation are then considerably more involving.

It is best to keep all runners removed in such a system. Only the mother plant is used for production. Plants need to be much closer together when no runners are being established.

Matted Rows

Runner establishment is essential in a matted row system. Runners are randomly spaced or simply allowed to fill the row with young plants.

More production and larger berries can be developed by carefully spacing and limiting the amount of runners to six or less per plant.

FEEDING OR FERTILIZING:

Fall Fertilizing

Late summer (early August-early September) are important periods to fertilize for blossom development in next spring crop. Irrigate after applying fertilizer or spread it just before a rain. Fertilization during dry, hot weather with no irrigation can seriously damage plants.

WINTER PROTECTION:

Straw Cover

Use clean wheat straw for the ultimate winter cover protection. Apply enough to create a complete layer over the plants rows and the aisles. A 2 to 4 inch thickness is sufficient. Apply when the plants are dormant (leaves start to discolor) usually around Thanksgiving Day.

Remove slightly, or part away, the heaviest part of the straw over the top of the plants in the spring. It is important to allow enough straw cover for the plants to grow through it and develop most of the berries on top of the straw mulch. This means less fungal diseases and much cleaner fruit.

Rhubarb

SELECTING AND PREPARING THE PLANTING SITE:
Select an area with rich loam or sandy loam. Work up the area well so there is ample loose soil. Good drainage is absolutely necessary. If you have heavy or slow-draining soil, you must plant rhubarb in raised beds.

SPACING:
Space crowns 3' in the row. Rows 5'-6' apart.

PLANTING:
Set root divisions in the ground so the buds are positioned ½" below the soil surface, pointing up. You will find the buds nestled in a protective layer of dark papery husks. When planting be sure there are no air pockets beneath the division and press the soil firmly around and over the division to eliminate air pockets. Be careful not to break buds.

FERTILIZING:
Do not fertilize close to planting time or during the first season. After the first season fertilize liberally with compost or 1-1½lbs of Turkey Trot fertilizer per 100sq. ft. in early spring. Because rhubarb prefers a slightly acidic soil we recommend top dressing with 1 cup (250g) of Blueberry Booster around each plant and lightly rake in before soaking with water. This can be done at planting time and repeated every spring, ideally quite early.

HARVESTING:
Warning! The only edible portion of rhubarb is its stalks. DO NOT EAT THE LEAVES – they are poisonous. Do not harvest rhubarb the first year. Harvest lightly (a few stalks per plant) the second year. The third year you may harvest stalks that are 1" and larger in diameter. Cut as close to the base as possible without damaging the crown. Remove the leaf and the base of the stalk before storing. Only harvest about 1/3 - 1/2 of the stalks at one time from each plant. Rhubarb is typically harvested from early May to early June.

MAINTENANCE:
To maintain stalk size and productivity, divide plants after 4-5 years. Dig when plants are dormant, in early spring and take care not to damage the buds while cutting or replanting. Divide the roots of the most vigorous plants into pieces about 2" wide being sure each piece has good bud development. Use these to establish your new bed. Follow the planting instructions above.

Asparagus

SELECTING AND PREPARING THE PLANTING SITE:
Select an area with rich loam or sandy loam. Work up the area well so there is ample loose soil. Good drainage is absolutely necessary. If you have heavy or slow-draining soil, you must plant asparagus in raised beds.

SPACING:
Green Varieties:
Space crowns 12-16" in the row. Plant rows 3-4' in a row.

Purple Varieties:
Space crowns 6-8" in the row.

PLANTING:
Planting asparagus crowns too shallow means the newly emerging shoots face a greater probability of frost damage and also leaves the crowns vulnerabe to winterkill. To avoid this, it is recommended to dig a trench 8-10" deep. Soak the asparagus crowns in water for 1-2 hours. Lay the crowns on the floor of the trench with the roots spread out to one side and cover with 2-3" of soil. (See diagram below, stages 1-2). Water well after planting.

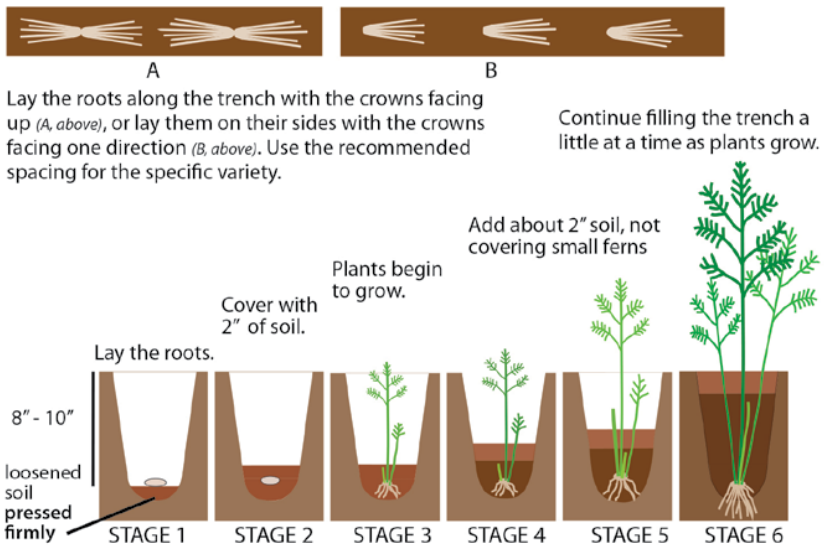
As the spears begin to grow, slowly add soil, or a soil/compost mix until the trench is full or until your raised bed is 10-12" high (see stages 4-6 below). This is usually about 6-8 weeks after planting. This method helps to limit weed development. Some folks prefer to wait until the ferns are growing well above the trench and fill it all at one time.

FERTILIZING:
You can mix up to 50/50 soil and aged compost as you fill the trench. Sidedressing in August with Turkey Trot (or equivalent) is also suggested. In subsequent years apply approx. 2lbs Turkey Trot per 100 sq ft in early spring and again following harvest.

HARVESTING:
Do not harvest any spears in the year of planting. The next spring you can harvest speras sparingly. By the third season, you can usually harvest for the full season (6-8 weeks). Harvest the spears by cutting or breaking the stalk just above the soil surface.

MAINTENANCE:
During harvest season, asparagus roots need 2-3" of water per week. Don't let them get too dry. Manually pull weeds so spears are not injured. After harvest let the asparagus grow up to become tall plants with attractive fern-like foliage. The ferns will die back naturally in the fall. The dead ferns can be cut down to the ground in late fall or early spring or mowed down with a lawn mower. The asparagus bed can be mulched with several inches of compost.

Asparagus beetles can be controlled by hand-picking or spraying with neem oil.



Wildlife Habitat Tree Plantings

To attract wildlife to your acreage, providing FOOD SOURCES is the greatest secret. A variation of food sources if beneficial to the diet. Fruits attract a greater variation of wildlife species. Wildlife soon discover good food sources and stay close to them

Fruit trees can be established quite easily. They are able to provide lots of attractive food. Apple trees, various other fruit trees or nuts are permanent plantings that add beauty and provide food year after year. Once they are established they require very minimal care.

SELECTING AND PREPARING THE PLANTING SITE:

Plant in areas that provide adequate drainage. Ridges are preferred. Avoid planting in low, swampy areas. Hillsides or banks that have sufficient topsoil are suitable places to plant. Select semi-shaded or open field areas. Avoid planting in deeply wooded, shady sections. Fruits will be of much higher quality where direct sunlight is received at least 60% of the time.

PLANTING PROCEDURE:

Spade up a small area slightly larger than the root system of the tree you are planning to plant. Set the tree into the hole. Spread out the roots. Plant wildlife trees deeper than orchard trees. Mound up to soil to cover the graft union. This will create a vigorous rooted tree. Tamp the soil over the roots to avoid air pockets. Water well after planting and cover the fresh soil area with leaves, mulch or compost.

PRUNING:

Wildlife habitat trees should be pruned differently than orchard trees. At planting, prune off side branches from 4' - 5' from the ground. Allow the top to grow up out of the reach of browsing deer.

Keep pruning limited until the tree is well established. Later, as the trees continue to develop, prune out several entire limb sections to maintain a larger, spreading crown area.

POST PLANTING PROTECTION:

DO NOT allow weeds or grass to compete with the new trees! This is important in the success of establishing vigorous growth. Using weed barrier mats such as a 4' square sheet of landscape fabric to surround the tree is ideal. Even laying down cardboard sheets and covering with hardwood mulch is helpful. Protect the trunks from girdling voles, or rabbits. Netting or plastic tree guards can be used. Plastic tree guards should be removed in the summer to avoid a damp environment between tree trunk and guard. Allow the trees to grow up beyond the reach of browsing deer. Sometimes fence protection is needed. The best protection is a cage built around the

tree with wire netting 2 m (6') tall. This is also valuable for protection against rabbits when the snow gets deep and the tree guard gets covered. Where only moderate rodent and deer pressure exists, the trees can be protected by painting the trunks with latex paint and attaching a deer deterrent soap bar to each tree.

Trees planted late in the spring often require extra watering during the summer drier stress periods (July, August) to provide ample moisture to the establishing root system. Fertilizer should be applied in the springtime just before the growth cycle begins.

Following these simple steps with diligence during planting, and providing protection the first couple years afterwards, will benefit you with success. It can provide natural food sources for your enjoyment, for wildlife, and generations of nature lovers in the future.

Solutions for Managing Pests and Diseases

Backyard fruit growers do not have access to the powerful chemicals and poisons which enable commercial growers to produce large quantities of blemish-free fruit. Most of us want more healthy and environmentally friendly approaches to fruit growing.

We have no "silver bullet" for growing organic fruit, but Whiffletree is constantly seeking to put more "tools into the backyard fruit gardener's toolbox". If your goal is to apply mostly organic solutions which result in mostly bug-free fruit with only minor disease issues, consider the following resources. Some are old and some are new—use what works for you!

A. ORGANIC ORCHARD SPRAY KIT

Developed by well-known orchardist, Michael Phillips. The Kit contains all the key ingredients with complete mixing and spraying instructions as well as a schedule to guide you. It includes an Organic Orchard Spray Program
Calculated for 15 L (4 US gal) Sprayer. SKU #735-0199

Spring Dormant Spray

If the trees are still dormant, or have up to quarter-inch green bud tips showing, this mixture can be sprayed to the point of run-off on the trees as well as on the ground. Otherwise spray on the ground only since the higher ratio of molasses could damage new foliage.

- 140 ml (5 oz.) Neem Oil
- 10 ml (2 teaspoons) liquid dish soap
- 700 ml (24 oz.) Blackstrap Molasses
- 600 ml (20 oz.) Organic Gem Liquid Fish
- 150 ml (5 oz.) Liquid Ultra Kelp
- 10 ml (2 teaspoons) Effective Microbes

Spray Schedule for Spring & Summer Using Summer Spray Recipe

- Remember to not spray in the heat of the day
- 1st Spray Trees are showing about ¼" (6mm) green tips
- 2nd Spray Blossoms are starting to show pink
- Do not spray when trees are in bloom. That will make grumpy bees.
- 3rd Spray immediately after blossoms have fallen.
- 4th Spray 7-10 days after blossoms have fallen.
- After this 1-2 times per month until harvest.

Summer Spray Recipe

- 70 ml (2.5 oz.) Neem Oil
- 5 ml (1 teaspoon) liquid dish soap
- 100 ml (3oz.) Blackstrap Molasses
- 300 ml (10 oz.) of Organic Gem Liquid Fish
- 150 ml (5 oz.) Liquid Ultra Kelp
- 10 ml (2 teaspoons) Effective Microbes

*Note–Discontinue Organic Gem Liquid Fish after 4th spray

Fall Holistic Spray

Identical to the spring dormant spray.

Apply when 50%-60% of the leaves have fallen off. Target the ground, trunk & branch structures.

*Note–If you choose to spray Liquid Ultra Kelp and/or Effective Microbes alone, increase rates to 200 ml per 15L water.
- For Neem only applications use Summer Spray rate.

Spray Mixing Instructions

- Put 8L (2 US gal) of water into sprayer.
- Add all ingredients except the Neem Oil* and Blackstrap Molasses* (*handling instructions below)
- When all ingredients are added, including Neem oil and Blackstrap Molasses, put lid on sprayer and shake very well.
- Take lid off and fill up to 15L (4 US gal) with water.
- You are ready to spray your trees.

Instructions for Handling Raw Neem Oil

Since Neem becomes thick as butter at temperatures below 16°C (60 F°) it needs to be thawed to a consistent liquid form before using. This can be best achieved by placing the container of Neem in hot water.

We do not recommend letting the Neem freeze.

- Mix the liquid dish soap directly into the Neem Oil. This helps the Neem mix better with water.
- Pour this oil/soap blend into 2L (½ US gal) of warm water in a container and stir vigorously
- Add this to the ingredients already in the sprayer

Instructions for Handling Blackstrap Molasses

- Put 2L (½ US gal) of hot tap water into a plastic container. Use a plastic container rather than glass to allow for gaseous expansion.
- Pour the correct amount of Blackstrap Molasses into the hot water.
- Shake well to dissolve the molasses.
- Add this to the ingredients already in the sprayer

*Note–Be sure to clean your sprayer & lines immediately afterwards with a 50/50 mix of white vinegar & water to avoid build-up which could casue clogging the next time the sprayer is used.

B. VARIOUS LOW IMPACT ORCHARD SPRAY PROGRAMS

SPRING DORMANT SPRAYS-To control overwintering pests and diseases.

1. The Green Earth Dormant Spray Kit consists of two products- Mix 60 ml. (4 tablespoons) of horticultural oil AND 120 ml. (8 tablespoons) of lime sulphur in 3 litres of water. SKU 735-6150

Horticultural oil kills overwintering insects, insect eggs and some caterpillars. Lime sulphur is effective in controlling fungal diseases such as blister and rust mites, pear scale, red mite eggs, aphid eggs, twig borers, powdery mildew, apple scab, pear rust, plum black knot and peach leaf curl.

2. Eagle Copper Spray is especially effective for Peach Leaf Curl. Mix 9 grams in 1 litre of water (1 level tablespoon in 1 litre of water) Timing is crucial! See package details. SKU 735-4500

3. To Control Fireblight: Copper offers superior control for fire blight. If you had fire blight the previous year, replace or supplement the lime-sulphur with copper in the dormant spray. Avoid heavy nitrogen fertilization, especially in summer, when succulent growth is most susceptible to fire blight infection. In years when warm, humid, wet weather coincides with flowering and leaf emergence, spray with copper to reduce fire blight infection. Follow the manufacturer's recommended dose. Copper is a good preventative spray for fire blight infections but too many applications of copper are not good for the soil.

SPRING AND SUMMER SPRAYS Remember to not spray in the heat of the day

1. Surround WP Crop Protectant is the best current organic option. SKU 735-5305 & 735-5312. Surround is a wettable powder that is mixed with water and applied to fruit trees, shrubs and canes with a sprayer. After it dries, a powdery film of kaolin clay remains on the fruits and the leaves as a physical barrier that protects fruit from the egg laying activity and feeding damage of insects. It also inhibits the growth of fungal spores on foliage.

Rates:

- First 3 sprays or after a heavy rain—3 cups Surround per 4L (1 gal) of water
- Remaining sprays—2 cups Surround per 4L (1 gal) of water

Mixing Instructions for 15L Sprayer:

- Fill a 20L bucket half full of warm water. Add required Surround amount. Stir well with a whisk before pouring the mix in your sprayer. Close lid and shake vigourously. Add additional water and shake again. At the end of application, spray until empty and flush sprayer and nozzle with a 50/50 mix of vinegar and water to avoid buildup.

Guidelines for using Surround-see label for detailed instructions

- Thorough coverage is critical for good control! keep a good coat of Surround on all fruit trees **immediately after petal fall** until pest pressure is past
- Mix thoroughly and spray tree to near drip coverage. **Shake sprayer intermittently to keep spray well mixed**
- Reapply a second coat the next day to give trees a white, chalky appearance
- Reapply the product every 7 to 14 days, or whenever the current coat begins to look thin or after a heavy rainfall
- A little rain often has little affect on Surround, but 2.5 cm (1 inch) or more will wash off most of the protectant

To Control Codling Moth in Apples and Pears

- First generation moths are present from bloom to mid June. Second generation moths emerge from late July to mid August and flight can continue until late September.
- Place pheromone traps in orchard at bloom to identify presence of codling moth, monitor for moth-bitten apples that have a brown spot with frass coming out
- When coddling moths appear, commence spray and maintain coverage of developing fruit through all generations (see page 28 for trap ideas)
- A little rain often has little affect, but an inch of rain will wash off most of the protectant
- Remove and destroy all the codling moth bitten fruit and all drops

To Control Apple Fly Maggot in Apples

- Apple fly maggots overwinter in the soil and emerge from June through August with peak emergence in July. Mated adult females lay eggs under the skin of apples
- Apple maggot traps are red sticky balls that can be hung in apple trees to monitor the presence of the fly SKU # 735-9110
- Keep a good coat of Surround on fruit and leaves when pest is present
- A little rain often has little affect, but an inch of rain will wash off most of the protectant
- Remove and destroy all the infected apples and all drops

To Control Plum Curculio, Cherry fruit fly and other Insects on Stone Fruit

- Rapid spring growth, petal drop and shuck drop can expose unprotected areas which need to be sprayed
- Plum curculios (PC) adults begin to lay eggs shortly after the shuck split stage on stone fruit, but the peak of egg-laying is not reached until most of the shucks (petals) have fallen and the fruit is beginning to size.
- Keep a good coat of Surround from **right after petal fall to quarter-sized fruit**
- PC are most active on warm nights-don't let the trees sit unprotected
- Cover the fruitlets from all sides and the branches around the fruits because PC mostly walk between fruitlets
- If the petal fall times vary, **spray branches that have dropped petals**
- A little rain often has little affect, but an inch of rain will wash off most of the protectant
- PC favour nectarines and plums
- When thinning fruit, pick off the curculio-bitten fruits that have crescent-shaped wounds
- Pick up fruit drops because they are likely pest-bitten fruits that harbour worms and each fruit you pick up now means one less pest for next year
- PC has only 1 generation and is usually finished by the end of June.

Additional Information about Surround

- For added control of scab, add recommended amount of lime sulphur (the growing season rate) to the Surround
- A secondary benefit of Surround is that it acts as a sun screen to reduce sun scald, cool plants and retain moisture in very hot, dry conditions. When used as directed, Surround doesn't interfere significantly with photosynthesis but it can delay fruit ripening by 3-7 days.
- Surround can leave a powdery film on the fruit that reduces attractiveness. Do not spray when harvest is 1 week away. Fruit growers may consider washing or brushing off the residue prior to consumption or sale.
- Surround doesn't interfere with pollinators, beneficial insects or earth worms.
- Some anecdotal evidence claims that spraying Surround on Hazel Nut bushes helps repel squirrels.
- We don't recommend mixing Neem oil and Surround together

2. Lime sulphur or copper in lower concentrations and mixed with water have been used for generations to control fungus diseases and insect damage in the growing season. See product labels for directions and precautions. Spraying when 30 degrees C (85 degrees F) or more can burn leaves. Note-do not use lime sulphur on apricots.

3. Beneficial Nematodes are the organic grower's biological weapon. They kill the below ground larvae of plum curculio, slugs, weevils etc. greatly reducing the population of these pests. To combat plum curculio, spray nematodes on the ground under fruit trees, out to the drip line. Two applications about July 1 and 15. SKU 735-2050 & 735-2100

4. To Control Aphids. Be alert to aphid infestations, especially on sweet cherries, plums and currants. Aphids overwinter on twigs and fruit spurs and hatch shortly before bloom. An application of horticultural oil when the tree is dormant will greatly reduce aphid populations. They can go through a number of generations and may become

very abundant in early spring, especially on young, tender growth. Puckered and curled leaves on succulent, young growth are characteristic signs of aphids. Ants are often an indication of aphids because they share a symbiotic relationship—aphids provide ants with sugar-rich honeydew as a source of food and the ants protect the aphids against various natural enemies. If you get rid of the aphids, you'll get rid of the ants. Avoid high nitrogen applications which stimulate excessive new growth that attracts aphids. Adult and larvae ladybugs are nature's control for aphids but if ladybugs aren't controlling aphid infestations, consider the following measures:

1. Manually remove the infected leaves and crush the aphids.
2. Try blasting aphids off with water sprayed from your garden hose
3. If they persist, spray a mixture of soap and water onto the aphids. Mix 2 tsp. of liquid soap to 1 pint of water. Most dish soap works, or purchase insecticidal soap. To be effective, the soapy water needs to coat the insect's body. This likely means turning over leaves to reach insects on the underside.
4. If they persist, add neem oil to your soap solution. 1 oz. of neem oil and 8 tsps of liquid soap to 1 gallon of water.
5. If the infestation is still severe, use Malathion as a last resort. To reduce harming beneficial insects, spray after bloom period, before 9am on an overcast day.

C. PESTICIDES REGISTERED FOR HOME USE

Malathion and Spinodad are pesticides labelled "Domestic". **They are designed to have low toxicity and to pose a minimum risk to people and the environment when used according to label directions.** If you do not use Surround, Malathion and Spinodad can help control bugs throughout the growing season-aphids, plum curculio, apple maggot, codling moth, leaf rollers, leaf hoppers, mealybug, scales and spider mites (both are toxic to bees and other beneficial insects). Malathion and Spinodad (Monterey Garden Insect Spray) are available at hardware and big box stores. Read the product label carefully and follow all label instructions and safety precautions. Discontinue all spraying before harvest according to the label directions.

D. TIPS FOR REDUCING PEST AND DISEASE PRESSURE

1. Orchard Hygiene. When seeking to control diseases and pests, we can't stress enough the importance of hygiene. Clean away last year's fruit tree leaves, fallen and mummified fruit which may harbour the spores for next year's fungus infections. Unless your composter is "hot" enough to destroy disease pathogens, bury or bag and remove each season's leaves and wasted fruit. When thinning, pick off bitten fruits e.g. curculio-bitten fruits have crescent-shaped wounds. Pick up fruit drops because they are likely pest-bitten fruits that harbour worms. Each fruit you pick up now means one less pest for next year.

2. Hang Codling Moth Traps and Apple Maggot Traps in trees after bloom to detect the presence of these pests and to disrupt their propagation.
Codling Moth Traps SKU 735-9202
Apple maggot traps SKU 735-9110

Home Made Codling Moth Trap:
Codling moth is responsible for wormy apples and pears. They have several generations in 1 season and can be present from after bloom until harvest. Trapping them greatly reduces damage to your fruit. Stefan Sobkowiak of Miracle Farm, Quebec recommends this home made codling moth trap. **Hang up these traps starting after bloom till mid August.**

1. Acquire non-sulfured molasses (this is the same product as in the Whiffletree Spray Kit SKU# 735-0402).
2. Use sturdy plastic bottles e.g. recycled vegetable oil, motor oil containers etc.
3. Drill a 3/8" hole near the top for filling and refilling.
4. Drill one or two 1/4" holes on each side. The smaller holes help keep out butterflies and beneficial insects.
5. Drill a small hole thru the cap and lid to fit a wire.
6. Place wire thru the cap and add a "pig tail" hook to hang from a branch.
7. Mix molasses and water (1 to 1) and half fill bottle (500 ml. Or 16 oz)
8. Hang 1 trap/tree in apple and pear trees after bloom until harvest. Hang traps down wind, about shoulder height.
9. In hot weather, water will evaporate and needs to be replenished.

Codling moths smell the molasses, enter the trap and drown in the liquid.

Make a Trunk Trap Out of Cardboard:
When the codling moth grub leaves the apple, it looks for a nice crevice in which to spin a cocoon to begin another generation of codling moths. Corrugated cardboard provides attractive crevices in which the moth forms cocoons. Tie a piece of cardboard around the trunk of the tree or it's limbs **at the start of June until mid August**. Cardboard should be about 8-10 inches high by twice the length needed to wrap around the trunk twice. Every few weeks take off and destroy the cardboard and coddling moth cocoons. Replace with fresh cardboard.

3. Break the Fungus Cycle-Unless you are growing a scab resistant apple (e.g. Liberty, Nova Easy Grow, Williams Pride etc.), scab can be a perennial problem for most apple growers. Apple scab fungus overwinters in the soil under the tree and relies on raindrop spray to launch it back onto the tree come spring. Interrupt this cycle and bury the spores by laying new straw, wood chips or mulch under your dormant trees.

4. For Bacterial Canker on cherry and plum trees, use a sharp knife to cut out the infected tissue. Removed all the dark coloured cambium until healthy tissue appears.

5. Black Knot in plums. When Black Knot infects a small branch, cut away the branch 5 inches below the knot. Where infections occur on larger branches or trunks, excise infected tissue down to healthy wood. Burn or bury prunings away from the area to prevent reinfection. Sterilize cutting shears to limit the spread of the disease. Severely infected trees should be removed entirely.

6. Sticky Barriers. Paint a ring of Tree Tanglefoot or Sticky Stuff SKU 735-9108 a few feet up the trunk to block ants, Gypsy moths, tent caterpillar larvae, canker worms, and other crawling insects.

7. Good Sun Exposure and Air Movement will significantly reduce disease pressure. Space and prune fruit trees accordingly.