# A is for Apple - Grow Apples in Your Back Garden

## Apple Trees (*Malus domestica*)

Many fruit trees thrive for West Coast home gardeners to plant, pick and enjoy – apple, apricot, avocado, cherry, citrus (lemon, lime, orange), fig, pear, persimmon, plum, peach, and quince as well as some nut-bearing trees such as hazelnuts and walnuts. All trees that flower produce 'fruit' but for home gardeners, 'fruit trees' are those that produce edible fruit for human consumption. This article presents information on the most common fruit tree planted locally for their edible benefits.

### Which Apple Tree Should I Plant?

- Apples need care and attention. They are not a 'plant it and forget it' type of crop. Healthy, well-tended trees are more likely to produce an abundant, sweet harvest while neglected trees usually produce a small crop of disappointing fruit. It is a long-term undertaking.

- Research is important before you choose a tree:
    - Decide if you are growing primarily for cooking, eating raw, or cider production.

    - Consider the size and shape of mature apple tree if left to grow – would it fit an urban sized garden. There are now smaller forms grown on dwarfing rootstocks. Selected pruning styles can encourage apple trees to grow in smaller spaces.

    - Most apple trees are not self-fertile, at least one other apple tree is needed to act as a pollinator, again a limiting factor in a smaller garden. Even supposedly 'self-fertile' trees crop more heavily if other pollinator apple trees are present.

    - Consider fruit storage. When you get a bumper crop of apples, you have to harvest it. Some apples are more capable of being stored for a longer time than others.

    - Most importantly, try and taste a variety of apples before you select your tree. See section 5. "Some Useful Community Resources"

- Look for disease resistant varieties that are adapted to and grown for, our local climate. Unfortunately, many popular apple tree varieties are vulnerable to pest and disease problems. Many grocery store apples are helped along by commercial growers using toxic pesticides and fungicides which are not an option for the home gardener.

- Apple trees are common enough that friends and neighbors can be consulted. Never underestimate the first-hand experience of fellow gardeners.

- For pollination purposes it is useful to know if there is another fruit tree, and what type it is, in your neighborhood.

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## Points to Think About When Choosing & Taking Care of Your Fruit Tree



## 1. Pollination, Fruit Harvesting, & Fruit Storage

### Pollination:

- Most apple trees are incapable of setting fruit with their own pollen and need a different apple variety nearby which flowers at about the same time to allow cross-pollination. If you are in an area with apple trees in a neighbors' garden, you may not need to plant a pollination partner so it is good to check around to see which variety and when these neighboring trees flower.

- Early season apples can pollinate mid-season apples; mid-season apples can pollinate late-season apples but late-season apples will not pollinate early apples.

- If space is limited for growing compatible trees a multi-variety tree is an option, where 3 to 4 apple types are grafted onto one tree.

### Fruit Harvesting:

- For the first two years after planting, remove all of the fruit from the apple tree. If you allow the tree to fruit when it's very young it won't have enough energy to devote to establishing a healthy root system and branches.

- As apple trees mature they naturally shed some fruitlets in early summer in a process known as the 'June drop'. This may look alarming with little fruits lying all over the ground but in fact, this is natural and not usually a cause for concern as a good crop of apples is often left on the tree.

- To encourage a larger size of mature fruit after the June drop, continue to thin some of the forming fruit in a cluster to leave 1 to 2 fruit about 4 to 6 inches apart. First, remove fruit

that are malformed, diseased or insect damaged. Next, remove those apples that are smaller than the rest of the cluster.

### Fruit Storage:

- Generally, the later in the season an apple comes to harvest, the longer its storage life. Most apples ripen in Victoria between July to early November.

- Early-season ripening apples are not good for long-term storage and should be eaten as picked; mid-season apples store for about 3 to 4 weeks, and late-season apples can be stored up to 6 months depending on the variety.

- Apples for storing are usually harvested slightly before completely ripe. A ripe apple will come away easily complete with its stock with a gentle twist of the hand.

- Apples must be kept in the right conditions – consistently cool (2 – 5C degrees), dark, and slightly humid, in loosely closed plastic bags. Use any damaged or bruised fruits first as they give off ethylene gas which speeds up ripening and affect the good apples if stored together.

## 2. Tree Size & Pruning

### Tree Size:

Apple tree size matters both from the point of view of space in your garden and for ease of picking and tree maintenance. There is a lot of choice:

- Standard apple tree is 20 feet tall by 20 to 25 feet wide
- Semi-dwarf 12 to 16 feet tall
- Dwarf 8 to 12 feet tall
- Very Dwarf 6 to 8 feet tall
- Columnar apples with a singular trunk 6 to 8 feet tall and about 2 feet wide are an easy to maintain choice for pots or accent plants in the garden.

Again, all these trees need two varieties for pollination. Most home gardeners choose to plant a dwarf, semi-dwarf, or columnar variety.

### Pruning:

All apple trees must be pruned every year to provide good air circulation, encourage fruiting, maintain shape, to rejuvenate mature trees, and for a long and healthy life. It is usual to prune established trees twice each year; 'winter pruning' spurs vigorous growth while 'summer pruning' is key to disease prevention.

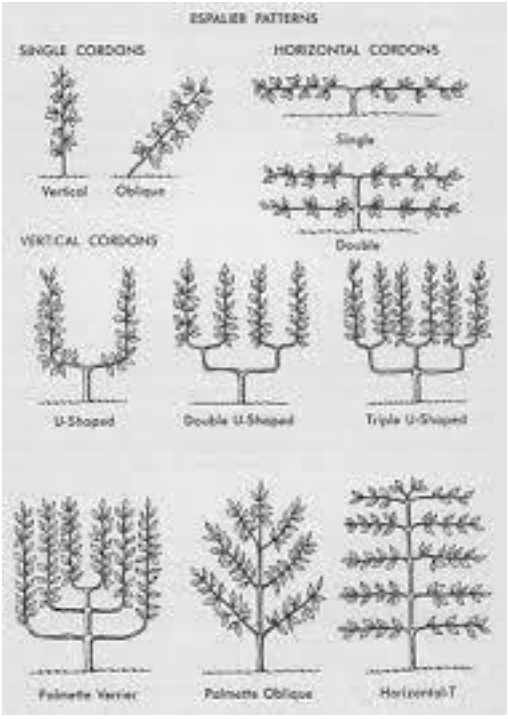
Winter pruning during the dormant period between January to March allows the trees' energy to be distributed to fewer branches so each branch will grow more and produce better quality

fruit. The tree will heal quickly and protect itself naturally from disease infections if the cuts are made clean and sharp and with disinfected hand pruners.

- Remove dead, damaged, or diseased branches and those that cross-over, rub each other or grow towards the trunk
- Remove limbs that come out of a trunk at a narrow angle as these develop weak crotches that may break under a heavy fruit load
- Thin out water shoots

Summer pruning is undertaken to keep the tree compact and slow down the excessive growth of vigorous trees. Trees that shoot out several feet on each branch over the season are growing too fast, especially in a year they carry little or no fruit. Start pruning when the tree is no longer putting on new leaves at the tip of the branches; new leaves are smaller and a lighter green than mature leaves. This is usually around the end of July or early August.

- Cut back branches by half and remove water shoots and new shoots that are growing in the wrong direction.




'Espalier' is one of the more popular forms of pruning for shape - growing fruit and other trees flat against a wall, pruning and training them to grow two-dimensionally. Besides taking up less space, training apple trees against a sunny wall creates a warm microclimate as the open framework of an espalier lets in more sun, encouraging more blossoms and faster fruit ripening. Another benefit is how beautiful the trees look basking in the sun against your home or garden fence.

## 3. Location in Your Garden, Planting, & Fertilizing

**Location:**

- The ideal position for an apple tree is a sunny, sheltered site, away from any late spring frost pockets.
- Avoid poorly drained or shallow soils.
- Plant your apple trees in one area no closer than 12 feet apart and no further than 50 feet apart with no other trees or buildings in between. This helps insects pollinate the spring blossoms.
- Keep the area around fruit trees well weeded with nothing planted close to them that will compete for sun, water, or nutrition – no weeds, no flowers, no veggies, no shrubs.

### Planting:

Apple trees sell in two forms, 'bare-root' stock (the roots are exposed) or in containers

- Bare-root trees should be planted from late autumn until early spring.
- Trees in containers can be planted at any time of year, though late autumn is preferred and always remove the container completely before planting. Keep the newly planted tree well watered and avoid fertilizing until spring.

When a new apple tree is planted:

- Improve the soil with well dug-in compost. Ensure good drainage. Avoid heaping soil up against the trunk – this can lead to collar rot disease.

- A young fruit tree should be watered deeply at least twice a week during the growing season for the first year or two after planting. Fruit trees can only absorb the nutrients in the soil in liquid form so dry soil leads to a malnourished tree.

- Concentrate water on the roots as apple trees are vulnerable to fungal diseases. Excess moisture on the branches, leaves or bark can make these problems worse. A soaker hose is ideal looped around the base of the tree so that the water can soak slowly into the ground. Never use overhead sprinkler systems.

- Most newly planted dwarf, semi-dwarf, or columnar apple varieties don't need staking. Even when staking is beneficial to a newly planted tree say to straighten the trunk, it usually remains so for only a short period of time. Staking a tree that does not need it can do more harm than good as movement of the trunk helps strengthen and thicken it and encourages a wider spread of the roots.

### Fertilizing:

Continue with an annual application of compost or well-rotted manure around the roots in early spring. As young apple trees are often nitrogen deficient, an organic source of nitrogen such compost, well-rotted manure, fish emulsion, coffee grounds, blood meal, alfalfa or soybean meals will help them along.

## 4. Identify & Treat Pests & Diseases

Apple trees are among the most prone to pests and diseases so looking at your trees regularly for changes or problems is necessary.

- Planting apple tree varieties that are 'disease-resistant' is the first line of defense.
- Regular maintenance, pruning and simply observing the fruit trees' progress, particularly during growing season, can help identify pests and diseases before they get out of hand.

- If you do suspect a problem, research it online (a picture in this case is worth a thousand words) contact a local organization or garden center. Consider taking a workshop on fruit tree pests and disease - you will learn what problems to look for and how to deal with them when they arise … and meet some fellow fruit tree gardeners to boot. It is reassuring to know that sometimes the solution can be as easy as just pruning and carefully disposing of a diseased branch, but not in the compost.

- Deer-proof your garden as apple trees are not a 'deer-resistant' plant. While the fruit will be the main attraction, deer will also eat young leaves and branches and cause damage to mature trees due to their size and habit of rubbing against trunks and branches.

## PESTS:

### a) Apple Ermine Moth Caterpillars

These are rarely numerous here in home gardens and in most areas, do little besides cosmetic damage.

**Watch for:** Large clusters of grey-greenish-yellow caterpillars that feed generously within loose nests of spun silk-like webbing along a branch. They can cause yellow blotches on leaves and extensive defoliation while feeding in the spring.

**Treat:** Check plants regularly from spring for the presence of larvae

- Remove caterpillars by hand where possible on smaller trees.
- Prune off on hard to reach branches and dispose, but do not compost.
- As a LAST RESORT, if complete defoliation is expected, actively feeding caterpillars can be controlled by BTK (*Bacillus thuringiensis kurstaki*) spray. If caterpillars are not actively feeding, spraying will do no good.

### b) Apple Maggot

This pest is recently introduced in our area and is usually not a problem in the home garden.

**Watch For:** The larva of these small, black-bodied flies resemble a large dark brown grain of wheat and feed on the apple flesh by tunneling through the fruit. Look for misshapen fruit, dimples on the skin or pin-pricks in the fruit. When the apple is cut open, the tiny brown tunnels are seen in the flesh. Affected apples become soft and rotten, decay quickly, and often fall from the tree.

**Treat:**

- Regularly inspect fruit and destroy any affected fruit on the tree or fallen on the ground, do not compost.

- Traps can be used to trap the adult Apple Maggots before they reproduce; 1 trap for a small tree up to 8 feet tall; 2 to 4 traps on medium sized trees; and 6 to 8 traps on trees up to 25 feet tall. Commercially available traps are yellow rectangles or red balls usually with an attractant containing ammonia or fruit essence. Clean traps weekly and replace attractant every 3 weeks. A laborious practice on small well-pruned trees, involves protecting each apple by covering the young fruit with paper or fabric bags and removal and disposal of any remaining fruit not covered.

## c) Codling Moth Caterpillars

**Watch For:** This is the most serious pest of apples trees in the Pacific Northwest and is the cause of 'maggoty' apples. Coddling Moth feed exclusively within the fruit. Cut open a fruit to look for the brown crumbly excreta around the end of the apple where the Codling Moth has tunneled through the apple directly to the core.

**Treat:**

- Use commercially available 'tree bands' which are wide sticky tape wrapped around the trunk of the tree spread with a layer of insect glue. Install from June to late September. The bands require prompt removal, disposal (not in the compost), and replacement as cocoons/caterpillars are found.
- Remove and destroy damaged fruit by hand when small entry holes are seen in the apple, either on the tree or dropped fruit on the ground.
- A laborious practice on small well-pruned trees, involves protecting each apple by covering the young fruit with paper or fabric bags. Remove and dispose of any remaining fruit not covered.

## d) Winter Moth Caterpillars

**Watch For:** Tiny green inchworms, holes in the leaves, often with a brown ring of dead tissue around the hole, and sometimes where the affected leaf sits in a silky web. Most often noticed in the spring on new leaves, Winter Moths will also eat blossoms and damage young fruitlets and can cause a deep cleft in the side of the fruit when the Winter Moth has reached maturity.

**Treat:**

- It is highly recommended to use sticky tree bands as they are environmentally friendly and really work!! Commercially available 'tree bands' are sticky tape wrapped around the trunk of the tree spread with a layer of insect glue. They intercept the flightless females as they crawl up tree trunks to lay eggs. Apply bands after mid-October; the bands require prompt removal, disposal (not in the compost), and replacement as cocoons/caterpillars are found. Remove the bands after February.

- Plant to attract beneficial insects such as herbs and dozens of types of ornamentals. See page 108 of L. Gilkeson's "Natural Insect, Weed & Disease Control"
- If not using tree bands, apply dormant oil spray once between December and February before the leaf buds begin to swell.

## DISEASES

### a) Apple Scab

**Watch For:** Scab is the most common fungal disease of apple trees and overwinters on dead apple leaves and fruit left on the ground. During spring moisture, Scab spores infect developing leaves and fruit. All outer parts of unopened fruit buds are highly susceptible to Scab. As the fruit matures, it becomes less susceptible. In the spring, look for pale, water-soaked spots the size of a pinhead on the new leaves; these spots enlarge, become darker and later turn a brownish-black color. The fruit shows circular warty brown bumps (scabs) on the apples. As the fruit enlarges, the Scab spots become brown and 'corky'.

**Treat:** Reducing Apple Scab primarily depends on good cultural controls:

- plant scab-resistant cultivars of apples;
- clean up and remove fallen leaves and fruit;
- avoid overhead watering;
- prune to open up branching and allow more air circulation.
- In the fall, a broadcast application of dolomite lime will help to increase soil pH and reduce fungal spores in the spring.

### b) European Canker

**Watch For:** When purchasing a new tree choose a disease resistant variety and before purchase carefully inspect the bark of a new tree for lesions.
Canker is caused by a fungus and is most severe in coastal areas spread by rain or overhead irrigation. The first sign of canker is a reddish-brown spot around a leaf scar, spur, or pruning wound which develops quickly with ring shaped cracks forming in the swollen bark. European Canker can develop in the first year after planting a new tree and usually stops growing after one year. Look for raised or sunken rough bark sometimes on swollen branches and sometimes splitting and oozing. Infections often begin at wounds or buds.

**Treat:** Treating European Canker primarily depends on good cultural controls:

- Plant in well-drained soil

- Don't over-fertilize with nitrogen which encourages excessive leaf growth;
- Make sure bark is not rubbing on support posts
- Prune during dry weather to open up branching and allow more air circulation.
- There are no fungicides registered for control of European Canker in Canada.
- Prune out diseased wood. If seen on a young tree, this may mean pulling out the tree and discarding or returning it to the nursery for replacement.

## c) Powdery Mildew

**Watch For:** This is fungus produces a white powdery growth on the new upper and lower surfaces of leaves. Later in spring as the fungus dries off, a network of russet colors appears on the infected fruit. There are multiple infections each year with trees susceptible as long as they are actively growing. High levels of Powdery Mildew at the end of the growing season can damage the tree in two ways. First can increase the number of infected buds, so you will have a high level of infection next spring and second, it can inhibit the formation of flower buds, so that there will be fewer or no fruit produced the following season. Powdery Mildew is favored by moderate temperatures and high relative humidity although it does not need wet weather to germinate.

**Treat:**

- Plant disease resistant cultivars,
- Plant in a sunny area,
- Avoid the excessive use of fertilizer,
- Avoid overcrowding of trees and branches. Prune to create good air circulation.
- Remove infected white tipped apple shoots during dormant season pruning
- Prune out twigs with white fungus growth on the surface, do not compost.

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## 5. Useful Community Resources

**BC Fruit Testers Association** - A province-wide network of fruit growing enthusiasts which offers a quarterly newsletter, tours of fruit growing locations, fall fruit shows, help with native bee pollinators, clinics, seasonal demonstrations on pruning, grafting, and orchard maintenance, access to fruit tree sales with a wide selection of difficult to find varieties, and an extensive lending library. Membership required. www.bcfta.ca

**BC Orchards Directory** - 16 orchards and fruit tree growers in the Victoria area, the Gulf Islands, and the Cowichan Valley are listed. The Directory also offers descriptions and pictures of an extensive list of apple varieties, and pear, plum and cherry too. www.orangepippin.com

**Compost Education Centre** - The mission of the Centre is to encourage composting, local food production, and conservation through community education courses and on-site demonstrations on an intensively gardened urban site. A wide range of community education workshops for everyone are offered including 'Growing Fruit Trees in the Pacific Northwest' and 'Advanced Fruit Tree Pruning'. Open to the public and free, workshop charge. www.compost.bc.ca

**Horticulture Centre of the Pacific** – An internationally recognized botanical garden which demonstrates the wide variety of plants that can be grown in our climate in 9 acres of cultivated gardens. Occasional community education workshops for everyone are offered including 'The Backyard Orchard' - cultivating fruits and nuts in an urban space. HCP also has an extensive lending library. Open to the public with admission, workshop charge. www.HCP.ca

**Salt Spring Island Apple Festival** – If apples are your choice of tree, this seasonal community event held annually in late September/October celebrates everything apple and showcases the multitude of apple varieties successfully grown on the Island. Over 450 apple tree varieties are showcased and many are available for tasting during the Festival. Open to the public and free.
www.saltspringapplefestival.org

**Vancouver Island Farms & Food Map -** The map is an interactive on-line tool to locate farms and purchase fresh local food grown and sold on Vancouver Island and the Gulf Islands. Search the map for in-season fruits, nuts, berries, and much more including on-farm workshops; offers fruit varieties beyond the grocery store, which are successfully grown locally. Try and taste a variety of apples before you select which tree you will plant.
www.bcfarmsandfood.com

**Victoria Horticultural Society** - The Fruit & Vegetable Group is a special interest group of the Victoria Horticultural Society dedicated to the cultivation and study of the fruits and vegetables it is possible to grow in the Greater Victoria area. As a VHS member, you will have access to plant identification, plant selection and cultivation tips, lectures and guest speakers at monthly meetings, workshops and other events scheduled throughout the year, as well as the general expertise and inspiration of other members. VHS also has an extensive lending library. Membership required. www.vichortsociety.org

**Welland Legacy Park & Community Orchard** – Located in Victoria, gather, harvest, and learn at one of the largest and most diverse community orchards in Canada, once the home and backyard of a leading local conservationist Rex Welland. The orchard is home to nearly 200 fruit trees and vines, including many rare varieties of apple, pear, plum, fig, grape, hazelnut, kiwi, paw-paw, and more. Open to the public and free.
www.lifecyclesproject.ca

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## 6. References

For a comprehensive **list of apple varieties** and their approximate ripening season see:
- Kathleen Norris Brenzel ed., The New Western Garden Book, 2017, "Top Picks To Grow", p 157.
- Royal Horticultural Society, "List of Apple Varieties" www.rhs.org.uk/apples

For clear videos of **apple tree pruning** see:
- Royal Horticultural Society for winter pruning https://www.rhs.org.uk/advice/profile?pid=90
- Royal Horticultural Society for summer pruning https://www.rhs.org.uk/videos/advice/Apple-pruning

For a complete illustrated guide to **pruning apple trees and training apples** as cordons, fans, espaliers and in a range of free-standing forms see:
- Christopher Brickell & Trevor Cole eds, Practical Guide to Gardening In Canada 2nd Canadian Edition, 2001, "Pruning and Training Techniques", pages 373 to 379.

All the information **for pest and disease identification and treatment** for the home gardener are attributed to:
- Linda A. Gilkeson, West Coast Gardening Natural Insect, Weed and Disease Control, Appendix I: Table 5. "Common pests & diseases in the Pacific Northwest by host plant", pg. 193 & throughout the book by type of pest or disease, 2013.
- Oregon State University Extension, Pacific Northwest Gardening Handbooks - by type of pest www.pnwhandbooks.org
- BC Tree Fruit Production Guides – by type of pest or disease www.bctfpg.ca
  - BC Ministry of Agriculture and Lands, Home and Garden Pest management Guide for British Columbia, 2009 https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/plant-health/insects-and-plant-diseases/home-garden/home-and-garden-guide

For a concise overview of **pests and diseases specific to apple trees** see:
- Gardening Know How, "Information On Common Diseases of Apple Trees"

https://www.gardeningknowhow.com/edible/fruits/apples/apple-tree-diseases.htm

For a well-**illustrated guide** showing pictures of actual apples infected with specific pests and diseases, in a question and answer format see www.rhs.org.uk/advice/profile?PID=769

**Publications available from the Greater Victoria Public Library**
- Barbara Edwards, From Tree to Table: Growing Backyard Fruit Trees In the Pacific Maritime Climate, 2011.
- Tara Austen Weaver, Growing Berries & Fruit Trees in the Pacific Northwest: How To Grow Abundant, Organic Fruit In Your Backyard, 2019.