

Fruit Trees and More
Nursery & Demonstration Orchard
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GROWING LEMONS AND LIMES IN THE GROUND IN SOUTH COASTAL BC

Introduction

Contrary to popular opinion, **acid citrus** (lemons, limes, yuzu and sudachi) unlike sweet citrus, do not require sustained summer heat to ripen the fruit. They will ripen fruit to perfection outside in our cool summer / mild winter south Vancouver Island climate. Lemons and limes can successfully be grown in the ground outside if they are properly sited against a warm, sunny sheltered south or west wall and provided adequate protection during winter cold snaps. They can also be grown in the ground in an unheated greenhouse.

The hardy yuzu and sudachi can be grown in the open in a hot sheltered spot.

Trees should start to bear fruit within two years of planting. Lemon trees blossom repeatedly from late March to early October with the strongest bloom occurring in April. It is generally best to concentrate on growing branch structure instead of fruit in the first year.

General Principles for Growing Acid Citrus in the Ground Outside

Lemons and limes can be planted directly in the ground or grown in containers in an unheated greenhouse. However, as with fruit trees in general, planting citrus in the ground is preferable to planting citrus in containers.

As for any other fruit tree grown in the ground, plant the trees on a berm or in a raised bed. Plant your young citrus tree in a free draining rich composting soil.

Prepare planting soil mix as follows: Dig a planting hole about 2 ½ feet wide by 12-14 inches deep. Place soil from planting hole into a wheelbarrow and add 1 cup bonemeal, 1 cup dolomite lime , finished compost, aged steer manure or sea soil and mix thoroughly together.

Before setting your container grown tree in the planting hole, slightly loosen any peripheral roots. When backfilling the planting mix into planting hole, be sure to firm the soil beneath the rootball to prevent settling of the tree later. The tree should be planted such that the original soil level on the tree trunk (i.e. as it was in the pot) is maintained. It is best if the uppermost fibrous roots are barely covered with soil.

After planting the tree, water thoroughly to settle the soil and ensure good root/soil contact.

It is generally best to plant in the spring or summer (April to September) when the soil has warmed and is conducive to root growth.

Siting the citrus properly

Although acid citrus such as lemons and limes can be grown in an unheated greenhouse, they can be grown outside in the ground if they are sited properly.

Plant lemons and limes in a sheltered location, against a hot unshaded south or west wall. Although sun all day is best, trees will usually do fine if they have at least the afternoon sun from 11 to 4 or noon to 5 during the spring and summer growing season.

Plant the trees 1 to 1 1/2 feet from the wall. Train them against the wall and prune to keep the branch structure within 2 feet of the wall for maximum heat. Construct a glass overhang approximately 3-4 feet deep and 6-9 feet high above the planting site. The overhang can also be made from greenhouse-grade poly or corrugated fiberglass.

In the first and second years, it is generally best to further shelter your young citrus tree in winter by growing it under a remay teepee erected over your tree against the wall. This remay shelter should be left in place until the new spring growth is evident. Small trees sheltered in this way will show stronger and earlier growth than unsheltered trees. It is also useful to stake the plant to begin the training process and ensure quick vertical growth. Support wires fastened to the wall can be used to train the branches vertically and horizontally against the wall.

Maintaining fertility for citrus grown in the ground

Conventionally As growth begins in spring (early April) top-dress the tree with 1 tablespoon of slow release fertilizer such as 9-3-9 & micros (Palm & Tropical) and repeating at 4-5 week intervals until August. This should help maintain both macro & micronutrients at optimum levels.

Later, after the tree has grown to 4-5 ft high and wide, increasing the rate of the slow release fertilizer to two tablespoons and scratching it into the surface of the soil will provide a constant low rate of fertilizer release. An annual dusting of the soil in fall with 1/2 tablespoon dolomite lime should maintain correct pH and adequate magnesium levels.

Organically Top dress the tree annually in early April with a complete organic fertilizer blend such as Gaia green 4-4-4. Supplemental irrigations with liquid fish fertilizer (following label instructions) should be applied at bi-weekly intervals April to August. Micro nutrient levels can be maintained with liquid seaweed (following label instructions)

Winterizing

Fruit in all stages of development from small green to large green, and fully ripe fruit can be found on the tree year round including winter. Both green and ripe fruit will freeze at temperatures below -2.5° C even though dormant trees are hardy to -6° C (Meyer lemon) or -4° C (Bearss Lime).

Therefore, if a freeze below -2.0° C is forecast and fruit is hanging on the tree, it will be necessary to provide some additional level of freeze protection. A relatively simple procedure to provide this protection is as follows: String a set of Christmas lights –old fashioned 7 watt bulbs--on the branches or some other support structure around the tree. Attach remay to the wall and then drape a double or even triple layer of remay cloth (floating row cover) from the wall over the plant. If the temperature is forecast to drop below freezing, turn lights on and leave on for the duration of the freeze. A small tree measuring 2'x 2' would only require 7-10 bulbs whereas a larger tree 6'x6' would require a full string of 25 bulbs. Note: a thermostat (hung in the tree under the remay) set at 0° C could be used to automatically turn the Christmas lights on and off in freezing weather. The heat given off by the bulbs is trapped between the remay and the wall and will prevent freeze damage to the foliage and citrus fruit.

Although large bearing trees can withstand normal winter temperatures on the south coast and need to be protected only during severe cold snaps, it is perhaps a little easier to simply “winterize” the tree at the beginning of the winter season (mid-November) by stringing Christmas lights throughout the branches, connecting them to a thermostat (hung in the tree) set at 0° C and covering the tree with 2 or 3 layers of remay. In this way you can go away during the winter and your tree and fruit will be well protected in the event of a severe cold snap. The remay can be removed from mature trees about mid-April. Note: To rapidly increase the size of small one or two gallon trees in the first one to two years after planting, leave the remay on for an extended period in the spring (eg to early / mid-May).

Pests & Problems

Occasionally **ants or earwigs** may appear on your trees. Regular examination of the foliage should reveal their presence allowing you to physically remove or treat the pests before much damage has occurred. Earwigs and ants may feed on the new flush of leaves on citrus grown against a wall. Simple baited traps can be set out to reduce earwig populations.

Supplies for sale

We sell both remay and pre-wired thermostats to help with growing and winterizing your citrus

- 1) Pre-cut remay
- 2) Thermostats – weatherproof
-prewired and can be set at 0° C to turn lights on when the temperature drops below freezing

Follow-up to

OUR Youtube Video on Lemons and Limes (April 23, 2015):

Growing Lemons and Limes in South Coastal BC, Canada <https://youtu.be/XX-R8sq6-vg>

Growing Lemons and Limes in South-Coastal British Columbia – Background information

Lemons, limes and other acidic citrus such as Yuzu and Sudachi can successfully be grown as in-ground plantings on southeast Vancouver Island and, by extension, in other areas with similar mild winter – cool summer climates such as occur in areas bordering the Salish Sea in BC and Washington and coastal areas of northwestern Europe (France, Low Countries, SW England). At our growing site near Victoria, BC we have grown lemons and limes outside in the ground for over twenty years. Abundant crops of high quality lemons can be picked all year long.

How is this possible?

- The climate of Victoria on Vancouver Island, BC, Canada is often described as a modified Mediterranean climate with cool sunny summers and mild wet winters with on average, fewer than ten nights dropping below -3° C (temperature at which citrus fruit freezes).
- Although citrus' centre of origin is sub-tropical to tropical southern China, acid citrus will ripen to perfection in cool summer climates such as is found in San Francisco as well as Victoria.
- Citrus is commonly grown in areas where winter frost is a normal occurrence, such as in the San Joaquin and Sacramento Valleys of California and the Mediterranean Basin. Most, but not all winter frosts in Victoria are mild and not unlike those occurring in California and the Mediterranean.

- Citrus tolerates relatively harsh winter conditions including extended periods with high temperatures between 5° C and 12° C and lows between 0° C and 5° C combined with short days (less than 8.5 hours) and extended periods of overcast low-light conditions.

What growing sites are best suited for growing lemons and limes in south-coastal BC?

- The climate of our area is marginal for citrus. We are more than 10 degrees latitude north of the most northerly citrus production area in California and there is no history of outdoor, in-ground citrus plantings here.
- With this in mind, it must be recognized that citrus will only succeed in the most favourable locations such as sunny, well-drained wind-sheltered sites against south- or west-facing walls with an overhang.

How can in-ground lemon and lime trees be protected in the event of damaging freezes below -3C?

- Although citrus are fine with 95% of our winter weather, we do occasionally- five to ten nights per winter - experience “arctic outbreaks” where temperatures fall below -3° C (temperature at which citrus fruit freezes) and rarely as cold as -10° C. During these freeze events, citrus must be protected to prevent damage to fruit and / or the tree.
- During freeze events, a citrus tree grown against a south- or west-facing wall (with an overhang) can be protected by stringing a set of ‘old-fashioned’ Christmas lights - 7 watts per bulb or 175 watts per string of 25 bulbs- throughout the tree and covering the tree with a double or triple layer of remay. The remay should be fastened snugly to the wall and weighed down at the bottom. One string of Christmas lights is more than adequate to prevent freeze damage to fruit on a tree measuring 2.5 metres high by 2.5 metres wide.
- The energy cost to protect a hundred or more lemons on a 2.5 by 2.5 metre tree in an average winter is between one and two dollars per year. We also sell pre-wired thermostats to turn on the lights automatically.

(rev. Sept 2018)