

Fruit Trees and More
Nursery & Demonstration Orchard
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GROWING CITRUS IN AN UNHEATED GREENHOUSE 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. They can successfully be grown in the ground outside if they are properly sited against a sunny warm sheltered south or west wall and provided adequate protection during winter cold snaps. They can also be grown in an unheated greenhouse.

Sweet citrus, on the other hand (oranges, tangelos, grapefruit, mandarins and kumquats) require sustained high summer temperatures such as in an unheated greenhouse to produce sweet fruit.

On the South Coast, there is no need to heat the greenhouse unless the temperature is expected to fall below freezing.

Trees should start to bear fruit within two years of planting. Lemon and Lime 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 Citrus in the Ground

Both **sweet citrus and acid citrus** 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 rich compost and add sand if necessary to improve drainage.

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 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 August) when the soil has warmed and is conducive to root growth.

Maintaining fertility for citrus grown in the ground

Conventionally As growth begins in spring (early April) top-dress the tree with 1 tablespoon or slow release fertilizer such as 9-3-9 & micros (Palm & Tropical) and repeating at 4-5 week intervals 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 March 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 Citrus Trees in the Greenhouse

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 -2.0°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).

Sweet citrus being grown in containers in an unheated greenhouse, also need to be protected in the same way.

Pests & Problems

Scale insects and **spider mites** are a common problem on citrus grown in greenhouses or as house plants but not on citrus grown outside. Periodic sprays of a light summer oil on the upper and lower surfaces of foliage should provide adequate control of scale. (sold as 500mL Horticultural Oil Insect Spray – Green Earth- at Home Hardware. Similar product available at Borden's in Victoria). In addition, periodic coarse misting of upper and lower leaves with a ‘Fogg It’ mister cleans the foliage and controls scale insects during the summer months. Alternatively, bi-weekly forceful misting of the upper and lower surfaces of the leaves with a coarse water mist --using “Fogg It” mist nozzle or similar-- (May-Sept) will discourage both scale insects and spider mites.

A physiologic condition called **oedema** (yellow spots on leaves) may occur on the foliage under some conditions. Maintaining even moisture to roots should reduce incidence of this condition.

It is normal for older leaves to turn yellow and drop. Severe drought, or bringing citrus which has been grown outdoors into heated low humidity interior environments can induce **severe leaf drop**.

General chlorosis shown by foliar discoloration, can be caused by either magnesium or nitrogen deficiency.

Interveinal chlorosis can be caused by zinc, manganese, or iron deficiency. Burning of leaf margins is indicative of salt build-up in soil. Leaching the soil periodically will prevent damaging salt buildup.

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

-accepts 120 or 208/240 VAC; temperature range 30° to 110° F or -1° to 42° C

-prewired and can be set at 0° C to turn lights on when the temperature drops to freezing. In HOT weather, this thermostat can also be used for cooling. Check with us for instructions on how to change to cooling setting.

OUR Youtube Video

Growing Lemons and Limes in South Coastal BC, Canada (April 23, 2015): <https://youtu.be/XX-R8sq6-vg>

(rev. Sept 2016)