

# Calamondin: The Versatile Citrus

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 [botany-world.com/calamondin-the-versatile-citrus/](http://botany-world.com/calamondin-the-versatile-citrus/)

## What is calamondin?

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Calamondin (*Citrus × microcarpa*), also commonly known as *calamansi*, *Phillipine lime*, *China orange* and *calamandarin* is a type of acid citrus, from the family Rutacea. The precise origins of calamondin are somewhat uncertain due to its long history of cultivation, but it is believed to have originated in China as a hybrid between a kumquat and a wild species of mandarin. The calamondin was likely carried by traders and travellers along maritime trade routes to other parts of Asia, including the Philippines where it remains hugely popular.

Calamondin is commonly grown throughout the Philippines, both agriculturally and in home gardens. It's used extensively in local Filipino cuisine, both as fresh fruit and in processed forms like juices, jellies, and sauces. Calamondin is also a key ingredient in many traditional Filipino health remedies.

### Synonyms

- Kalamansi
- Philippine lime
- Calamandarin
- Golden lime
- Panama orange
- Philippine lemon
- Chi chieh
- China orange
- Lemonsito

### Calamondin names around the world

- Kalamandinë (Albania)
- Calamondini (Italy)
- Limau kasturi, Limau chuit (Malaysia)
- Ma-nao-wan (Thailand)
- Shikikitsu, Tôkinkan (Japan)
- Szu kai kat (China)
- Kalamunding, Kalamansi or calamansi (Philippines)
- Djerook kastoori (Java)
- Calamondina (Madagascar)

Despite its popularity in Southeast Asia, the calamondin is one of the lesser-known citrus varieties in many parts of the world. In recent years, its popularity has grown due to its year-round fruiting and ornamental appearance, and it is now widely available in garden centres.

Calamondin was introduced to the United States as an 'acid orange' in the early 20th century. This was part of a broader pattern of plant and crop exchange between the United States and its territories, including the Philippines, which came under American control following the Spanish-American War in 1898. During this period, there was significant interest in introducing new and exotic fruits to the United States. Agricultural explorers brought back a variety of plant species, including many types of citrus.

## Appearance

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- **Tree:** The calamondin tree typically grows in a rounded or umbrella shape with a dense canopy, referred to as a *globular* or *spherical* form. Calamondins are considered small trees or large shrubs, usually growing 3-6 metres tall. The calamondin has an evergreen habit, retaining its leaves throughout the year. Overall, the calamondin tree is quite compact and well-suited to container growing, which makes it a popular choice for indoor or patio gardening, especially in regions where outdoor conditions are not ideal for citrus cultivation.
- **Leaves:** Calamondin leaves are classified as 'simple leaves', which means each leaf consists of a single leaf blade, with a bud at the base. The leaf shape is 'elliptical' (oval), which is typical of the citrus family. These leaves are glossy, dark green on the top and lighter green underneath. Leaf length is 3-7 cm, the leaf margin (edge) is smooth and they are arranged on the stem in alternate formation, ie; not directly across from each other on the stem. The leaf apex (tip) is acute, to slightly acuminate (tapering to a pointed end), and the base is cuneate (wedge-shaped).

- **Fruit:** The bright orange fruit is around 5 cm in diameter and has a similar oblate shape to that of a small tangerine (spherical, flattened at the poles). The rind is very thin, loose, smooth and firm and is dotted with oil glands. Inside, the fruit is divided into 8 to 12 segments, with juicy pulp and small seeds. Calamondin fruit is classified as 'hesperidium', which is a specific type of berry with a leathery rind found in the citrus family. Inside, the fruit is divided into 8 to 12 segments, each enveloping a juicy pulp. These segments are surrounded by a somewhat spongy pith. The fruit contains several seeds that are small, pointed, and ovoid or oblong in shape.
- **Flowers:** Calamondins produce what is known as '*perfect flowers*', which means each flower has male and female structures. The sweetly fragrant flowers are small, white and typically 1 cm long. They are arranged singly, or in small clusters in the leaf axils. Each flower is made up of five petals, and numerous stamens. The shape of the flower is '*actinomorphic*', which refers to its radially symmetrical shape. Peak blooming time is spring, but calamondins in temperate zones produce flowers and fruit year-round.

## What does calamondin taste like?

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Photo by Julia Wilson

Calamondins have a unique taste that combines the elements of different citrus varieties. The skin is sweet, while the juicy flesh is tart and tangy, similar to a kumquat.

When the calamondin fruit is eaten whole, the sweet skin balances out the tart flesh. This unique taste profile of sweet and tart makes the calamondin a versatile ingredient in a wide range of dishes and can enhance both sweet and savoury recipes.

The Brix level (denoted by °Bx), is the sugar content of an aqueous solution. One degree Brix corresponds to 1 gram of sucrose in 100 grams of solution, thus representing the strength of the solution as a percentage by mass. The Brix scale is used in the food and beverage industry to measure the approximate amount of sugars in fruits, vegetables, juices, wine, and more.

As you can see from the chart below, the calamondin has a Brix level similar to that of limes.

<b>Fruit</b>	<b>Brix Level (approximate)</b>
Bergamot orange	8 – 10
Buddha's hand	6 – 8
Calamondin	6 – 7
Clementines	12 – 13
<u>Dekopon</u>	13 – 14
Etrog	8 – 10
<u>Finger lime</u>	8 – 10
Grapefruit	9 – 12
Key lime	6 – 8
Khasi papeda	8 – 10
Kumquat	8 – 9
Lemon	8 – 9
Lime	6 – 8
<u>Makrut lime</u>	6 – 8
Mandarins	10 – 13
Micrantha	8 – 10
Orange	12 – 14
Pomelo	10 – 12
Satsuma	12 – 13
Tangerine	12 – 14
<u>Sudachi</u>	6 – 8
<u>Yuzu</u>	9 – 11

## Nutritional information

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The average weight of a calamondin is 30 grams, for reference, a medium lemon weighs approximately 200 grams.

According to the [University of Texas](#), one calamondin is 12 calories and contains 1.2 grams of fibre, 37 mg potassium, 7.3 mg vitamin C, 57.4 mg IU vitamin A, 8.4 mg calcium, 15.5 g water and 3.1 g carbohydrates.

## Uses

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**Food and drink:** In Filipino cuisine, the calamondin used when it is still green and unripe. The tart, acidic taste is valued in many Filipino dishes. It is often used as a souring agent in dipping sauces, soups and marinades.

Uses in Filipino cuisine

- **Kinilaw:** a traditional Filipino dish similar to ceviche, where raw fish, is 'cooked' in an acidic marinade of vinegar and calamondin juice, and mixed with onions, ginger, chilli, and other seasonings for a refreshing and tangy appetiser.
- **Toyomansi:** A popular Filipino condiment consisting of soy sauce (toyo) and calamondin (mansi), often used as a savoury dipping sauce or marinade to enhance the flavours of grilled meats, fish, and other dishes.
- **Sisig:** A traditional Filipino dish made from parts of a pig's head (snouts, jowls and ears) and liver, often seasoned with calamondin and chilli, and served sizzling on a hot plate.
- **Pancit:** A noodle dish, seasoned with calamondin for a tangy flavour, and typically includes meat, vegetables, and sometimes seafood
- **Arroz caldo:** A comforting Filipino rice porridge dish, similar to congee, traditionally made with chicken, rice, and flavoured with ginger, garlic, onions, and garnished with scallions, crispy fried garlic, boiled eggs, and calamondin or lemon juice for a touch of acidity.
- **Siomai:** A traditional Filipino dumpling filled with pork mince, beef, prawns or vegetables, and often served with a calamondin-soy sauce dip for a tangy kick.
- **Aligue fried rice:** A rich Filipino dish made with crab fat, garlic, rice, and seasonings, typically brightened with a squeeze of calamondin for a touch of acidity.

Beyond its use in food, calamondin also finds its way into drinks and cocktails, adding a unique flavour profile and is an essential ingredient in desserts, sweet pickles, and marmalades, showcasing its versatility in both savoury and sweet preparations.

**Food:** In Western cuisine, calamondin can be used when ripe in a similar way to kumquat, lemon or lime and can be used in cakes, marmalades, marinades and drinks. See the end of the article for calamondin recipes.



**Personal care:** Calamondin is used in personal care products in the Philippines. Rich in vitamin C, potassium and antioxidants, calamondin is used as an antiperspirant as well as in skin care to brighten the skin, reduce the appearance of age spots and combat damage from free radicals.

**Household uses:** Calamondin can be used as a natural cleaner due to its high citric acid content. The juice can remove stains, clean surfaces, remove ink stains from clothes and even act as a natural insect repellent.

**Ornamental plant:** Due to its attractive appearance, year-round flowering, fruit set, and compact nature, calamondin is often grown as an indoor or outdoor ornamental plant in Florida and California. If it is grown inside, but you would still like to enjoy its unique fruit, hand-pollination will be necessary.

## How to harvest and store calamondin

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Harvest when the fruit is a vibrant orange. Take care when picking calamondin as the thin skin can easily tear when the fruit is picked (see image below), use a sharp pair of scissors to snip the fruit from its stalk.

Calamondin can be stored for up to a week at room temperature or two weeks in a refrigerator. The juice can be squeezed into ice cube trays and frozen.



The fruit on the left was pulled from the tree, and the one on the right was snipped off to prevent ripping the peel. Photo by Julia Wilson.

## How to grow calamondin

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The calamondin is a sun-loving plant with similar care requirements to other citrus varieties and can be grown in a pot or in the ground. Potted calamondins make a spectacular outdoor feature on a deck or patio, and unlike other citrus varieties, they are frost-hardy down to -6°. Bear in mind that a potted calamondin will not produce as much fruit as one in the ground, however, my three potted calamondins still produce between 20-40 fruits each. I don't have a mature calamondin, but for comparison, in its peak, my kumquat in the ground produced hundreds of fruit.



Here you can see fruit in different stages of development on my calamondin tree. Photo by Julia Wilson.

If planting in the ground, mix in plenty of organic fertiliser, dig a hole twice the width of the tree, and fill it with water. Allow the water to seep into the ground, place the tree in the hole and backfill it with soil. Mulch well, to retain moisture and deter weeds, but do leave a ring around the trunk of the tree mulch free to prevent collar rot.

Citrus trees have shallow roots and do not like plants around the base of the tree, so weed regularly and resist the temptation to plant companion plants around the base.

<b>Light</b>	At least six hours of full sunlight a day
<b>Water</b>	Give a deep water at least once a week, or more often in hot weather. Water less in winter. It is important to ensure the tree has constant moist soil (but not saturated) during fruit set.
<b>Soil</b>	Use well-draining, organically rich soil. Soil pH should be between 6.0 and 7.0. Look for a citrus-specific potting mix or a premium potting mix if growing in pots.

<b>Temperature</b>	Calamondin prefers temperatures between 15°C (60°F) and 29°C (85°).
<b>Fertiliser</b>	Feed with a slow-release fertiliser in spring, as well as a water-soluble citrus fertiliser every month during the growing season (spring to early autumn). Reduce feeding in winter.
<b>Humidity</b>	Moderate, between 40-50%.
<b>Pruning</b>	Prune to maintain shape and size after the fruiting season. Remove dead or diseased branches as needed.
<b>Repotting</b>	Repot every 2-3 years or when the tree becomes root bound. Spring is the best time for repotting.
<b>Pest control</b>	Watch for common pests like aphids, scale, and spider mites. Use a horticultural oil or soap to control these pests.
<b>Pollination</b>	Self-pollinating and does not need another citrus tree for self-pollination.
<b>Harvest</b>	Harvest in mid to late winter when the fruit is bright orange.

## Where to buy calamondin

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Outside of Asia, calamondin fruit is not typically available in fruit shops or supermarkets. However, most garden centres or online nurseries sell grafted calamondin trees for the home grower. I've noticed the availability of calamondin trees increasing in garden centres over the past two years.

It will take up to ten years for your calamondin tree to reach its full size, but smaller trees do produce fruit. It is generally recommended you remove fruit from immature trees so they can put their energy into growth and not fruit production.

## What is the difference between calamondin and kumquat?

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Ripe calamondin on the left and an unripe kumquat on the right. Note the spotty appearance on the skin due to the presence of oil glands. Photo by Julia Wilson

	<b>Calamondin</b>	<b>Kumquat</b>
<b>Origin and distribution</b>	China but now widely cultivated in Southeast Asia, especially the Philippines	South Asia and the Asia-Pacific region
<b>Fruit appearance</b>	Small, round and orange, approximately 2.5-5 cm in circumference	Small, oval approximately 2-4 cm in circumference
<b>Tree height</b>	Mature height of 3 metres	Mature height of 4.5 metres
<b>Plant characteristics</b>	Small, shrub-like and can be kept indoors as an ornamental plant	Larger, and while they can also be kept as ornamental plants, they are often grown outdoors.
<b>Usage</b>	Beverages, desserts, marinades, condiments	Eaten whole, preserves, flavouring in baked goods and drinks
<b>Seed count</b>	Up to 12 per fruit	2-5 per fruit
<b>Leaves</b>	Small and oval, glossy green	Larger, darker and more elongated
<b>Growth rate</b>	Faster	Slower

<b>Fruiting season</b>	Year-round	Early spring
<b>Hybrid status</b>	Believed to be a cross between a kumquat and a mandarin or tangerine	Own genus (Fortunella) within the citrus family

You may notice that online plant retailers often refer to calamondin as 'kumquat calamondin', there is no such thing. While the calamondin is a hybrid of kumquat and a wild mandarin, it is a variety within its right now. This creates confusion for buyers, the tree is either a kumquat or a calamondin.

- Calamondin Green**  
\$59.99  
Flower Power Gar...
- Dwarf Calamansi-Calamondin (OLD ONLY) | Ross Creek...**  
\$49.00  
Ross Creek Tropic...
- Dwarf Kumquat Calamondin Fruit Tree**  
\$39.00  
Daleys Fruit Tree ...  
★★★★ (4)  
Free returns
- Calamansi/Calamond /Philippine lime/Kalamansi/...**  
\$12.53  
Etsy  
Was \$19.05
- Calamondin - Variegated**  
\$45.00  
Diggers Club
- Kumquat Calamondin Fruit Tree - Citrus...**  
\$39.00  
Daleys Fruit Tree ...  
★★★★ (3)  
Free returns

About these results

- Dwarf Kumquat Calamondin Fruit Tree**  
3.5 ★★★★★ 4  
Fruit · Ornamental · Dwarf  
\$39.00  
Daleys Fruit Tree Nursery  
\$21.43 delivery · Free 30-day ret...  
Trusted store
- Calamondin Miniature Orange 1 Gal | Botaniful**  
\$13.53 + tax (USD 9.00 + tax)  
Earth&Jungle - botaniful  
Free delivery
- Kumquat Calamondin Fruit Tree - Citrus Japonica × Reticulata**  
5.0 ★★★★★ 3  
Fruit · Ornamental  
\$39.00  
Daleys Fruit Tree Nursery  
\$21.43 delivery · Free 30-day ret...  
Trusted store
- Dwarf Calamondin Cumquat Fruit · Dwarf**  
\$54.40  
Garden Express Australia  
\$16.90 delivery  
Trusted store
- Calamondin Green Fruit · Ornamental**
- Citrus cumquat 'calamondin' Fruit**
- Calamondin - Variegated Fruit**
- Cumquat Calamondin - Calamansi Dwarf Fruit · Ornamental · Dwarf**

## Recipes



I find hand-squeezing calamondin is the easiest way to juice them as they are too small for traditional citrus juicers. You will end up with a little pulp in the juice, but this can be sieved out. Each calamondin will produce approximately 5 ml of juice. So a recipe calling for 250 ml of calamondin juice will require 50 calamondins.



Here is the juice of one calamondin, which is approximately 5 ml. Photo by Julia Wilson.

1 cup = 250 ml

<b>Calamondin marmalade</b>	<p><i>Ingredients:</i></p> <ul style="list-style-type: none"><li>• 1/2 kg calamondins</li><li>• 1 lemon</li><li>• 4 cups water</li><li>• 4 cups sugar</li></ul> <p><i>Instructions:</i></p> <ol style="list-style-type: none"><li>1. Cut calamondins in half, remove seeds, and thinly slice.</li><li>2. Slice lemon and remove seeds.</li><li>3. Combine fruit and water in a large pot, and let stand overnight.</li><li>4. The next day, bring to a boil, reduce heat, and simmer for 1 hour.</li><li>5. Stir in sugar until dissolved.</li><li>6. Bring to a boil, and cook until mixture reaches 220 degrees F (105 degrees C) or until a small amount of syrup dropped into cold water forms a soft gel.</li><li>7. Remove from heat, and let cool for 5 minutes.</li><li>8. Ladle into hot sterile jars, and process to seal.</li></ol>
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<p><b>Calamondin cooler</b></p>	<p><i>Ingredients:</i></p> <ul style="list-style-type: none"> <li>• 1 cup calamondin juice (around 50 calamondins)</li> <li>• 1 cup sugar</li> <li>• 6 cups cold water</li> <li>• Ice</li> </ul> <p><i>Instructions:</i></p> <ol style="list-style-type: none"> <li>1. Mix all ingredients together in a large pitcher.</li> <li>2. Serve chilled over ice.</li> </ol>
<p><b>Calamondin chicken</b></p>	<p><i>Ingredients:</i></p> <ul style="list-style-type: none"> <li>• 4 boneless and skinless chicken breasts</li> <li>• 2 tablespoons olive oil</li> <li>• 1/2 cup chicken broth</li> <li>• 1/4 cup calamondin juice (around 12 calamondins)</li> <li>• 1 tablespoon calamondin zest</li> <li>• 1 tablespoon honey</li> </ul> <p><i>Instructions:</i></p> <ol style="list-style-type: none"> <li>1. Season chicken with salt and pepper.</li> <li>2. Heat oil in a skillet over medium heat, and cook chicken until browned and cooked through.</li> <li>3. Remove from skillet.</li> <li>4. Add broth, juice, zest, and honey to the skillet, and bring to a boil.</li> <li>5. Cook until sauce is reduced by half.</li> <li>6. Return chicken to the skillet, and coat with sauce.</li> <li>7. Serve hot.</li> </ol>
<p><b>Calamondin vinaigrette</b></p>	<p><i>Ingredients:</i></p> <ul style="list-style-type: none"> <li>• 1/2 cup calamondin juice (around 25 calamondins)</li> <li>• 1/2 cup olive oil</li> <li>• 2 tablespoons honey</li> <li>• Salt and pepper to taste</li> </ul> <p><i>Instructions:</i></p> <ol style="list-style-type: none"> <li>1. Combine all ingredients in a jar with a tight-fitting lid.</li> <li>2. Shake well to combine.</li> <li>3. Drizzle over salad greens.</li> </ol>



<p><b>Candied calamondins</b></p>	<p><b>Ingredients:</b></p> <ul style="list-style-type: none"> <li>• 1 cup of calamondins</li> <li>• 2 cups of sugar</li> <li>• 1 cup of water</li> </ul> <p><b>Instructions:</b></p> <ol style="list-style-type: none"> <li>1. Rinse the calamondins thoroughly. Slice them into thin rounds and remove the seeds.</li> <li>2. In a medium-sized saucepan, combine the sugar and water over medium heat in a medium-sized saucepan. Stir until the sugar completely dissolves.</li> <li>3. Add the calamondin slices to the saucepan. Reduce the heat to low and let them simmer for about an hour. Stir occasionally to ensure that all the slices are evenly coated in the syrup.</li> <li>4. Using a slotted spoon, carefully remove the candied calamondin slices from the syrup and place them on a wire rack to cool and dry. This could take a few hours or, for best results, leave them overnight.</li> <li>5. Once completely dried, the candied calamondins can be stored in an airtight container for up to two weeks.</li> </ol>
<p><b>Calamondin sorbet</b></p>	<p><b>Ingredients:</b></p> <ul style="list-style-type: none"> <li>• 1 cup of calamondin juice (around 50 calamondins)</li> <li>• 1 cup of sugar</li> <li>• 2 cups of water</li> <li>• Zest from 10 calamondins</li> </ul> <p><b>Instructions:</b></p> <ol style="list-style-type: none"> <li>1. Zest about 10 calamondins and set the zest aside. Then, cut the calamondins in half and juice them. You should have approximately 1 cup of juice.</li> <li>2. In a medium saucepan, combine the sugar and water. Heat over medium heat until the sugar has completely dissolved. Remove the pan from the heat and stir in the calamondin zest. Allow this mixture to cool.</li> <li>3. Once the syrup is cool, mix in the calamondin juice.</li> <li>4. Place the mixture in the refrigerator and allow it to chill completely. This should take a few hours, but it can be left overnight for best results.</li> <li>5. Following the instructions of your ice cream maker, churn the mixture until it reaches the consistency of soft-serve ice cream. This usually takes about 20-25 minutes.</li> <li>6. Transfer the sorbet to an airtight container and place it in the freezer for at least 2 hours to firm up before serving.</li> <li>7. Scoop into bowls or cones.</li> </ol>

<p><b>Calamondin simple syrup</b></p>	<p><i>Ingredients:</i></p> <ul style="list-style-type: none"> <li>• 1 cup of calamondin juice (50 calamondins)</li> <li>• 1 cup of sugar</li> </ul> <p><i>Instructions:</i></p> <ol style="list-style-type: none"> <li>1. Slice the calamondins in half and squeeze them to get the juice. You'll need about 1 cup of calamondin juice.</li> <li>2. In a saucepan, combine the calamondin juice and sugar.</li> <li>3. Put the saucepan over medium heat. Stir constantly until the sugar completely dissolves.</li> <li>4. Once the sugar is fully dissolved, remove the saucepan from the heat and let the syrup cool. After it has cooled, you can store it in a clean glass jar or bottle in the refrigerator.</li> </ol>
<p><b>Calamondincello</b></p>	<p>A twist on the traditional limoncello which is an Italian liqueur</p> <p><i>Ingredients:</i></p> <ul style="list-style-type: none"> <li>• 40 – 50 calamondins</li> <li>• 1l bottle vodka</li> <li>• 3 cups caster sugar</li> <li>• 4 cups boiling water</li> </ul> <p><i>Instructions:</i></p> <ol style="list-style-type: none"> <li>1. Carefully peel the calamondins with a zester or vegetable peeler, ensuring there is no white pith on the peel. Note: Use only the outer part of the rind. The pith, the white part underneath the rind, is too bitter and would spoil your limoncello.</li> <li>2. Place the calamondin peels in a large glass jar (1-2 quart). Pour the vodka over the peels and cover with a tight-fitting lid. Steep the calamondin peels in the vodka for 2 weeks at room temperature.</li> <li>3. Stir the water and sugar in a large saucepan over medium heat until the sugar dissolves, about 5 minutes. Cool the syrup completely.</li> <li>4. Pour the sugar syrup over the vodka mixture. Cover and let stand at room temperature overnight.</li> <li>5. Strain the 'calamondincello' through a mesh strainer. Discard the peels. Transfer the to bottles. Seal the bottles.</li> <li>6. Best stored and served straight out of the freezer.</li> </ol>