

Growing Your Own Food at Home in Salisbury Series

Pack 1 Notes 2 GROWING CITRUS



Citrus have been grown for thousands of years and groves were established early in City of Salisbury. Adelaide's climate suits many citrus and with a little work on improving drainage and soil condition they grow well. They make great feature trees, can be espaliered, grown as hedges and in pots.

Selecting the best tree

These evergreen trees are planted in the warmer months, so even if you buy one in winter wait until the soil is warmer -prepare the soil whilst you wait. Choose a variety for you preference, pollination, season or use. Multiple grafted can be expensive and difficult to manage growth balance so if you are starting out avoid these if you are a beginner.



- Select the greenest, healthiest and best growing of the batch. Check the bud/graft union is strong and well united.
- Select the shape for the planned growth structure. If growing in open it will be pruned in an inverted cone shape and needs two or three prominent branches. If growing as an espalier select a single trunk or two branches one.
- Avoid plants with many tiny fruit hanging on it.

Site preparation

Location: Sunny, warm and protected from the wind

- Citrus trees require some (5) hours of sunshine, or open shade. This could be divided into morning, midday or afternoon sun.
- Can tolerate the harshest western sun
- Cumquats benefit from open shade to avoid sunburnt fruit
- Sub-tropical varieties benefit from a norther facing wall as a heat sink
- Protect citrus branches and trunks from sunburn by painting exposed trunk and branches with water based white paint

In-ground

- Citrus trees do not tolerate wet feet
- Check soil pH. Slightly acidic is preferred. If can't lower very alkaline or saline soil grow in pots
- Prepare the ground 2-10 weeks in advance of planting



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In pots

Citrus grow well in pots though the overall growth will be limited, this can be very helpful for small gardens.

- Choose a durable pot – plastic or glazed terracotta (wine barrels will rot). Plastic are light weight and usually have adequate drainage holes. Do NOT block drainage holes
- Ensure maximum drainage. Some pots will need more drainage holes drilled into them
- Place pot on pot feet to rise off the ground. Do NOT sit in saucer
- Place a piece of shade cloth in the bottom to cover holes –keep out slugs
- Size matters – Do NOT over pot
- Step up gradually – 20cm, 30cm, 40cm, 50cm, 60cm, 100cm, 1 cubic metre. Pot up in spring
- Use highest grade potting medium - NOT garden soil.



Advantage: Pots can be relocated, watering and fertilising is easily managed.

Potting mix for citrus in pots

Either use a premium potting mix or potting mix with equal parts sand to keep its structure and good drainage. Premium potting mix has sand in it already hence will last a few years before it needs replacing. Regular potting mix will slump and need replacing annually, as drainage will become a problem. You can prolong the life of regular potting mix by mixing it with equal parts sand. Add clay 2kg per 100 litres of mix to help retain water. As this makes it heavier, add up to 20% perlite to reduce the weight and maintain good drainage.



Note: Don't add fertiliser beyond what is in the potting mix at planting, wait until the plant is established.

Preparing the soil

Prepare the ground 2-10 weeks in advance of planting

- In poor draining areas raise the bed 20-50cm
- In clay soils: add gypsum to break down clays
- With clay and sandy soils
 - Add mature compost, well-rotted animal manures
 - Mushroom compost is ideal with a neutral pH
 - Mix well with the natural soil

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Planting

Make sure the plant is well watered before planting

- Knock from the pot
- Carefully wash off all the soil from the roots, and unravel any roots that are entangled
- Trim off any broken roots, excessively long ones
- Soak in weak liquid fertiliser
- Place in the hole or pot -set at exactly the same level as the original soil level
- Carefully fill medium around roots, jiggle the plant to settle the soil
- Check that plant is at original soil level and top up with extra soil or raise as necessary
- Water in well and ensure water drain quickly
- Cover bare soil with mulch. Keep away from stem
- Stake if windy site
- Do NOT add fertiliser at planting as this can burn the roots
- DO NOT dig a bowl shaped hole in clay – it will fill with water in winter
- Do make a 1 metre dam for summer watering
- Add mulch to the dam, keep clear of the trunk



1. Preparation



2. Remove from pot



3. Soak in weak Seasol



4. Clean bare roots



5. Fill to same soil level



6. Water in well



7. Tie to stake

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Fertilising



Citrus are heavy feeders. Either organic or chemical fertilisers can be used. As can liquid fertilisers, but these will need to be applied more frequently. Feed around the drip line and water in well.

Organic

Pelletised chicken manure such as Neutrog's "Rapid Raiser" or "Gygantic"

- Apply monthly throughout the year. Approximately 100gm per 100 litre pot
- More during spring and summer months
- Do Not feed when flowering- wait until flower set to fruit
- Remove mulch and lightly scatter over root zone. Keep away from trunk

Good Compost and well-rotted animal manures – pigeon, chook, sheep, cow, horse etc. seaweed fertilisers can be used. Add blood and bone and Sulphate of Potash at recommended rates in addition to these. Apply at same rates as pellets. Trace elements may also be used periodically- potting mixes should have enough for a while.

Chemical

These are

- Check the N:P:K on the packet and use one where K (Potassium) is higher than the N (Nitrogen), approximated 2% N is good.
- Generally used to correct deficiencies such as Nitrogen, Iron< Magnesium, or Zinc
- Apply in the warmer months only
- Citrus are heavy feeders and like Super Phosphate
- Apply at rated recommended only. For pots use minimal amount

Watering

Citrus don't like cold wet roots but don't let the soil dry out either, as this can cause fruit drop. Less watering will be required in winters but you may still need to water depending on the rainfall and your soil type.

- Water when the soil surface is just beginning to dry out or when the plant is just beginning to stress (leaf curling)
- For new plantings consider the root ball size as purchased. Water to saturate the root –ball, even if the surrounding is damp
- In summer make a dam 1 metre around and fill weekly - weather



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dependant

- Pots – fill pot rapidly and allow to drain, then fill again. Do NOT allow the potting medium to dry out or it may not wet thoroughly. If this occurs a wetting agent will need to be used. You also may need to change the potting mix
- Water to cover the root zone – generally to the drip line (the tree canopy)
- For pots feel their weight to monitor the water levels as their water level is progressively reducing after watering
- Ensure mulch is damp too

Mulching

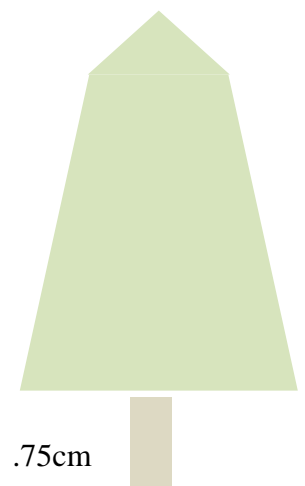
Mulch is essential all through the year to maintain moisture and protect the roots. It can also feed the plants as it decomposes. A thicker layer will be necessary over summer months.

- Use pea straw, Lucerne, hardwood chips, leaf litter or shredded paper.
- Avoid toxic material such as permapine sawdust
- Approximately 20 – 80mm. Less in winter and progressively more in winter
- Keep it away from the trunk
- Make sure rain can penetrate it
- Check that you are deep watering as if shallow watering the wet mulch may encourage shallow roots to develop
- Be careful with cultivation (including weeding) as citrus have very shallow roots

Pruning

Every tree will need to be pruned particularly young ones to shape them. With mature trees you will keep height manageable and open the centre to let sunlight in the canopy to develop flower, leaves and fruit. A light annual prune in later winter early spring when the trees are flowering and setting next year's fruit crop (you will need to decide which branches fruit). Don't prune the whole canopy as if it were a hedge as you will not get fruit.

- Remove dead wood
- Remove crossed, bent, or overly long or complex branches
- Remove damaged branches
- Open up the centre to let sunlight in. Paint exposed branches with white acrylic paint
- Maintain the shape and optimal height of the tree
- Prune out strong vertical "water" shoots
- Prune up to height of 75 cm from ground to allow air flow
- Paint any exposed branches with a weak water-based white paint



Water shoots are to be removed

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Spraying

There are fungal diseases and insect infestations that can impact fruit production and quality which require spraying. Correcting mineral deficiencies will also require spraying.

- Ants, aphid, gall wasps, leaf miners, mites, thrips, scales and weevils are problems for citrus.

Mineral deficiencies are best dealt with early to be effective. Common deficiencies are: Nitrogen, Iron, Magnesium and Zinc. These can be corrected through soil additives.

Caution: Avoid systemic chemical that remain in the environment and can destroy good organism such as bees, animals and humans over a long period. Read the instructions and only use as directed.

Infestations:

Ants, Aphids, Mites, Thrips, and Scale: Removing the ants will help. Pyrethrum and Success Ultra insecticides, Pest oil.

Gall wasp, Elephant Weevil and Leaf Miner:

- Gall wasp causes lumps in citrus twigs – cut off and destroy. Or in early October, use a vegetable peeler to slowly peel back the skin to expose young wasp.
- Weevils eat the bark and bore hole in the trunk of citrus – search and destroy t dusk and dawn in October
- Leaf miner makes silver trails under young citrus leaves in Autumn. Avoid new growth in Autumn by holding back fertiliser, or simply squash the grubs, or cut off infected twigs. Use Pest Oil if heavily infested.



Gall wasp



Weevils

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Deficiencies:

Small yellow or vined leaves, small or no fruit can be corrected with fertilisers (NPK or Complete D) and /or foliar sprays (iron, nitrogen, phosphorus, potassium, magnesium, zinc). Potash is essential for fruit production. Citrus are heavy feeders for Nitrogen –they love aged pigeon manure. Iron deficiency is common in alkaline soil, (as in City of Salisbury) and a foliar feed of iron chelates is helpful.



+ Iron



+ Nitrogen

Mulching with well-made composts and decomposed animal manures helps feed plants.

Fruit management

- Limit fruit crop in the first 1-3 years to nil or just a few
- Always thin heavy crops at half growth – maximum 2 fruits per bunch
- Remove smallest or damaged fruit – e.g. codling moths, scab etc.
- Thinning improves quality, avoids alternative year cropping
- Cover with light shade-cloth if sunburn is likely >36degrees
- Fruit flavour are re best when picked at fully ripe stage
- Learn to recognise ripeness – subtle colour changes



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Citrus Foliar Spray to Correct Mineral Deficiencies – Peter Cundell (ABC)

Mottled leaves are often typical of a mineral deficiency. The fruit trees suffering in the vegie patch include a sweet orange tree, a cumquat and a 'Kaffir' lime, which is probably suffering from either zinc or magnesium deficiency, but how do you quickly overcome these deficiencies in plants. The answer is to make a foliar feed. Most of the ingredients needed to make this foliar feed recipe are available from garden centres.

FOLIAR FEED FOR CITRUS AND OTHER FRUIT TREES AND LEAF VEGETABLES:

To 10 litres of water - an almost brimming bucket - add the following:

- ½ a cup of fish emulsion - mainly as a rich source of nitrogen.
- 1 cup of seaweed concentrate - contains a wide spectrum of trace micro-elements.
- 3 teaspoons of zinc sulphate.
- 3 teaspoons of Epsom salts (magnesium sulphate)

Mix well. This is a very strong mixture - far too strong to apply directly to the foliage of plants. In fact it could damage or even kill young plants if applied at this strength.

To use as a foliar feed, dilute one part of the mix by adding ten parts of water. (For example – add 1/2 litre of mix to roughly 5 litres water).

Spray this weakened mixture over and under the foliage of citrus trees, most other fruit trees and leafy vegetables such as cabbage, cauliflower, broccoli and silver beet. Also over only well-developed sweetcorn, pumpkin, zucchini and tomato plants.

Never use at a greater strength than suggested. If in doubt apply an even weaker mixture. Always thoroughly water trees and other plants both before and after a foliar feed. The best time to apply is during the cool of the day, preferably late afternoon and always during the main growing season. Apply every 3 weeks where soils are impoverished or sandy.

Valuable mineral elements are absorbed through the leaves while any mixture that drips on to the soil will increase fertility.

Any unused concentrate can be stored in child-proof containers and kept in a secure place, out of reach of children. It should be marked as a concentrate to be used only after being heavily diluted with water.

Please note:

This recipe is suggested in good faith as a means of supplementing normal fertilisers, especially for plants showing nutritional deficiency problems in well drained, sandy or impoverished soils. No responsibility is accepted for the advice given and for the ingredients used in the recipe or the manner in which they are used or stored.

Adapted from Ross Pitman's notes from the Grow your Own Food workshop series, 2017

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