Part 3

Essential Plant Info

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Key to chart symbols

Form			
	Groundcover	Bush	Tree
	Dw = Dwarf	F = Full size	
Soil type			
	Well drained	Medium	Heavy
Sunlight			
	Full sun	Partial shade	
Moisture levels			
	Tolerates dry	Average	Must be moist

Almond (*Prunus dulcis*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil Type	Sun	Moisture	Shelter	Plant	Harvest
	D	Dw 4.5 x 4 F 6–10 x 6	4–5 5–7	Y				Y	Autumn to early spring	Late Feb/March

Site

- Needs an open, sunny site, sheltered from spring frosts and wind at flowering. Likes hot summers. Tolerates drier conditions than other stone fruit.
- Needs dry weather at pollination time and during the growing season. Humidity causes diseases. Best suited to conditions in the east of the region.
- Does not tolerate poor drainage.

Care

- Plant in late autumn or early spring.
- Be careful not to damage the taproot.
- Needs nitrogen – mulch with well-rotted manure.
- Dwarf is self-fertile. Others are cross-pollinated (by honey bees) – plant varieties that bloom at a similar time.

Fruiting spur

Vase shape

Modified central leader

Adapted from *Fruit Gardening in NZ*

Training & pruning

- Train as a *vase* shape or *modified central leader* (see 'Part 2 – Training' for details). Also good as *espalier*.
- Once the shape is established, prune the tree in summer, in dry weather, and seal all cuts with pruning paint to minimise diseases.
- Bears fruit on 1-year-old shoots and on spurs on 2- or 3-year-old wood – cut back a quarter of the shoots that have already borne fruit to a new bud, to stimulate the growth of new fruiting wood.
- Cut out weak or criss-crossing branches, and dead or diseased wood.

Companions

- Clover, thyme, garlic, chives, hyssop, tansy.

Harvest

- Takes about 3 years to produce nuts.
- Nuts ripen late summer/early autumn.
- Harvest when the shells start to crack – clean off any dirt and pieces of hull, then air dry them and store in a cool, dry place.

Health

- Eat fresh or use roasted – great added to vegetable or fish dishes, in sweets and desserts.
- High in healthy oils, protein, vitamins B and E, antioxidants, minerals.

Recommended varieties

CY750	Fatnut/All-In-One
403	Fabin

Monovale – excellent pollinator for all varieties, hard-shelled (hard to open), 'marzipan' taste

Apple (*Malus* spp.)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	Dw 2–3 x 4 F 5–6 x 5	3 10	Y				Y	Autumn to winter	Autumn

Site

- Needs a sunny site, sheltered from strong winds – moderate summer, winter chill.
- Tolerates a range of soil types, and prefers slightly acidic conditions.
- Needs good air circulation to prevent diseases.

Care

- Plant in winter and mulch well.
- Tie to stakes for the first couple of years.
- Water regularly while it's fruiting.
- Cross-pollinated by bees and other insects – if there's no apple trees in your neighbourhood, plant two varieties or a multi-graft.
- Thin the fruit in early summer so it grows to a good size.

Training & pruning

- Best as a *central leader*. Can be trained as *espalier* or *cordon* (details in 'Part 2 – Training').
- Once the tree is established, prune to remove crossing branches, dead or diseased wood, and to encourage new fruiting wood.
- Bears fruit on spurs and end buds (see diagrams). Fruit buds develop on 2-year-old wood, so keep new shoots for two seasons, then cut them back.
- Shorten or thin out about a quarter of the older fruiting wood each winter.
- Shorten the strong framework arms to an outward-facing leaf bud (see diagram).

Companions

- Replace grass with spring bulbs, chives, garlic, tansy, comfrey, alyssum, nasturtium.

Harvest

- Fruits within 2–4 years.
- Pick fruit when they have developed full colour – lift them gently from the tree so you don't damage the fruiting spurs.

Health

- Use fresh, cooked, bottled or frozen.
- Dry for use in cereals, trail mix, snacks.
- Best health benefits if you don't peel the skin. Good for vitamins A, B and C, minerals, fibre, antioxidants.

Recommended varieties

Buy disease-resistant varieties.

Early: Akane, Discovery, Gravenstein

Mid: Captain Kidd, Dayton, Egremont Russet, Prima, Worcester Pearmain

Late: Belle de Boskoop, Jonagold, Liberty, Kidd's Orange Red, Merton Russet

Very late: Bramley's Seedling, Sturmer Pippin, Cornish Aromatic

Graft on a different variety: *www.sces.org.nz/pmwiki.php/Content/Grafting*

Central leader

Fruiting spur

Flower buds (rounded)
leaf buds (pointed)

Adapted from *Fruit Gardening in NZ*

Apricot (*Prunus armeniaca*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	4–6 x 4–8	7–8	N				N	Early winter	Early to late summer

Site

- Needs full sun. Likes a cool winter, but not severe frosts or wet weather during spring. Humidity causes brown rot.
- Well-drained soil is essential. Plant on a mound if the soil can get waterlogged.

Care

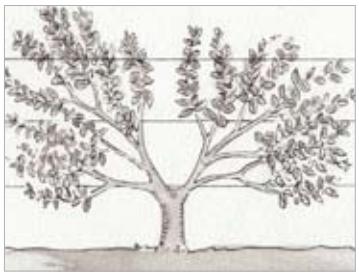
- Plant in early winter, being careful not to damage the roots. Don't try to shift it later.
- At planting, shorten some of the shoots to two or three buds.
- Water frequently while young, and a month before harvest.
- Mulch in early summer to keep weeds down and retain moisture.
- Self-fertile, but you'll get more fruit if it's cross-pollinated with another variety.

Training & pruning

- Best shape is *vase* – keep the centre open. Also great trained as a *fan* against a wall or fence (see 'Part 2 – Training').

Fruiting spur

Fan shape



Adapted from *How to Make a Forest Garden*

Vase shape

Adapted from *Fruit Gardening in NZ*

- Prune in dry weather in summer, after harvest.
- Shorten the limbs every year and regularly thin out the strong growth to keep the fruiting wood near the centre of the tree. Remove criss-crossing branches.
- Fruiting spurs form on the previous season's growth and last for 3 or 4 years. Establish a cycle of renewing the fruiting wood. Each summer:
  - remove worn-out laterals
  - space out new shoots
  - shorten weak shoots by two-thirds.
- Seal all cuts with pruning paint.

Companions

- Nasturtium, garlic, chives, marigold, hyssop, forget-me-not.

Harvest

- Bears fruit in 2–4 years.
- Check the fruit daily when ripening. Pick when fully ripe, very carefully so they don't bruise.
- Use fresh, add to desserts or yoghurt, cook for jam, or bottle or freeze.
- Dry for use in cereals, trail mix, snacks.

Health

- Very high in vitamin A, good for vitamins B and C, potassium and antioxidants.

Recommended varieties

- Katy Cot – self-fertile
- Royal Rosa – pollinates the others
- Sundrop + Trevatt – pollinate each other

Blueberry (*Vaccinium* spp.)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D/E	3 x 2	1.5–2	Y				Y	Autumn to winter	Midsummer

Site

- Prefers sun, with afternoon shade in summer. Needs winter chilling, and shelter from wind and spring frosts. Doesn't do well in the eastern parts of the region.
- Needs well-drained, acidic soil that can hold moisture during the summer – plant on a ridge if there's any chance of waterlogging. Does not like clay – add gypsum, organic matter and sand.

Care

- A very fussy plant.
- Plant in winter in a hole 30cm deep and wide, with leaf mould added to the soil; add flowers of sulphur to make the soil more acidic, or use a container (45cm diam.) of acidic potting soil.
- Very shallow rooting. Needs moisture at all times during the growing season, but doesn't tolerate waterlogging.
- Spread a 10cm deep mulch of sawdust, leaf mould or pine needles to keep the roots cool and moist, and to supply nutrients. Add 5cm more mulch every year, and some extra nitrogen in spring and midsummer.
- Pinch off the flowers in the first year so the plant can get established.
- Protect from birds.
- Pollinated by bumble bees. Will produce bigger fruit if cross-pollinated with another variety.

Training & pruning

- Plant 1m apart to form a hedge, or include in mixed plantings.
- Prune in winter.
- Fruit forms on 1-year-old wood.
- Cut out dead or diseased wood, and weak or criss-crossing branches.
- Remove wood that is 4 years old, to encourage the growth of new shoots from the base of the plant.
- Once mature, prune again in summer, shortening any long shoots so new fruit buds grow near the centre of the plant.

Harvest

- Takes 2–4 years to bear fruit.
- Best flavour is a few days after the berries have turned blue. Pick by rolling them gently between the thumb and finger.
- Eat fresh, freeze (they naturally free-flow), add to smoothies, yoghurt, desserts and baking, bottle, or make jam or chutney.
- Dry them to use instead of raisins.

Health

- High in vitamins A, B, C, E and minerals, very high in antioxidants, and have anti-inflammatory properties.

Recommended varieties

Rabbit eye: Tifsblue, Powder Blue, Delite
Highbush: Duke, Dixie, Bluecrop

Plants for free

Multiply your plants by *layering*:

- In early autumn, choose a long, healthy young stem and peg it down in the soil.
- Keep it moist until it develops roots (up to 18 months), then cut the new plant free and keep it in a pot in a sheltered place until planting time.

Boysenberry, Blackberry (*Rubus* spp.)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
Canes	D	2 x 2	2.5	Y/N				Y	Autumn	Summer to autumn

CAUTION:
Wild blackberries are a vigorous, painfully thorny weed. Don't get cuttings from the wild – buy cultivated Blackberry varieties.

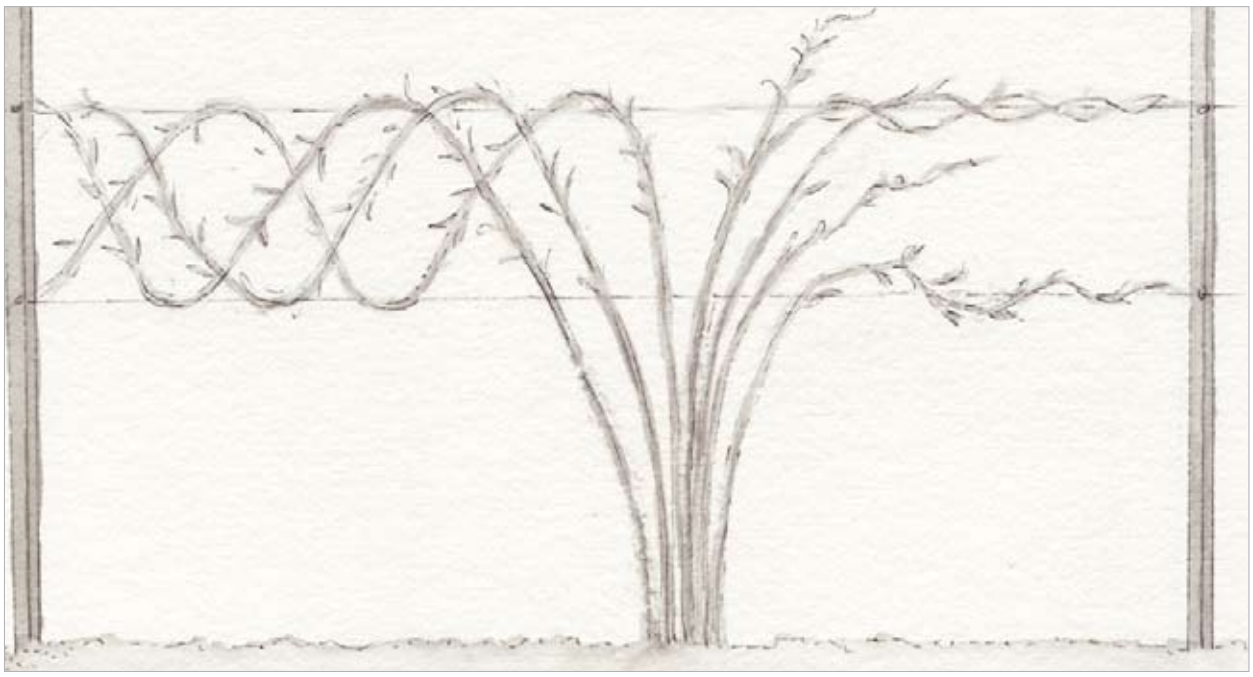
Site

- Needs a sheltered position – full sun helps with flavour, but happy in part shade.
- Soil needs to retain moisture but NOT be heavy or waterlogged.

Care

- Needs a support structure. Set up a strong trellis or set of 3 wires, at least 1.8m high, with the first wire 0.5m from the ground. (Don't plant against a fence – suckers will come up on the other side.)
- Plant in autumn, along with plenty of well-rotted manure and compost. Space the plants out well for good air circulation.
- At planting, shorten the canes to 15cm so the roots can get established.
- Water regularly during summer – dryness affects the current crop AND the next year's canes (an irrigation system is good for regular, light watering).
- Has shallow roots, so hand weed carefully and keep well mulched.
- Add a little fertiliser in August, and also in late summer before the new canes grow.
- Pollinated by bees and wind. Some need cross-pollination with another variety.

Train the canes between two wires – you can weave, tie or twist them in place



Training & pruning

Erect-growing types

- Tie the canes up against the support structure. Head back the new growth at 2m high and 1m wide, to encourage the development of fruiting laterals.
- A fan shape will let the sun reach all the fruit – choose the best four or six canes and cut each one at 15cm past the top wire, spacing them 10–15cm apart as fan 'ribs'. Thread them in and out between the wires and tie them in place.

Trailing types

- Tie, twist or weave the canes onto horizontal wires (see diagram).
- First-year canes grow leaves early in the season, and then form flower buds in the late summer for the next season's fruiting. In the first summer, thread the canes in and out of the wires and tie them in place.
- In the second summer, train the new canes straight up through the centre and fasten them along the top wire. This will keep them separated from the fruit-bearing canes, and help keep the plant under control – especially important for Blackberries.
- Immediately after fruiting, cut the fruited canes down to ground level and weave the new canes in and out of the lower wires.
- Remove all prunings from your property to reduce the risk of diseases and pests.
- Make sure you don't let the plant's tips touch the ground, where they could sprout roots and become a thicket.

Companions

- Marigolds, chives.

Harvest

- The trailing types fruit between December and January. Blackberry fruits in late summer to autumn.
- Pick them when they are dark coloured and have softened. Handle them gently so they don't squash.
- Eat fresh, use in desserts, yoghurt, ice cream, drinks, or bottle, make jam.

Health

- High levels of vitamins A, C and E, folic acid, antioxidants, minerals and fibre.

Recommended varieties

Boysenberry: Tasman, McNicholl's Choice, Mapua

Blackberry: Black Satin, Navaho

Plants for free

Multiply your plants by *tip layering*:

- In early autumn, choose a strong healthy cane on a disease-free plant and bring its tip down to soil level. Dig a hole in this spot, with the near side angled towards the parent plant.
- Bury the stem tip and peg it down with a piece of wire.
- When the tip shows new growth in spring, cut the new plant from the parent plant and tie the parent plant back upright.

Tip layering

Cape gooseberry (*Physalis peruviana*)

Type	Deciduous/ Evergreen	HxW (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
Trailing or bush	E	1–2 x 2	1.5	N				Y	Spring	Autumn

Site

- Copes with drought and a little shade.
- Needs shelter from heavy frosts.
- Prefers light well-drained soil, but copes with clay if it's well drained.

Care

- Easy to grow, and is better not pampered with fertiliser or watering. Over-watering leads to fungal diseases.
- Its papery husks protect the fruit from most pests, and it seldom has any problems.
- Good in containers amongst other pots, and in the ornamental border.
- Plant 90cm apart in the ground, or in 30cm (diam.) pots.
- Self-fertile, easily pollinated by bees and other insects, as well as by wind.

Training & pruning

- At planting, pinch out the new shoots to encourage the development of a more compact, bushy shape.
- Provide support (you could stake it like a tomato) or help it scramble up into other taller shrubs.
- No ongoing pruning needed – just cut back the stems after fruiting has finished.

Harvest

- Produces bright yellow/orange fruit in autumn of the first year.
- Fruit is enclosed in papery husks – great fun for children to open and eat! But make sure they don't eat them when unripe, as they are poisonous then (like green tomatoes).
- Let the fruit ripen until it's a deep yellow/ orange colour and the husk is a pale colour. They fall off at the slightest touch when they are ripe.
- Harvest in dry weather. Fruit will last for weeks if you leave it inside its husk.
- Eat fresh, dry into 'raisins', or cook for a dessert topping or jam (has a high pectin content), or for a sauce with meat.

Health

- High in vitamins A, B and C, protein, phosphorous and iron.

Plants for free

- The plant can survive the winter in milder areas, but it fruits best on new plants.
- Transplant self-sown seedlings to where you want them when they start popping up after spring, or grow plants from seed each year.

Cherry (*Prunus avium*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	9+ x 6	6–10	Y				Y	Winter	Summer

Site

- Needs a sunny, sheltered site, protected from spring frosts. Needs winter chilling, and a dry spring and summer. Suits conditions in the east of this region.
- Prefers deep, well-drained soil – does not tolerate waterlogging.

Care

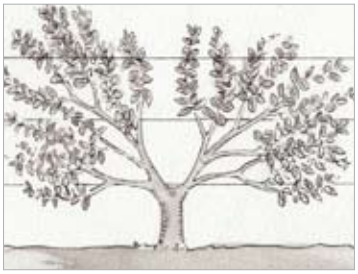
- Needs a lot of care.
- Plant in winter, well away from other large trees.
- Water regularly during the early stages and when the fruit is developing.
- Shallow-rooted, so weed carefully and mulch to retain moisture and suppress weeds. Keep underneath the tree clear of grass.
- Net against birds.
- Needs another variety for cross-pollination – try a double-graft.

Training & pruning

- If you have space for a large tree, training it as a *modified central leader* will control its size.
- A tree grown on dwarf rootstock can be trained as a *fan* (see details for both shapes in 'Part 2 – Training').
- Fruits on 1- and 2-year-old wood, and on spurs on older wood. Fruiting spurs last for 10–12 years, so they don't need to be renewed as often as in other stonefruits.
- Each year, cut dead, damaged and unproductive laterals back to a replacement shoot.
- Shorten new shoots to encourage the development of fruiting spurs.
- Remove vigorous upright growth.
- Prune in dry weather in summer, after harvest, to reduce the risk of diseases.

Modified central leader

Fan shape



Adapted from *How to Make a Forest Garden*

Companions

- Chives, marigold, lettuce, nasturtium, red clover.

Harvest

- Fruits in third year. Ripens from early to late summer, depending on the variety.
- Pick with stalks attached when fully ripe, or if the fruit starts to split.
- Eat as soon as possible or freeze them.

Health

- High in vitamins A and C, antioxidants, iron, magnesium, potassium and fibre.
- Reported to reduce inflammation from rheumatoid arthritis and gout.

Recommended varieties

Early: Burlat, Summit, Rosann, Tangshe
Early/Mid: Rainier
Mid or late: Dawson, Bing, Stella, Lapins

Cherry guava (*Psidium cattleianum*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	E	2–3 x 3	2–4	N				N	Autumn or spring	Autumn

Site

- Needs a warm site with full sun.
- Tolerates some frost once established.
- Tolerates salt and wind, good for coastal areas.
- Soil should be well drained but also retain moisture.

Care

- Has shallow, spreading roots, so weed very carefully and mulch with well-rotted manure or compost to control weeds and help retain moisture.
- Take care not to damage the taproot when planting.
- Protect from frost when young.
- Water regularly while the fruit is developing.
- Pollinated by bees and other insects, and birds.
- Self-fertile, but you'll get more fruit if there's more than one tree.

Training & pruning

- Ideal for growing in a container, or in the garden as a large, *vase*-shaped bush or as a small *central leader* tree.
- Prune in late autumn or early spring to shape the tree.
- Fruit forms on new growth, so don't prune after the new growth has started.

Companions

- Citrus trees, marigolds

Harvest

- Fruits within 2 or 3 years.
- Pick fruit in autumn when soft and fully coloured. Keep refrigerated.
- Eat fresh, or use in jellies, jams, sauces, baking and preserves.

Health

- Good levels of vitamin C, fibre, iron, calcium and phosphorous.

Chilean guava (NZ Cranberry – *Ugni molinae/Myrtus ugni*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil Type	Sun	Moisture	Shelter	Plant	Harvest
	E	1 x 1	1.5	N				Y	Autumn	Autumn

Site

- Needs some sun, but tolerates a little shade – a good bush for placing around taller fruit trees.
- More cold tolerant than Cherry Guava.
- Not fussy about soil.

Care

- Very easy to grow, no special care needed.
- Plant in autumn so it gets established before new growth starts in spring.
- Self-fertile.

Training & pruning

- Very good for growing in containers – if you like topiary, you can grow it on a short stem and clip it as a ball.
- Also good grown as a low hedge – slow growing, so patience is needed.
- Grows as a tangle of small branches, with fruit throughout the bush.
- Thin out some branches occasionally to make picking the fruit easier, and remove old or broken twigs.

Harvest

- Bears fruit in the first year – small, highly scented, wine-coloured berries that can be eaten directly from the bush (a favourite with children).
- Doesn't store well, so make juice from the excess, or cook for desserts and jellies.

Plants for free

From seed

- Soak seeds in water for 24 hours to soften the seed coat.
- Sow into warm seed-raising mix – only cover the seed very lightly.

Hardwood cuttings

- In autumn, take a shoot with a 'heel' from this season's growth.
- Insert it into a pot of gritty compost and keep it moist in a sheltered, shady place during the winter.
- Plant out in spring when it shows new growth.

Citrus (spp.)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	E	3–6 x 4	5–10	N				Y	Spring or autumn	Winter/ spring

Site

- Most citrus trees are subtropical or tropical and some of them don't tolerate temperatures below freezing level.
- Prefer deep, slightly acidic soil, but will grow on most soils – use trifoliata rootstock on heavy clay.
- Need excellent drainage, but also have very shallow feeder roots, so the soil needs to retain moisture.
- ***Grapefruit*** needs warmth to develop good flavour, and moisture to be juicy.
- ***Lemon*** is fairly frost hardy, likes a warm summer, mild winter, full sun, and shelter from wind.
- ***Lemonade*** is not at all fussy.
- ***Lime*** needs similar conditions to lemon, but is very frost sensitive when young – needs protection for the first few years in colder areas.
- ***Mandarin*** needs more heat than other citrus. Protect young trees from heavy frost.
- ***Orange*** trees need protection from frost when young. Don't water as much in autumn, as the new growth can be damaged in winter. Too much water makes the oranges less sweet.

Care

- Attractive evergreen trees, easy to train, but need quite a bit of care to get juicy, tasty fruit.
- Great grown in containers – in colder places, move them inside for the winter.
- Plant in spring after the big frosts have finished, adding some well-rotted manure to the planting hole.
- Water daily during the first summer, and keep them moist during dry periods and when the fruit is developing.
- Keep underneath the tree clear of plants to allow free air movement, to reduce the risk of diseases.
- Have very shallow feeder roots and dislike competition from other plants – keep them mulched with a thick layer of acidic mulch e.g. well-rotted compost, manure, pine needles, rinsed seaweed.
- Are 'gross feeders', so they need regular fertilising, especially with nitrogen (e.g. poultry manure, blood and bone, fishmeal) in autumn and spring when they put on a lot of growth (limes prefer less nitrogen). Yellowy leaves, blotches, stunted growth and early leaf fall are signs that the tree is undernourished.
- Self-fertile, pollinated by bees and other insects.

Training & pruning

- In late winter of the first year, shorten the main branches by one-third, to encourage growth in a *rounded* shape.
- Remove all the flower buds in the first year to let the roots get established.
- Thin the fruit to ensure it gets to a good size and is sweet and juicy.
- After fruiting has finished, remove any dead, diseased or criss-crossing branches.
- Lemons and some of the bushy mandarins need to have the older branches thinned out occasionally to allow sunlight and air circulation.

- Prune to keep the tree at the height you want.
- Whenever you pick the fruit, shorten any spindly old branches (see diagram) to a strong lateral, to encourage the development of fresh fruiting wood.
- Remove any growth from the rootstock.

Companions

- Guavas, Mediterranean herbs e.g. lavender, catnip, rosemary – plant at the edges of the tree's dripline, not directly under the tree.

Harvest

- Bear fruit within 2–3 years.
- Cut off the fruit with secateurs so you don't damage the fruiting laterals.
- Eat fresh or add to desserts, baking, chutneys and preserves.
- ***Grapefruit*** ripens late autumn to early spring. Leave on the tree to ripen.
- ***Lemon*** fruits all year. Fruit ripens about 6–8 months after flowering, and will ripen indoors if picked unripe. Keeps well.
- ***Lemonade*** is delicious to eat straight from the tree.
- ***Limes*** ripen in either midsummer or midwinter. Can be left on the tree for some time. Pick when the skin is lemon-green and feels a little soft.
- ***Mandarins*** need to be picked when they're ripe – they dry out if they're left on the tree.
- ***Orange*** fruits when 7–8 years old. Fruit ripens over many weeks and can be left on the tree for up to 6 months, picking them fresh as you want them.

Health

- High levels of vitamins A and C, antioxidants, and other beneficial compounds.

Recommended varieties

Grapefruit: Golden Special (Sept–Dec)
Lemon: Meyer (year-round), Genoa (Sept), Yen Ben (July/Aug)
Lemonade: (Sept)
Orange: Washington Navel (Aug), Ruby Blood (Oct), Harward Late (Nov)
Mandarin: Clementine (July), Encore (Sept), Miho for containers (very early winter)
Tangelo: Seminole (Sept)
Lime: Bearss (June–Aug), Tahitian (Sept)

Citrus laterals
Top – healthy
Bottom – old and spindly, needs to be shortened

Currants (Black, White, Red – *Ribes* spp.)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	1.5 x 1.5	1.5	N				Y	Autumn	Midsummer

Site

- Like a cold winter with some frosts – but need protection from late spring frosts and wind.
- Need shade from hot afternoon sun – do well on the south side of fruit trees or buildings.
- Need soil that will hold moisture (not sandy), containing lots of organic matter. Tolerate heavier and wetter soils than most fruits, but not waterlogging.

Care

- Fairly easy to grow.
- Plant in autumn.
- Plant deeply, as the new growth shoots up from below the ground.
- At planting, cut the shoots back to 30cm so the roots can get established.
- The roots are very fine and close to the surface. Handweed carefully.
- Water regularly during the growing season, and keep the roots cool and moist with a thick mulch.
- Add potash (wood ash) during winter.
- Cover with bird netting when the fruits begin to ripen.
- Pollinated by bees and flies.
- Mostly self-fertile, but Blackcurrants set more fruit if they're cross-pollinated by other varieties.

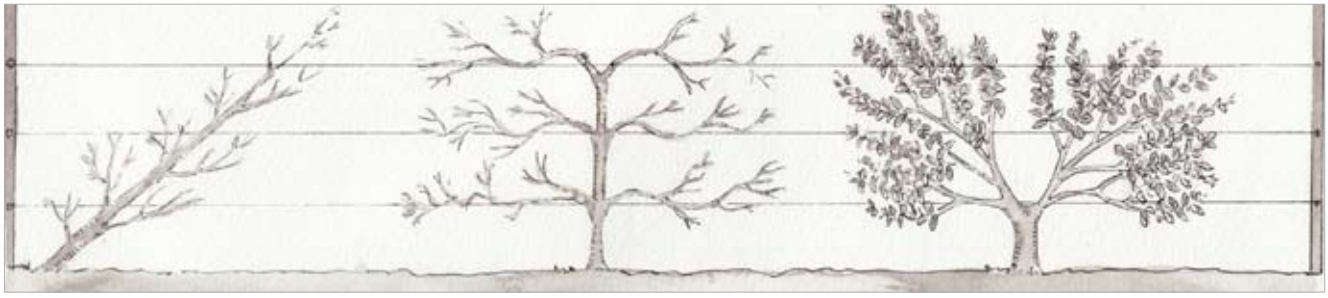
Training & pruning

Blackcurrants

Train as a *vase*-shaped bush (plants 1.5m apart), or as a hedge (plants 1m apart):

- At planting, remove any branches that are shorter than 15cm and any suckers.
- Choose eight to ten branches as the main framework, and shorten them by half to an upward-pointing bud. Allow enough space between the branches for airflow and sunlight.
- Once established, prune in winter, NOT after new growth has started in spring.
- Bears fruit on the previous season's shoots – cut old (dark-coloured) or weak wood back to ground level to stimulate the growth of new shoots.
- Keep eight to ten of the new shoots to be next year's fruiting branches, and cut the rest to ground level.
- If necessary, renew the bush every third year by cutting all the shoots to ground level.

Cordon, espalier and fan shapes



Adapted from *How to Make a Forest Garden*

White/Redcurrants

Plant 2m apart to train as *vase*-shaped bushes, *espalier* or *fan* (see diagram), or 45cm apart to train as a *cordon* – wires about 60cm apart.

- At planting, shorten the main leader to half its length and lightly tie it to a piece of cane that will support it up to the first wire.
- Remove any branches that are shorter than 10cm, and any suckers.
- Trim all the laterals back to a bud at about 2.5cm.
- Once established, prune in summer.
- Fruit forms on older wood, so shorten the main stems to force the growth of lateral branches. These will last for about 3 years, so keep a balance of younger and older canes each year e.g.:
  Year 1: Cut to ground level all except two or three stems.
  Years 2 & 3: Cut back all except two or three stems of that year's growth.
  Year 4 onwards: Cut out the oldest stems to make way for new growth, and shorten any extra-long stems.

Harvest

- Takes 2–3 years to bear fruit.
- Ripens in midsummer over several weeks. If protected from birds, will last for several weeks on the bush.
- Pick (when dry) in whole clusters.
- Eat fresh, or bottle, freeze, cook for dessert, or make into jam.
- Redcurrants are quite tart, most often used for juice, jellies and purees.

Health

- Rich in vitamin C.

Recommended varieties

Blackcurrant: Magnus, Tai Tahi, Ben Mapua
Redcurrant: Myra McKee, Gloriade de Versailles
Whitecurrant: White

Plants for free

Easy to propagate with cuttings, taken in autumn after the leaves have fallen.

- Cut healthy stems from the current season's growth.
- Get them into pots of sandy soil as soon as possible after cutting, and keep them moist in the shade for 1 year, planting out the following autumn.

Blackcurrants

- Take cuttings 20–30cm long. Leave all the buds on the stem, but remove all the leaves.
- Pot up with two buds showing.

White/Redcurrants

- Cuttings 30–38cm long. Remove all but the top four or five buds, and all the leaves.
- Pot up with the buds showing.

Feijoa (*Feijoa sellowiana*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	E	2–5 x 2–5	4	Y				N	Winter	Autumn

Site

- Needs a fairly sunny site with a long, warm summer.
- Tolerates some frost, but not while the fruit is ripening in autumn.
- Tolerates moderate winds.
- Happy in most soils but does not like to be waterlogged.

Care

- Very easy to grow.
- Plant in early winter.
- Water well during the early stages and when fruit is developing.
- Has shallow feeder roots – needs a deep mulch to retain moisture, control weeds and supply nutrients.
- Some varieties are self-fertile, but all produce more fruit if cross-pollinated with another variety.
- Pollinated by birds (especially blackbirds) and bees. Keep the centre of the tree clear so birds can get to the flowers.

Training & pruning

- Grow as a stand-alone *bush*, or as an attractive hedge or windbreak.
- Grow in a container in very cold areas.
- A single-stemmed plant is the easiest to manage. At planting, shorten the main stem to knee height. Four or five branches will develop from the top of the stem – nip them back to two or three buds, to keep a compact shape. Keep the trunk bare below the first branches.
- In January, pinch out the tips of the new growth if it is getting very long.
- Bears fruit mainly on the outside of the tree on the tips of the previous season's growth, and on short side shoots.
- Once the tree is established, remove a few of the larger branches each year in winter, to encourage the growth of new shoots.
- Pep up a tired tree with a heavy pruning in late winter.

Companions

- Keep underneath the tree well mulched and clear of plants.

Harvest

- Fruits within 2 or 3 years.
- Feijoas ripen in autumn. When they're ready, they fall to the ground at the slightest touch – don't pick them unripe, as the flavour is not as good. Collect them daily and store in the fridge, otherwise the flesh turns brown and soft.
- Eat fresh, added to fruit salads (sprinkle with lemon juice so they don't go brown), make juice, or cook for desserts, bottling, chutney, jam, relish, sauces. Scooped out flesh can be stored in the freezer.

Health

- High in vitamins C and B6, iodine, minerals, folic acid, pectin, antioxidants.

Recommended varieties

Early: Apollo, Gemini, Unique
Mid: Kakapo
Mid-late: Wiki Tu
Late: Triumph

Fig (*Ficus carica*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	3–6 x 5	4–6	N				N	Autumn to early spring	Autumn

Site

- Needs maximum sun, a sheltered and frost-free site, with a long, hot, dry summer for the fruit to fully mature.
- Likes soil that retains moisture but is well drained.
- In colder areas, plant against a sunny wall that reflects warmth.
- Has wide-spreading, invasive roots – don't plant it close to the house or plumbing. Put rubble in the bottom of the planting hole to restrict the roots, or you could grow it in a container.

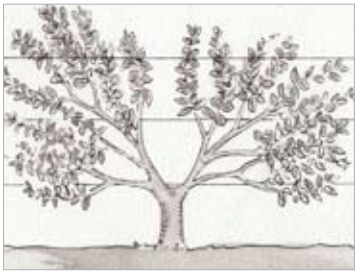
Care

- Easy to grow, but must be protected from birds when fruit is ripening.
- Plant between autumn and early spring.
- *Container-grown trees* – water regularly, and re-pot in winter every 3 years. Shade the sides of the container in summer to keep the roots cool.
- *Trees in the ground* – water well while young and when fruit is developing.
- Weed carefully to avoid damaging the surface roots.
- Self-fertile.

Vase shape

Adapted from *Fruit Gardening in NZ*

Fan shape



Adapted from *How to Make a Forest Garden*

Training & pruning

- Train as a sprawling *vase* shape with several strong fruiting arms, or as a *fan* against a sunny wall (see 'Part 2 – Training & Pruning' for details).
- Fruits mainly on the tips of the previous season's growth. Don't shorten them, or they won't fruit the next season.
- If pruning is needed, cut out half of the previous season's growth.
- Keep the tree open to allow maximum sunshine and light. Don't prune hard – it stimulates too much leafy growth.
- In early summer, pinch back young side shoots to five leaves.

Harvest

- Bears fruit within a year or two.
- Harvest the fully coloured fruit in late summer as it begins to split. Pick fruit gently so it doesn't bruise.
- Eat fresh, freeze whole, or dry in gentle sun for 4 or 5 days.
- Use for pies, desserts, baking, jam, preserves, syrup, and in savoury dishes.
- Remove any fruit that didn't ripen this season BUT leave the small fruits close to the end of the shoots – these are next year's harvest.

Health

- Good levels of B vitamins, iron, magnesium, manganese and fibre.

Recommended varieties

Early: Brown Turkey
Mid: Brunswick, San Pedro No 2
Late: Lesa, Preston Prolific, French Sugar

Gooseberry (*Ribes grossularia*)

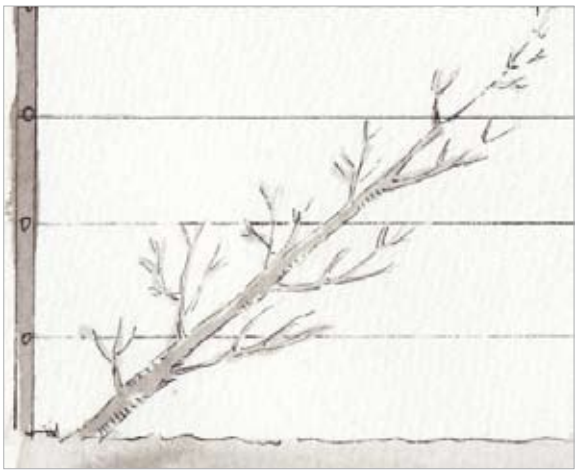
Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	1–1.5 x 1–2	1.5	N				Y	Mid- to late autumn	Late summer

Site

- Needs a cold winter to form plenty of fruit, and prefers cooler summers – but tolerates warmth if it's not humid. Very frost hardy.
- Best in a position with part sun, shade in the afternoons, and sheltered from strong winds, which can break the branches.
- Likes slightly acidic, medium-heavy soil, not prone to drying out.
- Set them well away from pathways, because of their prickles.

Care

- Easy to grow.
- Plant in autumn or late winter, allowing 1.5m in all directions so there is good air circulation.
- Has shallow roots – weed carefully, and mulch in early spring with well-rotted manure or compost.
- Cover with bird netting when the fruit begins to ripen.
- Self-fertile.



Adapted from *How to Make a Forest Garden*

Cordon

Training & pruning

- Train as an open *bush*, or a *cordon*, which makes picking the fruit much easier.
- For both shapes, plant deeply, as the new shoots spring from below ground level.

Cordon

- Space the wires about 60cm apart, with the first wire 60cm from the ground.
- Space plants 45cm apart, supported with a piece of cane tied to the first wire.
- At planting, cut branches that are shorter than 10cm back to ground level.
- Shorten the main leader to half its length and tie it to the piece of cane.
- Shorten all the side shoots (laterals) back to a bud at about 2.5cm.
- Once established, prune in late winter by shortening the leaders to 15cm, and all laterals to 2.5cm.

Open-centred bush

- At planting, cut branches that are shorter than 15cm back to ground level.
- Choose eight to ten branches to keep as the main framework and shorten them to half their length, to an upward-pointing bud. Allow enough space between the branches for airflow and sunlight.
- Once established, bears fruit on older wood – each year shorten the main stems by one-third to force the growth of fruiting laterals. These will last for about 3 years – prune each year to keep a balance of young and older stems e.g.:

  Year 1: Cut to ground level all except two or three stems.

  Years 2 & 3: Cut back all except two or three stems of that year's growth.

Year 4 onwards: Cut out the oldest stems to make way for new growth, and shorten any extra-long stems.

- Make sure you keep the centre of the bush open – otherwise you won't be able to reach the fruit because of the prickles!

Companions

- Strawberries.

Harvest

- Bears fruit within 2–3 years.
- Pick in late summer when the fruit is fully coloured, slightly soft, and is easy to pull off the stalk (or when it drops to the ground).
- Eat fresh, cooked in pies, tarts, sauces, jams, desserts, or added to sweet-and-sour sauce. Freezes well.

Health

- Good levels of vitamins A, B6, C, and potassium, copper and manganese.

Recommended varieties

- Invicta
- Pax

Plants for free

Hardwood cuttings

- In early autumn, take a cutting about 30cm long from the current season's growth. Remove all the leaves except for the top two, and insert the cutting to half its length into pots of well-drained soil. Keep it in partial shade for the summer.
- Next autumn, dig up the plant and replant it where you want it, with more of the stem exposed, so your gooseberry has a 'standard' – this lifts the bush higher and makes it easier to pick the fruit.

Layering

- Some varieties have drooping branches that are easy to layer.
- In late summer or early autumn, choose a strong healthy cane and bring its tip down to soil level. Dig a hole in this spot, with the near side angled towards the parent plant.
- If the soil is heavy, work in some grit or river sand to improve the drainage.
- Bury the stem tip into the soil and peg it down with a piece of wire.
- Keep it moist until the tip shows new growth in the following spring. Then cut the new plant from the parent plant.
- Be sure to remember to shift it, or you could create a thorny thicket.

Tip layering

Grape (*Vitis* spp.)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
Vine	D	1–3 x 2–5	1.5–3	N				Y	Winter	Autumn

Site

- Must be in full sun. Needs a hot summer, and also winter chill.
- Shelter from wind and heavy spring frosts.
- Needs good air circulation to avoid diseases.
- Needs good drainage for its deep roots – prefers fertile, dry, stony soils.
- Good grown over a pergola, verandah or trellis to provide summer shade, or on wires (2m high, wires 30cm apart).

Care

- Self-fertile.
- Plant in winter.
- Mulch in spring to control weeds and retain moisture.
- Feed with a liquid organic fertiliser high in potash while fruit is ripening.
- Protect from birds when the fruit is nearly ripe – use nets, or tie a paper bag over each bunch.

Training & pruning

- Training and pruning are essential for getting a good crop.
- Place a strong stake in the position you want for the main trunk, reaching either to the top of the wires or the top of the pergola/patio.
- At planting, select the strongest shoot as the main stem, shorten it back to 60cm, and tie it to the stake. Remove all other shoots.
- In spring, select the strongest of the new shoots to be the permanent trunk and tie it to the stake loosely. Remove all the other shoots.

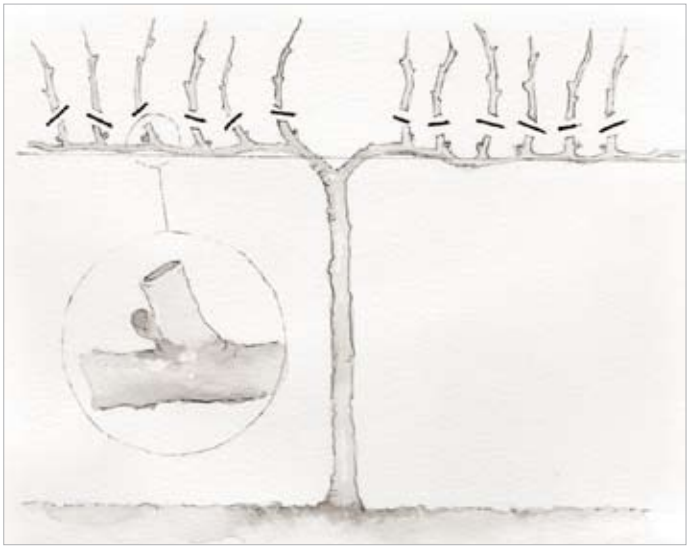
Growing on wires

Spring/summer training:

- When this main stem has grown past the top of the wire, cut it back to the level of the wire.
- When the top two buds sprout a new shoot each, train them as 'arms', one to the right and one to the left along the wire, and tie them loosely. Remove all fruit until the vine is established.

Winter training:

- Cut off all side shoots (laterals) growing from these main 'arms', leaving just a stub (see the diagram).



Adapted from *Fruit Gardening in NZ*

Training a grape vine on wires – in winter, cut all the laterals back to a stub

Growing over a pergola or patio

Spring/summer training:

- When the main stem reaches the top of the support stake, bend it over the top of the first beam and tie it down. Pinch off any side shoots, so all the plant's energy goes into lengthening the main stem until it has covered the structure.

Winter training:

- Cut off any side shoots (laterals) that have developed, leaving just a stub.

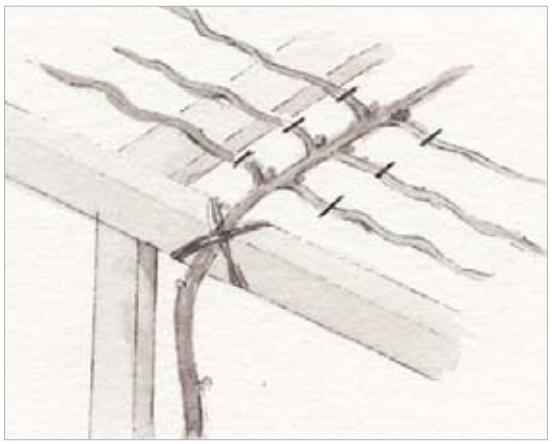
Next spring:

- When the new shoots reach about 15cm, thin them to 30cm apart and as they get longer, loosely tie them down onto wires, to the right and to the left of the main stem.

Once established on the structure

- Fruit forms on lateral growth off 1-year-old stems.
- Prune each winter, well before the sap rises in spring. Space out the laterals to 20cm apart and stub each lateral back to two buds (see the diagram below).
- Remove all weak, diseased, damaged or worn-out growth.
- After the new growth has sprouted in spring, choose one fruiting lateral per spur, and rub off the rest.
- To have good-quality fruit each year, it's important to control the amount of fruit. Once the bunches have formed, allow two or three bunches per lateral, and cut off the end of each lateral two leaves beyond the last bunch. Shorten any sub-laterals to one leaf, or rub them off.
- Trim the laterals again during summer to let in enough sun to ripen the grapes.

Training over a pergola or patio – in winter, stub each lateral back to two buds



Companions

- Tansy, mustard, sage, hyssop.

Harvest

- Fruits within 2–4 years.
- Pick in dry weather when fully ripe, cutting the bunch with scissors and keeping a small length of stem.
- Eat fresh, make into juice, or freeze for desserts.

Health

- High levels of antioxidants and vitamins C and K. Also good levels of vitamins A, B1, B2 and potassium.

Recommended varieties

Early: Himrod (seedless green), Buffalo (red), Shuyler (black)

Mid: Iona (pink), Steuben & Albany Surprise (red)

Late: Niagara (green)

Plants for free

Hardwood cuttings

- In winter, cut sections of stem that are as thick as a pencil and include three buds.
- Insert them into a pot of sandy potting compost, leaving the top bud uncovered.
- Leaves and roots will form during the summer. Plant into pots and keep in a sheltered place until it's time to plant them out.

Hazelnut (*Corylus avellana*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	4 x 3	3–6	Y				Yes	Autumn	Autumn

Site

- Needs a warm summer and cold winter, with frosts in spring. Prefers drier areas.
- Tolerates a little shade, but needs sunlight on the stems to form flowers.
- Avoid windy sites and very hot summers.
- Grows well in most soils except sand – must be well drained.

Care

- Plant in autumn or early winter.
- Has shallow roots – mulch well.
- Pollinated by wind.
- Carries both male and female flowers on the same tree, but needs other varieties to cross-pollinate them – plant a group of varieties that will pollinate each other.

Training & pruning

- Essential for good nut production.
- A *vase* shape makes it easier to collect the nuts and lets the sun reach the stems to stimulate flowering. Remove low-growing shoots and all suckers from the base of the tree four or five times throughout the season.
- A multi-stemmed *bush* reduces the harvest because some nuts get lost amongst the stems, and some fruiting wood gets cut off.

Adapted from *Fruit Gardening in NZ*

Vase shape

- Prune in late winter after the dangling male catkins have shed their pollen – but don't cut off wood carrying the small female flowers.
- Shorten the main leaders by about half, to an outward-facing bud.
- In late summer, break any longer side shoots in half and leave them hanging on the tree, so light and air can reach the inner branches. Cut them back further in the winter.
- If the tree becomes tired, prune it hard in winter to stimulate new fruiting wood.

Companions

- Flowering bulbs.

Harvest

- Takes 4–5 years to bear fruit.
- Collect the nuts from the ground in autumn. Dry them well to prevent the development of a fungus.
- Nuts in the shell last about 5 months in a cool, dry place. After shelling, they last up to a year in the fridge or 2 years in the freezer.
- Remove any nuts left on the branches, as they can stop the next season's female flowers from forming.
- Great eaten fresh, added to cereal or bread, roasted, or made into a spread.

Health

- High in vitamins E, B1, B6 and folate, 'good' fats, protein and minerals.

Recommended varieties

Whiteheart	Alexandra
Barcelona	Merv De Bolwillier
Ennis	Tonda de Giffoni

Kiwifruit, Kiwiberry (*Actinidia deliciosa/arguta*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
Vine	D	3–4 x 6–8	4.5	Y				Y	Early spring	Early winter

Site

- Likes a hot, sunny site, with a long, warm summer.
- Needs winter chilling for good fruit. Tolerates light frosts (but not in early spring or autumn). *Kiwiberry* is more cold hardy, but needs about 150 frost-free days and shelter from winds.
- Both need well-drained, deep, light soil – they do not tolerate wet soils.
- Needs shelter from wind.
- *Kiwifruit* is a vigorous trailing plant that will grow to 8m wide unless it's well controlled. Grow it on a sturdy pergola or T-shaped support structure, about 1.8m high, 4–5m long, with braced T-bars 1.5m wide. Space three wires evenly across the top of the T for tying down the branches. New season's shoots can grow 5m in a season, so think carefully about where you locate it! You'll need to tie the new growth down and prune it, so make sure you can reach above the top of the wires.

Care

- Plant in early spring and shorten the central stem back to 30cm, and remove all other growth below the graft. As the main shoot lengthens, tie it securely to a support stake that is attached to the top central wire. This will form the single trunk.
- Has some very deep roots (up to 15m deep), and also spreading shallow roots that must not dry out – water regularly and keep weed free. A heavy mulch in spring (include comfrey leaves to provide potassium) will help to control weeds and retain moisture.
- A very hungry plant, so add plenty of organic matter (especially nitrogen at the beginning of the growing season) across the whole root zone area – but keep it clear of the stem.
- Must have a male vine that flowers at the same time as the female vine. Grow them together, or buy a double-graft with both male and female plants – label which plant is which, and make sure you don't prune all the male flowers off. Restrict the size of the male plant.
- Pollinated by bees, but the flowers aren't very attractive to them so it helps to hand-pollinate by rubbing a freshly opened male flower across a female flower. One male flower can pollinate five or six female flowers.

Training & pruning

- Once the main stem reaches the top wire, choose two strong shoots to train in opposite directions along the centre top of the structure, making a T shape. All the future fruiting canes will grow from these permanent main 'arms' or leaders. If there are no suitable shoots available, cut the main stem just below the wire to force the growth of new shoots. As these leaders get longer, loosely twist them around the central wire and tie them lightly in several places.
- During the first summer, choose healthy shoots growing at right angles from the permanent 'arms', spaced about 25–35cm apart, to be next year's fruiting wood, and carefully tie them down to the wires. Remove any extra canes.

- From then on, it will bear fruit on the current season's growth coming off 1-year-old wood. Pruning is essential to allow enough air, light and sun for good fruit production.
- In spring, after the male plant has finished flowering, cut it right back so it doesn't compete with the fruiting plant.
- During summer, choose healthy fruiting shoots (those with fat buds close together) that are either growing from the main leaders or off 1-year-old laterals. Tie them down to be next year's fruiting wood (see *a* in the diagram). Cut off any extra or over-vigorous canes.
- Shorten the ends of fruiting laterals to reduce the amount of leafy growth (see *b* in the diagram). Prune several times during summer to make sure the growth doesn't get tangled or too dense.
- In late summer, remove some of the leaves to let more sun onto the plant, to encourage fruit buds for the following year.
- Each July, remove the canes that carried fruit last season (see *c* in the diagram), and keep the new replacement canes that grew during the season (see *a* in diagram). Shorten the ends dangling over the wires to about knee height.
- Remove any suckers, and any wood that is more than 3 years old.

Companions

- Underplanting with comfrey helps the soil stay moist and provides the potassium the plant needs.

Harvest

- Bears fruit 3–4 years after planting. Leave the fruit on the vine until they start to soften.
- Harvest by snapping them from the branch with some of the stem attached.
- Carefully pack them into a box. They'll keep ripening over the next 3 months – pick them over regularly to take out the ripe fruit. If you want some to ripen more quickly, put them in a bag with an apple for a few days.
- Eat fresh, or add to fresh-fruit desserts, savoury dishes, make into juice or jam.
- Contains enzymes that can tenderise meat.

Health

- Very high in vitamin C.
- Also high in vitamins A and E, digestive enzymes, antioxidants, fibre and potassium.

Recommended varieties

Kiwifruit: Hayward
Kiwiberries: Takaka green

Pruning kiwifruit:

a) During summer, select strong new shoots to be next year's fruiting wood and tie them down to the wires.
b) Shorten the ends of fruiting laterals to reduce the amount of leafy growth.
c) In winter, remove the cane that has already carried fruit, and keep the replacement lateral (a).

Olive (*Olea europaea*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	E	4–8 x 3–6	5–7	Y				N	Autumn	Autumn

Site

- Prefers full sun, a hot, dry summer and winter chilling.
- Tolerates frost in winter but not in spring.
- Copes with coastal conditions – young trees need staking against strong winds.
- Soil should be well drained, alkaline, and have lowish fertility.

Care

- Easy to grow, long lived, height easily controlled with pruning.
- Plant during autumn or spring, taking care not to damage the long taproot.
- Space plants 5–7m each way. One or two trees are enough for pickling; more if you're growing them for oil.
- Has shallow roots as well as deep taproots – mulch well.
- Water while the tree is young and during dry weather to improve the fruit yield.
- Cross-pollination (by wind and bees) is needed for good fruit.

Training & pruning

- Grows fast at first, then slows down – makes an attractive specimen tree or hedge.
- Best trained in a *vase* shape.

Adapted from *Fruit Gardening in NZ*

Vase shape

- At planting, shorten the central stem to force the growth of side shoots below that point.
- Next spring, keep about five of the strongest long new shoots as the main framework. Remove the tips of those shoots.
- Once the tree is established, each year remove the tips of the leaders and any very long shoots, to keep the shape open.
- Remove dead or criss-crossing branches, suckers and very low branches.
- Fruits on the previous season's wood, so don't cut off the new growth.
- Thin the fruit by hand soon after it has formed – this helps the tree bear even crops each year.
- Heavy pruning will pep up a tired tree.

Companions

- Mediterranean herbs eg oregano, thyme.

Harvest

- Bears fruit within 3–4 years.
- Leave olives for oil on the tree until they're fully ripe. Pick olives for pickling while they're still firm.

Health

- Very high in monounsaturated fat, antioxidants and vitamin E. Good for digestion.

Recommended varieties

- *Oil*: Chemlali, Koroneiki, Moraiolo, Picual, Sourani
- *Oil & Pickling*: Barnea, Manzanilla, Frantoio, Leccino, Nocellara, Pendolino.

Passionfruit (*Passiflora edulis*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
Vine	E	2 x 6	3–5	N				Y	Spring/ summer	Midsummer to winter

CAUTION: Be sure to grow black passionfruit, not banana passionfruit, which is a noxious weed.

Site

- A subtropical vine, fussy about site. Can't tolerate wind, frost, or wet feet. Frost can split the stem and kill the plant.
- Needs warm, moist conditions. Likes shade from hot afternoon sun.
- Prefers slightly acidic, sandy, moist soil that is rich in organic matter – good drainage is essential.
- Grow in a large pot if necessary, in a warm sheltered spot.
- Grow on a fence or trellis, with support wires 23cm apart – great for disguising an ugly wall.

Care

- Short-lived – only lasts 5–7 years.
- Prepare a 1-metre deep planting hole, with plenty of well-rotted manure. If the soil is heavy, plant it on a mound.
- Plant out between mid-October and January, and shorten back the main stem to let the roots get established.
- If grown in a container, repot every year in early spring.
- Has shallow, spreading roots – needs a thick layer of mulch to keep the roots moist and control weeds, but keep a clear space around the stem or it will rot.
- Because the vine is so leafy it needs a lot of water – every day in hot weather. If the roots get dry, the leaves and fruit will fall off. However, don't overwater, as this leads to root rot!
- Fertilise it at planting time, and every 4–6 weeks in the first growing season. Once the vine is bearing fruit, don't add nitrogen during the growing season – this leads to a lot of leafy growth rather than fruit, and makes the vine more vulnerable to diseases.
- Self-fertile. Bees love the flowers. To get more fruit, hand-pollinate with a soft brush in the late morning (the time when the female part is receptive to pollen).

Training & pruning

- Needs a strong supporting structure – train against a wall or across a pergola.
- Can be left untrained, but training and tying up will prevent the development of a disease-prone tangle.
- At planting, place two light stakes on either side of the plant in a fan shape, and tie them to the wires. Choose the four strongest shoots that grow in spring, and gently tie them to the stakes. Remove all other shoots.
- As these leaders grow, tie them to the stakes until they reach the wires, then train one each way along the lower wire, and the other two along the top wire (see diagram). Regularly remove all other shoots so that all the plant's energy goes into establishing these leaders.
- Bears fruit on the new season's growth.
- Once established, prune every year in spring after the plant has started to grow. Sacrifice the last fruit, or you'll end up cutting off the new season's growth.

- Shorten all the laterals to 15–20cm below each wire (see diagram), cutting to a young side shoot, rather than to a bud.
- Cut out any dead, diseased and weak growth. Remove all the prunings from your property.
- If the vine gets straggly, prune it back to ground level and start again.

Companions

- Plant marigolds nearby.

Harvest

- May produce fruit in the first year.
- Fruit ripens from midsummer and throughout the winter – the skin turns dark purple and the fruit falls off.
- Harvest daily in the morning, so the fruit doesn't get scorched by the sun. Gently shake the vine to make ripe fruit fall.
- Eat fresh or add to fruit salad, ice cream, yoghurt, cakes, juice. Can be frozen for up to a year.

Health

- A good source of vitamins A, B and C, minerals, fibre.
- The fruit and herbal tea made from the leaves have a calming influence.

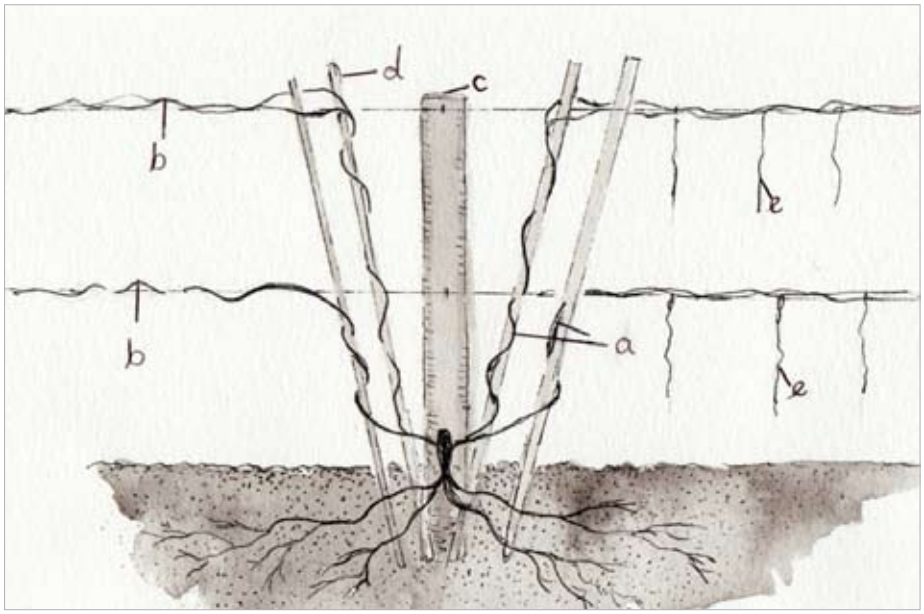
Plants for free

Seed

- Pick out the seeds from the flesh, wash them, and sow them immediately 1cm deep in well-drained compost.

Cuttings

- In late spring, take 20cm cuttings with a 'heel' from new shoots.
- Put them in a pot of sandy compost and place the pot in a clear plastic bag, with sticks to keep the plastic bag from touching the cuttings.
- Keep them warm and moist.
- Pot out each seedling into its own pot when it has taken root.



Adapted from *Aglink Information Pack – Subtropicals*

Passionfruit training:

a) Main leaders
b) Secondary leaders
c) Post
d) Stakes
e) Laterals

Peach, Nectarine (*Prunus persica*)

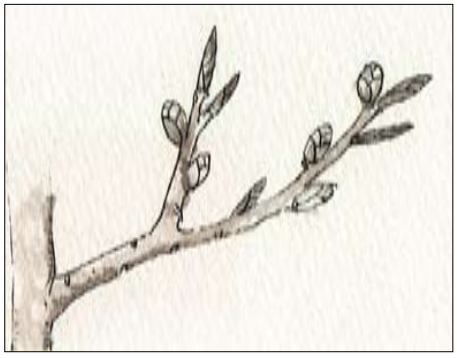
Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	3–6 x 4	4-6	N				Y	Midwinter	Summer

Site

- Very fussy. Needs a warm site with good sunshine. Prefers a hot, dry summer, cool winter and dry weather in spring – but not late spring frosts.
- Needs good air circulation, but not strong winds. Prone to diseases in humid conditions.
- Prefers deep, sandy loam with good drainage – very sensitive to waterlogging. Plant on a mound if necessary.

Care

- Short-lived.
- Hard to grow in this region without regular copper sprays.
- Plant in midwinter so the tree can get established before new growth starts in early spring.
- Has shallow roots that should not dry out. In spring, spread a mulch of well-rotted manure and compost over the whole root zone.
- Most varieties are self-fertile. Pollinated by bees and other insects.



Flower buds (rounded)
leaf buds (pointed)

Training & pruning

- Best trained in a *vase* shape that lets sunlight into the tree (fruiting buds die if they are shaded), or as a *fan* against a fence or a wall (wires 15cm apart). See the section 'Part 2 – Training' for details.
- Prune in summer to minimise the chance of diseases – after harvest is best, and always in dry weather.
- Seal all cuts with pruning paint, to protect against silverleaf disease.

Once the tree is established

- They're naturally large, vigorous trees, so don't let a lot of heavy wood develop, pushing the fruiting zone further and further out – shorten the limbs every year, and regularly thin strong growth to keep the fruiting wood near the centre of the tree.
- Bears fruit on the previous season's growth, as well as on short spurs from 2-year-old (or older) wood. Make sure you don't cut off the flower buds for the next season's crop (see the diagram below).
- To get a succession of new fruiting wood:
  - cut out 2-year-old laterals
  - thin to space out new laterals
  - shorten weak laterals by two-thirds.
- In early summer and again after harvest, remove any over-vigorous laterals – the laterals you keep should be fairly flat, a lot thinner than the leaders, and flexible enough to flatten out when loaded with fruit next season.
- If strong laterals develop higher up the tree, suumer-prune them back to a weaker side shoot so they don't shade out the lower branches.

Companions

- Tansy, garlic, chives, and on dry sites, creeping rosemary, oregano, thyme, borage.

Harvest

- Fruits within 2 or 3 years.
- Fruit ripens in mid- or late summer. Pick when ripe for best flavour, just as they start to soften. Handle them gently to prevent bruising.
- Eat fresh, add to fruit salads, yoghurt, ice cream, cook for desserts, bottling, chutney, or dry for use as a snack.

Health

- High in vitamins A and C, and also good levels of vitamins B3 (niacin), E and K.
- Good source of fibre and minerals, especially potassium.

Recommended varieties

Even varieties labelled 'disease-resistant' get curly leaf and brown rot in the Top of the South region. The following varieties have been found to be the best performers:

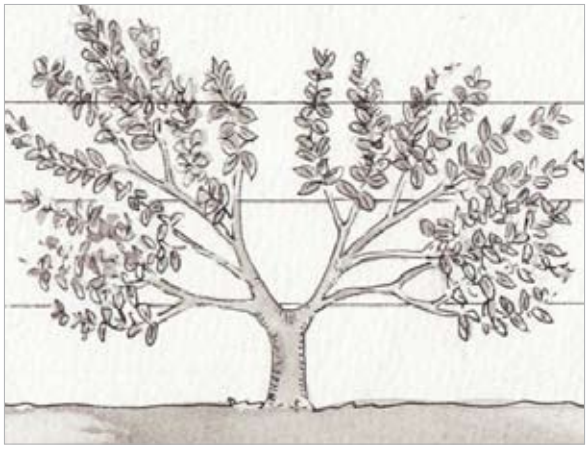
Peach: Blackboy, Golden Queen, Late White, Red Haven

Nectarine: Theo Ching, Goldmine, Black Pearl

Vase shape

Adapted from *Fruit Gardening in NZ*

Fan shape



Adapted from *How to Make a Forest Garden*

Pear, Nashi, Quince (*Pyrus* spp.)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	5–15 x 4–6	4-10	Y				Y	Winter	Autumn

Site

- Prefers a warm summer, cool winter, shelter from wind, and a cool, damp, shady site.
- Likes deep, well-drained clay soil. Copes with wet conditions, but doesn't produce as much fruit if waterlogged.

Care

- Easy-to-grow, long-lived trees.
- Quince is self-fertile.
- Pollinated by bees.
- You'll get more fruit if there's another suitable variety nearby for cross-pollination, or if you grow a double-grafted tree. Most pears and nashi cross-pollinate each other.
- Plant in winter.
- Mulch with well-rotted manure and rinsed seaweed, leaving a clear space around the trunk.

Modified central leader

Fruiting spur

Adapted from *Fruit Gardening in NZ*

Training & pruning

- Vigorous trees that need to be controlled if grown in an urban backyard.
- Training options:
  - freestanding tall pears – *modified central leader*
  - nashi, quince, dwarf pear – *espalier, cordon*
  - quince – *fan or bush*
- See the section 'Part 2 – Training' for details on early training for each of these shapes.

Once the tree is established

Pears carry the best fruit on 2–4-year-old spurs on the main branches.

- Fruiting laterals form on branches that grow flat, rather than upright – each spring, cut off any strong, upright laterals and keep the flatter-angled growth.
- Tie down vigorous growth to encourage the development of fruit buds.
- To get a succession of new fruiting wood:
  - remove the tips of the fruiting arms
  - shorten 2-year-old laterals to three or four fruit buds
  - remove older spurs.
- In summer, remove any diseased or damaged wood – cut this well below the infected area and remove it from your property. Sterilise your pruners with meths or bleach wipes.

Quince bears fruit on the tips of the previous season's growth and on spurs on older wood.

- Prune in winter to remove dead or diseased wood, old laterals and overcrowded growth. Don't shorten the laterals, as they carry the next season's fruit buds.

Companions

- Spring bulbs, tansy, alyssum, nasturtium, borage, comfrey, chives, garlic.

Harvest

- Dwarf trees bear fruit within 3–5 years; tall varieties take 5–9 years.
- Fruit ripens in autumn.
- Pick *pears* carefully just before they're fully ripe and let them finish ripening indoors. Eat fresh, or cook for freezing, bottling, desserts, jams, chutneys, savoury dishes. Dry them for use in cereal or trail mix.
- Leave *nashi* on the tree until fully ripe and eat them fresh, when crisp and juicy. Store in fridge for up to 3 months.
- Pick *quince* in midautumn before frosts. Store in a cool, dark place for 4–8 weeks, until the skin turns green. Use in marmalades, jellies, candies and pastes.

Health

- Have good levels of fibre and vitamins C and K (but most of the vitamin C is lost if the fruit is cooked).

Recommended varieties

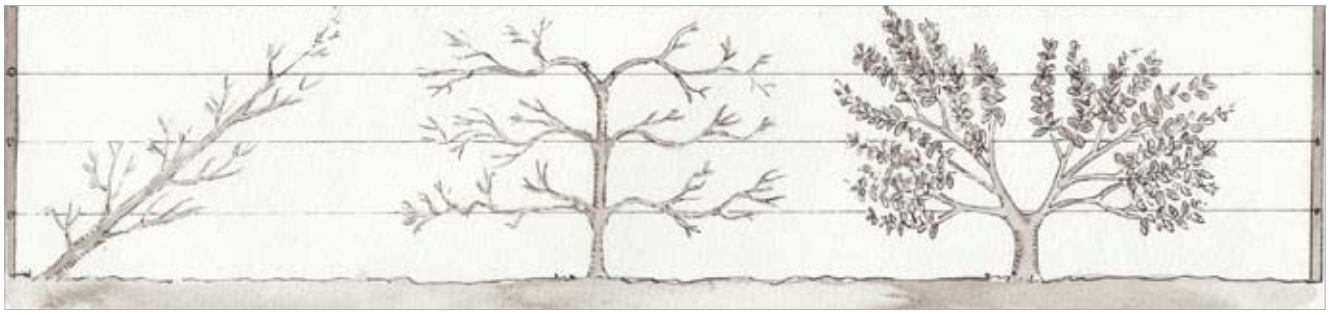
Pear

Early: Williams Bon Chrétien
Mid: Princess, Beurre Hardy, Conference
Late: Beurre Bosc, Doyenne du Comice
Very late: Winter Cole, Winter Nelis

Quince

Early: Van Deman
Mid: Vranja

Cordon, espalier and fan shapes



Adapted from *How to Make a Forest Garden*

Persimmon (*Diospyros kaki* – non-astringent)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	3–6 x 4–6	5–6	N				Y	Winter	Autumn/ early winter

Site

- Needs a sunny, sheltered and frost-free position, with a hot summer.
- Prefers deep, fertile, fairly heavy soil – but must be free-draining. Will tolerate flooding for a short time, but can develop root rot if wet for longer.
- A handsome tree with great autumn colours – looks good as a specimen tree, in the shrub border or beside a driveway.

Care

- A long-lived tree. Remove suckers or it will turn into a thicket over time.
- Prepare a deep hole and plant in winter, taking care not to damage the taproot.
- Stake the tree against wind.
- Water well while young, especially in spring and early summer, and during dry periods when the fruit is developing.
- Mulch in spring.
- ***Don't use non-organic fertiliser – it can kill the tree.***
- Self-fertile, pollinated by bees and other insects.

Training & pruning

- Good grown in a container and also trained as a fan, hedge or espalier.
- Freestanding trees are best trained as a *vase* shape or *modified central leader*.
- See the section 'Part 2 – Training' for details on training these shapes.
- Fruits on 1-year-old wood. Prune to keep the tree open and shorten the fruiting arms so they don't break under the weight of fruit. Thin out the fruit to one every 10cm.
- Heavy pruning will pep up a 'tired' tree.

Harvest

- Bears fruit within 2–5 years.
- Fruit ripens in autumn.
- Eat fresh while crisp, or wait until the full flavour develops when the flesh is soft. Can be frozen, peeled and dried, stewed, or used in salads, ice cream, cakes, desserts, sauces.

Health

- High in vitamins A and C, manganese and fibre.

Recommended variety

- Fuyu

Vase shape

Modified central leader

Adapted from *Fruit Gardening in NZ*

Plum, Greengage (*Prunus* spp.)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	D	3–6 x 4–6	3–5	Y				Y	Late autumn	Mid/late summer

Site

- Prefers a warm, dry summer, cool winter, and tolerate frost (except in spring).
- Tolerates partial shade, and both wet and dry conditions.
- Copes with a wide range of soils, including clay.

Care

- Plant in late autumn so the tree is well established by spring.
- Has shallow roots – mulch thickly to keep the root zone moist and weed free.
- Water regularly while young and when fruit is developing.
- Net against birds when fruit is ripening (or share with the birds).
- Self-fertile, but you'll get more fruit if cross-pollinated with another variety.

Training & pruning

- Easy to grow, more disease resistant than other stonefruits.
- Best trained in a *vase* shape or *fan* on wires spaced 15cm apart.
- Training and pruning tips are the same as for Peaches and Nectarines.

Companions

- Spring bulbs, tansy, garlic, comfrey, marigold, multiplying onion.

Harvest

- Bears fruit within 2–4 years, ripening from midsummer to early autumn.
- Pick when ripe for eating fresh or for making juice. Can also use for jelly, desserts, sauce or bottling.
- ***Prune plums*** fruit later, and can be eaten fresh, dried or bottled.

Health

- Very high in vitamin C and fibre, and a good source of vitamins A and K.

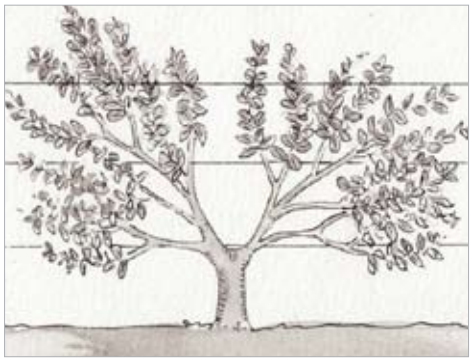
Recommended varieties

Plum

Early: Duff's Early Jewel, Wilson's Early
Mid: Fortune, Purple King, Greengage
Late: Omega

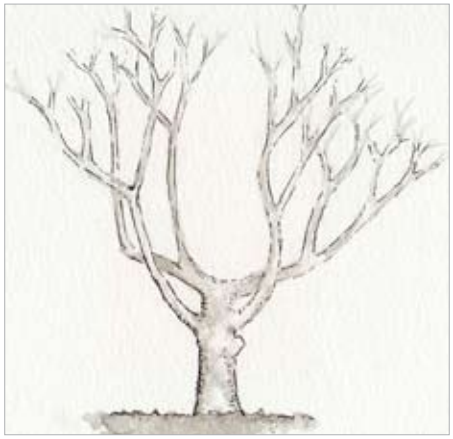
Prune plum

Mid: Cacak Fruitful
Late: Stanley



Adapted from *How to Make a Forest Garden*

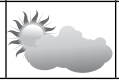
Fan shape



Vase shape

Adapted from *Fruit Gardening in NZ*

Raspberry (*Rubus idaeus*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
Cane icon	D	2 x 1.5	0.45	N				Y	Autumn/ winter	Summer/ autumn

Site

- Prefers a sunny site with some shade from hot afternoon sun – tolerates partial shade.
- Hardy to frosts and needs winter chill.
- Needs shelter from strong winds.
- Does not tolerate wet feet – needs well-drained soil that also retains water.
- Spreads by suckers – plant in a place where this won't matter, or dig the suckers up each year and relocate them.
- Grow against a support structure e.g. between posts or against a fence with two or three strands of wire, up to 1.7m high.

Care

- Plant canes preferably in late autumn/early winter, or early spring if necessary.
- Plant into a trench filled with compost and soil, about 45cm apart (overcrowding leads to diseases).
- Cut the stems back to a bud at about 25cm.
- Roots are very close to the surface – in spring, spread a thick mulch of well-rotted manure (or acidic compost and pine needles) to keep the roots moist and suppress weeds.
- Keep the soil moist (but not waterlogged) when the fruit is developing.
- Self-fertile – pollinated mainly by bees and other insects.
- Need to be protected from birds with netting.

Training & pruning

- Each spring, train six new canes per plant up between two wires (upright or fan pattern), with the canes spaced 15cm apart.
- Cut off any surplus new canes at ground level, to prevent overcrowding.
- Cut off the tops of any canes that grow taller than 2m.
- After fruiting in autumn, keep the canes that carried fruit this season until they fruit again next spring, then cut them off at ground level in autumn.
- Keep a balance of new and second-year canes each year.
- Remove all prunings from your property, and clean your tools between plants, to reduce the risk of diseases.

Companions

- Mulch the canes and grow parsley and tansy nearby.

Harvest

- Bears fruit within 2 or 3 years.
- Pick when fully ripe for using fresh with yoghurt, or in desserts, fruit salad.
- For jam or freezing, pick when they're still firm.

Health

- Good for vitamin C, anti-cancer properties, fibre, minerals.

Plants for free

Suckers

- In autumn, carefully cut the suckers away from the parent root, plant them in a new row, and shorten them to 30cm.

Strawberry (*Fragaria x ananassa*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	E	0.20 x 0.30	0.35	N				Y	Autumn	Summer to autumn

Site

- Needs an open, sunny site with no frosts at flowering or fruiting times, and shelter from wind.
- Soil should be slightly acidic, well drained but able to retain moisture.

Care

- Easy to grow if cared for.
- Plants need to be replaced after 3 years – put new plants in a different place to avoid a buildup of diseases (allow 4 years before replanting a site).
- To allow frequent picking, plant on garden edges or in containers near the house.
- Best planted in early autumn so they can get established during the winter.
- Plant 45cm apart on a slight mound, with the plant's crown slightly raised.
- Roots are very shallow – water regularly in dry weather, but make sure the soil isn't waterlogged and the berries aren't damp.
- Mulch the ground with straw or pine needles to retain moisture and keep the fruit off the ground – but watch out for slugs hiding in the mulch.
- Protect from birds.
- Cut off any 'runners' that develop during the first year.
- At the end of each season, remove the mulch and all dead leaves, and carefully fork up any compacted soil between the plants.
- Self-fertile, pollinated mainly by bees.

Companions

- Parsley, marigold, lettuce, borage, chives, lavender, onions, sage.

Harvest

- Pick fruit as it ripens.
- Eat fresh with cereal or yoghurt, or in fruit salad. Cook and bottle or freeze, or make into jam.

Health

- Very high in vitamin C when eaten fresh, good for manganese, potassium, iron, Vitamins A, B6 and K, calcium, fibre, antioxidants and anti-cancer agents.

Plants for free

Each year, catch a few runners from disease-free plants to replace old plants:

- Bury pots of compost in the ground near the mother-plant and peg runners down into them to grow roots.
- Once the roots have formed, cut the runners free and shift the pots to a sheltered spot until you're ready to plant them out.

Strawberry runner pegged down into a pot in the ground

Tamarillo (Tree Tomato – *Cyphomandra betacea*)

Type	Deciduous/ Evergreen	Height x Width (metres)	Spacing (metres)	Pollinator	Soil type	Sun	Moisture	Shelter	Plant	Harvest
	E	2–3.5 x 3	3	N				Y	Oct–Nov	Autumn–winter

Site

- Needs a warm summer, mild winter and sheltered site.
- Very frost tender, with large, thin leaves and brittle branches that break easily. Evergreen unless frost removes the leaves in winter.
- Prefers deep, rich, well-drained soil that retains moisture during summer.
- Does not tolerate waterlogging – grow on a slope if this might be a problem.

Care

- A short-lived tree (5–12 years).
- Plant in October or November. Stake the tree against winds and protect from frosts in the first winter.
- Has very shallow roots – water regularly during dry periods. Doesn't tolerate competition from weeds – mulch thickly to control weeds and keep the roots cool and moist (but keep the area next to the trunk clear so it doesn't rot).
- Established trees can survive brief frosts – the leaves might fall off, but new leaves will grow again.
- A fast-growing tree. Fertilise four times per year, when the soil is wet – in early spring, after pruning, in November, and in February.
- Self-fertile. Pollinated by insects and wind.

Training & pruning

- At planting, shorten the main stem to 1m to encourage low branching.
- When side shoots (laterals) grow, pinch them back when they're 50cm long, to create a strong framework.
- Fruits on new growth. Needs pruning to keep the fruiting wood near the tree's strong framework – each year, cut laterals that have fruited back to the tree's basic framework, and remove dead or diseased wood, and any suckers.
- Prune from after the last of the big frosts until as late as October. The timing of pruning determines the timing of the next season's fruit.

Harvest

- Bears fruit within 18 months – fruit takes 8 months from pollination to ripening.
- Ripens from April to November.
- Pick when the fruit is slightly soft and pulls off the tree easily.
- Eat fresh, add to fruit salad, or use in sauces, chutneys, savoury dishes, jams, juice and jellies. Preserve in jars, or puree the flesh and freeze (it turns brown, but is still good to eat). To remove the skins easily, cover the fruit in a bowl with boiling water for a few minutes then peel.

Health

- High levels of vitamins A, B6, C (when eaten fresh) and E, iron and potassium, fibre.

Plants for free

- Take 30cm cuttings from 1- or 2-year-old wood on disease-free plants.
- Cut the stem square, just below a leaf node, and remove the leaves.
- Insert the cuttings into firm soil until they've taken root, then plant in late spring.