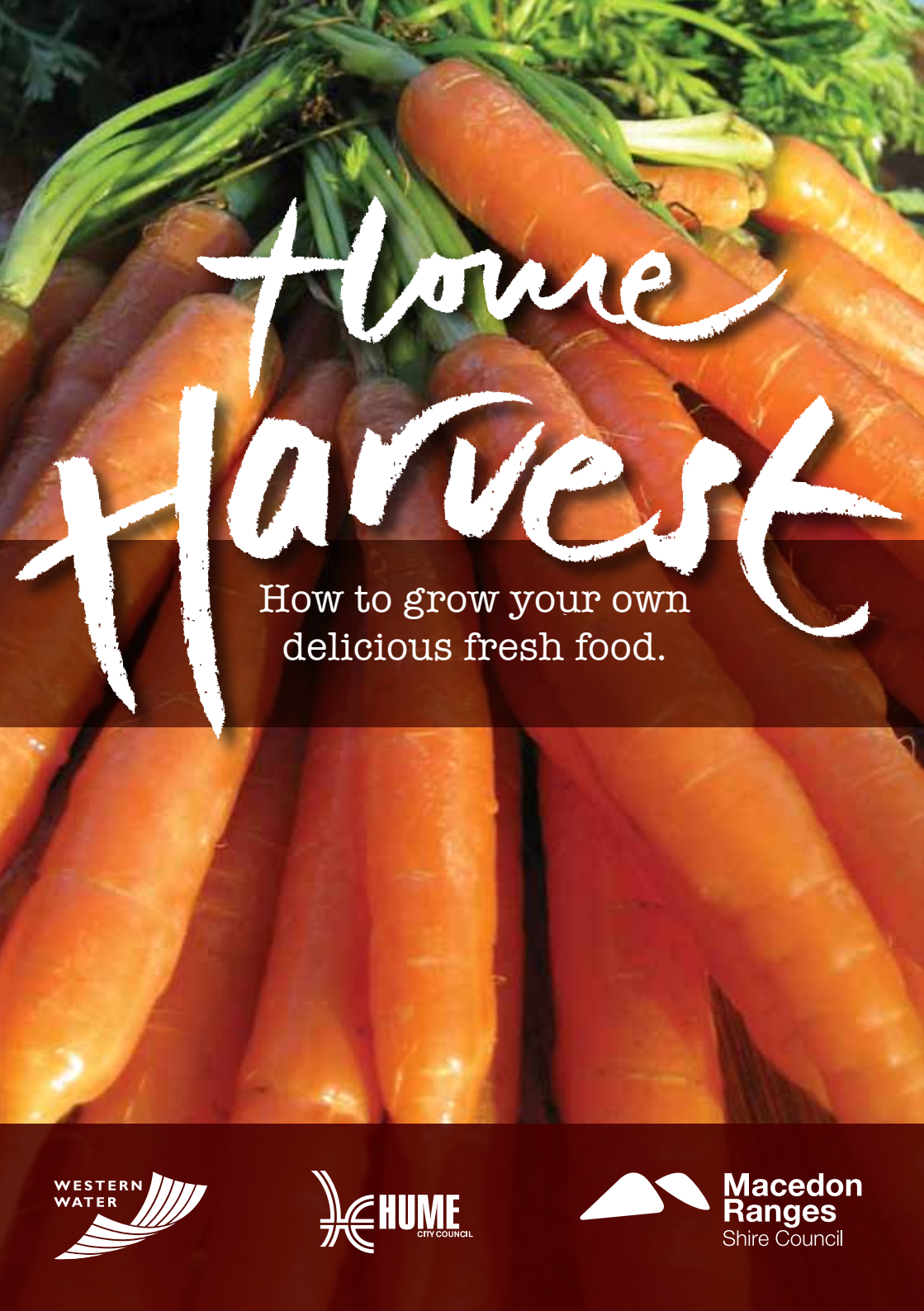

Home Harvest

How to grow your own delicious fresh food.

WESTERN WATER

HUME CITY COUNCIL

Macedon Ranges Shire Council

This booklet was produced by Western Water, Hume City Council and Macedon Ranges Shire Council.

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Contents

Why grow your own produce?

The creation of local food systems is an important step in the development of more sustainable communities. Home produce gardens are an integral part of this process.

Rewarding Educational Healthy Fun

Home produce gardens provide individuals and families with food that

- is seasonally fresh and naturally ripened
- uses less water, energy and chemical inputs than crops grown in large scale monocultures
- reduces food miles and eliminates energy associated with packaging and transportation

Home produce gardening can also bring

- increased physical and mental well-being
- improved diet and nutritional outcomes
- a greater connection with the local community through a common activity and purpose
- support for and from local businesses
- cost savings in a time of rising food prices

Because it's...

- fun
- healthy
- educational
- rewarding

And it's easy... you just need

- a little knowledge
- a lot of enthusiasm
- some help along the way!

Planning your produce garden

Your garden doesn't have to conform to any 'system' but you should aim to design and manage your garden sustainably.

Some tips for a sustainable garden

- choose natural and organic soil improvement regimes
- create plant diversity to minimise pests and diseases
- practice crop rotation and plant hygiene to prevent diseases
- comply with current rules on Western Water's website or capture rainfall onsite
- prevent uncontrolled seed dispersal by wind, birds or animals
- avoid water, chemicals or fertilisers leaching off site
- choose products that are sourced sustainably

Organic garden systems

For truly organic gardening inputs look for legitimate certified organic symbols on gardening products.

BFA Biological Farmers of Australia

AUSTRALIAN CERTIFIED ORGANIC

OGA Certified organic

NASAA CERTIFIED ORGANIC

Visit **www.sgaonline.org.au** and search 'GreenUP Product Guide' for an extensive range of low environmental impact horticultural products.

Other planning considerations

1 Do a site analysis.

Identify the garden's

- sunny and shady spots – these can differ in winter and summer (remember produce performs best in full sun)
- deciduous trees – yours and your neighbours
- sheltered areas and wind tunnels
- micro-climates (local isolated zone where the climate differs from the surrounding area) created by buildings and existing site vegetation
- site drainage and any water logging areas
- soil pH in different areas of your garden. (More information on pg. 14).

2 Think about the physical location and ease of access to the produce garden.

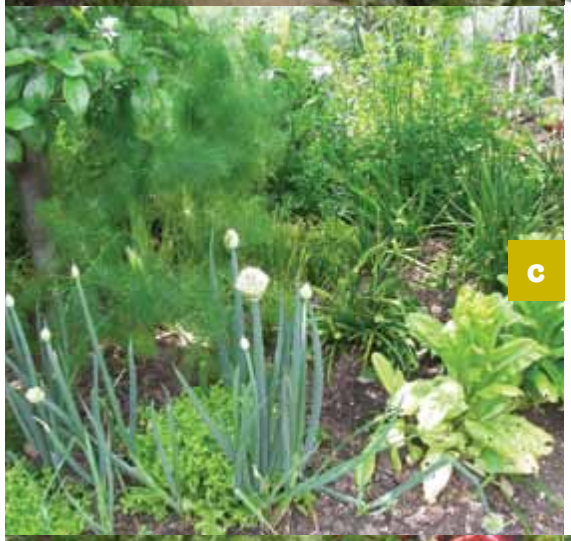
Should it

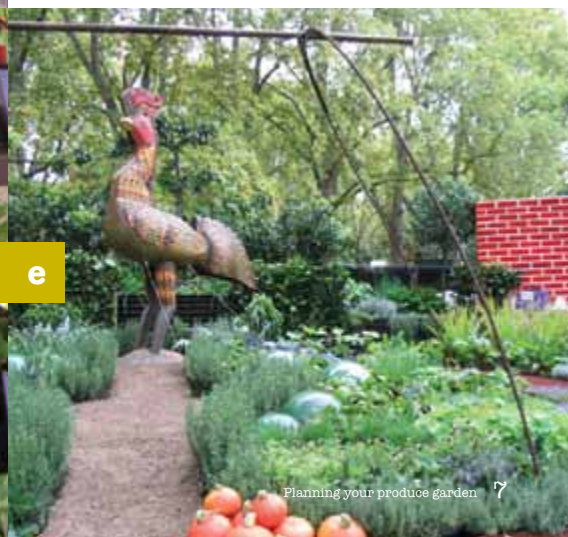
- be close to the house for gathering vegetables, fruit and herbs when desired?
- include raised garden beds for older people or those with poor backs?
- have nearby storage areas for tools and equipment?
- be close to the compost heap or worm farm for managing waste and accessing the compost?
- have access to a water supply such as a rainwater tank?
- include a propagating area?

3 Be realistic about the limitations of your garden size.

Consider

- mixing in produce plants with ornamental plantings
- using containers, pots and hanging baskets
- incorporating vertical plantings such as climbers and vines
- using food producing hedges or espaliered (formal pruning to increase horizontal growth) trees along walls or fences
- adding a small chicken coop and run as chooks love to eat kitchen green waste and will produce great fertiliser for your garden, and of course produce delicious fresh eggs!





4 Decide if you want a particular 'style' of produce garden e.g.

a. a formal kitchen garden

b. a practical vegie patch

c. a multi-level food forest

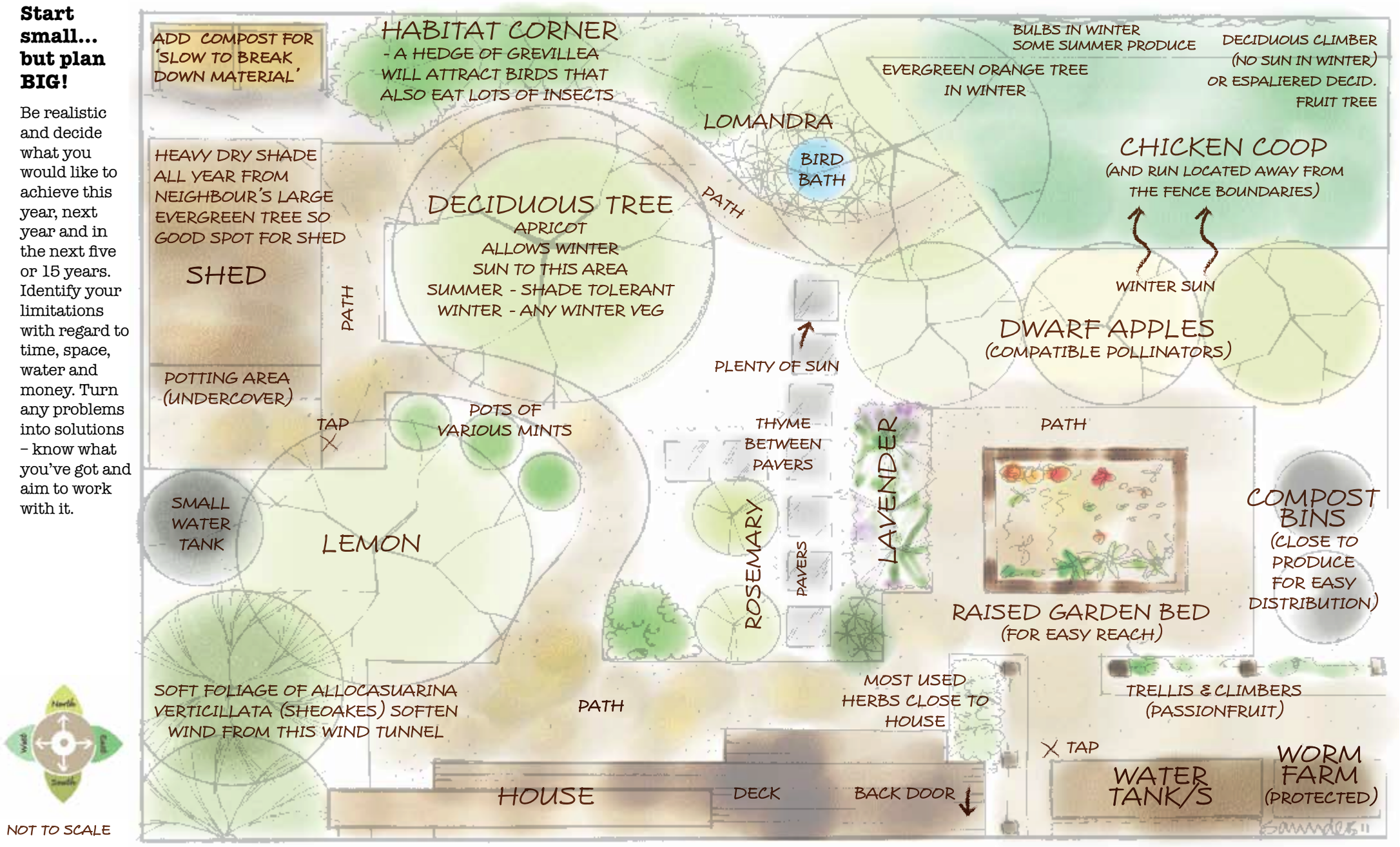
d. a variety of container gardens

e. or your own unique style!

Example of a garden plan

Start small... but plan BIG!

Be realistic and decide what you would like to achieve this year, next year and in the next five or 15 years. Identify your limitations with regard to time, space, water and money. Turn any problems into solutions – know what you've got and aim to work with it.



NOT TO SCALE

Building your produce garden

Would you like to

- create a dedicated garden area for long term use
- modify your existing garden to include produce
- start small with containers and pots...
  or a combination of all three!

Turn any problems into **solutions** – know what you've got and aim to **work with it.**

Consider the depth of your beds

How deep the soil of your produce garden is will affect what you can grow. If the soil in your vegie garden is 30cm deep you can grow leafy produce, climbers, low growing bushes and dwarf fruit trees, but not root vegetables or large fruit trees. If your soil depth is in excess of 100cm you can grow all types of home produce.

No dig raised garden beds

How to create one in 10 steps

1. Locate on a level spot that benefits from full sun, as most vegies like this best.
2. Consider pedestrian access and whether the spot can be used permanently. Once full, moving the garden bed will be difficult.
3. Mark out and form the walls, these should be at least 30cm high. You can use anything including old rocks, sleepers, bricks, blocks or pavers.
4. If using timber check out **www.goodwoodguide.org.au.**
5. If the garden bed has a base, ensure there are adequate drainage holes.
6. Build a no-dig garden by first lining with multiple layers of newspaper or cardboard before filling with compost/ soil mix.
7. Stack alternating layers of fine and coarse compostable materials. For example, start with a layer of pea straw, then with a layer of aged cow manure, a layer of compost, and repeat the layers finishing with a thick compost layer.
8. Planting can be done into the top compost layer. Make a small hole to fit the seedling in and plant. Water in well. The plant will eventually establish a strong root system in its nutritional base.
9. Mulch around your seedlings well with a straw-based mulch and dig this into the soil as it rots down, before topping the mulch up.
10. As the layers rot down, top up with more layers of aged manure and compost.





Existing garden bed

If you decide that you want to convert your existing garden bed/s into a vegie garden, the soil should be improved well before you start planting your vegies. Traditionally, this involves digging over the soil to about 100mm and incorporating a great deal of organic matter, like compost, at roughly 3 parts soil to 1 part compost mix. Just don't do it when the soil is too wet as you'll ruin the delicate structure of the soil, and end up with a compacted mess!

Aged compost, worked lightly through the soil with a garden fork and rake, will do wonders.

If working with a heavy, clay soil, dust gypsum over the surface of the soil (like icing sugar on a cake) before adding compost.

Containers

Planting a productive potted plot is no different to getting going in a garden – it's all about planning, position, potting mix, patience and productivity.

Position

This is all about the best position, not just for your plants, but for you as well. Almost all edible plants will do best in a full sun spot. Remember, this will vary considerably from winter to summer but the beauty of planting in pots means you can move them as required. Place your pots somewhere convenient for you – the closer they are to the house, the more likely they are to be watered and eaten.

If you have limited space why not consider going up, rather than down? There are many plants that can be grown in hanging and wall pots, and this is often an excellent solution for light starved courtyards, or those spaces dominated by pets.

Planning

Containers look best when they're grouped together, with pots of all different shapes and sizes closely clustered. It has a greater visual impact, cuts down on watering and creates some mini biodiversity. Group plants that require similar levels of watering together, bearing in mind that plants in terracotta pots will dry out a bit faster than others.

Potting mix

When planting productiven pots, the growing medium is incredibly important, but the hot tip here is NOT to use garden soil in pots!

Healthy garden soil contains a fantastic mix of microbes, bacteria, fungi and worms which are great in the garden, but generally don't perform that well in containers. Garden soil in pots can drain poorly and tends to break down quickly. Use a certified organic potting mix. Good organic potting mixes will break down over time, so you will need to refresh the pots with new potting mix every so often.

Mulch the tops of all pots with a straw-based mulch to slow down water loss and prevent weed infestation.

Soil

Good soil is without question the most important element in your food garden. Spend some time getting to know your soil, you will be surprised what you find out. Soil is a mixture of mineral particles (the gritty bits), air, water and a very small but critical amount of organic matter. Soil health is also dependent on the millions of micro-organisms that live beneath its surface. To grow great vegies your soil needs to be crumbly to touch, dark in colour and moisture retentive.

A good investment is a soil pH testing kit. Readily available from good garden centres and hardware stores, a pH kit has everything you need to check whether your soil is acid or alkaline or something in-between. Ideally your soil should be within a pH range of 6.0 to 7.5 where most plant nutrients are readily available. If the pH is too low (acid), it can be raised with Dolomite of Lime. If the pH is too high (alkaline), it can be lowered with sulphur. However altering pH takes time so don't expect immediate results.

Test your garden soil routinely but particularly at the end of each growing season and before you prepare for the next crop. Slight variations are normal within a garden bed. Some vegies and herbs have a fairly specific pH range but most prefer to be grown in a slightly alkaline soil which is why many gardeners sprinkle a little lime over the bed about 6 weeks before planting out vegie seedlings.

Keeping soil healthy is an ongoing process and is especially important in productive gardens. As your incredible edibles grow, they remove nutrients from the soil, and these need to be replaced fairly regularly using garden compost and organic fertilisers.

Soils in your region

There are a wide variety of soils across the Western Water region from the alluvial soils of Bacchus Marsh to the deep red soils of Mount Macedon. By far the most challenging soil gardeners have to work with are the volcanic clay soils that can be found right across the region. These soils harden when dry and become 'sticky' and waterlogged when wet. This makes it difficult to grow vegetables and fruit producing plants.

To grow produce in your existing clay soil you will need to improve your topsoil before you plant out. Sprinkle gypsum across the surface like a layer of icing sugar. Add lots of organic matter, such as compost and aged animal manures, to your garden beds. Or you may want to consider investing in a raised no dig bed to counteract the problem.

Ideally your soil should be within a pH range of 6.0 to 7.5 where most plant nutrients are readily available.

To grow great vegies your soil needs to be healthy and friable i.e. crumbly to touch.

Planting techniques for your produce garden

Taking care when planning and planting your produce garden will enable your plants to thrive.

Fruit trees

- Deciduous fruit trees such as pears, apples, peaches and plums are best planted in winter when they can be purchased bare rooted.
- Evergreen fruit trees such as lemons, oranges and cumquats should be planted in spring when the soil has warmed up.
- All fruit trees require plenty of sun and good drainage.
- Select dwarf varieties if you have a small space.
- Be aware that some fruit trees require cross pollination i.e. two apple trees! Ask at your local garden centre before you purchase.

Planting techniques

Potted plants

- Choose young, well shaped plants that have not outgrown their pot size.

Bare rooted plants

- Trim bare rooted trees by about a third, removing any weak, damaged or overlapping growth.
- Check for damaged or diseased roots and trim back.

All plants

- Allow the plant to soak in a bucket of water for about two hours prior to planting. A mild seaweed solution or compost tea can also be added.
- Dig a hole in prepared soil the depth of the plant pot and twice the width. Use a stick to check the depth. The hole should have rough edges.
- Fill the hole with water and allow to drain naturally.
- Place the plant in the hole and backfill taking care not to plant above the existing rootball level.
- Water well. Do not 'heel in' (stomp around the roots) as watering will remove air pockets.
- Mulch but ensure the mulch is pulled back from the trunk of the plant to prevent collar rot.
- For every tree and shrub you plant consider the insect or bird life needed to support it. E.g. flowering fruit trees such as grevillea, need pollinating insects so provide some habitat and food plants for them.

◀ Espaliered plum tree

Fruit trees (continued)

Preventing problems for fruit trees

- Do not overfeed your trees with high nitrogen fertilisers. This produces soft sappy growth that easily succumbs to pests and diseases.
- Do not apply water to the tree canopy as this can encourage fungal diseases. Apply water via driplines.
- Treat deciduous stone fruit trees with a winter wash to break any disease cycle. For more information on winter wash visit **www.sgaonline.org.au** and search 'winter wash'.

Annuals or perennials

Perennials are plants that grow in your garden over a number of years such as rosemary. Annuals are plants that grow for one season and need to be replaced the following year unless they self seed e.g. tomatoes. Both can easily be planted between trees and shrubs if you do not want to further disturb the soil. However be aware of the need to provide additional nutrients and water because of the increased competition between plants. For other seasonal produce that requires soil cultivation e.g. root vegetables, a dedicated vegetable area should be considered. This avoids any damage to the root zones of more permanent plants.

Seeds or seedlings

SEEDS:

- Are much better value than seedlings.
- You can collect and store your own seeds at the end of each growing season.
- Certified organic and untreated seeds are now relatively easy to obtain.
- Unusual or heritage varieties are often only available by seed.
- Some seeds can be grown directly in the soil but others need to be grown first in seed trays and transplanted.
- Hot weather can prevent germination of autumn seeds or give a poor germination rate.
- Some seeds have naturally low viability and germination rates. Check the packet for details.
- Seeds sown too thickly will need thinning out.

SEEDLINGS:

- Easier and less time consuming than growing from seed.
- Gives you a 'kick start' into the season. May save up to 6 weeks of growing time.
- Allows you to grow only what you need thus minimising wastage.
- Can be difficult to obtain organic vegetable seedlings or unusual varieties.
- Plants may suffer from transplant shock if not properly removed from punnets.

Other tips for a successful produce garden

Good maintenance practices lead to a more productive harvest.

Feeding your garden

Additional nutrients can be made available by feeding the soil – not the plants.

Australian soils are naturally low in nutrients. Vegetables and fruit usually require large amounts of soil nutrients for optimum growth. This is particularly true for annual crops. Existing soil nutrients can be made more available by regulating the soil pH. Additional nutrients can be made available by feeding the soil – not the plants.

Before the autumn and spring growing periods apply organic slow release pelletised fertiliser.

During the growing period most food producing plants will benefit from supplementary fertilisers applied fortnightly during the growing period. Choose an organic liquid fertiliser such as worm tea, seaweed solution or fish emulsions. You can also make your own compost teas from some homemade compost or dried animal manures. Avoid synthetic fertilisers, these often have synthetic nitrogen and heavy metals. The salt content can also burn young seedlings.

For information on plant nutrients check out **sgaonline.org.au** and search 'plant nutrients'.

Organic waste recycling systems

When food and garden materials are broken down they can turn into compost. Composting your food scraps, grass and garden clippings (organics) can provide you with an excellent source of free garden food and soil improver. Compost can be made at home or is readily available commercially. Aged animal manures and vermicompost (worm castings) are rich in nutrients and are excellent for use in the home vegetable garden. Compost does not have to be dug into the soil. Unless the soil needs to be improved, the compost can be laid on top. Mulch layers will also break down over time to add nutrients to the soil.

Add
to your compost

- **Fruit and vegie scraps**
- **Coffee grounds**
- **Tea bags**
- **Herbs**
- **Leaves**
- **Egg shells** – crushed
- **Pizza containers**
- **Egg cartons**
- **Vacuum cleaner dust**
- **Onion** – outer skin
- **Finely chopped citrus peel**
- **Grass clippings**
  – thin layers 3 to 4cm
- **Chopped prunings**
- **Weeds**
  – not bulbs or seed heads
- **Shredded newspapers**

Keep out
of your compost

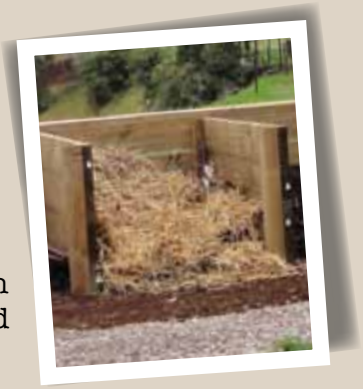
- **Meat and fish scraps**
  – they can attract vermin
- **Dairy**
  – again they attract vermin
- **Office paper**
  – bleached or glossy
- **Weed seeds and bulbs**
  – you will only spread them around your garden
- **Bird, dog and cat poo**
  – can be a health risk
- **Large tree branches**
  – unless you've put them through a chipper
- **Citrus fruit**
  – okay in small quantities
- **Diseased plants**
  – spreads disease

Compost bins

Operate as a closed system restricting vermin access and therefore allowing kitchen scraps to be added. In addition, compost bins are compact and preferable if space is limited. Place your compost bin in a sunny position to assist breakdown, and on soil so that liquid drains well and worms can enter the bin to aid composting. Keep moist but not too wet. Use the layered technique (pg. 24). The compost should be ready in three to six months.

A compost heap

An open system that requires more space and will attract vermin if kitchen scraps are added. A system of bays are constructed with the material forked from one to the other as it breaks down. The heap needs to be a minimum of $1m^3$ in order to generate enough heat to breakdown efficiently. Garden cuttings, lawn clippings and manures are added to the heap in layers to assist decomposition. The heap should generate enough heat to obtain compost in three to six weeks.



Kitchen fermentation kits

Specially designed bench kits that are a convenient way to break down kitchen waste. These kits are fermentation systems that break down waste to nutrient rich soil conditioner for your garden. The air tight system works when you sprinkle a handful of the manufacturer's rice husk and wheat bran that has been infused with micro-organisms over a layer of kitchen waste which then begins to breakdown. The fermented product then needs to be dug into soil.

Building a layered compost heap

1. Build your compost in thin layers (3 to 10cm).
2. Alternate high nitrogen (e.g. food scraps) and low nitrogen (e.g. dry leaves) layers.
3. Aim for a ratio of 3 buckets low nitrogen to 1 bucket high nitrogen.
4. Use a diversity of materials.

This diagram is an example of the different layers. Alternating kitchen and garden waste layers with an occasional layer of manure works well.

Compost bins can be purchased from your local nursery or hardware store.

Why is my compost...

1. Left with half decomposed big lumps?

Adding smaller pieces to the bin/heap should ensure that it all decomposes evenly. Avoid avocado seeds, pineapple tops, twigs and other woody items unless they can be crushed or chopped before adding.

2. Smelly?

Either: Too much nitrogen containing matter and not enough carbon (i.e. add a layer of dry material such as dried chopped up leaves and newspaper).

Or: Make sure you aid decomposition by using a garden fork and turn over the bin/heap occasionally (maybe once a week) to introduce more air. This prevents anaerobic bacteria from taking over and producing the bad smells. In a compost bin you can add lengths of holey irrigation pipe to increase aeration.

3. Crawling with ants and slaters?

The heap is too dry. Add a sprinkling of water or less dry matter. Ants and slaters are not harmful however they do indicate that your compost will not decompose fast enough.

4. Attracting flies?

If you see tiny flies (*Drosophila spp.*) every time you open the lid, rest assured that they are there because they enjoy the contents of your bin/heap, especially if you have been adding fruit peelings. Add a blanket cover to the contents of your bin/heap, such as hessian sacking or carpet felt underlay.

5. Visited by rats or mice?

Meat scraps and fish bones are best avoided since they do encourage vermin, especially over summer. Rats and mice enter the bin by digging underneath, so fasten a piece of fine mesh wire under the bin before commencing.

How do I know when my compost is ready to use?

It should look like rich, brown, moist soil and it should not smell offensive.

Worm farms

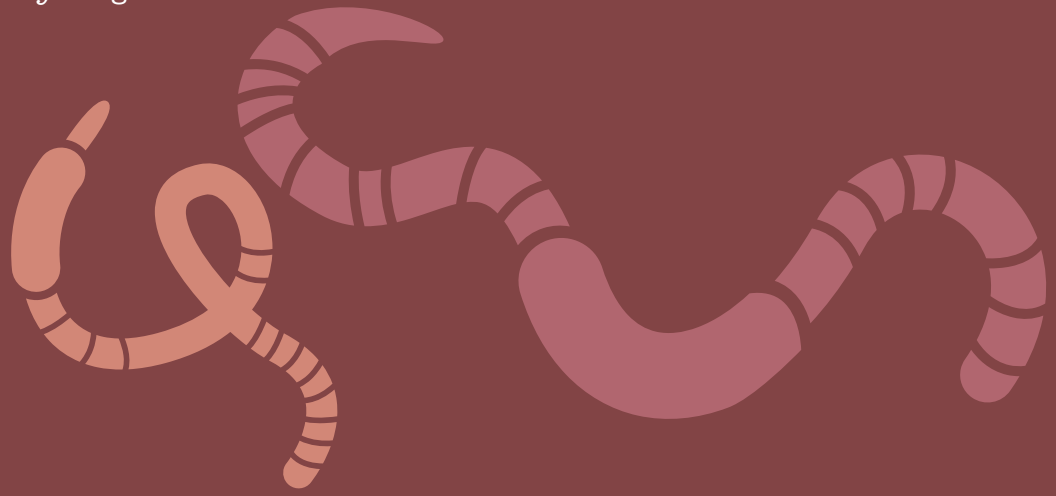
Keeping worms in worm farms and feeding them fruit and vegetable scraps is an excellent way to reduce the amount of organic waste you place into your garbage bin.

Worm farms can be purchased from hardware stores, and come with instructions and bedding material. There are specific composting worms that eat food scraps only and are different to the earthworms that you find in your garden. These can be purchased by the box at hardware stores. You should start with a minimum of 1000 worms.

Composting worms are Tiger Worms, Red Wrigglers and Indian Blues. Worms produce rich, inexpensive garden fertiliser, called worm castings and worm tea, that is great for your garden.

Worm farms are ideal for people mainly disposing of food scraps such as those living in flats or in houses with small backyards.

Food – when starting your worm farm, worms may take a few weeks to start eating and slowly build up their appetite. If you are adding more food than the worms can eat your worm farm may become smelly as the food is rotting. Be sure to monitor and adjust the amount of food you are giving your worms. If your worm farm is attracting rats and mice you are adding the wrong foods such as meat and bread.



Moisture – worms need to keep their skin cool and moist to breathe. Keep a few layers of moist newspaper, or a moist worm 'blanket', available at hardware stores, over the top of your worms before placing a lid on your worm farm.

Do not flood your worms and take care not to leave your worm farm uncovered if it rains. If your worm farm is too wet you may have huge numbers of small vinegar flies (a small amount are healthy).

Likewise, if you find worms drowned in the worm tea at the bottom of your worm farm your system is too wet. Add some torn up newspaper to absorb the excess moisture.

Temperature – worms stop eating if they are cold and will die if they are too hot. They like a temperature between 18 to 24°C so it is important to keep your worms in a shady place out of direct sunlight in summer and warm in winter.

Using your castings and worm tea – castings can be mixed directly into the soil around your plants or before you add seedlings to the soil. Because worm castings will never burn plants you can use as much as you like. Worm tea is a strong nutrient boost for your plants and needs to be diluted 1:10 in water before you add to your plants.

Watering

Australia is the driest inhabited continent on Earth, and, as such, we need to use water responsibly in the garden. It is important to check current rules about water use:
www.westernwater.com.au

Water is essential for growing healthy plants. How and when you replace water is important for growing healthy plants and reducing pest and disease problems.

Here are some tips

1. Put the water where it's needed – the roots!

Plants take up water through their roots, so direct the water there. Water on the leaves of plants can encourage fungi and mildew. The easiest way to do this in a vegie patch is through a subsurface irrigation system, where dripline or porous hose delivers water directly to the thirsty root zone of plants.

Make a shallow trench (about 2cm), lay your dripline, check it's working, cover lightly with dirt, and then mulch. Adding a timer will take the guesswork out of watering.

2. Group plants according to their water needs

Different plants have different water needs. Save yourself time, effort, and money (replacing dead plants) by grouping your plants according to thirstiness.

3. Think about alternate sources of water

Consider installing a rainwater tank even if it is a small one just for the vegie patch. This will allow for the more frequent watering regimes needed to grow seasonal vegetables or to ensure trees set fruit. Water fed by gravity from a rainwater tank is perfect for dripline irrigation systems.

A pump may be required where the site has an incline. Be aware of potential contaminants coming from your roof surface and consider installing a 'first-flush' device. SGA and Western Water have fact sheets on choosing the size and type of rainwater tank and irrigation systems for your garden. Visit **www.westernwater.com.au** and search 'rebates and tanks'.

4. Water in the morning

The earlier in the day you water your plants, the happier they will be. A morning drink allows the plants to take up water before the heat of the day, keeps the soil cooler, and avoids wet soil as the day time temperature cools. Watering in the evening allows for fungal diseases to take hold, particularly in warmer periods.

5. Test the soil before you water!

Don't just water for the sake of watering. Test the soil with your finger before watering– if soil sticks to your finger, the soil is damp and probably doesn't need a drink. If it's dry, water it! This is especially important in cooler months, where overwatering can lead to root rot, fungus, mildews and very cold soil.

6. Greywater and vegie gardens don't mix!

Untreated greywater (household water directed from the laundry and bathroom to the garden) should never be used on vegie gardens where food is grown for household consumption.

It can contain all manner of bugs, detergents, fats and oils. It can be used around fruit trees and shrubs as long as it is applied sub-surface by drippers. It should be alternated with fresh water to prevent a build up of toxins in the soil. Phosphorous free and low sodium detergents should be used if using greywater in the garden.

For more details visit **www.epa.vic.gov.au** and search 'greywater'.

7. Pots

If using pots to grow produce be aware that they will dry out quickly, especially in summer. To reduce the impact of evaporation, try to avoid dark coloured pots; consider glazed pots; include a saucer; consider double layering the pot (a smaller pot within a larger pot), installing dripper irrigation system with a timer (great for when you go away for the weekend) or adding a simple 2L drink bottle dripper.

8. Water storage crystals

As these crystals are petro-chemically based they are not appropriate for an organic garden. It's much better to store water in your soil with a rich compost. For more details visit **www.sgaonline.org.au** and search 'water storing crystals'.

9. Mulch

To prevent surface water evaporation throughout the year, produce gardens should be mulched with a straw mulch. However mulching can increase the incidence of insect pests like weevils and earwigs, so set up insect traps to deter them.

Mulching techniques

Mulching is essentially the application of a layer of organic material to the surface of the soil. There are a huge range of mulches available, but, for food gardens, a straw based mulch is the best. High in nutrients, straw based mulches (pea straw, lucerne and sugar cane mulches), when applied to a depth of about 7 to 10cm, will help keep soil moist, prevent weed infestation, minimise temperature fluctuations in the soil, and, as they break down, will improve both the structure and the nutrient content of the soil. Grass clippings are not a good mulch as they tend to mat together and form an impenetrable barrier, preventing water and air from reaching the plant's roots.

Top up your mulch every six months. Don't mulch right up to the stems of your plants as it can cause all manner of nasty fungal diseases to occur. Leave a gap of at least 4cm around the stem and monitor often.

Grass clippings are not a good mulch as they tend to mat together and form an impenetrable barrier, preventing water and air from reaching the plant's roots.

Garden health

Prevention is better than the cure!

Ladybird eating mould

Prevention

Integrated Pest Management (IPM)

IPM is a technique that tries to minimise pests and diseases naturally and without the use of harmful chemicals.

- Healthy plants can protect themselves, provided they have a healthy soil, are mulched, not exposed to synthetic fertilisers and are regularly watered.
- Check the micro-climate. Many fungal diseases occur when there is too much shade, poor ventilation due to plants being too close together or more vigorous plants out compete weaker plants.
- Set tolerance levels unless pest problems are at an unacceptable level. Accept that some losses and blemishes are normal in a chemical free garden.
- Practice a range of techniques – plant companion plants, net fruit trees, manually remove weeds and encourage biodiversity in the garden.
- Consider purchasing some beneficial insects commercially. Visit **www.goodbugs.org.au**
- Home remedies are often very effective. E.g. Milk spray can be used to combat powdery mildew; beer traps for slugs/ snails; or linseed oil for earwigs.
- Check your vegie patch regularly for pests. When you are watering, it is a good time to look for the very hungry caterpillar and friends!

White Fly

Companion planting

Companion planting recognises that, even in a highly managed environment such as a vegetable garden, it is essential that we have a large range of different plants and animals. Planting flowers and aromatic plants in a garden attracts beneficial insects, birds and fauna encouraging fertilisation and allowing you to control pests and diseases naturally. Some plants also seem to perform better, or worse, depending on what plants they are growing near.

Many of the claims made about companion plants are anecdotal, but others have a strong scientific basis.

Beneficial plants

- Mustard seed sown between plantings – inhibits root knot (nematodes).

Repellent plants

- Aromatic plants (e.g. basil and coriander) repel pest insects but plant large swathes.

Attractant plants

- Lavender, alyssum and other flowering plants attract bees and other pollinators.
- Umbelliferous flowering plants (e.g. carrots and parsley) attract butterflies.

Marigold

For an extensive list of companion plants visit:

www.sgaonline.org.au and search 'companion planting'.

Borage

Crop rotation

There are many soil borne diseases that can become problematic in our gardens. Preventing these diseases is critical in vegetable gardens. Crop rotation is the practice of alternating vegetable plants between different garden beds on consecutive seasons. No plant family should be repeated in the same bed on two consecutive years. If you grew solanums (tomatoes, eggplants, chillies, potatoes or capsicums) this summer you should not grow them again in that bed until two years havs passed. This will reduce the risk of diseases that attack solanums from taking hold in the soil.

It is okay to use that bed to grow a crop from a different plant family e.g. onions or garlic from the allium family.

Certain plants also fumigate the soil with toxic chemicals that are harmful to nematodes (microscopic roundworms) and certain soil fungi. For this reason brassicas, and in particular mustards, are often grown in beds that previously grew solanums. However brassicas should then be rotated the following season/year as they too can succumb to soil borne fungal diseases that attack their family.

For further information on crop rotation visit the SGA website, **www.sgaonline.org.au**

Example of crop rotation in a garden bed

Garden hygiene

Many of the diseases that attack our plants do so because of poor garden hygiene practices. Prevention is the best cure when it comes to most plant problems. Make sure that you:

- Sharpen your pruning tools so cuts are clean and bark isn't torn.
- Clean your secateurs by wiping the blades thoroughly with eucalyptus oil before moving between plants.
- Keep pest insects under control as they are often transmitters of viruses between plants.
- Prune diseased or damaged wood from trees before they cause bigger problems.
- Remove fallen leaf litter and infected fruit from around the base of trees.
- Avoid putting diseased leaves, fruit or other plant parts in your compost bin.
- Minimise insecticide use so that natural predators of fungal diseases are not harmed.
- Avoid using high nitrogen fertilisers that produce soft, sappy growth that is easily colonised by diseases.
- Source seeds and plants, from reputable suppliers.

Powdery mildew on sage leaf

Clean your secateurs by wiping the blades thoroughly with eucalyptus oil before moving between plants.

Identification

Sometimes, even in the best of gardens – THINGS GO WRONG! Don't panic... help is at hand! The most important thing is to accurately identify the problem and then discuss control options with your local nursery or refer to the SGA website.

Cabbage White Butterfly Caterpillar

Tomato Caterpillar

Snail

Chickens

Chickens can be an excellent addition to the backyard garden. Not only are they popular with children but they provide an excellent source of eggs and fertiliser. There are a few things to consider before setting up your hen house.

Council regulations

You need to research your local council regulations regarding the keeping of chickens. Council regulations will differ on issues such as whether or not roosters are allowed and how far from the property boundary the chook house needs to be.

It is also a good idea to talk to your neighbours about any concerns they may have.

Housing

Chickens are not particularly demanding, but there are a couple of accommodation necessities that need to be considered and constructed prior to the arrival of your girls!

Firstly, chooks need to have a house with a comfortable perch that gives them somewhere to roost at night and a place to shelter. Ideally, the chook house should allow about 0.5m^2 of floor space per hen, as well as 23cm of perch for each bird.

Chooks love nothing more than to scratch in some fresh mulch while they hunt for worms and show little regard for your precious plants.

Test run

Why not try before you buy? Conduct a web search of 'rent a chook' to find out more details.

While you are designing your coop, remember to incorporate some nest boxes at a rate of one box for every three hens.

Your chook house will need to be attached to a 'run', an area where your new arrivals can scratch, feed and roam. A decent rule of thumb is to give the chooks about 1m^2 space each, but this can be smaller if you plan to let them wander about in the garden from time to time. The run should have dirt for a dirt bath, and a permanently shaded area.

A fox and cat proof run is essential for the security of your chickens. Make sure your wire is buried at least 10 to 15cm under the ground and flared outwards.

Ongoing Care

You need to ensure your chickens have fresh, clean water in containers that they cannot knock over. Chicken pellets and grain should be stored in vermin proof containers outside your house and excess food such as kitchen scrapes removed so as not to attract vermin. Excess droppings in the coop should be raked up regularly and used as a garden fertiliser once they have aged.

Chickens will eat most food scraps but you should avoid giving them the following: avocado, chocolate, raw potatoes, raw peanuts, dried beans, raw meat, rotten food and some garden plants leaves such as eggplant, capsicum, tomatoes and potatoes.

Chickens in the garden

Left to 'free range' (i.e. chooks left to their own devices through the garden), your hens can wreak havoc, especially when there are young seedlings in the patch. Chooks love nothing more than to scratch in some fresh mulch while they hunt for worms, and show little regard for your precious plants. That said, they are fantastic at the end of a growing season in the vegie patch, because they will turn the whole lot over, while pulling out the remains and adding fertiliser as they go.

More established vegie patches can benefit from poultry patrol, particularly if you are having insect issues and weed worries, and unless the plants are sensitive (e.g. lettuce and spinach) the chooks will give them a miss. Sensitive plants can be fenced off with some temporary fencing, to prevent attack from roaming hens.

For more details on keeping chickens and council regulations visit:

www.kynetonpoultryclub.com
www.mooroolbark.vic.gov.au
www.hume.vic.gov.au
www.mrsc.vic.gov.au
www.melton.vic.gov.au

Seasonal planting

Remember if planting from seed you need to plant 6 weeks earlier than seedlings, or according to the suppliers instructions.

Globe Artichoke

Annual planting guide

PLANT	J	F	M	A	M	J	J	A	S	O	N	D
Asian Greens*			●	●	●	●	●	●	●			
Asparagus				●	●	●	●	●	●			
Basil*	●	●									●	●
Beans* (summer)	●	●									●	●
Beetroot	●	●							●	●	●	●
Broad Beans			●	●	●	●	●	●	●			
Broccoli				●	●	●	●	●				
Cabbage			●	●	●	●	●	●				
Capsicum										●	●	
Carrots*	●	●	●	●						●	●	●
Cauliflower			●	●			●	●	●			
Celery		●	●	●			●	●	●			
Chilli										●	●	
Coriander		●	●	●	●	●	●	●	●	●	●	
Cucumber	●									●	●	●
Eggplant											●	●
Endive	●	●	●	●	●	●	●	●	●	●	●	●
Globe Artichoke			●	●	●	●	●	●	●	●		
Leeks	●	●								●	●	●
Lettuce	●	●	●							●	●	●
Onions			●	●			●	●	●	●		
Parsley	●	●	●	●	●	●	●	●	●	●	●	●
Parsnip*	●	●	●							●	●	●
Peas*					●	●	●	●	●	●		
Potatoes	●	●								●	●	●
Pumpkin	●									●	●	●
Radish*	●	●	●	●	●	●	●	●	●	●	●	●
Rocket	●	●	●	●	●	●	●	●	●	●	●	●
Silver beet	●	●	●	●	●	●	●	●	●	●	●	●
Spinach				●	●	●	●	●	●			
Spring onions	●	●	●	●	●	●	●	●	●	●	●	●
Sweet corn	●										●	●
Thyme	●	●	●	●	●					●	●	●
Tomatoes	●	●	●								●	●
Zucchini	●									●	●	●

*Best grown from seed

Autumn

Plant as seedlings or seed which you have propagated into seedlings by Autumn.

Winter Lettuces - Mignonette and Mesclun

- Need a warm, sunny, position. Choose cold hardy varieties. Seeds will not germinate over 30°C. Growth will slow in cold temperatures.
- Heavy feeder – likes a rich, moist, well drained soil, pH of 6 to 7.
- Can be ready to start picking in 6 to 8 weeks. Pick only leaves as needed for a continual harvest or repeat sow.
- Lettuces can become bitter if water stressed so apply ample water and regular liquid fertiliser during growing period.
- Can also be grown in pots, but do not allow to dry out.
- Companion plant: celery.

Peas – Snow Peas, Sugar Snap, Shelling

- Likes plenty of sun, a fertile, well drained soil and a pH of 6.5 to 7.5. Add a little garden lime to the soil at planting.
- Prefer temperatures below 20°C for germination and growth.
- Can be ready to start picking in 10 to16 weeks. Snow peas bear earlier than shelling peas. Repeat sow every 4 to 6 weeks for an extended season.
- Climbing varieties are more productive than the bush varieties, but will need an upright support.
- Companion plant: carrots.

Spinach - English and European

- Likes a fertile, well drained soil and a pH of 6 to 7. Plants dislike excessive root disturbance at all stages.
- Prefers temperatures below 20°C for germination and growth. Warm temperatures will give poor results.
- Apply liquid fertiliser and ample water throughout the growing season.
- Ready to pick at 8 weeks. Pick leaves as needed for a continual harvest. If removing spinach heads, leave stems to re-sprout.
- Will run to seed in warm weather.
- Companion plant: strawberry.

Beetroot and Silverbeet

- Like a moist, well drained soil with a pH of 6.5 to 7. Add a little garden lime to the soil at planting. Avoid using high nitrogen fertilisers.
- Seeds benefit from soaking in warm water for a couple of hours prior to planting. Beetroot seedlings must be thinned as needed to allow for good root development.
- Beetroot and/or silverbeet should be ready to pick in 4 to 6 weeks.
- Beetroot will be tough if water stressed or over mature. Apply ample water during the growing period and harvest at 10cm root width.
- Companion plant: onions.

Carrots and Parsnips

- Light feeders – too many nutrients will produce excessive top growth at the expense of the roots.
- Like a deep, loose friable soil with a pH of 6.0 to 7.0. Build up beds in clay soil areas.
- Root crops can be slow to germinate, so keep weeds down to prevent competition with young seedlings as they emerge. Carrot seed should be sown late in the season.
- Thin out young plants to allow for the development of larger root size.
- Companion plant: peas.

Cabbage, Cauliflower, Broccoli, Kale and Brussel Sprouts

- Heavy feeders – like a rich, well drained soil with a soil pH of 6.5 to 7.5.
- Prepare beds well with aged compost and add dolomite lime for calcium.
- Mound the soil around plants to support leggy growth.
- Apply ample water during the growing season and feed weekly with a liquid fertiliser.
- Brassicas will run to seed and heads fail to form if weather is too warm at harvest time.
- Heads can be harvested at between 10 and 14 weeks.
- Companion plant: dill.

Asian Greens – Chinese Cabbage, Bok Choi and Pak Choi

- Generally faster growing than European varieties.
- Heavy feeders so plant after legumes.
- Like plenty of sun and a well drained soil with a pH of 6.0 to 7.0.
- They are shallow rooted so need ample water and frequent feed of liquid fertilisers.
- Outer leaves can be picked as needed for continuous harvesting but do not defoliate.
- Companion plant: lettuce.

Home grown favourites

(Spring)

Plant as seedlings or seed which you have propagated into seedlings by Spring. Do not plant out until the Winter frosts in your area have finished.

Tomatoes

- Need a warm, sunny, position but never in the same spot as the previous season.
- Large varieties are heavy feeders but small cherry tomatoes are less fussy.
- Calcium deficiency can be prevented by adding dolomite lime or gypsum to the soil prior to planting.
- Prefers a soil pH of 6.0 to 6.8.
- If using seedlings plant up to the first set of leaves to encourage root development. Support large plants with stakes.
- Pinch out top growth to encourage more lateral growth.
- Apply liquid fertiliser and ample water.
- Companion plant: basil.

Capsicum and Eggplant

- Cultivation is similar to tomatoes but need good airflow.
- Calcium and magnesium deficiency can be prevented by adding dolomite lime to the soil prior to planting.
- Prefers a soil pH of 5.8 to 6.8.
- Apply liquid fertiliser and ample water throughout growing season.
- Shade on days of extreme heat.
- Pick capsicum at desired stage of ripeness.
- Individual eggplants should produce 8 to 10 fruit.
- Companion plant: beans.

Cucumber

- Heavy feeder - likes a rich moisture retentive soil.
- Prefers a soil pH of 6.0 to 7.0.
- Seed can be sown directly into warm soil. Important to choose a variety to suit your climate.
- Quick to grow and ready to harvest in 6 to 8 weeks.
- Can be grown up a trellis or in pots.
- Pinch out the top growth to encourage laterals.
- Each plant produces 8 to 10 fruit.
- Companion plant: corn.

Pumpkin

- Often appears as a 'volunteer' crop when using home made compost.
- Heavy feeder – likes a rich, well drained soil. Can become rampant.
- Prefers a soil pH of 5.5 to 7.0.
- Can be grown on mounded beds or on a trellis.
- Apply ample water during the growing season.
- Has both male and female flowers so pollination by bees or by hand is necessary.
- Harvest when top stalk dries and hardens.
- Companion plant: eggplant.

Leafy vegetables e.g. Lettuce, Rocket and Mesclun
(as per Autumn planting)

Beans

- Replaces nitrogen in the soil after a heavy feeder crop. Add some blood and bone to the soil before planting.
- Like plenty of sun and a well drained soil.
- Prefers a soil pH of 6.5 to 7.5.
- Can be ready to start picking in 10 weeks. Sow repeatedly every 4 to 6 weeks for an extended season.
- Climbing varieties are more productive than the bush varieties but will need a trellis support.
- Companion plant: broccoli.

Root vegetables – Carrots, Parsnips and Beetroot
(as per Autumn planting)

Sweet corn

- Heavy feeder so plant after legumes.
- Likes plenty of sun, water and a well drained soil.
- Prefers a soil pH of 6.0 to 7.0.
- Has male flowers and female flowers that are wind pollinated.
- Grows to about 1m in height.
- Beans are traditionally grown with corn as the beans provide nitrogen and the Corn provides support.
- Companion plant: beans.

For a complete planting guide visit:

www.gardenate.com

For a month by month guide visit:

www.sgaonline.org.au and search 'this month in your patch'.

Beyond the garden...

Gardening fun doesn't stop at your fence.

Get connected!

Gardening is one of the most popular hobbies in Australia, and many people are wanting to adopt sustainable gardening practices. A great way to do this is to connect with your local gardening community. You can do this by joining a group or supporting local food swaps and farmers' markets. You can also consider coordinating with your neighbours e.g. if you want to grow apples you need two apple trees to cross-pollinate. Bees have no problem crossing the back fence if you don't have enough space to grow two trees.

Community groups

Sharing Abundance

Sharing Abundance is a viable, local food system involving mutual exchange of fresh produce and labour in a fun, sociable way. Local co-ordinators organise groups of people to harvest excess backyard produce and maintain fruit trees. Produce is shared between those involved and those in need such as local schools and hospitals.

If you have a fruit tree in your backyard, or want to get out and about with your neighbours, it's easy to be involved.
www.sharingabundance.org

Transition Network

Transition Towns or Hubs are grassroots community groups focused on local self reliance. Transition groups offer a wide range of sustainability initiatives including gardening activities and food exchange.

Transition Town Riddells Creek
Has a fantastic Foodgardeners Group as well as the Riddells Creek Seed Savers and Nature Strip Food Gardens.
www.transitiontownriddell.org.au

Kyneton Transition Hub
Work together to transform backyards into edible gardens.
www.kynetontransitionhub.com

Permaculture

Permaculture is a practical design concept applicable from the balcony to the farm, from the city to the wilderness. It enables people to establish productive environments providing for food, energy, shelter, material and non material needs, as well as the social and economic infrastructure that supports them.

To arrange a visit to the permaculture garden in Woodend contact the Macedon Ranges Sustainability Group.
www.mrsgonline.org.au

Share your food gardening experiences through Macedon Ranges 'Our Stories Page' at **www.ourlandscapes.mrsc.vic.gov.au**

Community gardens

If you do not have space to grow your own produce or you would like to be part of a collective, a community garden may be for you. Community gardens vary in structure but typically the land is managed by a committee. Individuals can either have access to their own plot or share a plot with others to grow food to share.

Get involved in your local community garden today at the following locations:

HUME

Craigieburn Community Garden
Hamilton Street Reserve, Craigieburn
(behind the Guides Hall)

Jill Gibbs Neighbourhood Garden
Riddell Road, Sunbury

Meadows Primary School Educational Garden
Gerbert Street, Broadmeadows

Roxburgh Park Homestead Community Garden
Roxburgh Park Homestead, Whiltshire Drive, Roxburgh Park

Sunbury Community Garden
Highgrove Drive, Sunbury

Westmeadows Indigenous Community Garden
Toora Drive, Westmeadows

For more information visit **www.hume.vic.gov.au**

Community gardens

MACEDON RANGES

Lancefield Community Garden
Lancefield Neighbourhood House
Contact: Emma on (03) 5429 1214

Woodend Community Permaculture Garden
Contact: Krista on 0408 204 449

Kyneton Edible Gardens
Contact: Julie on (03) 5422 3023

Kyneton Community & Learning Centre Community Garden
34 Mollison Street, Kyneton
Contact: (03) 5422 3433

Riddells Creek Neighbourhood House Community Garden
59 Main Road, Riddells Creek
Contact: (03) 5428 7836

MELTON

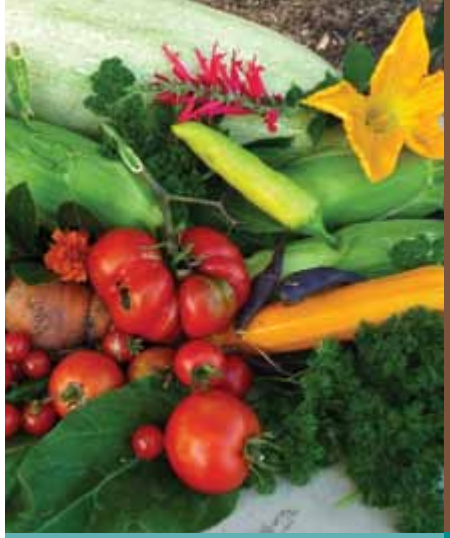
Melton at Heart Community Garden
Station Street, Melton
Contact: Cathleen on (03) 8746 1000

Melton South Community Centre Garden
Contact: Danielle on (03) 9747 8576

Melton Men's Shed
Contact: (03) 9971 5106

BACCHUS MARSH

Ballan Community Garden
Ballan Art and Craft Society
Contact: Miranda on (03) 5368 1100



...be part of a collective community garden...

...grow your own...

...come together and swap excess home grown produce, ideas, knowledge and skills.

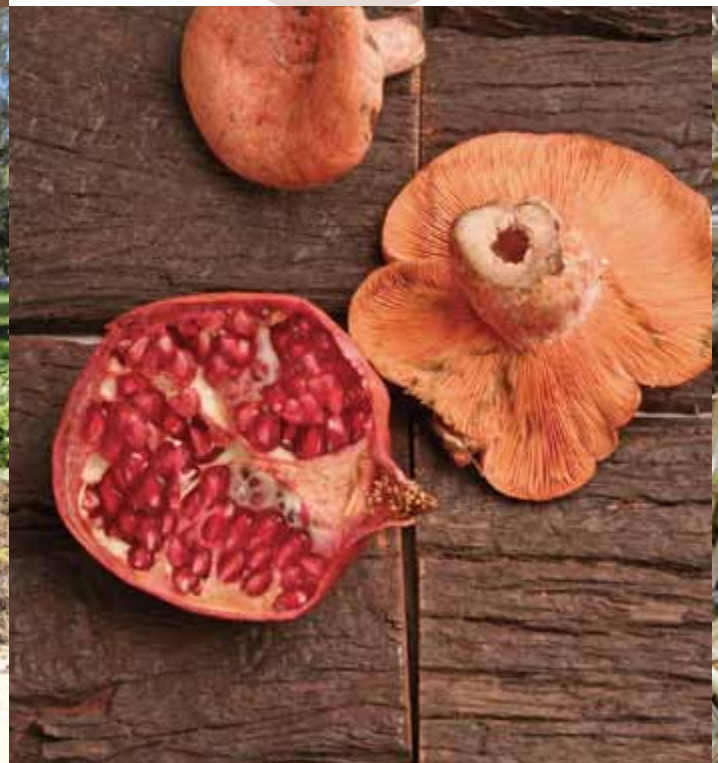
Farmers' markets

HUME

This is a place where farmers sell their produce directly to consumers. They serve not just as a place for farmers to get the best price and consumers to get the best products, but as venues for producers and consumers of food to come together, forge relationships, and exchange information.

Highland Farmers' Market
Third Saturday of the month from 9.00am to 2.00pm. Located at 1 North Shore Drive, Craigieburn.
Contact:
highlandfarmersmarket@stockland.com.au

For more information visit the Victorian Farmers' Market website:
www.vicfarmersmarket.org.au



Farmers' markets

MACEDON RANGES

Woodend Community Farmers' Market
Woodend Community Centre Grounds
Cnr. High and Forest Streets, Woodend
First Saturday of the month from 9.00am to 1.00pm

Kyneton Farmers' Market
St Paul's Park
Piper Street, Kyneton
Second Saturday of each month from 8.30am to 1.00pm

Riddells Creek Farmers' Market
Main Road, Riddells Creek
Third Saturday of each month from 9.00am to 1.00pm

Lancefield & District Farmers' Market
Centre Plantation,
High Street, Lancefield
Fourth Staurday of each month from 9.00am to 1.00pm

Food and seed swaps
Provide an opportunity to come together and swap excess home grown produce, seeds and ideas, knowledge and skills. No money changes hands at local food swaps; the only currency is what you have produced (and possibly over-produced) at home.

To find out about local food and seed swaps in your area visit:
www.myhomeharvest.com.au

Veggie Swap is an online harvest exchange platform for home and community gardens
www.veggieswap.com

Further information

Western Water
Address: 36 Macedon Street, Sunbury VIC 3429
Postal Address: PO Box 2371 Sunbury DC VIC 3429
Telephone: 1300 650 422
Fax: (03) 9218 5444
Email: mail@westernwater.com.au
Website: www.westernwater.com.au

Hume City Council
Address: 1079 Pascoe Vale Road Broadmeadows VIC 3047
Postal Address: PO Box 119 Dallas VIC 3047
Telephone: (03) 9205 2200
Fax: (03) 9309 0109
Email: contactus@hume.vic.gov.au
Website: www.hume.vic.gov.au

Macedon Ranges Shire Council
Address: Kyneton Town Hall, 129 Mollison Street, Kyneton VIC 3444
Postal Address: PO Box 151 Kyneton VIC 3444
Telephone: (03) 5422 0333
Fax: (03) 5422 3623
Email: mrsc@mrsc.vic.gov.au
Website: www.mrsc.vic.gov.au

Sustainable Gardening Australia (SGA)
6 Manningham Road West
Bulleen VIC 3105
Telephone: (03) 8850 3050
Fax: (03) 9852 1097
Email: info@sgaonline.org.au
Website: www.sgaonline.org.au

Ingredients for harvesting joy:

• seeds • good healthy soil • warm loving sun
• sprinkling of water =
delicious home grown food in all colours of the rainbow