



# LET'S GROW FOOD

## Introduction

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Many people are finding it increasingly difficult to cope with the rising cost of living. This book has been written to help meet that need.

This book gives you the practical know-how so that anyone with even a very small space can grow fresh produce, with practically no outlay, no chemicals and with a minimum of effort. All you really need is the WILL to do it.

It does not seek to invalidate traditional gardening methods, but rather to extend them so that anyone with limited means, space or knowledge can grow at least some of their own food using sustainable methods.

The sowing and planting times in this book are for south-eastern Australia but the information and principles will apply anywhere. If you are from outside this area we have included an appropriate sowing guide for your area. Local area knowledge is also valuable and free so make the most of it where you can.



Don't be daunted;  
you can do it!

Let's call problems  
'challenges', and see  
what we can do.

We'll take them one  
by one and find some  
solutions.

**"I know nothing about  
gardening"**

Growing vegetables does not require great knowledge or skills. People in tribal and small communities around the world grow food. They have done so for generations with no formal education at all.

**"Everything I plant  
seems to die."**

Plants are like us. They need food, water and sunshine to live and grow. Like us, they also need care to achieve their potential.

We will show you in a simple way how to take care of plants so you can harvest your own fresh vegetables.

**"I live in a unit or a caravan,  
what can I do?"**

Vegetables can be grown in containers on a balcony, porch or at the caravan door. They can even be grown inside! There are many smaller growing vegetables available and don't forget sprouted seeds. Their nutritional value is phenomenal and they can be produced in 3-4 days!

**"I live in a rented house"**

Vegetables can be grown in containers, even quite large ones. Deep polystyrene containers are ideal and can be painted with acrylic paint if you want to improve their looks or brighten them up.

**"I get transferred with my  
employment."**

Containers are ideal and can be relocated to your new address along with all of your other belongings.

**"My dog digs everything up"**

Aside from fencing off your vegetable patch, which may not be practical or affordable, you could use containers and put them on a frame or an old table so they are out of reach.

**"My soil isn't any good."**

The condition of the soil (rocky, clay, sand) is no real obstacle. We will show you how to improve your soil for FREE and also how to make a vegetable garden on rock, concrete or asphalt!

**"We rely on tanks"**

Limited water supply is a challenge but re-using grey water, increasing the ability of the soil to hold water, mulching, and 'stacking' plants can all help conserve and make the most of our precious water supplies.

Even on mains water we should still conserve as much water as we can. Basic grey water diversion piping is not expensive while mulching and improving your soil needn't cost you anything.

**"I can't afford to buy plants"**

Most vegetables can easily be grown from seed. A packet usually contains a lot of seeds and you can save seed from your crops to provide seed for the next growing season. We have also included other easy ways to get plants and seeds with little or no outlay.

**"I've given up because  
of the pests"**

In nature all things are kept in balance. We can copy this 'balance' in our garden to help control pests or, alternatively, we can use sprays made from simple household ingredients to control pest outbreaks.



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# I want to know more

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Now we've come this far let's keep going. We know that growing some of our own vegetables will save us money and will provide us with 'garden fresh' produce but what do we do next? The first thing we need to do is look at the space we have available.

The following are some suggestions starting with caravans or units and working up to people that have their own yard:

- sprouting seeds grown in jars inside,
- containers around the tow pole, doorway or annexe of your van,
- hanging baskets on brackets fixed to trees or a wall,
- 'towers' made with a large tub at the base and filled with mix then a smaller one on top, and so on, building up like a cone and planting in the 'terraces',
- a 'retired' wheelbarrow,
- some caravan parks have 'community' gardens or may have a plot that you can use,
- the north or east facing side of a fence or wall of a house or shed. Fix brackets to hang pots or planters. Even if you haven't

got such a spot there are still a lot of things that can be grown without much sun,

- a disused patch of concrete, asphalt or bare rock can be made to flourish with a 'no-dig' garden,
- a neighbours or friends unused backyard. Elderly or disabled people might enjoy the company and activity as well as some fresh vegetables,
- a railway reserve or vacant land adjacent to your property; check with the owners first,
- unused space where you work,
- or if you have your own yard the potential is almost unlimited.



# Use your site to the best advantage

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For example:

- a brick or concrete wall will provide wind protection and will store heat. This will help things to ripen earlier and could extend the growing season for some plants further into the autumn,
- a fence will provide protection and somewhere to grow climbing plants such as beans, peas and 'staking' tomatoes,
- wire fixed to the side of a carport and planted with climbing beans would provide some shade in the summer for your car as well as being a screen from neighbours,
- a window box outside a north or east facing window could be planted with herbs or small vegetables,

- a leaky gutter or downpipe on your house or even a neighbour's shed could provide extra water to grow 'thirsty' vegetables such as rhubarb or sweet corn,
- 'stacking' plants is another great way to fit more food plants into a small space (more on this later).

Take a few minutes 'time out' and have a wander around your 'domain'. Find the warm spots, the cool spots, the damp spots, the shady spots and the drier spots. They will all grow something; why not something to eat?

## LOOK FOR SOLUTIONS — NOT PROBLEMS

# What's next?

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We've found spots to grow things, but how do we grow them? Like us, plants need food, water and sunshine. They also need soil or growing medium to grow in. Plants draw nutrients and water from the soil; they also make food from sunshine. Using household waste, we can provide nutrients (food) for plants, build up and improve the soil, and grow our own food without spending any money!

## Food for the soil

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The addition of organic material to the soil has the following benefits:

- improves soil structure,
- improves water-holding ability,
- increases soil-life, making more nutrients available to plants.

At least 50% of household waste can become food for the soil.

The following waste materials from in and around our homes can be used to improve our soil:

- uncooked fruit and vegetable scraps. Keep a bucket under the kitchen sink,
- lawn clippings,
- floor sweepings and the dust from the vacuum cleaner,
- old hessian or jute sacks,

- egg shells (crushed),
- egg cartons (also good for growing seedlings),
- old coir door mats (coconut fibre),
- hair and feathers,
- old linen, cotton or wool clothes (cut up roughly first),
- trimmings from the garden,
- used tea bags (remove the strings and tags first),
- dead flowers,
- manure/litter from chooks, rabbits and guinea pigs,
- shredded paper or old newspaper/phone books torn up and soaked in water,
- coffee grounds.

A good guide to go by: Was it once alive? Can it rot? If the answer to both is yes then it can be food for the soil.



## Other sources of food for the soil

Consider sourcing:

- waste from your local fruit shop, which will generally have a high water content; a bonus! This waste can be 'processed' by chooks first (if you have them),
- horse manure from someone who keeps a horse or has stables. Stable manure will have the added bonus of chaff or straw, and nitrogen from the urine,
- lawn clippings/leaves from neighbours or someone in your area that mows lawns or does gardening,
- spoilt or damaged bales of hay from your local grain and produce store; even the loose bits raked up and bagged,
- shredded paper from offices, etc. Collect only non-glossy, plain white paper,
- pine needles, which are usually thick under old pine trees and generally yours for the asking,
- council dumps. Most local councils have mulched, green waste that you may be able to help yourself to; but check first,
- wood shavings and sawdust from a timber mill or joinery. Do not use sawdust or shavings from chemically treated timber,
- cow manure is often available from stockyards and milking sheds; ask the property owner,
- sheep manure accumulates in yards or under shearing sheds; ask the property owner,
- poultry manure from your own chooks, a neighbour or a friend. Also available from egg or meat chicken farms,

- seaweed. Fantastic stuff! High in nutrients. If you live near a beach you may be able to collect seaweed that has been washed up on the beach. Not likely to be allowed on coastal beaches but often raked up by councils on lake or estuary beaches prior to the summer season. Always check with the responsible authority first.

Not all of these sources will be available to you. However, if you look around you and think about what places process or have organic wastes as a by-product, you will be surprised at how much is available.

If we use a good variety of materials from diverse origins we will build a balanced soil, through the addition of this material, with little likelihood of nutrient deficiency.

### What do we do with all this material?

That all depends on what sort of garden you are going to have. The traditional thing to do would be to build a compost heap and decompose it that way. The easier way is to incorporate it into your soil or growing medium and let it decompose as you are growing things.



Anything which lived and can decay. Can it rot? Bury it!

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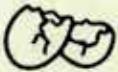
Bones



Fruit and vegetable Waste



Paper and Cardboard made from wood



Eggshells



Feathers



Old Leather



Natural Fibre Rags



Burnt Sticks, Wood Ash, Soot



Food Scraps



Sawdust



Leaves



Dead Flowers



Grass, Weeds, etc



Old Plants



Cow Manure



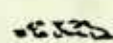
Poultry Manure



Rabbit Manure



Stable Manure



Pigeon Manure

Seaweed, Fish waste, Hoofs and Horns,  
Blood and Bone, Weeds

✓ **FOOD FOR THE SOIL**

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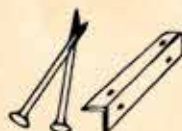
Sort these into your recycling or garbage bins.

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**CHECK YOUR LOCAL COUNCIL'S GARBAGE AND RECYCLING LIST FOR WHAT CAN BE RECYCLED AND WHAT CAN'T.**



Plasticised  
Cartons



Old Scrap Metal



Plastic or Glass  
Bottles

Old Tins

Soft drink or Beer  
cans



Plastic/Foam meat  
or vegetable trays



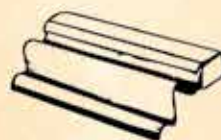
Old Footwear made  
from plastic, vinyl,  
etc (All leather  
shoes will rot if bur-  
ied)



Old Batteries



Broken china



Aluminium foil, plas-  
tic, coloured paper

**X NOT FOOD FOR THE SOIL**

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# Suggested garden types

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## CONTAINER 'NO-DIG' GARDEN TRENCH OR PIT COMPOST GARDEN

### Container gardens

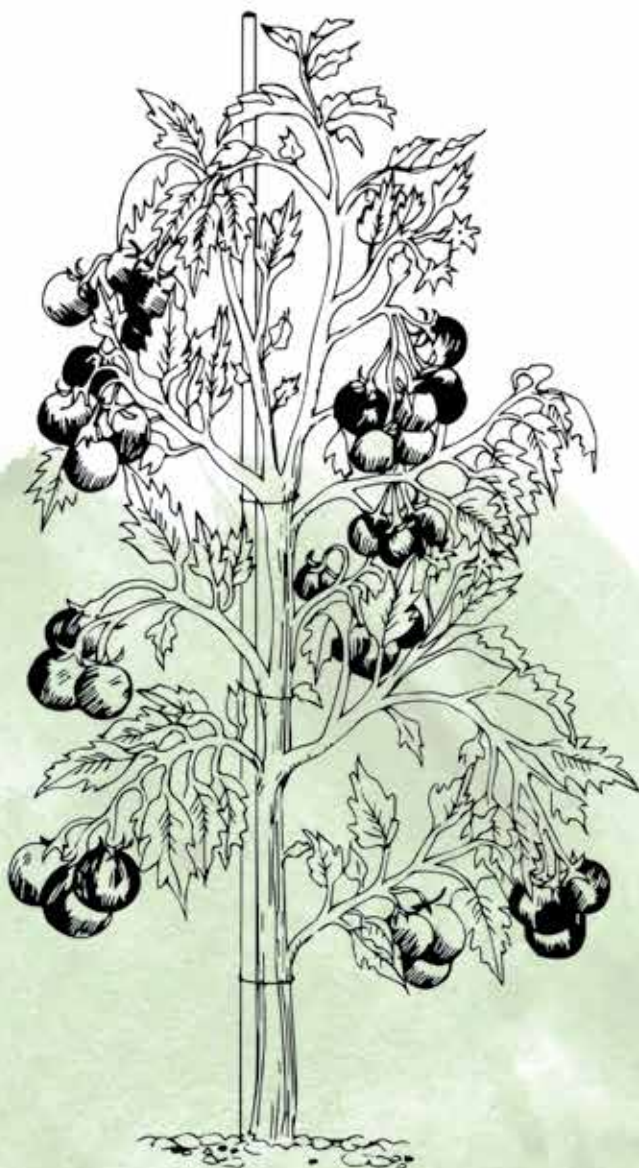
There are numerous commercially available containers; pots, tubs, planters, raised garden beds, baskets, and so on. Some can be picked up cheaply second hand but we will concentrate on containers that we can normally get for free. Some will be suitable for your situation; here are a few suggestions:

- used plant pots, especially the larger ones, 30cm diameter or more; try your local tip or landscape gardener,
- polystyrene fruit and vegetable boxes; try fruit shops, restaurants or supermarkets. Give them a coat of paint if you like. Kids (or adults) might like to paint pictures on the sides,
- 20 litre plastic buckets. These are used in the food industry so try cake shops, bakeries, restaurants, etc. Other industries use them but you will know they contain no harmful chemicals if you get them from the food industry,
- an old bath. Build a frame to hold the bath. Cover the frame if you wish, or position other containers around it. Leave the plug hole for drainage,
- any container that will hold a reasonable amount of soil: plastic buckets, wooden boxes, an old wheelbarrow, plastic crates, heavy duty poly bags, old laundry baskets (lined with a plastic bag), small plastic or metal garbage bins, old tyres (singly or stacked), bricks (stacked), cut down milk or juice containers, metal cans (these can also be painted), even ice cream containers. Look around, you will probably find more.

Containers need drainage holes so if you are using something that hasn't got them you will need to make some. A drill is best for plastic as punching a hole through will split the plastic.

If you are using a wooden or plastic crate with semi-open sides or spaced planks, it is best to line it with a plastic garbage or similar bag to contain the soil and then make some holes.

An offcut or old length of roof guttering with the ends stopped makes an ideal planter for strawberries, herbs or salad greens. Nail or screw a block of wood into each end to hold the soil then hang it with wire or plastic string onto a north or east facing fence or wall.



# CREATIVE GARDEN SOLUTIONS

A number of them, one above the other, would enable you to grow a lot of produce and would look great. Varying short lengths of 100 mm PVC pipe, strapped together and stood on end will also make an attractive and functional herb planter, especially for things like mint that can take over if planted amongst other herbs.

## Soil mix for container gardens

Container-grown plants will be relying entirely on you for their nutrients so a supply of old manure, at least to start off with, is important. One or two bags of cheap potting mix to provide a bit of bulk is also a good idea. This will give you something to work with initially. You will soon increase it with your own organic matter as time goes on.

If you are using polystyrene boxes or large tubs it is a good idea to put a few layers of newspaper or a pair of old jeans folded to fit in the bottom. This will stop the potting mix from falling through the gaps and will also help to retain water.

After you have lined the base with newspaper, add about 100 mm of potting mix followed by about 20 mm of old manure. Add vegetable and fruit peelings, used tea bags, shredded or torn paper, leaves, etc, mixing some more manure as you go. This will help the peels, paper, etc., to break down. When the container is nearly full, add a layer of potting mix to the top and firm it down with your hands. To maintain the garden, just keep digging small pockets and filling them with the same sort of waste and a bit of manure from time to time. For shallow gardens (guttering, etc.) you may be better to mix old manure with potting mix.

## 'No-dig' gardens

These are sometimes called 'lasagne' gardens because they are made in layers.

No-dig gardens can be as small or as large as you want them. A bed about 1.2 metres square could be made using reclaimed timber from an old pallet. It would be manageable and accessible from all sides and more beds could be added as required. Old tyres also work well.

Clear the site of any rubbish and mow or flatten any weeds. If the soil is dry, give it a good watering. No need to dig it over. The soil life will do it for you!

Basically you need a frame to hold the organic matter. It needs to be 150-200 mm high (higher if you like), using timber or concrete blocks to make the sides. Cover the ground where you plan to make your garden bed with layers of old newspaper, wool carpet, felt underlay, old hessian sacks or cardboard. Make sure there are good laps at the joins, then put your frame or old tyres on top. Leave the bits that hang out around the edges until later to trim off. This layer will stop weeds coming through from the grass. In time it will rot, adding organic matter to the soil. Give this layer a good soak with water to settle it.

Cover the first layer with a good layer of old hay or straw. Ideally, you would use lucerne hay but this is not cheap so use any coarse organic material. Spread dry leaves and small prunings on the lawn and run the mower over them a couple of times. This will shred them, mixing lawn clippings as you go. This layer can be 200 mm thick. Do not worry if the whole thing is piling up as it will settle as it starts to decompose. If you do not have a lot of material for this layer, make your bed a bit smaller and fill it out as you can.

Cover this layer with a good layer of old manure. This layer is important as it provides nutrients and micro-organisms to get decomposition under way. If you are using horse or cow manure run the mower over it to chop it up first. Use as much old manure as you can; try and completely cover the layer below.

Cover the manure layer with a layer of mulching material. Use straw, tree mulch, shredded paper mixed with tree mulch or grass hay. This layer will help to retain nutrients, hold water and protect young seedlings.

Give your no-dig garden a thorough soaking to settle it down and start the decomposition process.

You are now ready to plant. In this type of garden with high levels of fresh organic matter, it is better to start by planting a leaf crop, followed by a fruiting crop, then a root crop. Simply open a pocket through the top layer, put in a couple of handfuls of soil, and plant your seedling. The mulch on the top layer will shelter and protect your young plants. Planting in rows is okay, but not necessary. As your garden develops, fill in the spaces with whatever you want. At this stage, attention to watering is important as the garden will drain very quickly. As the material decomposes, the water holding ability of the garden will improve a lot.

To plant seeds, you will need to lay a strip of soil down in the mulch to act as a seedbed.

To maintain your garden, simply add organic matter from the earlier list and cover it with mulch. The soil life will do the rest.

## WHAT TO DO

## WHY DO IT

## WHAT IT LOOKS LIKE

Slash Long grass and weeds mow lawn and leave clippings in place

Clippings decompose and add organic matter to the soil



Wet whole area thoroughly

Rain won't reach the soil through the layers



Paper cardboard underfelt or even old carpet Lay overlapping sheets over whole area

Stops weeds and adds more organic matter to the soil



Add Lucerne hay to 10cm in depth

More compost to turn into humus



Add a layer of rotted manure, compost or mushroom compost (always difficult to get enough)

Immediate source of plant nutrients



Add a layer of clean weed-free mulch (10cm) such as straw

Holds water in retains volatile nutrients protects seedlings, & helps control soil temperature



## Trench or pit compost gardens

With this type of garden, you simply dig a trench or pit, add organic matter, put the soil back on top, and plant. It works well on any soils providing you don't dig down into the clay on shallow soils. It is particularly good for sandy soils as layers of newspaper, wool carpet, old jeans, etc. can be put in the bottom of the trench to help retain moisture.

To begin, make a line along the edge of your proposed garden. Using a shovel or spade, dig a trench along the line and put the soil beside the trench or pit. If the soil is sandy, line the base of the trench or pit, as mentioned earlier. Fill the trench with organic matter from the list on page 6. Stable or poultry manure are ideal to add if you are making the garden in late winter, as they will generate heat as they are decomposing. This heat will give your plants a boost in the spring. Always put fresh manure in the bottom as it may burn the roots of young plants. Refer

to the section on 'food for the soil', on page 6, then fill the trench with an assortment of organic material. A typical trench or pit could have light prunings, dead flowers, egg cartons or other coarser organic matter in the bottom; then maybe loose grass clippings, vegetable peels, tea bags and any old manure you can find. When the trench or pit is full, replace the soil and you are ready to plant.

You can start the next trench beside the first one and continue doing this until the garden is as big as you want it. To maintain this type of garden, just keep digging more trenches or pits, going back over the same area as the seasons come around. You will find that the soil will grow good crops and it will have cost you nothing.

As with 'no-dig' gardening, it is better to start off with a leaf crop, followed by a fruiting crop, then a root crop in soils that have high levels of fresh organic matter.

### DIG A TRENCH

Fill with compostable material - leaves, skins, cloth, paper, bones, peelings, food scraps, newspapers, etc



Make small hollows and plant the plants or seeds in them



Keep well watered and mulched



### DIG THE NEXT TRENCH

Put soil from this trench on top of the organic matter in the first trench, then cover with a layer of mulch to conserve water



COMPOST MATERIAL ROTTS AND BECOMES FOOD FOR PLANTS AND FOOD FOR YOU!





## Where to from here?

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Now you have your site organised and know what type of garden will suit you best, you will be wondering what to grow and how and when to plant it.

The answer to the first part is simple; grow things that you like or things that will contribute to the diet of chooks or rabbits if you have them. It is pointless growing armfuls of silver beet if no one likes it!

When you are just starting out and space may be limited, it is better to plant vegetables that are easy to grow and have a high yield for the space they take up. Beans (either bush or climbing), tomatoes and leaf vegetables, such as silver beet, are good choices as they can be harvested over a long period if looked after. Asparagus, on the other hand, will take 2-3 years to come into production and uses a lot of space relative to its yield.

# Seeds for sowing

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The following list covers a variety of easy-to-grow and/or high-yielding vegetables. Notes on their growing and care are also included.

There are numerous vegetables that can be grown but you will find these easier and more productive ones to start with:

**BEANS (BUSH OR CLIMBING)**  
**BROCCOLI CABBAGES CARROTS**  
**LETTUCE ONIONS PEAS (SUGAR  
SNAP OR SNOW) PUMPKINS**  
**POTATOES SILVER BEET SWEET  
CORN SUNFLOWERS TOMATOES  
(BUSH OR STAKING) ZUCCHINIS**

## Beans

### Bush beans

Beans are high-yielding vegetables that are rich in vitamins A, B and C. They can be planted after all danger of frosts has passed. October is a good time in south-eastern Australia. Plant the seeds about 2.5 cm (1") deep and about 25 cm (10") between plants. At this time of the year, they will come up in a few days so any gaps can be resown. The first beans should be ready for picking in about 2 months. Plant more seeds every couple of weeks until mid-January to provide a good supply of fresh beans until the cooler weather sets in.

### Climbing or pole beans

Climbing beans take a little longer to bear but yield much more over a longer period, ensuring a continuous supply. The varieties available are mainly annual. 'Scarlet Runner' is a perennial and will die back to a tuber in winter and sprout again in spring. Climbing beans may not set pods in very hot weather.

Climbing beans need some form of support about 2 metres high to climb on. There are many ways you can provide this with minimal or no expense.

Pieces of string tied to the top of a fence and hung down to the ground is the simplest system. The string doesn't need to be anchored at the bottom as the bean plants will twine themselves around it. Plant a seed at the bottom of each string and gently wind the growing shoot around it when it starts to grow. The weight of the plant will hold it. Strings can also be hung from shed walls, verandahs, eaves, etc. A row of strings hung from a verandah or eaves on a northern aspect could provide welcome summer shade or a screen.

Another method is to get 3 stakes that are 2-3 metres long and tie them together about 20 or 30 cm (8-12") from one end. Mark a triangle on the ground with

the points about 60 cm (2') apart, then make a slit with a spade or shovel. Stand the stakes up to make a 'teepee', pushing each stake into the slit you have made. Plant one or two seeds on the inside of each stake; the plants will soon 'run' up the stakes. A larger version of this made with more stakes would make an ideal shady 'cubby' for a child. Leave one wider space to provide access.

A twiggly branch, an old gate, a screen door minus the fly mesh, or even an old Christmas tree tied to a post or fence would be suitable. Look around you; all the beans need is something to climb on. Get the seeds in; the plants will do the rest!

### Broad beans

Unlike other beans, broad beans are sown in the cooler weather through to mid-Spring, making them a valuable cool-season crop. They will need full sun and protection from wind as some varieties will grow as high as 120 cm (4') and may blow over in windy conditions. Stakes at each corner of the patch, connected with string, will help overcome this problem. Sow seed about 5 cm (2") deep and 15 cm (6") apart. Beans will be ready to harvest in 3-4 months.

### Saving seed

At the end of the season, it is a good idea to leave a few pods from the best producers on the plants so you can save some seed. Wait until the pods are dry and papery before you collect them. The pods will split easily and the seeds can then be stored in a clean jar or paper bag. Don't forget to label them with a name and date; e.g. bush beans, November 2018. Store them in a cool, dry place until next season. You could also 'trade' some with someone else for other seeds or plants that you may need.

## Broccoli

Broccoli is more reliable and easier to grow than cauliflower and is rich in vitamin C and protein.

Staggered plantings from autumn through till mid-summer will provide a continuous harvest throughout the year. If you do not need the space, the plants can be left after the main head has been cut. They will generally grow some smaller heads which will extend the yield.

Plant the seed in a seedbed and transplant to about 40 cm (16") apart when big enough. Heads will be ready to cut in about 2 months from transplanting.

## Cabbage

Needing no description, different varieties of cabbage can be planted all year round. There are many smaller varieties that are ideal but all varieties will keep for a long time in the fridge. They are easiest grown by sowing in a seedbed and transplanting the seedlings when they are large enough. Cabbages can be harvested after about 2½ months.

## Carrots

Carrots need a good friable soil. If you have a 'no-dig' garden, they are probably better grown following a leaf crop which will have loosened the soil and used some of the nitrogen up. High levels of nitrogen in the soil will produce lush tops and small roots, while high levels of fresh manure will produce forked and twisted roots. The alternative is to open up a 'trench' in your 'no-dig' garden and fill it with friable soil before sowing your seed. If your soil is very shallow or hard, try smaller varieties like 'baby' carrots or the small round varieties. Seed is very fine so mix it with some dry sand or dusty soil so you can sow it thinly. Ants love carrot seed so, if they may be a problem, add some pepper as well. This is safe and effective. Sow the seed in a shallow groove about 6-10 mm (1/4-3/8") deep and cover with fine soil, followed by a light watering to moisten the soil without washing the seeds out. Seed must be kept moist; covering with a piece of damp hessian until they germinate will help. As the young carrots start growing, attention to watering is still important as setbacks will cause stunting and 'woody' roots. When the tops are large enough, the mulch can be brought up to them.

This will help to conserve water. Thin the growing carrots to about 4-5 cm (1½-2") apart, using the thinnings as 'baby' carrots.

### Saving seed

To save seed, leave a good specimen to run up to a flower head then produce seed. The flowers are quite distinctive with their 'umbrella' like head. Watch them and when the flowers look finished, cover them with a paper bag and tie it around the stem. If the weather is wet, pull the whole plant up and hang it upside down in a sheltered spot to dry off and release the seeds. Label and date the seeds and store them in a cool, dry place.

## Sweet corn

Sweet corn responds to generous amounts of old manure and a good water supply. Plant the seeds 4-5 cm (1½-2") deep and about 10 cm (4") apart after all danger of frosts is past. When the plants are about 15-20 cm (6-8") high, mulch them well with lawn clippings or something similar to help retain moisture. Corn is pollinated by wind so it is better to plant corn in blocks rather than single rows. Poor pollination shows up as undeveloped kernels on the cob when the husk is removed. The cobs are ready to harvest when the tassels start to die off. If you leave the stalks in the ground, they can be used as 'stakes' for climbing peas. When the peas are finished, the whole lot can be pulled up and used as mulch or used in a trench compost garden.

Sweet corn is wind-pollinated and any seed you save runs the risk of having been cross-pollinated by pollen from a neighboring crop. Saved seed may not produce true to type the next season.

## Lettuce

There are many varieties available: butterhead, cos, crisphead or iceberg and loose-leaf types. They can be grown throughout the year and will tolerate some shade. The 'heading' types dislike very hot weather, although varieties such as 'Great Lakes' will tolerate hotter conditions without 'bolting' to seed.

Sow the seed direct or in a seedbed about 1-2 cm (½-¾") deep and thin or transplant to about 30 cm (12") apart. They will be ready to harvest in about 7 or 8 weeks.

Lettuce like plenty of 'food' and water, so can be planted in areas that have just had old manure or organic matter added. They can also be fed with 'liquid manure' (see recipe on page 25) to keep them moving. Make sure the soil is moist before applying liquid manure and do not apply it to the leaves.

## Onions

A must-grow vegetable containing vitamin C, iron, sulphur and fibre. Salad or mild, flat types are usually sown in late summer or early autumn, with longer-keeping varieties sown during autumn and winter. Varieties such as 'Creamgold' (Pukekohe), which is one of the best long-keeping varieties, can be sown in June and July.

Onions like an open, well-drained spot where the leaves will dry out quickly after rain or a dewy night. They don't like a lot of manure so should be planted in a spot that was manured for a previous crop. Sow the seed 1-2 cm ( $\frac{1}{2}$ - $\frac{3}{4}$ " ) deep in a seedbed and transplant to 10 cm (4") apart. Harvest long-keeping varieties when the tops have flopped over and are starting to dry off. If the tops are left to dry completely, they can be tied together in bunches and hung up in a shed for storage or plaited to make a 'rope'. If you want to collect seed, leave one onion bulb in the ground and it will produce a flower head and seed in the second year. When the flower head is finished, cover it with a paper bag, tied around the stem, and hang the plant up by the bulb in a dry place to dry. When the seeds are ready, you will be able to hear them loose in the paper bag when you give the plant a shake. Label and date the bag and store in a cool, dry place.

## Peas

Peas prefer cooler weather, with the best crops harvested in spring, but can be grown at other times of the year in cooler areas. Peas come in bush and climbing forms with varieties that include snow peas, sugar snap and 'shelling' types. Sow the seed where they are to grow 2-5 cm (1-2") deep, in the autumn. Successive sowings can be made until about August and will be ready for picking about 2 months after sowing. Refer to the section on staking, under 'beans' on page 15, for ways to stake peas. Even the bush varieties will benefit from some support such as sticks and twigs. Peas should be picked daily and should be stored in the fridge. If you have grown sweet corn, maize or sunflowers during the summer,

the stalks can be left to provide stakes for your peas. The rest of the plant can be used as mulch or compost when the peas are finished.

## Pumpkins, zucchinis and squash

These have been grouped together because they all require similar growing conditions. They all like an open position with well-drained soil. Plant the seeds directly where they are to grow, in late spring. If you want to get them going earlier, start them in tubes, small pots or toilet paper cylinders, in a warm, sheltered spot. They must be transplanted from the tubes or pots carefully as they do not like root disturbance.

### Zucchini

Will be ready to harvest about six weeks after sowing and should be picked regularly to encourage further production.

### Pumpkins

Generally grow on strong vines so will need a lot more space. If this looks like a problem, consider growing them on a trellis on a north or east-facing fence, or up onto the shed/carport or chook house roof! Growing the vines over the chook house will give the added bonus of shade for the chooks during summer, and the plant roots can get nutrients from the run.

Keep vines well watered with a bucket or hose. Do not use sprinklers as you will waste water and encourage mildew. Vines often send roots down where they are in contact with the soil.

Harvest pumpkins when the vine dies off, which will be after about 4 months. Leave the stalk attached and store them in a cool dry place where rats cannot get to them. Storage life of pumpkins varies with the variety. Queensland Blue and Butternut are two varieties with an excellent storage life.

### Saving seed

Save a handful of seed from a good pumpkin when you are preparing it in the kitchen. Wash the seed in the sink, rubbing the membrane off with your hands, and then spread them out on a piece of paper towel or newspaper in an airy spot to dry. After a few days, when they are dry, put them in a labeled and dated envelope or container for storage.

## Potatoes

Potatoes are a valuable food crop and 'digging your own spuds' is quite exciting. They can be planted from late July until early in the New Year. 'Seed' potatoes, available from nurseries during the winter, are usually 'certified' which means they will be disease free. Alternatively, you can use potatoes that have started to sprout. Smaller ones are best but larger ones, which can be cut leaving 3 or 4 'eyes', will be okay. Leave the cut pieces to dry for a couple of days to reduce the chance of them rotting after they have been planted. Plant the pieces about 10 cm (4") deep and about 30-40 cm (12-16") apart and, as the shoots emerge, hill more soil or mulch around each plant. If you are growing them in old tyres or buckets, plant the tubers low in the container and just keep topping up around the stem as it grows. This will keep the developing tubers covered and stop potato moths from getting to them. Potatoes can be 'bandicooted' by carefully digging under the plant with your hands, about a month after flowering has finished. Only remove those that are a usable size, being careful to replace the soil or mulch afterwards. These are 'new' potatoes and are delicious cooked in their skins.

They do not keep well. The plant will continue to grow more potatoes. When the tops start to die off, the potatoes will be ready to harvest. These potatoes, called 'old' potatoes, will keep for a long time if stored in a dry, dark place.

Image: A potato plant showing flowers on the top and tubers forming below ground. Note the mulch layer which will reduce access by potato moth to the tubers.

## Sunflowers

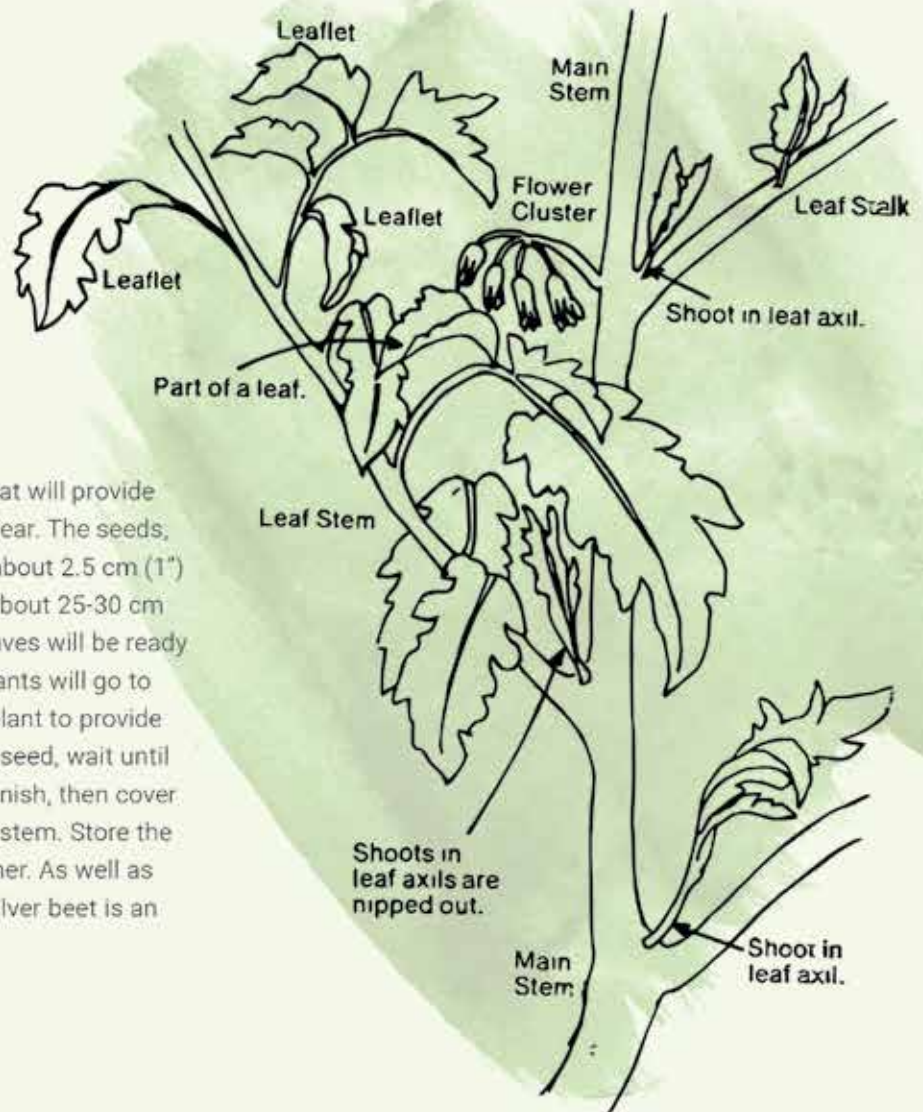
Sunflowers are bright and cheery, easy to grow and versatile. The seed is nutritious as a snack and a good source of protein. The cheapest way to get started is to get a handful of seed from a produce store, where it is sold for use in bird seed mixes. Get the grey and white striped seed rather than the black, if you can, as the grey seed is usually larger and is easier to crack for eating. Sow the seed in late spring and early summer, about 2.5 cm (1") deep where you want them to grow, with about 30 cm (12") between seeds. Put two seeds in each spot and, if they both grow, cut off the weakest one. Sunflowers will grow in a variety of soils but will respond dramatically to a good supply of water and old manure. If that is a problem, just plant them anyway; you will still get bright cheery flowers and seeds even though they may not be very big.

Sunflowers also make good 'stakes' for climbing beans. When they are about waist high, plant 1 or 2 bean seeds near the base of the plant and let the bean climb up the sunflower. You will need to have a good supply of old manure in the soil for this, and mulch to conserve water to cope with the needs of the two plants.

In the autumn, when the plant is starting to die off and the seed heads are drying off, it is time to harvest them. Cut the seed heads off and put them face up in a dry, airy place to finish drying. Birds, rats and mice will also enjoy the 'smorgasbord' so make sure they can't get them either.

If the birds start helping themselves before you have cut the heads, it is a good idea to cover the heads with an old piece of net curtain to stop them. When completely dry, rub the seeds off and store in a cool, dry place. Sunflower seeds can also be used as food for chooks.





## Silver beet

Silver beet is a rich source of iron that will provide a plentiful supply of leaf-greens all year. The seeds, which are quite large, can be sown about 2.5 cm (1") deep in spring and transplanted to about 25-30 cm (10-12") apart when big enough. Leaves will be ready for picking after about 2 months. Plants will go to seed in the second year so leave a plant to provide seed for the next sowing. To collect seed, wait until the seed head is starting to go brownish, then cover with a paper bag and tie around the stem. Store the seeds in a labeled and dated container. As well as being easy to grow and nutritious, silver beet is an excellent green feed for chooks.

## Tomatoes

Tomatoes are rich in Vitamin C, have many uses, and can be harvested over a long period. They will not tolerate frost and should only be planted after all danger of frosts has passed. To get an early start, seedlings can be raised in pots on a sunny windowsill, ready to plant out when it is safe to do so.

Seedlings will be ready to plant out about 5 weeks after sowing and will start to bear about 2 months later. Plants will crop for 3-4 months or until hit by a frost.

From the seed catalogues, packets or labels, you will see that tomatoes are grouped under 'determinate' or bush varieties and 'indeterminate' or staking varieties. Bush varieties are normally fairly compact and will spread on the ground, or can be planted in a tub or large hanging container. Staking varieties need to be tied to some form of support such as stakes, fences or wire mesh. If left unstaked, they will sprawl over the ground, taking up ground space that could be growing something else.

If you are growing staking varieties, it is best to put your stake or support in first and plant your seedlings

next to it. This will avoid damage to the new seedling which could happen if you put the stake in later.

Pruning of 'staking' varieties is a matter of choice with pruned plants yielding larger fruit, while unpruned plants will yield more, but smaller fruit. Whatever you choose, it is important that growth is not overcrowded as this will encourage diseases such as mildew.

To prune tomatoes, allow 3 or 4 shoots to develop and remove all other shoots as they appear. Growth shoots appear at the base of the leaf, while fruiting shoots form on the stem between the leaf stalks, and are easily identified by the small flower buds.

If you carefully cut the growth shoots off when they are 5-7 cm (2-3") long, you can use them to grow new plants. Simply put the cuttings in a small jar with water about half way up their stems, and they will soon grow roots. Put the jar in a warm, well lit spot and roots will appear in a few days. The new plants can then be planted out as you would seedlings. This will increase your plants at no cost.

# Growing herbs

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Herbs are very easy to grow and can turn a plain meal into something very tasty. The following herbs are a good start and will yield an abundance with a little care.

Once you are confident with these, try your hand with: lemon balm, borage, cilantro/coriander, oregano, sage, tarragon and thyme.





## **BASIL**

Basil is a tender annual that likes a good water supply. Harvest the leaves regularly and keep the tips pinched out to encourage a bushy plant. To extend the harvest, remove flower spikes when they emerge and you will keep it going until the first frost.

## **CHIVES**

Chives form a small clump and have the taste of mild onion. Flowers can also be eaten and are milder than the leaves.

Clumps will keep expanding and can be divided to swap or share. Cut some of the plant back hard when harvesting to provide new, fresh growth.

## **MINT**

Mint is very easy to grow and likes a damp semi-shaded spot. There are numerous forms of mint including: spearmint, peppermint, eau de Cologne, apple and chocolate.

It grows readily from a small piece with roots and, in ideal conditions, will spread giving you plenty to swap or share.

## **ROSEMARY**

Rosemary is extremely hardy and drought tolerant when established. The flowers are mostly blue and are loved by bees. There are bush and groundcover forms.

Rosemary grows easily from cuttings and will respond to hard pruning by giving you fresh, tender shoots.

## **PARSLEY**

Parsley is also easy to grow, but will reward you if you give it some manure or compost and a good supply of water.

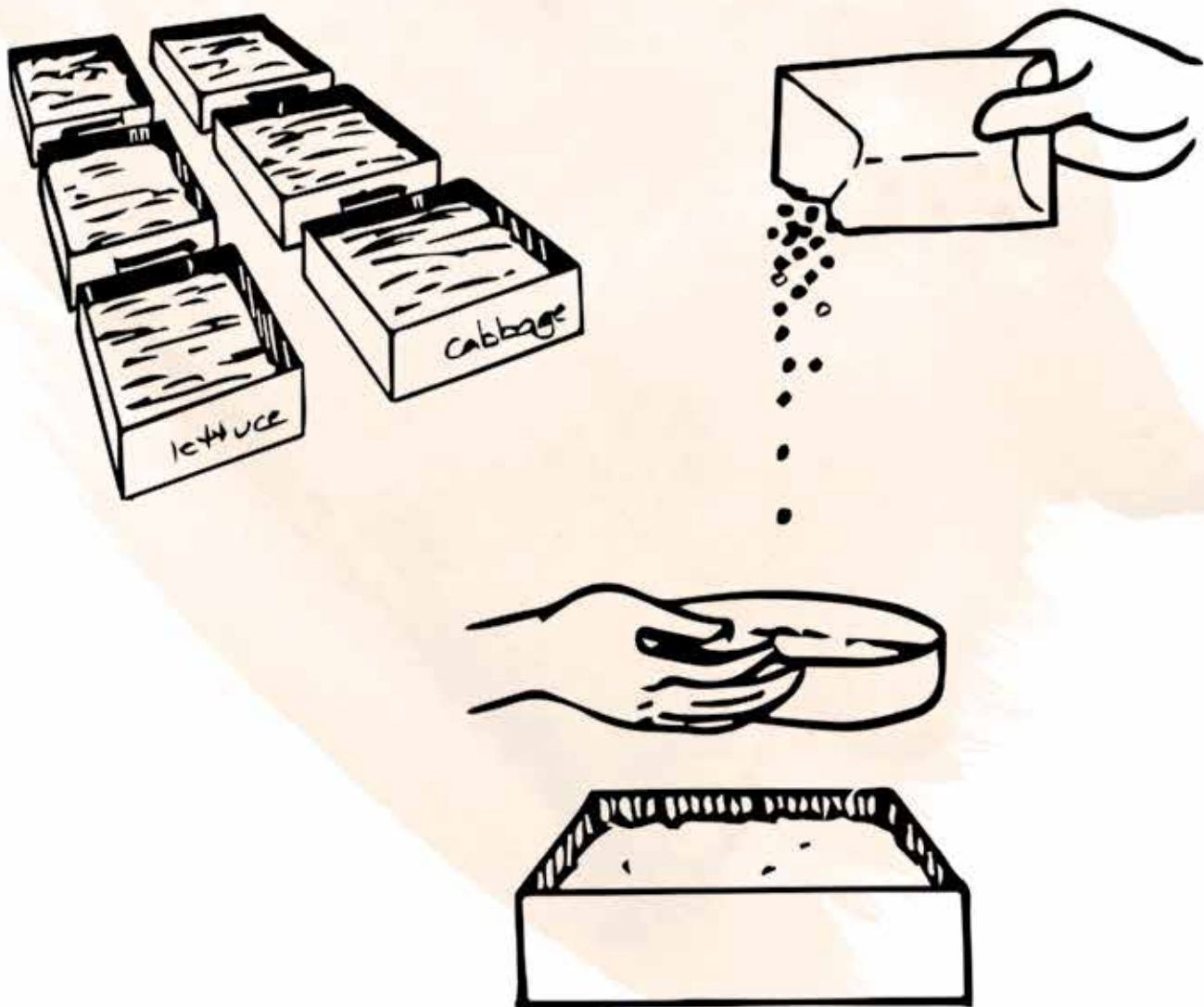
Parsley will grow and yield in its first year, and will continue to yield in its second year before going to seed. If you leave the seed stalks to mature and flower, you will be blessed with hundreds of new plants in the next season.

There are flat leaf and crinkly leaf forms available.

# Raising your own seedlings

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By following a few basic steps, it is easy to grow your own plants from seed. This section shows how.



Beans, carrots, onions, peas, sweet corn, pumpkins, squash and zucchinis are better sown direct where they are to grow and often do not thrive if transplanted. Pumpkins, squash and zucchinis can be planted singly in small pots early in the season to get a head start if you want. Toilet paper cylinders are ideal. Stand them on a tray and fill them with potting mix before planting a seed in each one. When they have grown their second set of leaves carefully plant them, including the cylinder, where they are to grow. The pots or tubes will need to be kept in a sheltered sunny spot. Onions, tomatoes, and green vegetables such as cabbage, lettuce, broccoli and silver beet do not mind transplanting and are often more easily managed if they are germinated in a seedbed or container for planting out later. Pumpkins, squash and zucchinis can be raised in small pots or tubes for transplanting out when the weather warms up but must be handled carefully as they resent root disturbance.

Find some strong, clean trays or boxes to use as seedbeds. Polystyrene boxes or waxed trays from fruit shops are ideal. An old cupboard draw or a large plant pot will also work just as well. Larger plastic pots are also suitable and can be used to grow some of the seedlings in later on.

Hygiene is important when raising seedlings. 'Damping off' fungus can wipe out your seedlings almost overnight. The easiest way to overcome this is to wash out any containers that have had soil in them with a solution of 1 part of vinegar (any sort) mixed with 3 parts of water. Vinegar is a good disinfectant and if you put your containers in the sun to dry you will have got rid of most of the potentially harmful fungus and bacteria.

If your containers have big slots or gaps, line the base with a few sheets of newspaper to prevent the soil from falling through. The paper will also help to retain moisture. Almost fill the containers with compost or compost/sand (50/50). An alternative is to buy 'seed raising mix' from a nursery or garden centre.

Level the mix and press it down flat and fairly firm. Keeping the soil level makes for even water distribution and penetration, (seedlings may dry out in high spots and rot in low spots). A short, flat piece of timber makes a good tool to level and firm the soil.

Sow seeds as thinly as possible: overcrowded seedlings will be spindly and hard to separate, and will be more likely to get damaged when you are handling them. If the seed is very fine you may find it easier to mix it with some dry sand first. After sowing the seeds should be covered with about twice their own thickness with more mix. If the seed is covered too thickly it may not make it to the surface when it germinates. Using your block of wood or the palm of your hand, firm the soil again and follow with a thorough water using a fine spray so as not to dislodge the seeds. A watering can or a hose with a fine rose is ideal but if you have neither of these put your finger over the end of the hose and adjust the flow until you have a very fine mist/spray.

Put your seedbeds in a sunny, sheltered spot. This will make the seeds germinate quicker. DO NOT allow them to dry out, it will set them back and at the worst, the germinating seeds will die. To reduce the chance of them drying out you can make some shade with a piece of shade cloth or old net curtain or some small, leafy branches.

As soon as the seedlings emerge they will need to be given more light. Increase this over a few days to 'harden' them off. Seedlings grown with too much shade will be spindly and may not do well when transplanted.

Every seedling has the potential to grow into a healthy plant; food for your table, so while you are transplanting, keep unplanted seedlings cool, moist and shaded. A damp cloth or paper works well.

# Planting your seedlings

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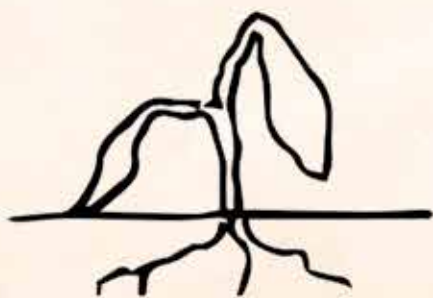
When your seedlings have two sets of leaves they will be ready to transplant.

A dull day, or later in the afternoon, is a good time to transplant as it is easier for the plant to overcome the shock of transplanting, without drying out in the sun.

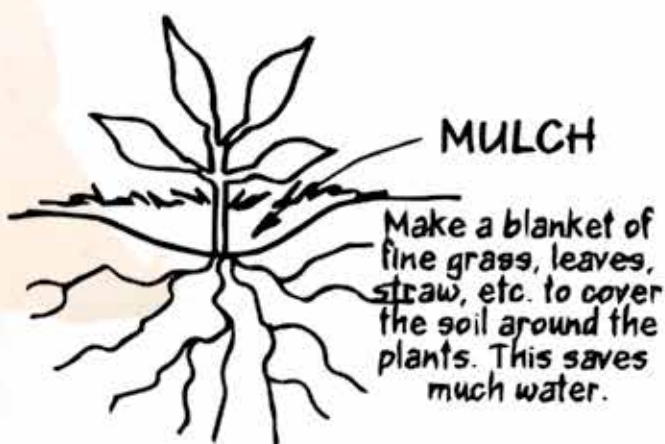
When separating the seedlings, try to retain as much soil as possible around the roots. The less shock to the plant, the quicker it will recover. Make sure the hole you are going to plant it in is large enough to comfortably fit the seedling, and that any loose roots are hanging down into the planting hole. Carefully

fill in around the seedling, ensuring that it is planted about the same depth or a little deeper than it was in the seedbed. Press DOWN and IN around the seedling to firm the soil, making sure it stands up straight and firm. Form a small depression around the plant with some loose soil, and carefully pour water into this depression to settle the soil around the roots. Do not be too worried if they wilt a bit; a drink of water and a cooler night will revive them.

After your seedlings have been planted and watered, some form of mulch around them is beneficial. Lawn clippings, leaves or straw are ideal as they will help to conserve water and provide some support for the plants. Small stones are also effective.



This plant will die.



## Interplanting

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If you look after your soil, you can interplant to increase yield. Lettuces or radishes could be planted in between rows of carrots or onions, as they will be ready to harvest before the carrots or onions need the space. Zucchini's could be planted along with sweet corn, as the corn will grow taller leaving room for the zucchini's to spread. Later plantings of climbing beans or peas could use the stalks provided by sweet corn or sunflowers.

## Care of seedlings

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Until they become established, seedlings will need more care. Check them regularly to ensure they are moist enough. Good soakings will encourage deeper root growth and will make stronger plants. Light sprinkling or shallow watering will encourage surface roots and the plants will wilt in hot or dry weather. Watering in the early morning is best if possible. The plants will take it in better and there will be less likelihood of mildew problems, which can occur when watering is done on warm to hot evenings in the summer. Crops susceptible to mildew include pumpkins, zucchini's, tomatoes, beans and onions.

## Liquid manure

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Sometimes called 'compost tea', liquid manure is very easily prepared and is an ideal source of nutrients to give your plants a boost during the growing season. It can also be applied very weakly to new seedlings.

To make liquid manure, you will need a container such as a bucket, old garbage bin or drum, animal manure, weeds, a mesh bag and some string. A hessian sack, an old stocking or an old tea towel would make suitable mesh bags.

Put a quantity of manure and/or weeds in your bag, or in the middle of a piece of cloth, and tie with the string to make a 'tea bag'. Put the bag into your container with the string hanging over the side.

Now add water to nearly fill the container. A couple of times a day, give your 'tea bag' a jiggle to help 'brew' it. After a couple of weeks you can start using your 'brew'.

Dilute the liquid to the strength of weak tea in a watering can or bucket, and use to water around your plants. If you have made a strong brew, use more water; if the brew is weak, use less.

Liquid manure can be used about every week or ten days, and should be applied to the soil. If the soil is dry, water it first. Strong healthy plants will be more resistant to attack from pests or diseases.

# Yearly vegetable sowing guide

Use this sowing chart as a guide.

Late cold spells will delay sowing of frost-tender summer crops. If you are growing vegetables, in a sheltered spot on a verandah or against a warm north wall, you may be able to start a little bit earlier.

Local knowledge is very valuable; you will gain a lot of knowledge about planting times by speaking to locals.

Keeping a journal is also a good idea. Keep notes of when you planted things and you will soon establish the best times to sow and plant. As a general rule, the soil is not warm enough for summer crops (beans, tomatoes, pumpkins, zucchinis, etc.) until later in October. We can sow some of these earlier in small pots, trays, etc., to give us a 'head start' when the weather warms up.

## January

<b>Week 1</b>	bush beans, beetroot, radish, lettuce, cabbage, cauliflower
<b>Week 2</b>	brussels sprouts, carrot, lettuce, swede turnip, silver beet
<b>Week 3</b>	butter beans, lettuce, beetroot, parsnip, peas
<b>Week 4</b>	parsley, bush beans (last sowing), beetroot

## February

<b>Week 1</b>	lettuce, cabbage, silver beet, turnip
<b>Week 2</b>	salad onion, parsnip, broccoli
<b>Week 3</b>	carrot, cauliflower, lettuce
<b>Week 4</b>	beetroot, carrot, spinach, turnip, swede turnip

## March

<b>Week 1</b>	salad onion, conical (spring) cabbage
<b>Week 2</b>	carrot, lettuce, spinach
<b>Week 3</b>	Chinese cabbage, salad onion
<b>Week 4</b>	turnip

## April

<b>Week 1</b>	cabbage, carrot
<b>Week 2</b>	odourless onion
<b>Week 3</b>	kohl rabi, lettuce
<b>Week 4</b>	carrot





## May

**Week 1** broad beans

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**Week 2** peas, turnip

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**Week 3** onion (Pukekohe/Creamgold)

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**Week 4** climbing peas

## June

**Week 1** broad beans, turnip, snow peas

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**Week 2** peas

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**Week 3** sugar snap peas, long keeping onions

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**Week 4** peas

## July

**Week 1-4** broad beans, onions, peas. Asparagus and rhubarb crowns can also be planted. Seed potatoes can be planted later in the month in frost-free areas

## August

**Week 1** radish, turnip

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**Week 2** carrot, lettuce, spring onions

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**Week 3** peas, silver beet, early tomatoes (seed trays)

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**Week 4** lettuce, beetroot, parsnip, early tomatoes

## September

**Week 1** carrot, lettuce, radish, peas, mint

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**Week 2** parsley, celery, spinach, tomatoes (seed trays). Sow pumpkin and zucchini seeds in small pots for transplanting when it is warmer.

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**Week 3** carrot, parsnip, bush beans (warmer areas), capsicum (in seed trays), silver beet, thyme

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**Week 4** carrot, radish, kohlrabi, basil, oregano

## October

**Week 1** climbing beans, beetroot, parsnip, sweet corn, peas, lettuce, tomatoes

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**Week 2** bush beans, chives, marjoram, pumpkin and zucchinis, (in warmer areas)

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**Week 3** carrot, lettuce, beetroot, peas, beans, sweet corn

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**Week 4** cucumber, zucchini, tomatoes, radish, bush beans, pumpkin

## November

**Week 1** watermelon, sweet corn, climbing beans, butter beans, lettuce, tomatoes

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**Week 2** lettuce, cucumber, rock melon, pumpkin, zucchini

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**Week 3** bush beans, cauliflower, silver beet, pumpkin, cucumber

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**Week 4** sweet corn, seed potatoes, beetroot, carrot, lettuce, climbing beans

## December

**Week 1** broccoli, cucumber, sweet corn, spinach, bush beans, celery, cabbage, climbing beans (last sowing), carrots, parsnips, potatoes

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**Week 2** cauliflower, radishes, zucchini, cucumber, pumpkin

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**Week 3** celery, cabbage, carrot, lettuce, bush beans

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**Week 4** cucumber, sweet corn, spinach, beetroot, silver beet

# Controlling pests in your garden

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While there always seems to an abundance of pests that will attack your plants, there are numerous beneficial creatures to help control them.



## Ichneumon wasps

These orange and black wasps are also predators of troublesome insects, and are very vulnerable to insecticides. They attack and paralyse caterpillars, then lay their eggs in them. This provides food for the young wasps when they hatch.



## Worms

One of the most important creatures in the soil, they process large quantities of decaying material, taking it down into the soil from the upper layers as they do so. The digestive process reduces particles in size making them and other nutrients more available to plants.

To encourage worms, use lots of mulch. This will keep the soil moist and provide food for them as well. Their efforts will aerate the soil, 'manufacture' fertiliser, assist water penetration and do the 'digging' for you. They will work 24 hours a day, 7 days a week, and only require organic matter for wages!



## Praying mantises

Mostly green or light brown insects that grow to about 65 mm (2½") long. They get their name from the way they hold their forelegs in a 'praying' position, while waiting to catch some unsuspecting insect. Eggs are laid in a blob of foam which sets. The young are ant-size when they emerge. Praying mantises catch a large number of insects which they hold in their spined forelegs. They are not selective in what they eat but are still valuable in the garden.

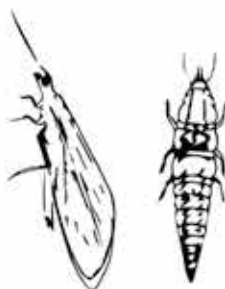


## Beetles

Black beetles, often found under logs rocks, are great hunters and account for many caterpillars and cutworms.

## Lacewings

So-called because of their filmy, lace-like wings, the larvae are active predators of aphids, two spotted mite, whitefly, scale, moth eggs, small caterpillars and mealy bugs. The adults feed on nectar and pollen. The larvae have similar appetites to ladybirds.





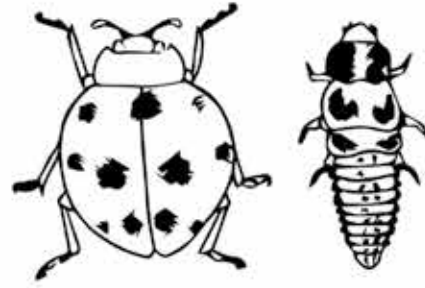
## Wasps

There are a number of predatory and parasitic wasps that are beneficial in the garden. Trichogramma and Encarsia are both minute wasps that lay their eggs in the eggs, larvae or pupae of pest insects. When the larvae hatch, they feed on the host, preventing it from reaching maturity.



## Poultry

A couple of chooks or bantams will also do a great job of cleaning up the garden. If they are kept in a movable coup with an open bottom, they can be moved around to provide fresh pickings for them, and also to clean up a garden bed when the crop is finished. They will clean up weeds and pests while cultivating and fertilising the soil. Supervised 'parole' periods later in the afternoon will give them a chance to 'work the fence lines', and will also make it easier to get them back in for the night.



## Ladybirds

Most common ladybirds are red or orange with black spots, but there also species that are black or steel-blue. The larvae of all species are similar.

Ladybirds are very beneficial predators as both the larvae and the adults can be effective in controlling aphids and scale. They have voracious appetites and one larva can consume 60 aphids in a day!

## Dragonflies

These 'good guys' catch and eat smaller insects including aphids.

## Birds and frogs

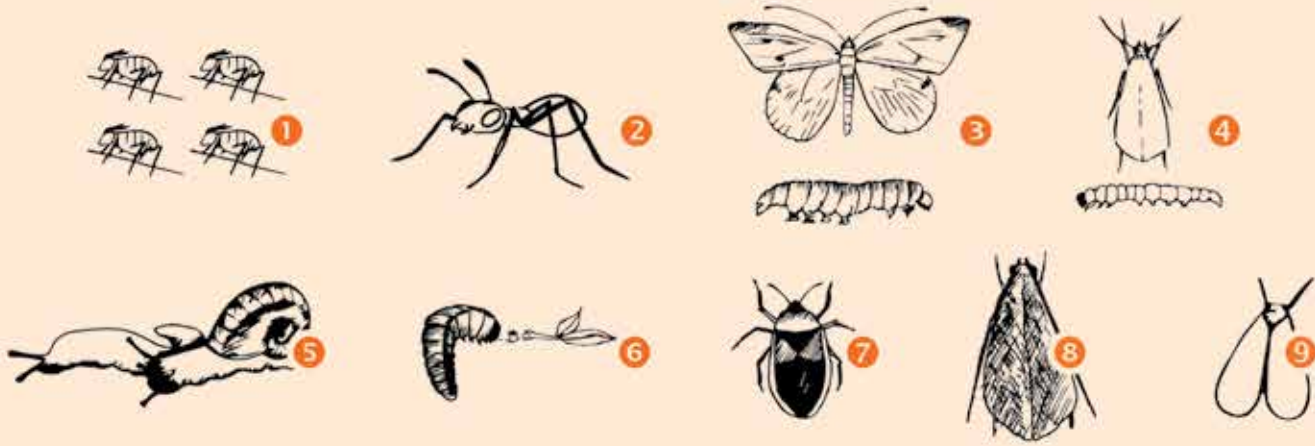
Birds and frogs dispose of larger insects such as crickets, caterpillars, worms (unfortunately), snails and slugs. The good they do far outweighs the 'beneficials' that they take.

# BENEFICIAL CREATURES



# Common pests

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Here are some of the main pests.  
**NEVER** resort to poisons.

## Aphids ①

These small, roundish, soft-bodied insects can be pale green through to grey and black. They come in winged and wingless forms and are prolific breeders. Fortunately, they have many enemies including wasps, ladybirds and lacewings. If the natural predators haven't turned up, knock them off with a jet of water from the hose, or use a homemade, less harmful spray made from soap or garlic.

## Ants ②

Ants may be a nuisance if they encourage and spread aphids. They do this to get the sweet, sticky substance excreted by the aphids. They can also take seed, especially carrot seed. To overcome this, mix pepper with the seed before you sow it, or sprinkle it along the row before you cover the seed over.

## Cabbage white butterfly ③ and cabbage moth ④

Cabbage butterflies are white with some black markings on their wings. They rest with their wings folded vertically. Cabbage moths are smaller and

are grey-brown. They rest with their wings folded along their body. Both can cause havoc to cabbages, broccoli, etc. Both lay their eggs under the leaves, and both have green caterpillars.

The larvae of the cabbage moth live on the internal leaf tissue, emerging and feeding on the underside of the leaves as they grow. If you only have a few plants, check the undersides of the leaves for eggs every couple of days. They are a pale yellow and are easily rubbed off.

Cabbages and broccoli planted in the autumn, for winter and spring use, are not likely to be affected, so you may prefer to grow them in the cooler months and grow non-target leaf vegetables for summer use.

If you do get an attack of these pests, a Bt spray such as 'Dipel' can be safely used. Mix a dash of milk in with the spray and only spray the affected plants. Bt is a bacterial spray and is considered 'safe'. It works by upsetting the digestive system of the caterpillar, stopping it from eating, and is harmless to birds or animals that might eat the affected caterpillar. Only use it when you have to; it is safe ammunition and we don't want insects developing immunity to it.

If the plant is damaged beyond use, feed it to the chooks. They will clean up the grubs and the plant, so you will get some benefit from the plant in eggs or manure. If you don't have chooks, just bury it (food for the soil).

## Snails and slugs 5

These pests feed at night or in dull weather if it has been raining. They wreak havoc in the garden attacking most plants, especially seedlings. A margarine container, half filled with beer or vegemite and water, is effective in attracting and drowning these pests. Set the container in the soil so that the rim is just above soil level.

Another good method is to go out after dark, especially if it is a dewy night or has been raining, and locate and squash them. A few nights of this treatment and you will have them under control. You will still need to be diligent as they may invade your garden from a neighbouring property. If neither of these methods appeals to you, there is a product called 'Multiguard' snail and slug killer which is effective on snails and slugs, but harmless to animals and birds (it is only iron sulphate). Ducks and chooks are also effective, but left unsupervised, they will destroy your garden.

## Cutworms 6

You may go out one morning and find your seedlings neatly nipped off at ground level. The offender is most likely to be cutworms. They are a smooth-skinned grey caterpillar that hides just below the surface of the soil and comes out at night to feed. Scratching lightly in the soil with a small stick will often reveal the offender. Alternatively use a Bt spray such as 'Dipel'. Bt sprays are a form of bacteria that affects the caterpillar and is harmless to birds, chooks, etc., that may eat the affected caterpillar.

## Harlequin bugs 7

A true bug, these pests can cause a lot of damage by sucking juices from soft fruits and berries. They like to hide in long grass around fence lines, and can also be found on marshmallow weed and hibiscus. They are easily controlled by keeping long grass down, and by keeping fence lines free of weeds and other hiding spots.

## Potato moth 8

As the name suggests, this pest attacks potatoes, but can also attack tomatoes. Stored potatoes are also susceptible. The adults are small grey-brown moths which are not normally seen as they are only active at dawn and dusk. The females lay their eggs on the leaves or any exposed potatoes. The caterpillars are

pinkish or greenish with brown heads. Full grown caterpillars are about 20 mm ( $\frac{3}{4}$ " long. Good cultural practices will control them:

- plant seed potatoes to a depth of 200 mm (8"),
- make sure you have good soil cover over the tubers as they develop,
- keep the soil moist; this stops them getting in through cracks in dry soil,
- remove green or damaged potatoes when harvesting them, to minimize damage during storage,
- store potatoes in a cool dry place away from light. If you are storing them in a shed, keep them in an insect-proof, but not sealed, container.

## Whitefly 9

Whiteflies are very small, white-winged, insects. They attack many vegetables; beans, tomatoes and the pumpkin family being very susceptible. When affected plants are disturbed, a cloud of these small white flies will lift off and settle again fairly quickly. With heavy infestations, wilting may occur, and black sooty mould will develop on the sugary excretions left by these pests. They are attracted to yellow, so if you smear a piece of yellow plastic or cardboard with petroleum jelly (Vaseline) and hang it on a stake, you will trap and destroy them safely. Ladybirds, damselflies spiders and mantids prey on them. They are also parasitised by minute wasps, so providing host plants with 'daisy' flowers will help. They are very determined pests, therefore you may have to resort to a soap or garlic spray to get rid of them.

## Birds

While we normally encourage birds to our gardens, some species can cause problems in their quest for food. This can be in the form of seedlings being rooted out by birds scratching, or small plants and fruit being eaten by them.

Use scraps of fly wire, wire netting, mesh or even an old net curtain propped up on sticks, to protect seedlings, young plants or soft fruits such as berries. Ripening fruit, such as tomatoes, can be protected by wrapping the bush in anti-bird netting or old net curtains. If you are using old curtains, the joins and gaps can be closed with staples or small pieces of wire. 'Hawk' bird scarers are available but, while they may be effective, they will frighten away the beneficial small birds as well.

Healthy plants, growing in healthy soils, will be much more resistant to attack.

Mixed plantings, host plants for beneficials, crop rotation, the use of herbs, and good garden hygiene will all contribute to a good ecological balance.

#### **POINT TO CONSIDER**

Would you rather eat a fruit or vegetable that may have a slight blemish on it, but is chemical free, or one that has been sprayed up to 17 times during its growing life (as is the case with some fruit and vegetables available in the shops)? Frightening, isn't it?

**PREVENTION  
— BETTER  
THAN A CURE**



# Encouraging beneficials to your garden

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By providing suitable habitats, we can encourage beneficials to our garden, hopefully to take up permanent residence.

Small birds need a food source, water, somewhere to nest and also somewhere to hide from predators such as hawks and cats. By planting plants with a wide range of flowering times, bushy growth habits and some with prickly leaves, you will encourage small birds.

Birds need water for drinking and bathing and will soon find it if you put it out for them. A bird bath is ideal but any container that is not too deep is suitable. If you do not have any shallow containers, you can reduce the depth by putting a brick or stones in the bottom of it. This will stop young or small birds from drowning.

If possible, have the water away from a fence, and a minimum of a metre off the ground, as bathing birds are a target for stalking cats.

Any plants from the daisy family are good host plants for parasitic wasps. Look around your neighbourhood if you live in a town, and see what daisies are in flower.

Look for winter and spring flowering ones as well; these will give the beneficials a head start on the aphids, white fly, etc., when they arrive in the spring.

If you are fortunate enough to find some resident skinks or other small lizards in your garden, do not disturb their habitat, if possible. They will clean up a lot of insects, slugs, etc., and only need somewhere to hide, and a rock or piece of concrete to sun themselves on.

A small pond with overhanging rocks will soon attract frogs. The pond needs to be sited so that the water doesn't get too hot in the summer. It would benefit from a partly submerged rock or piece of timber to provide a hiding place for both the frogs and tadpoles. The frogs will help control insects, and you may be fortunate enough to see them on the outside of your windows at night, getting the moths and other insects attracted to the light.

# Crop rotation for vegetables

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Crop rotation is an important factor in successful, natural food growing. It involves growing related crops in succession, through a number of beds or containers, over a minimum of three crops. The longer the rotation cycles, the better.

## Why rotate?

By moving your crop, from a particular plant group onto a new site every season, the risk of pest and disease build-up is greatly reduced.

By particular plant groups, we mean 'family' groups. For example, the Solanaceae family includes such vegetables as tomatoes, potatoes, eggplants and capsicums. The Cucurbitae family includes pumpkins, squash, melons and zucchinis. If we plant crops from the same family in the same area continuously, the pests and diseases that affect that family are likely to be still on, or in the soil, ready to attack the next sowing or planting.

The other equally important benefit of rotation, is that we keep a much better nutrient balance. Different crop 'families' have different nutrient requirements,

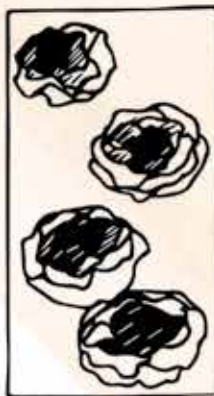
and rotation reduces the likelihood of a deficiency of a particular nutrient. For example, if we were to continuously plant cabbages in the same site, we would deplete nitrogen in the soil. We could rectify this with the addition of high nitrogen manure, which would work for a while. However, acidity would increase, making calcium and other nutrients less available.

Planting leaf vegetables in soil that has recently been manured is good, as these vegetables have high nitrogen requirements. If we were to plant carrots into the same soil, they would end up with forked roots and large bushy tops. Likewise, tomatoes would have a lot of soft top growth which would be vulnerable to pest and disease attack, and would not have many fruit.

## To sum it up

As each new growing season begins, each vegetable group is sown or planted into a different bed or container, in soil which has recently produced an unrelated crop. This continual movement is the best way to keep pests and diseases out, as well as helping maintain balanced use of nutrients from your soil.

# CROP ROTATION CHART



## First – Leaf

- cabbages
- lettuces
- silverbeet
- kale
- spinach
- broccoli



## Second – Fruit

- tomatoes
- beans
- peas
- capsicums
- cucumbers
- pumpkins
- zucchinis



## Third – Root

- carrots
- parsnips
- swedes/turnips
- potatoes
- onions

Note: Do not plant potatoes after tomatoes, capsicums etc.



## Companion planting

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There has been much written on this subject, and it is beyond the scope of this book to go into it in detail, but the following points are worthwhile considerations.

Planting a large area of only one crop (monoculture), makes that crop very vulnerable. Any pest that attacks such a crop can multiply strongly and affect the harvest. That is why large scale conventional monoculture farms use so much pesticide.

Smaller plantings, crop diversity and interplanting with other crops and aromatic herbs, along with strong smelling plants (like nasturtiums and marigolds), confuses pests, hosts beneficials and will give good protection in the garden.

There is no question that plants thrive in diverse situations. This can be readily observed in nature where many different groups of vegetation occur, changing subtly in different aspects or situations. Taller plants provide shelter, shade and support for smaller ones, while scents and aromas from flowers, foliage and roots contribute in attracting beneficials, or prevent or reduce attack by confusing or repelling pests.

This complex relationship is provided free by Nature; we should encourage and nurture it.





# Harvesting and storing your produce

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What we are aiming for is to be able to pick or use something we have grown every day of the year. In the summer and autumn, it is possible to have an abundance, but it is also possible to have vegetables through the cooler months too. Broad beans, broccoli, cabbages, carrots, potatoes, pumpkins, and silver beet can all be harvested, or used from your summer crop during the winter and early spring. Herbs, like parsley and chives, can be harvested all year round, and make a great fresh addition to egg dishes or salads.

Pumpkins, potatoes and onions store well, and carrots can be left in the ground and pulled, as required. Pull the last of the carrots in late winter, otherwise they will sprout again and run up to seed; they then become 'woody' and inedible.

In late autumn, any unripe tomatoes can be left on the bushes, and the whole plant pulled up and hung by its roots in the shed, or somewhere similar. They will continue to ripen, extending your harvest.

Smaller plantings or sowings every couple of weeks will also extend your harvest, and reduce the likelihood of a 'glut'. You may still end up with an excess, which can be preserved by freezing, bottling or drying.

Start harvesting vegetables as soon as they are ready. Thinnings from carrots can be eaten as 'baby' carrots. The outer leaves of lettuce or cabbage can be used anytime; just take what you need.

The layer beneath the skin of most vegetables is the richest in minerals and vitamins so, wherever possible, do not peel them. Soaking carrots, potatoes, etc., in water for a few minutes, then scrubbing them with a small brush, will easily remove the soil.

Potatoes can be baked in their 'jackets', or the skin can be rubbed off after boiling, if desired. ALWAYS remove green skin or flesh from potatoes as it is poisonous.

# Sprouted seeds

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This is one vegetable that needs neither soil nor fertiliser, and better still, it only takes up the space of a jam jar or two!



They are nutritious 'packages' containing more protein than any other part of the plant. Seeds are high in vitamins, minerals, essential fatty acids and carbohydrates. For such a fantastic little package, they are fairly cheap to buy, and take up no more space than the jar or container that you sprout them in. Half a cup of sprouted alfalfa has as much vitamin C as 6 glasses of pure orange juice! The following information was taken from the 'Mother Earth Manual of Organic Gardening' and shows the nutritional increase in a variety of sprouted seeds:

- vitamin C increased by 550% in soy beans,
- vitamin B2 increased by 1350% in oats,
- folic acid (a B vitamin) increased by 400% in wheat,
- niacin (vitamin B3) increased by 400% in mung beans,
- vitamins, A, E and K, pyridoxine and pantothenic acid (both B vitamins) also increased substantially in mung beans.

These figures give an indication of the benefits of growing sprouted seeds.

A variety of different seeds will give you variation in flavour and texture. They can be eaten in sandwiches or salads, or added to soups and stews and stir-fries just before serving.

The following seeds are suitable for sprouting: alfalfa, barley, fenugreek, mung beans, oats, rye, wheat, peas and other lentils, buckwheat and sunflower. Buckwheat and sunflower roots tend to be bitter, so they are better grown on a piece of cotton wool or in shallow soil, and the tops clipped for eating. Barley, oats, rye and wheat can also be grown on cotton wool or a few layers of paper towel, and then clipped for eating when they are 5-8 cm (2-3") high.

Sprouted grains (wheat, barley, oats, rye, etc.) are best eaten when the root or 'tail' is about the same length as the seed. They can be added to muesli, porridge, stews and stir-fries, and are delicious added to home-made bread.

Sprouted legumes (alfalfa, beans, peas, lentils, etc.) are best when the shoot is 5-7 cm (2-2¼") long.

### Materials

You will need:

- a glass or plastic jar or similar container,
- a fine sieve or tea strainer to rinse the seeds,
- a piece of muslin or other thin cloth. (a piece of stocking big enough to stretch over the container is ideal),
- a rubber band to hold the cover onto the jar,
- a dessert bowl to put the jar into when draining,
- seeds for sprouting (2-3 teaspoons is enough for an ordinary jam jar).

### Method

Put the seeds into the sieve, and rinse them thoroughly under running water to remove dust, etc.

2-3 teaspoons of small seeds, like alfalfa, would be enough. For grains, you could use more because you will be using them when they are less developed.

Transfer the seeds to your jar and cover them with about 4 times their own volume with water. Fit the cloth/stocking cover over the jar and secure with the rubber band. Leave the seeds to soak overnight.

In the morning, tip the water off and let the seeds continue to drain by placing it on an angle in a bowl. The seeds need to be damp but not sitting in water, as this will cause them to ferment.

Put the jar in a cupboard away from light and continue to rinse and drain 3-4 times a day. If you work, you may only be able to do it 2-3 times daily. Soy bean seeds should be rinsed and drained more often as they ferment more easily.

Depending on warmth, you will have sprouts ready to eat in about 3 days. Grains are used at this stage; legumes can be left for longer.

Your seed sprouts will be sweeter if kept in a cupboard, but can be put on a bench for a couple of days if you want to 'green' them up.

Nutritious sprouted seeds ready for eating!

### Clipping seeds

Seeds can also be sprinkled on a piece of paper towel, or old cloth that has been placed on a plate. Wet the paper or cloth and keep it damp. Leave the plate on a bench and clip the shoots with a pair of scissors, as required.

Seeds for sprouting or clipping can be bought in packets from nurseries. They can also be bought quite cheaply from grain and produce stores.

Soy bean sprouts should ALWAYS be cooked before eating, as they contain a protease inhibitor which is changed by cooking. Protease is an enzyme in our digestive system.

# WHAT'S STOPPING YOU?

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We trust you will find this book useful to help you 'get growing' and that you will enjoy the benefits and rewards of growing your own food.

## Some Further Interesting Notes

- During the Second World War Britain produced 10% of its food in backyards, railway reserves, vacant blocks, etc.
- Many South-east Asian families produce all of their food in an area the size of an average backyard.
- An area the size of a double carport can produce enough vegetables to feed a family of four.

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