



Healthy Valley Organics



Optimal health begins with the soil. The living soil requires nutrients, microbes and humus.

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Starting an Abundant Garden

Organic Fertilisers: Mushroom compost can be sprayed with chemicals - be wary. All manures need to be from the cleanest sources possible and preferably be composted.

If we grow organically, using organic fertilisers, we may be using fertilisers that lack certain minerals if they come from soils that lack those minerals, therefore we may need to add these minerals in some other way.

Sandy Soils:

To prevent soil nutrients leaching away, a “**Sand Remedy**” consisting of Bentonite, Zeolite and Gypsum is recommended. This is applied at the rate of 1 kg for every 3 - 4 sq. metres and lightly raked into the soil.

Zeolite holds nutrients and Bentonite clay retains water. Gypsum prevents the clay clogging and will help break up clay if it occurs underneath sandy soil. It also contains calcium.

Crushed Rock is promoted as an economical way of supplying minerals to our depleted soils and this no doubt is part of the answer, however crushed rock is only as good as the rock it comes from and we can only be sure it contains all the minerals we need if we procure a certified, analysed product with the list of minerals it contains.

Crushed Rock can be applied at a rate of 1 kg for every 4 - 5 sq. metres. Crushed rock supplies a large range of slow release minerals in inorganic form. Bacteria in the soil may convert these minerals to an assimilable form for plants. Every mineral has a bacteria that can dissolve it, including gold. To ensure all necessary bacteria are in the soil, there is a product called Eco-Probiotic Vermi Humus which can be applied as semi-dry worm castings or in liquid form using a spray or drippers.

Blood & Bone supplies nitrogen and phosphorus in a slow release form and this can be applied at the rate of 1 kg for every 3 - 4 sq. metres. It is best used with composted plant materials which supply potassium as excessive application of phosphoric fertilisers can cause severe trace element deficiencies. Blood & bone is an acid fertiliser.

Once the above ingredients have been applied to the soil, a light raking over will maximise their benefits.

Bull Kelp Seaweed: Supplying trace elements is beneficial, as are manures from a variety of sources however the most reliable source of minerals comes from the sea in the form of kelp. The sea contains all of the minerals our soils require and kelp probably contains most of the minerals our soils require.

In our own fruit and vegetable growing, we have found nothing to compare to kelp for giving us top tasting, highly nutritious organic produce. We use a kelp powder rather than a liquid based product due to the simplicity of application and the powder also adds organic matter to the soil, giving us a nutritious humus.

Kelp is applied at the rate of 1 kg every 5 - 6 sq. metres. This seaweed is very high in potassium, other minerals and trace elements—in fact, all the minerals found in the sea. Kelp is also contains growth hormones which accelerate plant growth.

The next best fertiliser for our garden is **alfalfa or lucerne** as it is called and this can also be used as a mulch to suppress weed growth. The reason alfalfa is so good is the fact that its roots grow deep into the soil, seeking minerals from depths of up to 150 feet or more. Of course alfalfa is only as good as the soil it is grown in, but it will contain more essential minerals than many other fertilisers and contribute nitrogen to the soil.

Free range pigeon manure must also be considered one of the best fertilisers because free ranging pigeons cover a

lot of territory and could be expected to have a variety of foods in their diet, thus the mineral content of their manure could be expected to be more than confined birds such as poultry. Poultry manure however, is also one of the top fertilisers especially if it includes lots of feathers as these break down in the soil to release nitrogen.

Following the application of Kelp, **Sheep Manure pellets or Chicken Pellets** can be applied. Chicken manure is alkaline because the chickens are fed shell grit which is high in lime. For acid loving plants or alkaline soils composted pig, cow manure or pelletised sheep manure is preferable.

Mushroom Compost helps conserve moisture in the soil by acting as a mulch. It also eventually breaks down and adds valuable humus to the soil, so building up the soil structure. Clay soils also benefit from the addition of humus. It is important to obtain mushroom compost from a chemical free source. We recommend Swan Garden Centre if required in bulk. Most mushroom compost is sprayed. Mushroom compost contains chicken manure and is therefore alkaline and not suitable for acid-loving plants.

Cedar wood shavings are used to make an acid compost and this is recommended for acid loving plants such as blueberries, strawberries, tomatoes and pineapples.



Pelletised Mulch made from pea straw is now available. This is an easy mulch to apply as it just needs to be spread around reasonably lightly. When wet, the pellets expand 4 - 6 times and form a thick covering, so suppressing weed growth. It will eventually break down and feed the soil. As with all mulches, it is best to apply a layer of animal manure such as sheep dag pellets to supply nitrogen otherwise the mulch will draw nitrogen out of the soil resulting in a deficiency.

Occasionally, if the soil **acidity is too high** or the leaves of plants turn yellow, the addition of **Dolomite** may be necessary. Dolomite contains lime which makes the soil more alkaline, and magnesium which is essential for the green found in chlorophyll - the plant's ‘blood’. We need iron to make our blood red and plants need magnesium to produce their green colour. If soil **acidity is too low**, the addition of **Sulphur** will help restore the correct balance.

Watering for 15 - 20 minutes daily is recommended in the early morning for vegetables in summer and this needs to be reduced to perhaps zero in winter if rain is consistent.

If you follow this method of growing your own produce, you will be rewarded with delicious and nutritious produce which will ensure you receive the best nutrition possible, thus building good health. Fresh produce has the added advantage of having greater “life force” in it as it is basically going from garden to plate in the shortest possible time. You will also save on vitamin pills, and doctors bills!

Clay Soils:

Clay soils benefit from the addition of **Gypsum** and **organic matter** such as compost. This will break down the clay into a more friable texture. Drainage can be a problem in clay soils, so garden beds may need to be raised to encourage runoff. The same fertilisers as for Sandy Soils can be used.

Maintenance:

A dressing of complete plant food (e.g. Rock Dust with fish and kelp) can be applied as crops grow - perhaps after 1 - 2 months and each new crop will need fresh applications of the various nutrients. Crop rotation is also recommended to minimise soil diseases.

Trees:

Citrus trees - Need to be fed with a complete plant food, seaweed, crushed rock. Compost/mulch is recommended to prevent the shallow roots drying out. It is best not to allow weeds or other plants to grow under the trees as they are shallow rooted plants. Cultivation (digging around tree) is also to be avoided. Navel Orange is best for eating. Valencia Orange is best for juicing. Ruby Red grapefruit is one of the sweetest. Emperor, Imperial and Hickson Mandarins.

Stone Fruits - It is best to dig a hole approximately 1 metre round and up to a metre deep, then add blood and bone, compost and a complete fertiliser, mixed with soil before planting the tree. This ensures good production. For flavoursome fruit over-watering is to be avoided. Moderate watering and mulching to retain moisture in sandy soils is recommended. Dwarf Peach and Nectarine trees produce well and can be successful in large pots.

Other Fruit Trees: Prepare soil as for Stone Fruits. **Figs** are vigorous plants and need moderate watering—the roots are invasive so avoid planting near a vegie patch. Good varieties are: Adam (resists fruit fly); White Genoa and Black Genoa. **Passionfruit** thrive on blood and bone fertiliser and good water supply in hot weather. Nelly Kelly Passionfruit is the most reliable variety. **Grapes** do best in full sun which helps to prevent mould. Best grown well spaced to allow plenty of ventilation. Restrict watering to achieve best flavour. Good varieties include: Pearlet (early); Sultana (mid season); Cardinale (mid - late) and Red Globe (late). Moulds can be prevented by spraying with Probiotics VermiHumus followed every 2-3 weeks by applications of Eco-Vital.

For Sweetness: The addition of Sulphate of Potash will provide the potassium a plant needs to flower, set fruit and add sweetness to the ripe fruit. Potassium also promotes chlorophyll production and plays an important part in the strength of the cells and the movement of water in plants. It also improves disease resistance. Sandy soils in high rainfall areas are most likely to be deficient.

Growing in Pots:

Many trees can be grown in large pots and the advantage of this is we can fully control the content of the soil it is grown in. By giving a potted tree the best soil and fertilisers we can grow produce with top flavour and nutrition. We may grow less, but what we do grow will be nutritionally superior to commercial produce.

One reason why we all tend to over-eat these days, is because the food we buy lacks nutrition and therefore we crave more food (nutrients) even though our stomach is full. So growing our own "power packed" produce means we will have less inclination to overeat. A simple test as to whether our food is nutritious or not is the taste test. If it is full of flavour, it is full of nutrition. To get the best flavour out of fruit, it is best to apply just the amount of water needed by the tree. Too much watering results in fruit containing too much water which diminishes the taste.

Another advantage of growing in pots is the trees are restricted on size and will not dominate our garden. Some trees such as figs send roots out like rubber trees and can sap nutrients from a nearby vegetable patch as an example. Most fruiting trees grow too large for the average backyard and too much produce is time consuming to pick and dispose of.

Dwarf varieties of Peach and Nectarine are ideal for growing in large pots, as are Figs, the Hicks Fancy Mulberry, citrus trees, mangoes, guavas, Acerola cherries and many others. Netting small fruit trees is much more practical than

trying to cover an oversized, mature tree.

**Striking Cuttings:**

Cuttings dipped in honey and then planted in a moist, loamy soil which is always kept at least damp, should result in a high strike rate. This is best done in the cooler months.

Vegetables & Herbs:

Vegetables grown in fertile soil, grow quicker, stronger and larger than they would otherwise and can be picked earlier, making way for another crop. This maximises the use of land which is often in short supply in small suburban back yards. Many vegetables can be grown in pots of a good size, so even balconies in flats can be quite productive. Strong plants resist insects and disease. Nature destroys the weak and the strong plants that survive are what is really fit for human consumption. If we want strong bodies we need to consume strong plants.

Cucumbers and Rock melons: Moulds can be prevented by spraying with Probiotics VermiHumus, followed every 2-3 weeks by applications of Eco-Vital.

Herbs are packed with nutrition and fresh herbs are always best. This can add a real zest to a salad and teas can be made from fresh Peppermint and Lemon Grass as an example. The strong flavours of herbs suggest they are packed with nutrition. This is why they are powerful healers.

Fruit Fly Resistant Plants:

If grown in fertile soil, most **lemons, oranges and grapefruit** can generally resist fruit fly attack. **Mandarins** however may need netting and are therefore best grown in large pots.

Passionfruit, bananas, pineapples, mangoes, Acerola Cherries, avocados and all nuts are not prone to fruit fly attack. Best Mango: Kensington Pride. Best Avocado: Hass.

Figs vary in their resistance with the Adam and then the Black Genoa most resistant. The White Genoa and other varieties may need to be netted or they can be sprayed with **Azadol** or baited. **Berries** are another fruit not troubled by fruit fly and they are the earliest fruits in the season.

Blueberries and **mulberries** can be grown in pots and **loganberries, raspberries** and **strawberries** are best grown in pots as they spread through gardens vigorously and need to be controlled. All berries except strawberries need large pots to produce well.

Fruit Fly Control:

In the metro area fruit fly are difficult to control as they are prolific due to poor control methods or neglect by home gardeners. Although fruit fly are lazy flyers - usually traveling only 50 - 100 metres, strong winds will assist there migration. The method that works best is to net the trees as soon as the fruit starts to develop. Cheap nets can be bought from a camping store, or if the trees are large, a canvas or netting manufacturer can make larger, more durable nets. A mono-filament white netting which allows light penetration is recommended. Fruit needs sunlight to ripen well. Such nets only filter out about 17% of the sun.

To support the netting, 4 Star Pickets, preferably 2.4 metres long may be used. In sandy soils these may need to be driven ½ - 1 meter or so into the ground. Small diameter white reticulation PVC tubing may then be tied onto one Star picket and then looped onto the next and secured with twine or "Adjusta-Ties" as in the diagram. It is best to make the frame large enough to keep the tree away from the netting. If the tree is allowed to grow through the netting it may create holes in the net, requiring repair before re-use.

If a variety of fruiting trees are grown, the same net can be used on many trees. For example, an early apricot may need to be covered until the end of November and when its finished fruiting, the net can be used over a plum tree which fruits later in the season. Nets are expensive, however there are savings on chemicals or baits and the time involved in applying them plus you get to eat the **all** the fruit! They also prevent birds attacking



the fruit.

Small trees, grown in pots are easy to net and if quantity is required, 2 or 3 potted trees may supply all that is needed. Large plastic pots are now available which makes potted trees an economical and practical solution.

Neem, Pyrethrum Spray:

Known as Azadol, this environmentally safe product is made from cold pressed neem oil, is UV stabilised, fully water soluble and one application lasts up to 28 days. It is said to be effective in deterring fruit fly and many other pests. The Pyrethrum in Azadol will kill beneficial insects however so we need to be careful where and when we spray. Be careful not to spray when or where bees are foraging.

Fruit fly bait:

A cup of sugar mixed in 2 - 3 litres of water with a sachet of live bread-making yeast is a good attractant. This can be placed in used plastic drink bottles. Wrap a yellow insulation tape around the circumference, about 2/3 of the way up from the bottom and drill several 5mm holes in the taped section. Fruit flies are attracted to yellow. Suspend 3 bottles per fruit tree by tying wire or string around the neck of the bottle. Be sure to replace the cap once the bottle is filled with baiting solution.

Another recipe for Fruit Fly Bait is: 1ltr water; 1½ tbsp Cloudy Ammonia; 1½ teasp Vanilla Essence; 4 heaped tablespoons of sugar. 1 Small squirt of detergent. Dissolve sugar in warm water, then mix ingredients together before pouring 6cm into traps as described above. This is a very effective bait and it keeps longer than others such as beer or the yeast mix described above which tend to go "off".

Bright yellow "sticky" traps are available commercially and these are very effective in trapping fruit fly which eventually die on the sticky surface. They are made from a plastic or cardboard card or a cylinder, coated with a sticky glue which remains sticky for several weeks.

(recommended renewal time 8 weeks). I place these traps, which are really designed for indoor use, into a used plastic drink bottle to prevent birds or dust sticking to the trap. Cut out the base of a 2 litre bottle and hang the trap inside, leaving 1/2 protruding below the bottom. Reverse the sticky trap after 4 weeks so that the top becomes the bottom, so exposing the other ½ to the



insects.

Naturalure: This is a new product on the market produced by Dow Agro Science. "Naturalure" is a naturally occurring bacteria combined with an attractant. It is sprayed on the foliage or bark of fruiting trees. The bacteria kills fruit fly after ingestion. Naturalure needs to be applied weekly. This product is very effective in orchards but it is not available in retail packs at this stage. The smallest container size is 2 litres and it costs just over \$100.

Other Pest Control Methods:

Spray for the cabbage white moth with 'Dipel' which is a bacteria that destroys this insect in it's most destructive caterpillar stage without causing any harm to humans or animals. Grow cabbage, cauliflowers and broccoli only in the cooler months. Aphids only attack these plants in the warmer months when they are really out of season. Similarly, lettuce should only be grown in the warmer months to avoid aphid attack. This is nature telling us to eat only those foods grown according to their season. Aphids on roses and other plants can be eradicated by spraying with a bio-degradable, environmentally friendly detergent at regular intervals until they are under control.

Snail, Slug & Slater Control:

There is a product on the market called the "Slug Slayer" which consists of a base which holds snail pellets and a top which clips onto this base, forming a waterproof cap, with 3 large holes in the side to allow entry to snails, slugs and slaters. The "Slug Slayer" prevents contamination of the soil which occurs when pellets are spread over the ground and it also prevents rain or watering dissolving the pellets. This

seems to be a very effective and efficient way to prevent these plant predators consuming our valuable produce. There is a similar product sold in Coles Supermarkets.

There is also a more environmentally friendly snail bait that breaks down into a fertiliser for plants. This is sold under the 'Multiguard' brand and is made from an iron-EDTA complex. This bait is safer to use around vegetables and is effective against the small conical snails.

Slater's can be controlled by applying a bait made from 1 part pyrethrum and 2 parts flour. This can be applied freely in infested areas. Pyrethrum is a natural insecticide and has a withholding period of 1 day. Use with discretion as it will kill beneficial insects also.

Sprinkler guards can also be used to protect young plants from slaters. Remove if necessary, if the plant is likely to become too large for the guard, however most vegetables except lettuce should be OK if left to grow with the guard in place.

A receptacle, sunk into the ground, partially filled with beer is a good way of attracting snails which will then drown in the liquid. A raised lid above the container will prevent it filling with water from sprinklers or rain while still allowing snails to enter. There is a commercial **Snail and Slug Trap** based on this principle, with an easily removed lid for examination. This trap is extremely effective for luring and trapping **slugs**. This is a completely safe non-chemical solution.

Barriers, including saw dust and wood chips can be used as a deterrent and copper strips laid on the soil or along fences and borders are also effective. Copper soil sprays can also be used but are not recommended near food crops as it could lead to excess copper levels in our body. Bordeaux or copper sprays on grapes etc to control mildew may also be a health risk.

Khaki Campbell Ducks and chooks are also effective snail control methods if you can allow them to run wild in affected areas. Bobtail lizards also love to eat snails if you are lucky enough to be blessed with one or more in your garden.

Snail Spray: Mix 1 part Espresso Coffee to 10 parts water. Spray foliage of susceptible plants. This mixture will kill snails and slugs.

Frogs Control Insects: Frogs are effective predators and will control slaters and small snails. Build a pond to allow them to breed - they will come from kilometres away. It is important to add plenty of humus to the soil so it retains moisture. This is a conducive environment to moisture loving frogs. Also, it is important to avoid the use of pesticides.

Fungicide Sprays:

Various types of mildew affect plants such as **cucumbers, melons, grapes and roses**. A cheap spray can be made from 1 part full cream organic milk to 10 parts water.

A product called "Ecorose" may also be used for powdery mildew and hyphae (Black Spot). Ecorose contains activated Potassium Bicarbonate and is a certified allowable organic input by ACO. It needs to be applied every 10—14 days.

A spray made from 2 Tsp bicarbonate of soda, 1 drop of olive oil, 1 drop of biodegradable washing-up liquid and 2 ltrs. of water (shake well) prevents powdery mildew, black spot and rust on **roses and tomatoes**.

Algae & Mould:

Mix 1 part white vinegar with 3 parts water and spray affected areas.

Root Control Bags:

This is a great idea for small yards or when we want to limit the size of a potentially large tree. They come in up to 300litre size and the idea is to dig a hole large enough to take the bag. The bag is then filled with soil and fertiliser and a tree or other plant can then be planted in the knowledge that the plant will be confined to the bag, so limiting its size.

Pots:

Glazed clay pots are best if we require good water retention as the glazing prevents moisture loss by sealing the pores of the clay. Terracotta pots are clay pots without the glazing and may be suitable where a cooling effect is required. Terracotta pots allow moisture to reach the outside

of the pot thus allowing evaporation. This may cause mineral salts to be deposited on the outside and subsequently a whitish mineral crust may develop. Terracotta pots need to be watered well as they tend to dry out in hot weather.

Plastic Pots: It is best to buy black plastic pots as they resist the Sun's ultraviolet rays better than other colours, especially white, which deteriorates in the sun quickly. Of course the more solid the pots, the longer life they will have. Better quality coloured pots should have good UV resistance.

"Self watering" pots have a reserve of water in the bottom to prevent drying out and this makes them perfect as hanging baskets. Plastic pots are an economical way of potting plants and the advantage of growing your garden in pots is that you can take them with you if you move to another area. Hanging pots are good for strawberries as the fruit is less susceptible to snail and slater attack.

Weed Control:

Environmentally friendly methods include a flame burner and an organic spray based on pine oil. The flame method involves passing a large flame over the plants to be eliminated. The burner runs on a BBQ or camping gas cylinder and is easy to use. We do need to be aware of any fire hazard however. The pine oil spray is sold under the name of "Interceptor". It is a non-selective contact weed control foliar spray. It is non-systemic, instead it dehydrates by burning all green contact areas. It is most effective if sprayed on young weeds—a good soaking is necessary so this may not be the cheapest option but in selected areas it may be a practical solution.

Mulching with straw, compost or other organic matter is a very effective way to suppress weeds and old carpets may also be used. Weed control mats are another option. The advantage with organic mulches is, they break down slowly and release nutrients in the process. Alfalfa or Lucerne hay as well as pea straw add nitrogen to the soil as they decompose.

Biodynamic Farming:

In biodynamic farming, cow manure is placed in hollow horns and buried for some time before being dug up and the manure extracted for a liquid fertiliser. Horns and hoofs also contain minerals which encourage microbe activity and these microbes help make minerals in the soil available to plants, so perhaps this is one reason why biodynamic farming is superior to organic farming. The helical structure of the horn may also add energy to the biodynamic fertiliser. There are commercial preparations that supply bacteria to break down the minerals and these act in a similar way to the biodynamic method.

Plants, like us, have an energy and we respond to homeopathic remedies which are energy based, so perhaps plants respond in the same way. When we talk about this mysterious energy, we are talking about the vibratory rate of substances.

Every food and every substance has a frequency. Every organ in our body has a different vibration and foods with a similar vibration will be attracted to that organ. As with our body, so with our plants.

Composting:

The easiest composting method is to use a Gedye Bin. This is a conical shaped plastic bin with an open base and a clip-on lid. To use, simply place on a flat surface in a garden bed or where it is convenient. Place on open soil in preference to a cemented or similar area to allow earth worms to enter.

To prevent rodents, pile up soil around the bottom edge or sink the bin into the soil 5—10 cm. All food scraps can be added as well as grass clippings, leaves, weeds etc. A layer of soil is of benefit every so often. To help eliminate insect infestation, add dolomite occasionally. Dolomite also helps to break down the composting materials. Comfrey leaves also assist the breakdown of composting materials. When full, cover with a layer of soil and leave for 6 months or more to allow the worms to complete their work.

A second bin is needed while the first bin is not being used and if this is filled before the first bin is ready, a third bin may be necessary. An alternative is to remove the

bin after a few months and replace it with a modular soak well kit. These kits are available from hardware stores and the panels simply slide together to make any size cylindrical elevated garden plot you wish. Use about 1 ½ kits to make a holding ring slightly larger than the large Gedye bin's diameter, then add soil to prevent offensive smells. Leave this set up for another 3 - 6 months or more to allow the earthworms to thoroughly digest the compost. The compost is ready to use when all earthworm activity has ceased.

Elevated Gardens:

An elevated garden makes gardening much easier. One of the simplest ways to elevate a garden is to use the modular soak well kits mentioned above. The modular panels have a grooved locking system which enables one panel to slide into the other. One kit builds a soak well however by adding a few more panels, a much larger soak well can be made. Besides their use as a soak well, they also make an excellent elevated garden. If it is too high, it is easy to cut the panels down by using a hack saw to take material off the bottom of the panels.

Besides making gardening easier by not having to bend down, elevated gardens can increase exposure to sunlight in suburban areas by raising the garden above much of the shade created by shrubs, buildings and fences. Elevated garden beds can be more productive because larger plants can be grown around their base and as long as they are kept low, the plants in the elevated bed will have sufficient sunlight to thrive. Also, in frost prone areas, elevated beds are less likely to be affected. Cold air sinks and affects low lying areas. All plants do better in winter if they are grown high up. For this reason, hills are more productive than valleys in winter.

An elevated garden can also be used to grow vegetables close to trees where the invasion of tree roots may be a problem. An easy way to prevent root invasion is to place 4 or more cement slabs down to form a base, then place black plastic sheeting or similar over the slabs. The modular panels of the soak well kit have slits in their sides so drainage is no problem. It is best however, to have a porous potting mix as the base (at least the first 10 cm) of the elevated garden to give it good drainage.