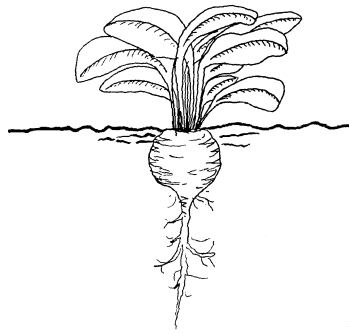


SOIL FOR LIFE

Build the soil, harvest the plants, feed the people, heal the planet



**To all who must eat to live, there is hope.
Grow your own food.**

It's the simplest (and cheapest) way to good health

Sponsored by the Soil for Life organisation

Soil for Life is a Cape Town-based NGO which teaches people to grow their own food. For more information about Soil for Life membership, and organic methods for growing vegetables, herbs and fruit, please phone Pat on (021) 794 4982

Soil, and its legions of microbes, is one of our most precious natural resources. How many are aware that a mere twenty centimetres of topsoil is all that separates mankind from starvation, yet each year a huge swathe of agricultural land is lost to erosion, salinisation and other forms of degradation?

How many of us are truly aware of the critical role that soil plays in our health and well-being? If we understand the importance of good nutrition, we will do everything we can to ensure that our food is fresh, safe and nutritious. We do not have to rely on costly supplementary diets to obtain the nutrients we need; we simply need to ensure that the food produced in our back- (or front-) yard gardens is grown in healthy soil, is well prepared and properly cooked. The amount and type of nutrients found in food depend on a number of factors, most important of which is the soil in which it was grown. Most of the soils around the world are exhausted from years of poor agricultural practices; their structure and life forms have been destroyed by extensive use of agro-chemicals and pesticides. They are depleted of the vital elements for healthy plant growth. Since all food comes from the soil – either directly or indirectly – its quality has suffered and so has our

health. By concentrating on restoring the harmony in the soil by good soil building practices we are working towards good health for all. As Marie Roux, formerly of *Operation Grow* teaches the communities in which she works – *There is an inextricable connection between soil, nutrition and human health*. To put it simply – YOU ARE WHAT YOU EAT.

Healthy soil; healthy plants; healthy people.

It makes sense, therefore, to go that extra mile when preparing the soil for your vegetable garden. Trenching, as was discussed in the previous edition of *Biophile* is undoubtedly the most effective way to boost soil nutrients and to undo years of damage in terms of a reduced humus content, a lack of soil life and compaction, which reduces the amount of air in the soil, and also its water-holding capacity. Soil preparation is the food gardener's most important task. Hard work it may seem, but it pays off in the end with increased production in small spaces and a major boost to soil fertility (and your health). And remember, this method is a most efficient and effective and environmentally sound way to recycle household and garden waste.

Your waste becomes your health, and your wealth.

There are other methods of preparing the soil in your vegetable garden; all are dependent on the type of soil you have, although bear in mind that most soils in South Africa are poor and compacted and that this country is short of water:

1. Single digging means that the soil is loosened or turned to the depth of one spade-head (30cm). If your soil is deep and fertile, is not compacted and you have plenty of water, this method is a good one.
2. Double digging is a good method for heavy clay soils where drainage is a problem. Dig out the soil (topsoil) in your bed to a depth of 30cm (one spade head) and put it to one side of the bed. Using a fork, loosen and turn the soil at the bottom (subsoil) to a depth of 30cm. This means that the soil is loosened to a depth of two spade-heads (60cm). Then add a 10cm layer of compost, well-rotted manure or any other organic matter in the bottom of the trench. Cover this with the topsoil.

Over time, through the action of rain and an amazing variety of soil life, the organic matter you introduce into your soil through good preparation and mulching will decompose into a rich, brown loamy material called *humus*. This awesome substance literally changes your soil into gold dust. It holds water and nutrients and releases them on demand; it prevents the leaching of valuable plant foods from the soil; it sticks soil particles together and prevents them from blowing and washing away; it makes the soil light and fluffy for good root growth. Vigorous root systems are essential for strong and healthy plants.

Having prepared the soil and planted your veggie beds for maximum production, your work as a gardener is not quite over. The good news – the heavy part is complete and, providing you never walk on the beds, and that you keep them covered with compost and

mulch, you need never till them again. You can sit back a little and ponder the wonders of nature while your garden grows.

CARING FOR YOUR GARDEN

Your garden is like a child; it needs constant attention if it is to flourish. There are a lot of things that you will have to do to keep it healthy so that you can harvest good crops:

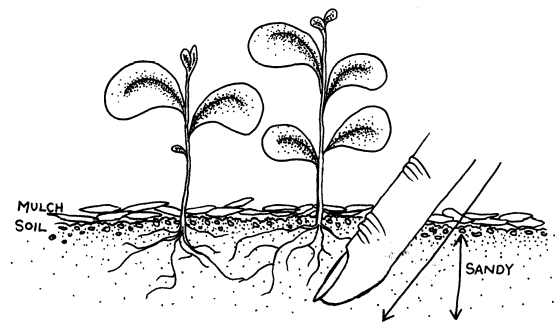
Watering

Vegetables need water if they are to grow well. Young plants must be kept damp. Check the garden every day – in summer, twice a day – to make sure that the soil is not dry. Stick your finger into the top layer of the soil; if it is dry you need to water.

The best times to water are early in the morning and/or late in the afternoon.

Avoid using a hosepipe as it wastes far too much water. Use a bucket and a watering can made out of a tin or plastic bottle with holes punched in the bottom.

Try not to get water on the leaves of pumpkins, squash and marrows. Wet leaves encourage the growth of powdery mildew which stunts the growth of the plants. Try using a simple system of drip irrigation by burying a plastic bottle next to the spot where you plant the seeds. Tiny holes poked in to the bottom of the bottle (use a thin needle that has been heated in a flame) will allow water to very slowly seep out into the soil next to the growing plant.



Weeding

Check everyday for weeds. Keep the beds free of weeds because they compete with your vegetables plants for the food and water in the soil. The smaller the weeds are when you pull them out, the less disturbance there will be to the roots of your crops.

Use the weeds to make 'weed tea' or to mulch the paths, make compost or to put into the next trench. Diseased weeds must be burnt and the ashes sprinkled in the garden as a fertiliser.

Some weeds, like wild spinach, stinging nettle, chick weed, fat-hen, milk thistle and pigweed, are eaten in relishes and as vegetables. Others are used as medicines. Find out about weeds by asking the people around you.

Weed tea

Many weeds, such as dandelion and chickweed, have deep roots which take up valuable minerals from the subsoil. When weeds are used as a mulch, or dug into the ground, they enrich the soil with these minerals and provide food for the vegetables that are growing.



Make a weed tea by soaking the weeds that you pull up in a bucket of water, leaving them for a few weeks and then watering your plants with the diluted tea.

Mulching means covering the soil with dry plant waste . A well mulched garden is a healthy garden. There are a lot of reasons why this is the most important job for any gardener to do.

Mulch

- slowly breaks down or decomposes and feeds the soil with organic matter and improves its structure.
- prevents the garden beds from drying out and so you do not have to water so frequently. It keeps water in the soil.
- keeps the soil cool in summer (so that plant roots do not get burnt) and warm in winter
- slows down or prevents weed growth. You will not have to work so hard!
- encourages earthworms to your garden. These little guys are your best friends when it comes to fertilising the soil, bringing air to the roots and improving drainage.
- provides a home for useful creatures – frogs, lizards etc who eat the pests that come to your vegetables.
 - * When the wind blows the mulch away – add more.
 - * As it decomposes into compost for the soil, add more.
 - * You can never afford to stop adding mulch to you garden.
 - * If you don't have dry plant waste, cover your soil with newspaper,cardboard and even stones.
 - * Mulch your beds; mulch your paths; mulch everything!

And this is not all. Once your seedlings start emerging from the warm, dark earth, they will need some extra special care. More of that later.

Tips for more successful (and cheaper) gardening

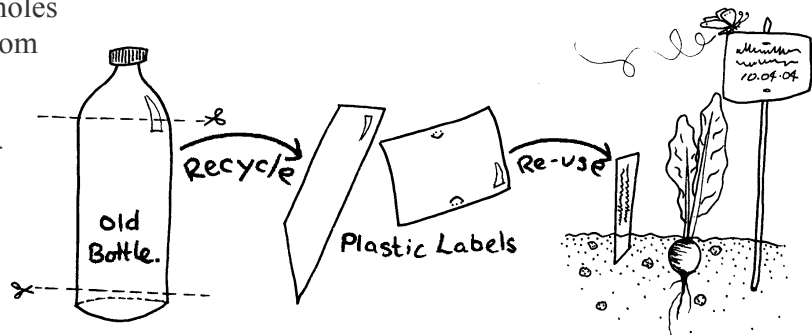
If you started your vegetable gardening with the second edition of Biophile you will already be harvesting and eating your very own fresh, delicious produce. You may well be on the verge of planting out your second crop in some of the rows in your beds.

With time you will soon discover that it is not a good idea to grow the same crop repeatedly in the same soil. Plants do better if they are rotated in the following order:

- First crop:** Leaf crops, for example – cabbage, kale, spinach, lettuce, cauliflower, broccoli, parsley
- Second crop:** Root crops, for example – carrot, turnip, beetroot, leeks and onions
- Third crop:** Legumes such as peas, beans, broad beans, lucerne
- Fourth crop:** Tomatoes and potatoes

Crop rotation makes the beds last longer, and maintains and increases soil fertility.

Plastic cool drink bottles make good plant labels: cut up the bottles with a sharp knife. Make a sharp point at one end so the label can stick in the ground. Alternatively, make them rectangular, poke holes through the top and bottom in the middle, and then thread a stick through. Use a permanent marker to write on the label. And remember, they can be reused when you replant after you have harvested.



Don't waste: Reduce, re-use or recycle

Lucerne: a high protein vegetable and a good crop for a quick winter and early summer harvest ...

Most people think that Lucerne is only for cows! But it is actually an important source of food for humans as well; rich in protein, vitamins and minerals. Cook it with spinach or beetroot leaves, or cabbage or turnip leaves. It is delicious and nutritious.

Autumn and winter are the times to plant Lucerne (the seed remains viable for up to five years) so that by the end of July you will be able to start harvesting the young tips. Add them to soups and stews, and chop them into salads. You can also tie the tips into small bunches and hang them in a cool airy place to dry out. Crush the dried material into a glass jar, seal and keep as a sprinkle for your food. After harvesting continually for three months, cut the plants down to the ground in October, chop them into small pieces with a spade and dig them into the soil.

Lucerne is a leguminous plant and this process of digging the plant remains into the ground is called *green manuring*. It makes the soil nitrogen-rich for the growing of the next crop of leafy vegetables such as spinach, cabbage and lettuce. No fertilisers necessary – nature does it for you.

Nitrogen-fixing legumes should have nodules scattered throughout the root system. The more nodules the better. These are little fertiliser factory sites that fix nitrogen from the atmosphere into a soluble form that can be taken up by plant roots.

