Vegie Garden Maintenance

Kimbriki Eco House & Garden

Learn how to build healthy soils, healthy plants & healthy people

By Peter Rutherford – Senior Ecologist, Kimbriki Eco House & Garden

This Vegie Garden Maintenance workshop will deepen your knowledge and skills introduced in the Beginners Workshop. You will learn how to continue building your living soils & understand what soil is made of. The ongoing success of organic gardening & farming depends on beneficial microbes, which act as drivers for our entire soil and plant systems.

This course will cover the following:

- Gardenate APP
- Review of Beginners Course
- What is soil made of?
- Testing & understanding pH
- Water holding capacity of soil
- The effect of synthetic fertilisers on soil
- Harvesting (i.e. picking) and ongoing management of vegies & herbs
- Microbial nature of soil
- Understanding the microbial balance in your garden.
- Creating bacterial or fungal dominance to suit different types of plants
- Learning to apply the 3 'Keys' to your garden:
    1. composts & other organic fertilisers
    2. mulches
    3. foliar fertilisers & compost teas
- Fruit trees
- Biogenics
- Questions & answers

Review of Beginners Course

- The KEY overriding principles we work with are called the A.D.A.M Principles. Aliveness, Diversity, Aeration & Moisture (see separate sheet for detailed explanation of A.D.A.M).
- Soil
- Light
- Heat
- Protection
- Vertical & horizontal space
- Moisture & air relationships
- Planting
- Feeding your soil/plants
- Unwanted visitors
- Harvesting/picking & eating your produce

What is Soil Made of?

Soil is made of two types of 'ingredients' – organic matter (OM) and rocks (mineral matter). Understanding this in a practical sense will give you the skills & confidence to grow plants anywhere in the world.

Draw diagram from whiteboard

"The soil is virtually a living organism. It is not just a collection of mineral particles with bugs walking through them. It is a mass of organic, living material in an inorganic matrix. It is dynamic. It is full of life. And it does not produce anything (healthy and vital) for human beings unless it is sustained in that living condition."
EO Wilson (1993)

Minerals

These begin as rocks which gradually break down into smaller and smaller particles (i.e. sand to silt to clay). Clay particles are defined as mineral particles having a diameter of <0.002mm. These minute particles are given the name 'clay colloids'. Clay colloids have a very symmetrical, crystal like shape with a fairly flat, small surface area, and they are electrically charged.

Organic Matter (any plant or animal tissue)

All plant and animal tissue (other than when burnt) is decomposed (i.e. broken down) by soil microbes and macrobes into smaller and smaller particles. These decomposing particles of organic matter eventually become HUMUS. Humus particles are defined as organic particles having a diameter of <0.002mm. Humus is made of long chain stabilised CARBON molecules. This is why fertile, healthy soils are BLACK in colour. These minute particles are given the name 'humus colloids'. Humus colloids have a very irregular, anemone like shape with a very large surface area, and they are also electrically charged.

Over time, these stabilised HUMUS (Carbon) particles naturally, slowly 'oxidise' and turn into CO2 (Carbon dioxide) which goes back to the atmosphere. Excessive digging and ploughing of soils, speeds up this oxidation process. This is why we need to continually add 'mature compost' mulches and other organic matter back into out soils (As nature does!)

Colloids

Both the clay and humus colloids have special qualities. Clay colloids have electric charge (mostly negative) all over their surface. This mostly negative charge allows these colloids to attract and hold large numbers of positively charged nutrient ions, to their surface, e.g. positive ions such as Calcium (Ca), Magnesium (Mg), Sodium (Na), Potassium (K) etc. BUT - The HUMUS colloids are the key. They have a lot of both negative AND positive charged sites all over their surface. Each humus colloid has a much, much bigger surface area than each clay colloid, even though they are about the same size in diameter. It is estimated that each humus colloid can attract and hold 10 to 100 times more plant nutrients than each clay colloid.

This means that even in periods of very heavy rainfall, soils with high levels of humus (& some clay) will 'hold' onto the plant nutrient ions and they will not be 'leached' out of the soil.

"The plant always eats at the second sitting, the plant only gets what the microbes give it.
Feed the soil, not the plants!"
Professor William Albrecht. (WALTERS - 1979)

Testing & Understanding pH

Acidity and Alkalinity are measured in terms of pH units. The pH scale ranges from acid (pH 0) to alkaline (pH 14) and pH 7 is neutral. pH means potential (p) Hydrogen (H). It is the way we measure the acid/alkaline balance of soil. All acids have hydrogen molecules somewhere in their structure. So, when we measure pH of soil, we are actually measuring the amount of Hydrogen that can 'potentially' turn into acid.

0	**6**	**7**	**7.5**	**14**
Pure Acid		**Neutral**		**Pure Alkaline**

Most herbs & vegies like a pH of between 6 and 7.5.

We will look at two methods of measuring pH:

1. Chemical powder pH test kit available from garden centres and hardware stores.
2. Electronic test meter.

NB The chemical powder pH test kits can become very inaccurate with ageing and heat. They often then give a false result, usually showing very high Alkaline reading, even though the soil might be acid.

pH testing is a useful thing to do, especially when starting a new garden. We can determine if it needs an initial adjustment, for example if it is too acid, an addition of dolomite lime will be needed. However, once you have created a vibrant, alive, soil system, pH testing is a lot less important because the worms and microbes work for you, to keep the pH balanced.

Water Holding Capacity of Soil

The ability of soil to take in water, i.e. the infiltration rate (IR) and to hold water, i.e. the water holding capacity (WHC) is very important. To most efficiently capture & use either rainfall or stored water in our gardens, there are some practical things we can do.

When and how to water

- In good quality 'loamy' deep soils, water deeply and less often. This will produce a deeper, more extensive root system and increase the plants' ability to resist disease and insect attack.
- In shallow sandy soils (like many parts of Sydney), it will probably be more water 'efficient' to water more regularly and for shorter periods of time. Long deep watering on sandy soils will result in a huge waste of water.
- Try and water in the early morning. Less water is lost due to evaporation, water pressure is at its peak and risk of fungal disease will be reduced.

Mulches

- Nature does not have 'BARE EARTH'. Always have a mulch or a living plant covering the soil surface. This greatly reduces the amount of water lost by evaporation and increases infiltration rate and balances soil temperature.
- Use a variety of mulches; don't get stuck on any one type. Diversity is the key.
- Newspaper is useful mulch, although it can reduce water infiltration if too thick (use no more than 10-15 pages).
- Use high protein (low Carbon) mulches around annuals (vegies etc) to promote bacterial domination in the soil (e.g. lucerne & chickpea straw).
- Use low protein (high Carbon) woody mulches around perennials (trees, shrubs, herbs, etc) to promote fungal domination in the soil (e.g. 'Forest Fines' from Australian Native Landscapes (ANL), tea tree mulch or aged leaf and twig litter).
- Sugar cane mulch is good for both annuals and perennials.

Note 1: it is also beneficial to use a small amount of high protein mulch and some cow or pelletised poultry manure, around perennials at flowering and fruiting times of the year.

Note 2: it is also beneficial to add a small amount of High Carbon (fine woody) mulch, e.g. Forest Fines, 5-10 litres /sq metre, once a year to your rich vegie growing soils. This helps to slow down the oxidation of the already formed HUMUS colloids.

Composts/organic matter (OM)

- Greatly increase water holding capacity (WHC) and infiltration rate (IR).
- An increase of 1% OM (e.g. from 3% to 4%) in soil will increase the water holding capacity of that soil by up to 5 or 6 times.
- Greatly increase microbe activity in soil.
- Greatly increase nutrient holding capacity of the soil.

Planting

- Pre-soak pots and tubes (add diluted worm juice and/or seaweed extract).
- When re-planting a vegie garden, it is good to rejuvenate the soil first.

  HOW TO DO THIS?

  - pull out old plant material and root balls also
  - loosen/dig the soil down to 15 to 20cm
  - add some fresh manure e.g. cow manure, or SUPER 6 (mix of manures and seaweed etc – very good, from ANL). Add up to 10 litres per square metre of garden
  - when planting new seedlings (or seeds) use some of your lovely mature compost or worm castings in every planting hole or trench. If you don't have your own compost, use Premium Potting Mix, or a good quality commercial compost
- Always water-in very well immediately after planting to remove large air pockets around roots.
- Always add a final thin layer of mulch to the garden surface e.g. lucerne mulch, sugar cane mulch, Forest Fines, etc.
- Twice a year (Spring and Autumn) add one handful of Dolomite Lime per sq m, to your food growing soils.
- Once a year (Spring is best) add one handful of Basalt Mineral Rock Dust /sq m, to your food growing soils.

Potted plants

- Use bottom watering/bucket soaking, especially when pots have dried out.
- Apply water to pots in regular small amounts.
- Add a thin layer of 'mulch' to the soil surface of your potted plants.
- Commercial & DIY **WICKING BEDS & pots** are well worth consideration.

The Effect of Synthetic Fertilisers on Soil

Organic gardening means stopping the use of any 'cides', i.e. Insecticides, Fungicides, Herbicides, etc. Cide = death or to kill (Latin). Organic gardening also means stopping the use of all 'synthetic, acid soluble fertilisers'. The reason is that acid soluble fertilisers gradually make your soil more acidic and there is also evidence that food plants grown using acid soluble fertilisers make our blood more acidic, when we eat those plants (most degenerative diseases thrive in an acidic environment).

The real difference between organic & non-organic food

Copy Peter's diagram from the whiteboard!

Human health issues related to organic vs synthetic practices

(Much of the information in this section comes from Tietze – 2003)

- The build-up of organic acid waste is our main problem. Ageing is organic waste build up. The most common acid waste products in our body are acetic acid, ammonia, carbonic acid, carbon dioxide, fatty acid, lactic acid and uric acid.
- When we are born, we are in the most Alkaline state of our lives. Reversing the slow but steady build-up of acid waste in the body slows the ageing process.
- Food is either acid or alkaline forming in the body. This does not relate directly to the actual pH of the food itself. For example, lime (the fruit) is extremely acid with a pH of approx. 1.9 but this fruit increases the alkalinity in the body and has an alkalising effect. If we want to influence the body's pH with food, it is not so important to know the pH of the food itself, but the reaction in the body, to the food.
- The acid or alkaline 'forming' response depends on the Calcium/Magnesium/Phosphorus/mineral ratio in the food.
- The most significant factor to mention here is that when we eat organically grown plants, this usually increases the alkaline forming response in our blood. The same plant grown NON-organically, using highly acidic synthetic fertilisers will have a more 'acid forming' response in our blood.

Harvesting (i.e. picking) and Ongoing Management of Vegies and Herbs

Harvesting (i.e. picking) your fresh produce is really as important as growing the plants. Whilst picking your produce it is an important time to observe your plants & soil.

You will notice:

- if it is too dry
- bugs that need to be taken care of & beneficial creatures that we can admire
- yourself pulling out a few unwanted plants (some people call weeds!)
- yourself pruning old, dead or diseased leaves from your herbs & vegies
- if fresh mulch or feeding is needed
- if a plant is struggling & needs some special attention, e.g. seaweed spray on foliage
- yourself munching on 'biogenic' food & blissing out!
- yourself talking & singing to your plants (don't let the neighbours hear you!!)

- Learning some simple harvesting techniques will give you more produce and extend the productive life of your plants, e.g. harvest produce daily if possible, especially beans, peas.
- Regularly remove all old, diseased, and eaten foliage, and add them to your compost or worm farm.
- Harvest and eat the outer leaves of leaf vegetables to prolong the yield. e.g. leaf lettuce, parsley, rocket, kale.
- Tip prune flowers off basil, etc to prolong life of plants.
- Saving seeds from your plants is also a form of 'harvesting' and it is fun and exciting.

Microbial Nature of Soil

It's ALL ABOUT MICROBES!

This is the 'brave new world' of horticulture/agriculture. We are learning how to work with and manage microbial populations in the soil and on the plants. Microbes are our 'friends', not our 'enemies' contrary to popular belief. Over 90% of all microbes are beneficial, 5-10% can cause harm. The 'beneficial' ones keep the 'harmful' ones under control. The higher the variety (or diversity) of microbial species in soil, the healthier our plants become.

These marvellous microbes will **increase**:

- the water-holding capacity of your soil
- the breathing capacity of your soil
- the quantity and quality of nutrients available to your plant
- the immune strength of your plants
- the nutrient levels in the food plants you grow
- the healing qualities of the plants you eat

We are microbial creatures. Every leaf of every plant is covered with microbes. Every square centimetre of our skin has over a million living microbes on it. These microbes keep us & our plants alive and healthy!

Creating Bacterial or Fungal Dominance to Suit Different Types of Plants

Bacteria & fungi are the two main bodies of microbes in soil. 'Annual' plants are happier and healthier with bacterial dominance in their root zone. 'Perennial' plants prefer a fungal dominance in their root zone. We will learn how to manage this in our gardens.

The softer ANNUALS - i.e. vegies and herbs, prefer a more bacterial dominated soil or a reasonable balance of bacteria and fungi. These plants prefer their Nitrogen as NITRATE (NO3).

Most PERENNIALS – i.e. woody shrubs and trees, prefer a fungal dominated soil. These plants prefer their Nitrogen as AMMONIUM (NH4).

Bacteria are concentrated forms of Nitrogen (N). No other living creature has a higher concentration of N in its body than bacteria.

Bacteria have a C:N ratio of approx. 4:1 (4 parts Carbon to 1 part Nitrogen)

Fungi are concentrated forms of Carbon

Fungi have a C:N ratio of approx. 15:1 (15 parts Carbon to 1 part Nitrogen)

So we begin to learn that **bacteria** will begin to 'dominate' in the soil food web if we INCREASE the amount of Nitrogen (protein). **Fungi** will begin to 'dominate' as we increase the amount of carbon into the soil.

It is now for us to learn how to get a 'feel' for this balance and then learn to shift this balance, in the direction preferred by the plants that we are growing.

Learning to Apply The 3 'Keys' to Your Garden:

To manage pH, water, microbial balance, general plant production and plant health, we have the following 3 'tools' to learn to use.

1. Mature composts & manures – Mature composts are the 'black' humus material created from decomposition
2. Mulches – we refer here to any materials added to the surface of your soil
3. Foliar fertilisers and aerated compost teas:

Foliar fertilisers are liquids like seaweed solutions, fish solutions, etc. Make sure if you are buying liquid foliar fertilisers that they are organic, and do not have synthetic fertilisers added to them!!

Compost teas are 'brown' liquids made from stirring mature composts in water using special recipes for spraying onto both the soil and the plants themselves. 'worm juice' from a worm farm is also technically a 'compost tea'.

Composts and Mulches, Manures and Other Organic Fertilisers

Bacterial Domination

Knowing that soft annual plants (vegies & non woody herbs) prefer bacterial domination in their root zone, then, they will prefer composts & mulches with higher protein/nitrogen. More protein encourages bacterial activity and will have more nitrogen available in the nitrate form (NO3). Compost ingredients higher in nitrogen are the fresh soft green materials, especially legumes, and also animal manures. Mulches higher in nitrogen are the fresh soft green materials, especially legumes, e.g. lucerne hay & chaff, and chickpea mulch.

Fungal Domination

Woody shrubs and trees prefer fungal domination in their root zone. Woody composts & mulches with higher carbon encourage fungal activity and will have more nitrogen available in the ammonium form (NH4). Mulches which are higher in carbon include the woodier brown materials such as dry leaves, and 'woody' mulches. 'Forest Fines' from ANL is an excellent fine woody mulch with high diversity of ingredients. Forest Fines is also an excellent ingredient into your home compost bin. NB: sugar cane mulch has average levels of nitrogen and carbon.

Modern 'Aerated' Compost 'Teas'

Recent biological research is showing us a BIG DIFFERENCE between:

1. the old-style manure teas, made simply by soaking some manure or compost in water and getting a brown liquid, and
2. the modern 'compost teas' which use more specific recipes and must be 'actively aerated'. Old style manure teas are often anaerobic with low numbers of beneficial microbes and can ferment into alcohol which can be dangerous to some plants. Modern aerated compost teas are very high in beneficial microbes and have no alcohol.

Setting up the Tea Brewer

A simple aerated tea brewer can be made using a 20 litre bucket, an aquarium pump and 2 airstones. Try and get a pump with two air outlets or use two single outlet pumps.

The key test for sufficient aeration is the smell test.

- smells good = adequate aeration
- smells bad = inadequate aeration

NB keep all components of the system very CLEAN between brews

Basic Compost Tea recipes

Two Types of 'teas'

1. Vegies and other annuals tea
2. Trees & shrubs tea

Type 1 Tea - Vegies and other annuals brew

These need bacterial domination around their roots for enhanced health.

The mix for Type 1 (for 20 litres of tea)

Use approximately four cups of very mature (non woody) black rich compost with more protein and less carbon. High worm activity indicates bacterial dominance. Worm castings are also very good for this 'bacterial tea' (worm 'juice' tea is a high quality Type 1 tea). Mix this compost with 20 litres of nice pure water i.e. no chlorine or other poisons. The water quality is critical.

Extra microbe food for Type 1 Tea

Add two tablespoons of a simple sugar to feed the microbes during the 'brewing' process, e.g. molasses (non-sulphured), cane syrup, maple syrup or fruit juice.

Type 2 Tea - Trees & shrubs brew

These need fungal domination around their roots for enhanced health.

The mix for Type 2 (for 20 litres of tea)

Use approximately four cups of a woodier compost with more raw (woody) carbon & less protein/nitrogen (e.g. "Greenlife Compost" – made by ANL). Mix this compost with 20 litres of nice pure water, i.e. no chlorine or other poisons. The water quality is critical.

Extra microbe food for Type 2 Tea

Mix 3-4 tablespoons of oatmeal, oat bran or powdered baby oatmeal with a cup of rich compost and moisten. Leave mix in container in a warm (27deg C) dark place for 3 or 4 days. A fungal 'beard' will grow. Add all this to your 20 litre bucket of water and woody compost and brew for one to two days. Other useful ingredients that encourage fungal populations are; aloe vera, kelp, kiwi fruit, pulp of oranges & apples.

General information for both Type 1 & Type 2 tea

How long to aerate the brew? Minimum 24 to 48 hours of aerated brewing.

Using Aerated Teas

Research shows that you can never use too much aerated tea. It doesn't burn plant leaves or roots. Billions of beneficial microbes will be present. Apply before 10am or after 3pm. Excess heat and ultraviolet light kills many microbes until they establish themselves in situ.

Directly onto the soil

Always water into the soil at the drip line, if possible. Always use fresh, aerated tea.

You can use the tea UNDILUTED around well-established plants. Ensure though that you DILUTE the tea (to the colour of weak tea) if using around young plants and seedlings!

Spray onto the leaves of your plants as a special plant 'tonic'

Compost tea can help prevent many fungal organisms from damaging your plants and is also a good foliar feed for your plants at flower and fruit set times or just for a 'nice little boost' for your lovely herbs, vegies and fruit trees.

- Filter the tea through a fine strainer or use an old stocking as your strainer. Put the filtered tea into your spray bottle.
- Now you can spray this tea just like this OR you can add some fish emulsion and also some Seasol or other good seaweed product into the mix – at their recommended rates – and spray your plants with this.
- Spray onto plant leaves directly making sure to cover the fronts AND backs of the leaves.
- Bigger droplets and lower pressure are best (to not harm the living microbes).

When to use Teas

- At onset of flowering or fruit set.
- At first sign of any stress or disease in plants.
- Boost to young plants over two weeks old.
- Regularly as a general 'tonic' for plants.

Fruit Trees

What is a fruit tree?

A 'TREE' is a woody plant, with usually only a single stem, and generally grows to a height of four metres or more. Trees are extremely complicated creatures.

The true definition of a fruit tree is a tree which produces an 'edible fruit' from the process of flowering. WE like to think of a 'fruit tree' as any tree, which supplies us with something we can use in our overall diet. For example the leaves of the native Lemon Myrtle Tree (Backhousia citriadora) make beautiful lemon flavoured tea, so to me this is a tree, which supplies me with something delicious, thus I think of it as a 'fruit tree'.

Planning your garden for fruit trees

Get to know your garden. Observe your garden at different times of the day in the different seasons.

Take note of the following issues before purchasing fruit trees so that the trees you plant are the best ones for your situation.

Space available (approx. 2m * 2m per tree)

- Aim for 4-5 hours sunlight per day. Jacki French recommends planting fruit trees about 1 to 2 metres apart. She says their branches will tangle together, but you will have more fruit and the bigger birds will be less likely to venture in and eat the fruit.
- Consider alternating deciduous and evergreen (non-deciduous) fruit trees. Most evergreens fruit and flower in winter or early spring, when the deciduous trees are bare, so the extra sunlight may help fruit set.

Soil type

Fruit trees prefer 'loam' soils – nice mix of sand, clay and & organic matter.

Drainage

Good drainage essential for all fruit trees.

Aspect

Fruit trees prefer a sunny position & shelter from strong winds. If exposed to salt spray you will need salt tolerant species.

Planting fruit trees

- Best time to plant fruit trees into the ground is during autumn and spring. In frosty areas best to plant in spring after frosts are over.
- Soil at planting time must be just damp, not wet or sticky. If soil is dry fill up the hole with water and let soak in before planting your tree.
- Make planting hole at least twice the width of the pot the plant is in, to allow for some good compost or potting mix to be added to encourage roots to grow outwards.

- Make the hole deep enough so that there is room to have at least a thin layer of mature compost or cow manure below the tree roots.
- In heavy clay soils raise the tree up slightly on more of a mound.
- DO NOT heap soil or compost up around the trunk of the tree. This can encourage disease.
- Fill in around the plant and firm down well with your hands. Build up a small mound around the 'drip line' to help catch water when you water it or when it rains.
- WATER THE TREE!
- Add a mulch all the way around the 'drip line' of the tree. Keep the mulch well away from the trunk of the tree. Use a 'woody' mulch also twice a year e.g. 'Forest Fines' from ANL.

Caring for fruit trees

- Sometimes it is necessary to put in a wooden support stake (or two), to support the young tree until it secures itself with new roots. Tie a tight complete tie around the stake then another loose tie around the tree trunk. Take the stake/s away as soon as you feel the tree is supporting itself.
- A good watering system for your trees can be made by getting a piece of 50 or 75mm ag drainage pipe about one metre long. Dig a trench out past the drip line of the tree and lay the pipe into the ground, leaving about 10 to 20cm out of the ground. Cover the pipe with soil and put an old tin or jar over the open end sticking out. Then when you water, simply lift off the tin/jar and pour water down into the ag pipe.
- Water your young trees every week or two, for at least 6 months, and try to always keep the soil moist through the heat of summer.
- Continue to add mulch, mature compost, worm juice and castings, and a handful or two of Dolomite Lime, at the 'dripline' of the tree, in spring, at flowering and fruit setting time.

Biogenics

Biogenic = Bio Genesis = Biological Creation.

While we are not able to improve the biosphere of the whole planet, we can definitely cleanse and balance our immediate micro-environment in our own personal space. (Our 'ECOS')

The 'biogenic' energy of plants has amazing healing qualities.

The plant 'system' in reality is a primeval intelligence far, far older and wiser than our much younger animal brain/spinal intelligence. Ancient cultures have understood the deeper intelligence of plants and learnt how to use energy from plants to support human health and healing.

The Great Biogenics Experiment

Dr Edmond Bordeaux Szekely ran a healing centre situated on several thousand acres of land in Costa Rica for over 30 years (1939 – 1974). In this time he gave over 5,600 lectures and over 123,000 people attended the centre. He healed thousands of these people, many with advanced degenerative and seemingly incurable diseases. Visitors to the centre ate 100% biogenic food. This was either sprouted food or food picked & eaten directly from the vegetable gardens & fruit orchards at the centre.

Two of the key findings in this experiment were:

1. the appearance of enhanced inner biological resistance (increased immune strength)
2. less food heals faster

The 4 stages of plant growth and their relationship to human health

Plants go through 4 (four) stages in their life cycle;

1. BIOGENIC
2. BIOACTIVE
3. BIOSTATIC
4. BIOCIDIC

1. Biogenic (biological genesis/creation)

These are the seeds, whole grains, nuts and legumes which when germinated (sprouts) have the biochemical capacity to generate new life. Enzymes, vitamins, antioxidants and life force itself is created in this early stage of plant growth. Any produce picked and eaten directly (or within 24 hours), from a living plant, is also considered biogenic food. For maximum healing when needed, Dr Szekely recommends no processing, no preserving, no canning & no freezing of the biogenic food.

2. Bioactive

These are the natural, unprocessed foods, such as uncooked, very fresh fruits and vegetables. These are life-sustaining foods, but with much less biogenic energy.

3. Biostatic

These are the unfresh, much older fruit and vegetables which are not life generating or even life sustaining, but allow our life own, accelerating the process of ageing.

4. Biocidic

These are the foods that contain harmful substances such as synthetic chemicals, additives, adulterants, preservatives, etc and have been refined and processed. These are life-destroying foods.

What is 'Biogenic' food?

1. Sprouts - These are the seeds, whole grains, nuts and legumes which when germinated (sprouts) have the biochemical capacity to generate new life. Enzymes, vitamins, antioxidants and life force itself is created in this early stage of plant growth.
2. Any produce picked and eaten directly (or within 24 hours), from a living plant, is also considered biogenic food. For maximum healing when needed, Dr Szekely recommends no processing, no preserving, no canning & no freezing of the Biogenic food.

Biogenic foods

- Synthesise entirely new compounds and substances which can perform superior biogenical and biological functions.
- Strengthen oxygen transport
- Strengthen cell respiration and biological resistance
- Accelerate cell renewal
- Stimulate the natural self-healing process

Eat more organic & Biogenic food

If you can't have your own outdoor vegie garden, you can at least grow some organic sprouts. Sprouts are 'biogenic' food. Sprouts are one of the most nutritious, healthy and 'alkalising' of all foods.

For maximum healing and long term health we must focus our diet toward the biogenic foods.

By coming to a deeper understanding of plant energy, related to their stage of growth, we can learn how to continually heal ourselves in a world which is very polluted & sick at this present time in our evolution.

NB What we are learning is how to build healthy soils, healthy plants and therefore - healthy people

Learning more with like-minded people

Consider joining your local Permaculture Group.

Permaculture Northern Beaches (PNB) is a local group of Permaculture Sydney North. PNB is based on Sydney's Northern Beaches and is active across Pittwater, Warringah and Manly.

Permaculture Northern Beaches

They meet on the 4th Thursday of each month from 7.15pm in the

Narrabeen Tramshed Community Centre

1395a Pittwater Road

Narrabeen NSW 2101

Check events page for the next meeting. http://www.permaculturenorthernbeaches.org.au/events/.

All welcome!

Useful information

Where to get 'Fruit Trees' & other edible plants???

- Kimbriki Eco Garden Plant Shop (open 7 days – with HONESTY box – cash payments only!)
- EFTPOS payment is available but only when Eco Staff are there in Eco House
- Local nurseries - New Leaf Nursery is a great one – at 224 Powderworks Rd, Ingleside. 2101. Ask for Daniel ph. 9913 3709
- Local Community Gardens
- Farmers markets (often cheaper)
- Some specialist nurseries (check internet and yellow pages)
- Daleys Fruit Tree Nursery (Kyogle – NSW). A wholesale and retail outlet that sells an extensive range of quality sub tropical fruit trees, nut trees, etc. www.daleysfruit.com.au

What to plant and when?

Try the 'I-phone' app called "Gardenate"

Good luck, have fun and enjoy eating your very own produce!

For more information
visit www.kimbriki.com.au/eco-house-and-garden/
email kimbriki@kimbriki.com
or contact via Kimbriki Resource Recovery Centre
phone 02 9486 3512 Monday to Friday

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