

# Customer Information Pack

Updated February 2017

Prices subject to change

**HYDROCENTRE**  
hydroponics

[www.hydrocentre.com.au](http://www.hydrocentre.com.au)

## Section 1 What is Hydroponics?

Hydroponics is Soil-less gardening. Plants absorb water and dissolved nutrients or minerals through their roots. The soil provides nutrition to the plant by allowing some of the minerals in the soil to dissolve in the water.

Hydroponic Nutrients are natural minerals taken from the soil and liquefied in a bottle. It's the same idea as soil, but ensures the right fertilizer elements are all there in the correct quantity, highest quality and solubility. That's why Hydroponic plants rarely show any deficiencies and grow quicker and healthier than soil.

## Is it Organic or Natural or Both?

Minerals are not derived from animal manure or rotting plant material, so minerals are not technically organic. Oxygen and water are natural. Oxygen and water are not technically organic, but they are required for you to be healthy. The Hydroponic nutrient is made from minerals. If you were buying a breakfast cereal that said "added minerals", then you would see that as healthy and natural. In the same way you should see Hydroponic Nutrients as natural and healthy, and definitely non-toxic. You could drink it if you like, but it tastes of mineral salts and you wouldn't like it.

## So why would you choose Hydroponics as a method to grow herbs, flowers, veggies and houseplants?



Grow anything you like in Hydroponics

Big answer. Here is a shortened list of reasons. (1) Home hobby growers have control over what they eat. (2) There is less work, no digging, less bending, no weeding, etc. (3) It's a great Hobby. It's rewarding to see plants grow VERY fast. With some plants it could be 1 to 5 inches of growth a day! (4) It's educational for children. (5) It's therapeutic to see plants grow and anti-stress. (It's definitely less annoying than sitar music) (6) For Hobbyists you can get systems that run themselves, or systems that can be tuned for higher performance. Do you want a hobby that you can get involved in, or one you can sit back and watch? You can get either type. (7) Some systems are designed to be complicated, and some to be simple. Hobbyists get much more performance as they can modify and be creative. (8) You

### Price Subject to change

Please note, we have been forced to raise our prices in line with that of our suppliers recently. While some products have risen by no more than a few cents, others have had to change to reflect global markets. We wish this didn't have to happen and are still proud of our competitive pricing. Please use the information in this catalogue to continue growing healthy plants and contact us for an accurate quote when purchasing as prices may change with out notice. Thank you.

can avoid Pesticides, as you decide if you spray. Because plants grow faster in hydroponics, they can survive more pest attacks than traditional growing methods, and they can recover faster. (9) You should be avoiding synthetic chemicals. 75,000 chemicals that don't exist in nature have been added to our lives since 1930's and only 7% tested for safety. Hydroponic Nutrients can and have been tested safe, but many Soil Fertilizers have not or cannot be tested. Bags of potting mix warn people that you should use a mask and gloves due to legionnaires and the micro-organisms in soil. (10) Organic growing is much more difficult than Hydroponics. E-coli in organic soils have been proven to be taken into the vegetable where washing cannot remove these bacteria. (11) Hydroponic Plants produce faster growth, such as Lettuce Farmers in soil expecting 3-5 crops per year and hydroponics achieving 10-14 crops per year, and Tomato Farmers in soil producing around 3 trusses of fruit by the same time a Hydroponic farmer has 5-7 trusses or more. (12) For this reason we can produce more in a small area which is perfect for rented properties or small balconies. (13) Hydroponic plants have Better Nutrition as they always have minerals available. (14) We can produce better Vegetable Quality. In 1939, the first set of Recommended Daily Intake (RDI) was established. The RDI was set at 3-5 serves fruit and vegetables per day. In 1998 they tested average supermarket veggies to determine RDI. New recommendations should be 10-14 serves per day (if raw) because they are not as fresh and are lower quality. If veggies are cooked every person should eat 30-40 serves per day. (Good reason to start taking vitamin supplements and growing fresh veggies at home. (15) Hydroponic Plants have Better Taste, due to increased sugar production. (All the different sugars don't always mean sweet, but they produce most of the flavour) Also due to vine ripening and a fresh Harvest which

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preserves Moisture and textures. (16) Hydroponics is easy to grow and control, with no special skills, no messy soil and fertilizers, no wondering what went wrong like soil, just simple, easy nutrients. (17) Hydroponics also saves water. A test found that per 1kg of vegetable matter produced, soil took 80 Litres of water, and Hydroponics used 3 litres. That's amazing how efficient the water is used... Whew, shall I go on?

## There are two main methods used for hydroponics.

(Also see section on Systems later in this information pack)

### 1. Passive. No Electricity.

In this method, we usually hand water pots or boxes just like soil gardening, but with soil substitutes. This can be very easy and eliminates soil diseases, knowing whether a plant needs fertiliser or what kind of fertiliser. You add the nutrients to tap water and "water" the plants until moist. To make it automatic, we can also use self watering pots, tanks of nutrients with an automatic valve feeding by gravity, or using wick systems.



Gravity Fed Systems are Easy  
"Just Fill and forget"

### 2. Recirculating or pump driven systems

We can use irrigation systems that are amazing. They allow for tremendous growth rates as they maximise a plants potential.

Common methods are: -

Trickle irrigation - trickling nutrients over the roots then allowing them time to use the nutrients before irrigating them again)

Flood and Drain—a tray filled with clay balls is flooded every 2 hours, for 15 minutes.

Nutrient film technique - growing in pipes/channels. Plants are placed in a shallow (1mm or less) moving stream of nutrients.

Aeroponics - spraying roots suspended in the air. Roots hang in a chamber and sprayers spray nutrients onto them, usually for 15 mins, then off for 15 mins.

Others—Other formats such as deep water culture (DWC) where roots are in super aerated water and hybrid systems. Please note that the "latest craze" doesn't mean



Recirculating systems can really perform!

older methods stopped working....

## The main ingredients for growing a plant successfully are

Light - Either use Sunlight (most common for veggie growers) or Artificial light (Agricultural lighting is most common with growers wishing a "full-on" hobby) or a mix of the two.

Air - All plants breathe Carbon Dioxide and outside they are fine. Inside, they would run out of air in a small room in a few minutes. At that point, their growth slows and then stops after several hours. This depends on the plant and the size of room. When growing in the outdoors, this is easy. If using a greenhouse, or a indoor growroom, this will require you ensure air exchange - old air removed and fresh air drawn in.



Plants get all their energy from light, either from the sun or special agricultural lights

Water Availability - Plants are mostly water, like us. We can go and drink when thirsty. If a plant is thirsty, we must ensure it is able to feed. Over watering will drown the roots and eventually kill the plant. Therefore we must have a root zone that is moist, with oxygen around the roots and moisture for when it is thirsty. Moist means not wet and not dry.... A squeezed out wet sponge for an example is moist, not dry and not wet. This should be used as a guide on when plants roots generally work at their best

Nutrient Availability - Nutrients are the minerals plants receive from damp soil. If it is strong, the plants slow or burn. If it is too weak, the plants pale, and become stretched between branches. If the nutrients are not available, deficiencies can develop. pH is the measure of acidity in the nutrients. Most nutrient packs will mix to the correct pH in normal town tap water. Check with a hydroponic store for advice - the pH of good nutrients in our town, the Gold Coast Australia usually sits between 6 and 7 and does not generally need adjustment if changed regularly.

Temperature - If temperatures fall below 15 degrees Celsius, many nutrient elements become less available to the plants and the nutrients or the root zone need to be heated. If temperatures exceed 30 degrees for long periods, the plants require high levels of water and ventilation to keep it from undergoing stress. In both cases speaking to us will help you make the right decisions about the best solution.

## Growing media / Soil Substitutes

Using different methods and different growing media such as Perlite, Expanded Clay, or Aeroponic pots can help us set up a system that can be hand watered, pumped, fed

by gravity, or have no media at all. In the upcoming sections on systems and media we will show how choosing the best media is a choice on performance, and a choice on how much work you wish to do, taking it easy, or getting involved.



No guessing. Every nutrient a plant needs in a bottle! No wonder they love it!

### Nutrients

Nutrients as discussed before are generally 100% natural minerals or organic/mineral blends in soluble forms for plants to take up. We have a range of nutrients. See the nutrient section for details of brands. More information on nutrients is in our nutrient section.



18 Hours a day— up to 3 times the natural daylength in a garden, away from pests, rain, wind, and be able to garden in the evenings if you like.

### Gardening Indoors—Artificial Lighting

Many people enjoy excellent growing all year long under grow lighting. You can use the lighting to get faster growth (18

hours per day of light), or grow in areas that have insufficient light. Examples might be Fluorescent - Useful for seed raising and cuttings. Also used when some light is available, such as a living room,

and the fluorescent can be used to enhance growth by running for 18 hours per day. Can be less effective for larger plants. Lamps from \$12 Agricultural type lights - These replace sunlight and can control the time plants flower or fruit by reducing the length of the day. We have more

**All hydroponic Systems are designed to be used**

- **OUTDOORS with natural sunlight,**
- **in Greenhouses, or**
- **INDOORS if lighting and ventilation is used**

You should advise staff where you will use the system for tips to make growing easier and more successful.

information on these lights in the lighting pack additional to this information pack.

### Section 2 Our Hydroponic Courses

We provide short courses on Hydroponic subjects.

**Free 10 minute Mini Course** – No Obligation, Free 10 minute tour of Hydroponic Systems, how they work and getting an idea of what you can do. Most people can achieve good results with just this information. – Totally

free, no booking required. See our website [www.hydrocentre.com.au](http://www.hydrocentre.com.au) for instructional videos

## Section 3 Hydroponic Methods and Systems

### BASIC HYDROPONIC SYSTEMS

#### PERLITE SYSTEMS

**How to grow with Perlite in Hydroponics without pumps or electricity.**

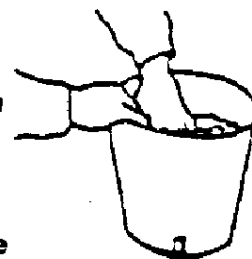
Perlite is a white volcanic mineral dug from the ground and heated in a kiln until the moisture in the mineral “pops” and makes a larger particle with the ability to hold water inside the granule.

Growing in Perlite is fun and Easy! By filling pots of containers with Perlite, and watering with a Hydroponic Solution, plants will grow quickly, Healthily, and Easily. Perlite has no nutrients of its own, and is designed to hold the right amount of water for a plant to be healthy.

When we add the Hydroponic Nutrient Concentrate to our water, and water the Perlite, the perlite will hold the nutrients for the roots, like tiny reservoirs, without waterlogging the plants roots, because the Perlite is an expanded medium, which holds the nutrient inside the



**1 - Pour Perlite into pot or container**



**2 - Wet down perlite with fresh water and plant seeds or bare rooted plant**



**3 - Keep your plant healthy by watering with a nutrient solution. When Perlite is nearly dry, water until just moist, not really wet.**

Perlite granule. Squeeze one and see the water inside one.

Perlite can draw nutrient up from a saucer under a pot, as it has a capillary action. So it is easy to water until moist, or until the saucer has some nutrient in it. When the saucer is empty, just fill the saucer again. In fact, since our brand of Perlite can hold 50-200 times its own weight in water, the best way to see if there is enough water for the plants is to see if the pot or container is heavy. Perlite only remains moist to the touch even if the granule is totally full of water.

Because Perlite only needs to be watered occasionally, and works best if you avoid getting it too wet, a Perlite system does not suit pumps. Perlite will not need to be watered every day. Some of our automated systems don't need you to do anything for weeks or months.

For information on starting seeds or transplanting plants into Perlite see our Propagation (Section 4)



#### **Perlite in Pots**

Just want something simple? Why not get some pots, fill with perlite, and mix up your nutrients, water until moist. You will need nutrients, a pot, a saucer and Perlite, We have them listed here as a kit to make it easy. We

include a bottle of nutrient to start you off.

Perlite 15litre bag \$8—100 litre \$36

500ml starter nutrient \$8

200mm pot and saucer \$3 (4litre)

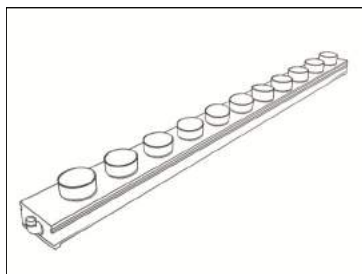
250mm pot and saucer \$4.25 (8litre)

300mm pot and saucer \$6.75 (15litre) 1 large or 4 small plants

Larger pots in 430mm, 500mm, 580mm and larger available

#### **Solo pipe Kit**

The perfect kit for the beginner who wants to dip their toe in and test the water before they jump in with one of our starter kits. The Solo Pipe Kit is a very simple hand watered system comprised of a FOOD GRADE channel, pots, perlite and nutrient you need to get started in hydroponics. Perfect for the herb or vegetable garden and a great hobby, you will be growing plants in no time, saving yourself money and supplying yourself with good quality produce for the dining table.

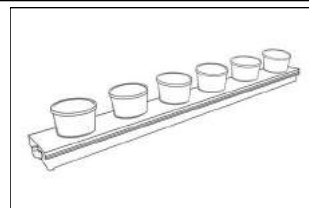


**1.5 long 11 pot system \$55**

#### **1.5 long 6 pot system \$75**

(see brochure)

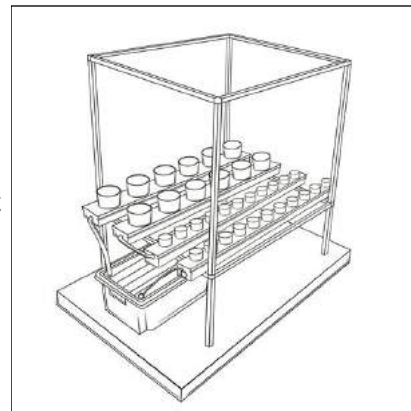
Can be easily converted to a pumping system.



2 row kits with stand pump and tank are \$350-\$400

4 row kits as shown are \$450-520

Solar power is one of the options we use to fill the system without needing an electricity connection.



#### **6 pot Perlite super crate system**

This system is a

great starter for growing veggies and is very easy. Just fill the crate to saucer deep in nutrient, about 30mm. The perlite in the pots will soak up the nutrients. Too Easy! Check twice a week for refilling if empty. The 183mm Square pots suit vegetables, herbs, and flowers.

6 pot super crate

6x183mm cells (650x450mm) \$50

including 500ml nutrients [worth \$10]

Convert to automatic system for \$60 (some mods required) by adding a valve and tank to make it weeks between feeding.

#### **Autopot Automatic systems**

The Smart valve (\$35) is the heart of this system. The weight of water in the tank powers the system, the valve allowing only what the plant needs into the growing tray.



The Smart Valve

#### **Network systems**

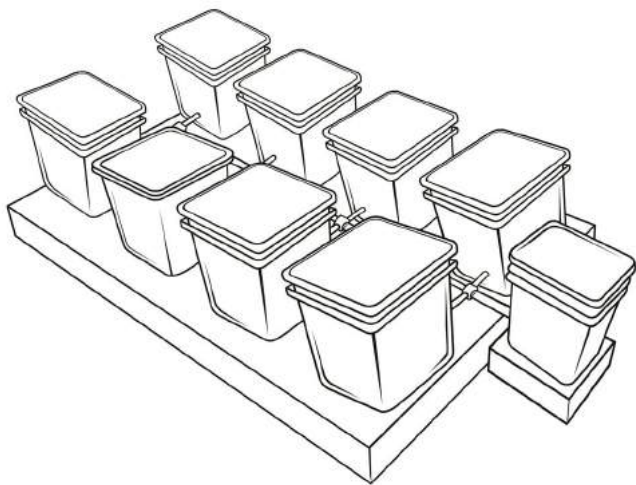
After 12 years we believe we have made a system that actually does all the hydroponic systems should do.

Just fill the tank with nutrient and forget about it. Refill your tank when empty, about every 2 weeks to 26 weeks (with optional tank sizes)

You can plant seeds directly into the system. You can expand by adding growing cells at anytime, and customize it to suit you. You need no special gardening skills.

Networks are available in many different sizes to suit your crops. All kits come with all the irrigation connections, Perlite and a bottle of nutrient. Larger tanks can be used, please ask.

All you do is connect the tank to the main control unit,



NETWORK SYSTEM

then add as many growing cells as you want.

**Medium (29cm square) cell network systems** suit 1, 2 or 3 small plants per pot, or big plants like seriously big tomato bushes, rose bushes, that sort of thing. Medium is best for the indoor grower as plants grow much faster under lights. A complete system with 2 cells is \$110, complete with 4 cells is \$160, complete with 6 cells is \$210, and add on kits are \$25 per cell (Perlite, irrigation, pots, ready to attach).



**Large (43cm) cell network systems** are for smaller sized long-term fruit trees. Single cell \$110, add on cells \$45 each



**Extra Large (51cm) cell network systems** are for long term larger fruit trees Single cell and add on cells custom quoted

**How to use Expanded Clay Systems**

Expanded clay are terracotta balls around 10mm across. Just as terracotta pots when “watered” will sweat the

moisture through the side of the pot, the moisture held inside the clay ball is “sweated” out on the surface of the ball for the roots to absorb. Pumps need to feed the balls nutrient by trickle feed or by flooding, usually for 15 minutes every 2 hours. We can overfeed plants in these systems with feeding every 2 hours as large gaps between the balls provide very fast drainage and lots of airspace for the plants root system to remain healthy.

**Satellite Systems**

This is our popular trickle fed system. The Satellite System is custom made to order, uses a pump to trickle feed system through Expanded Clay growing media. Pots are placed on a chipboard stand (**very cheap at hardware so not included in price unless desired**) with pots/bricks/crates to hold it up. The board is covered in white reflective plastic, and a 60 litre tank is on the floor at a lower level to allow the drainage back from the pots/cells. The pump feeds nutrient through the pots or cells 15 minutes out of every two hours and more often when the plants are smaller



**Satellite Kit Prices**

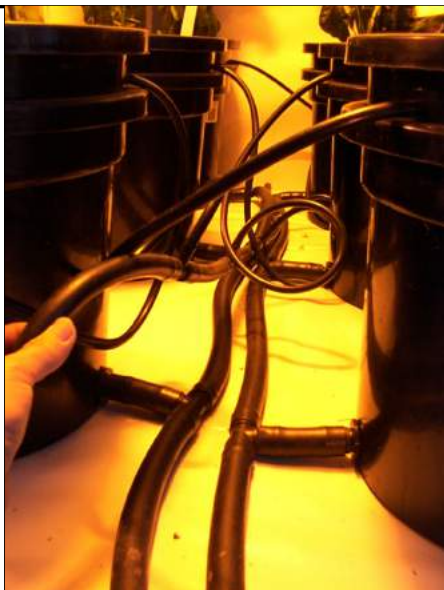
- 2 cell system, 60L tank, pump, clay balls with all irrigation and timer \$175
  - 4 cell system with timer \$225
  - 6 cell system with timer \$275
  - 12 cell system with timer (two 6 cell kits) \$520
- Dripper rings shown in picture are optional and vary from an extra \$4 each to 8.50 each for different designs. You may require a small upgrade in pump size.



**Setting up Expanded Clay trickle fed systems.**

Trickle Feed Systems are very easy to use. The Plants Roots grow in an Expanded Clay (Clay ball) medium and are fed once per hour until 3 weeks old and then once every two hours by a drip feed on top of the expanded clay. The timer runs the pump for 15 minutes each feed time. The first Step is to place the pots on a board that must be higher than the tank. Cover the board with Panda film to keep the board from swelling up with any spills / moisture.

Place the pots where they will end up growing. Assemble Pots, Drainage, and the Feederline and place the tank under the tray drain outlet. Once all of the drains are pointed into the tank, and the feederlines are connected to the pots, connect the feederline to the pump and put the pump in the bottom of the tank.



Note: Do not point drippers onto the stem of the plant. Point to one side to avoid stem rot.

**TIPS:** You can use garden hose on the pump outlet and switch the pump on if you wish to pump old nutrients from your system. Fill the grow pots with the expanded clay balls. Rinse Clay first for best results. Fill the system with nutrient. Mix according to directions or to recommended CF on nutrient tester. Fill to 30 Litres. Mark the level of nutrient on the side of the tank, so you can top up your system with water if the plants get thirsty. By making a mark you can fill up to the same height every time. Use Grow Research Vitamins (recommended) or other Growth boosters as directed. The Pump is a fully submersible pump, and is placed immersed the nutrient. There must be a timer connected to the pump to feed the system for 15 minutes every hour while they are small. When the plants are around three to four weeks old, change to one feed every 2 hours. Once every two hours is best when the roots are larger. (NOTE: As a general rule, any more than 15 minutes every hour will make the roots "too wet")

**PLANTING OUT:** see propagation for a guide on starting plants

**MAINTENANCE:** There is enough nutrient in the tank for about 7 days. If the water level drops below the level that you marked you should top up (with fresh water only). Change the tank every 7 days and mix up a fresh batch of nutrient then.

A good maintenance tip would be to save a sample of the nutrient you mix up, and a sample of the nutrient at the 7day mark. Bring these samples into the store and we can tell you what you can do to manage your nutrient strength and nutrient pH balances to get optimum performance as well as give you more tips on how to enhance your systems performance. Using an Airpump and an Airstone will increase dissolved oxygen levels in the nutrient. Increasing the Oxygen will result in faster

growing and healthier plants. Using Nutrient Strength and pH meters will enhance your ability to monitor and control the growth rates of your plants. Ask us about the benefits of using these meters. Grow Research Vitamins and other Growth Stimulants can be used to enhance growth or control the type of growth. Ask Hydrocentre Hydroponic Technicians for more details.

### **Making the satellite system irrigation easy**

Laying out the pots on a board, keeping the system above the tank with blocks/crates/pots to support the board.

This will allow for drainage back to the tank.

- 1/ After laying out the pots we will add the larger 19mm drainage hosing first
- 2/ The top hat grommet goes into the pot, the joiner into the grommet and the tee piece is used to put the drainage into the line follow the sketch supplied with the kit Note a small section of 19mm hose at least 10cm between joiner and tee is required to prevent leaks from any accidental hose movements.
- 3/ the 13mm feederline, comes up from the pump, and the 13mm to 6mm tees are inserted in the line next to the pots. Keep the 6mm hose the same length from tee to pot. If there are shorter lengths they will flow faster.
- 4/ the 6mm feeder hose goes through the side of the pot

### **OPTIONAL Dripper rings.**

Cut out a ring of 6mm hose and inset 4 or 5 of the 6mm tees into the ring using one tee to connect to the main 6mm feeder hose and the others to point inward to feed the plant. Point these tees outwards to increase root area after plants are 4 weeks old

**Hydro Halos** (see picture) available in 9inch \$8.50 and 12inch \$9.50 each. Suit 6mm and 13mm hose.



### **Aeroponics**

Aeroponics is a type of Hydroponic system where a nutrient solution is sprayed directly onto the root system. Generally plants get a very quick start and often a cutting of a plant will root directly into the Aeroponic system. Crate systems are 65 x 45cm can hold up to 6 plants in Aeroponic Baskets. The nutrient solution is sprayed onto the root system below the lid. Price of single crate (6 pots, clay balls, sprinklers, irrigation) with tank, pump, timer, filter, and irrigation to the crate, is \$199. A second or third crate can be added at \$120 each additional crate.

Aeroponic propagators (60x40cm) are fast producers of roots, and do not require using Rockwool cubes every time. Put the cutting into the basket, some FX clone nutrient into the tank and turn on the sprinklers. Usually roots occur within 2-4 days, and planting out can be done

by 5-10 days. Often the cutting keeps growing in the propagator as the roots grow that fast. Prices are \$275 Basic, \$315 with thermostatically controlled heating and \$400 with a 2 foot flurobay.

**Maintenance Guidelines.** Aeroponic Roots need to be sprayed often, however, some time without spraying is indicated as the roots grow. Ask for personal advice first time through, however, as a guide, use continual spraying until roots appear out of the baskets, wait about 5 days and then reduce pump spray times to 15 minutes on and 15 minutes off. When roots become very dense, and/or reach the bottom of a crate system, the roots are beginning to retain their own water, and less watering may be indicated. Reduce to 15 minutes on and 30 minutes off. If very hot or directly in sun in middle of day, then increase watering during this time to compensate, as the sprayers have a natural cooling effect on the roots. Check roots regularly for any sign of discolouration, and call us for advice



**Running the Aeroponic Systems is very easy.**

Starting plants off – see propagation section  
 Seeds are not started in the system, but transplanted into the system at a later age. Cuttings are often started in the system, but regular spraying and lower light levels such as indirect light or Fluro lighting is required to help them start. You can start them in an Aeropropagator and transplant them into the Aeroponic system once root emerge.

Running the system grow/flower  
 Run pump continuously until roots emerge from the baskets, and then run the pump 15 minutes on and 15 minutes off. Add Hydroshield once per week. Make observations of the roots every few days. If a plants roots form a mat in the base ask for advice to see if a 30 minute break between watering would be beneficial.



**Problems:** If roots become brown/black and slimy. This is the beginning of root rot, and you should dose Hydroshield every 2-3 days and reduce feeding by increasing the off time around 6x per day (15 minutes on and 30 minutes off) until the roots are clean (White/Ivory) again. As roots are fibrous and can absorb water like a sponge, watering quantity should reduce when root mass has increased in size. As a general rule, once roots are touching the bottom of the growing container, the grower would be wise to reduce the watering gradually to 15 minutes on and 30 minutes off, by increasing the number of 30 minute breaks over 2 weeks.

Check the filter and sprinklers from time to time and clean them if required.



**How to use Flood And Drain systems Concept**

Flood and Drain uses two cycles to feed oxygen and Nutrients to the roots. These are the Flood Cycle, and the Drain Cycle.

**FLOOD CYCLE:** To get high oxygen into the root zone, we can flood the root zone with nutrients, and expel all "dead air" from around the roots.

**DRAIN CYCLE:** After the Flood Cycle (2 to 15 mins) we can drain the nutrients quickly to draw or "suck" fresh oxygen into the root zone as the nutrients drain out and at the same time, leave the roots damp with nutrient. (15 to 45 mins)

Sound Complicated? It's as easy as Pump on and Pump off!

**Flood and Drain Systems**

Includes Expanded clay, tank, pump, filter, timer, stand/s, irrigation and nutrients.

Crate Flood and Drain 650x450mm great for small places \$199

950x540mm flood and drain system with timer \$199

900x900mm flood and drain system with timer \$330

650x1100mm flood and drain system with timer \$350

1100x1100mm flood and drain system with timer \$450

2100x1100mm flood and drain system with timer \$850

More tray sizes available on request.

**Design**

To Design a Flood and Drain System we have to pump from a reservoir into the growing container or tray. We usually do this by pumping in at the lowest point. The overflow is the drain point during the Flood Cycle. This

ensures the Growing Container does not overflow with Nutrients. The Pump is on and the Pump power keeps the nutrient "up" in the container.

The Nutrients Flow in and fill all the spaces between the Expanded Clay and Soak the Roots with Nutrient. The Nutrients are never still during this cycle. They are flowing up and out, through the over flow. Dissolved Oxygen levels in the nutrient are high because the nutrients cannot stagnate.

During the Drain Cycle, the pump switches off, and gravity forces the nutrients back through the pump into the reservoir. There is a filter to stop any damaging particles getting into the pump. As gravity drains the nutrient, the spaces between the Expanded clay are left empty, and air rushes into the spaces left by the receding nutrient. The high Oxygen levels are the reason for the massive growth rates.

The Flood Cycle should only be as long as it takes to fill the growing container or tray, and the Drain Cycle should be at least twice what it takes to drain the container.

Usually 15 minutes on and 45 minutes off is enough. If any root problems occur, lengthen the drain cycle. During the night hours only have one flood cycle in the night, and one just before dawn. If heat is necessary, flood as normal during the night, but have one longer drain cycle during the morning and one in the afternoon to add extra oxygen.

#### **Setting up a Flood and Drain**

The Growing Area should be set up with a pump connected to the inlet, and an overflow able to drain freely to the tank once the growing tray is full of nutrient.

The pump should be a submersible, and although you might think a larger pump than usual is necessary, it doesn't usually hold true. If the pump has to pump high, measure the distance between the height from where the pump will be in the reservoir, to the height where the overflow will be. We are only interested in height vertically, not distance horizontally even if the tank and growing area is several meters away (horizontally) from each other.

#### **Propagating**

Propagating in Rockwool cubes, or perlite mix is required to give the seeds a chance to germinate and develop a root system. Flood systems usually don't give a good result for propagation because the medium has very little water holding ability.

#### **Maintenance and Problem Solving**

I usually would advise people to keep an eye on their plants. If the stem and leaves wilt, then ask advice before increasing the number of floods. If the leaves wilt with yellowing of the lower leaves; you may have too many floods and the roots are drowning or rotting. Immediately call for advice and ask to increase the amount of time between flooding. As a guide, try flooding 15 minutes out of every hour, by setting a timer (15min increments) to that period. I miss out 3 to 4 floods a day, during the night, or during the morning or afternoon. The reason I do

this is to give the roots a chance to get a bit more oxygen. But if the plants are cold at night, and I am heating the solution, I would not give them any breaks during the night, using the morning or afternoon to give the system a break. If I have a choice, then breaking the flood times during the day is always my second choice.

Nutrient Changes should be performed regularly, if you have no electronic test equipment. For a 60-80 litre tank, feeding around 2 to 10 plants, I would change every 7 to 10 days. If more plants are using the solution, then change more often, and use common sense. If your plants start looking less than perfect, try changing more often. Take a sample of your nutrient into our hydroponic store and ask them to test it for you. Take one fresh sample from when it was first mixed up, and one sample either 3-4 days into the cycle or just before dumping. This will give you a reference to how the nutrients are going. Flush the expanded clay every 4-8 weeks with water, just in case any nutrients build up on the expanded clay. This can occur if the plants use a lot of water, and leave the nutrient behind. This is called salt build up. Some people get this problem, some don't.

#### **Growth Rate**

This system is known for unbelievable growth rates when it is really well run. Even without nutrient management, and control, the high oxygen ensures good growth rates at all times.

#### **Heat and Cold Control**

Since this system uses intermittent pumping cycles, the only time we have complete control of the nutrient is when the nutrient is flowing in the growing container. When the Growing container is drained of nutrient, the temperature is affected more by the air temperature. If heat or cold is extreme, consider using more flood cycles during that period of the day and less at other times. An example might be, very cold at night, and medium hot in the day around noon. Then you could flood more at night and miss a flood in the morning and one in the afternoon. Don't flood for longer, but have less of a period for draining.

Heating the Solution is an effective way of controlling the temperature. If the weather is hot, you will find that nutrient will cool enough generally because the nutrient flowing into the growing chamber is falling back into the tank through the overflow, and the aeration is cooling the nutrient enough. Further Aeration should cool the nutrient further if required.

#### **Suitable Crops**

Flood and Drain is excellent for permanent crops, Herbs, Flowers, and all crops. Harvesting plants usually means taking some of the media with the roots. Root crops may be too difficult to avoid rotting in this system. Root Crops will do better in a Pot with Perlite really, but you can give it a try.



## **Nutrient Film Technique**

### **Growing in pipes or channels**

This system is for the grower with an advanced knowledge of hydroponics as there is no medium between the plant and the nutrient. Commercial growers often use this system as, due to the lack of medium, it has relatively small ongoing costs once it is set up, however due to the heat in Queensland the nutrient often rises above 30 degrees. When the water is warm, the water cannot hold oxygen and roots will be affected. This is not a problem in our solo system—for home and hobby growers. Commercial growers use our hybrid cooling on their farms and the system can remain cooler. These systems are custom made to individual requirements. Please ask for a quote.

### **Commercial Hydroponic Farms – Not just Lettuce, Tomatoes, cucumbers and Strawberries and more...**

We provide a Commercial Hydroponic Course, which takes you through marketing your crop, profit and loss, and would set you up with a module or two of Hydroponic Channels or Hydroponic Pots, tanks, pumps and equipment. Your investment should return you your initial investment money in the first year. We suggest a budget of at least \$35-45,000 to set up your farm would be required as a minimum for a stand alone income producing farm.



Farmers can achieve some income with this sort of equipment. Marketing and crop selection will vary this significantly. You may have some losses during the first year due to inexperience in seeing symptoms, and not knowing it will lead to a problem. Having our commercial consultant out to see your system will complete your training as you grow. This is how you learn to run your Food Factory. We might be asked how much you can make. There is no guarantee that income will happen as farming is farming, but a good budget is essential to ensure it will work out.

If you were to buy a Baked Beans factory, you would do as the engineers who designed it told you to do. You would spend most of your time making sure you market your Baked Beans brand properly, systemise your processes and keep sales ticking over. We also encourage marketing and good business plans and budgets to be in place before beginning.

### **Schools and Education**

We work with schools to develop a program within their budget and curriculum. We are also working towards programs like producing videos of systems to make

teaching easier.

## **Section 3**

### **Propagation methods and equipment**

If starting from seed –

**SEED MIX** (Perlite/Vermiculite mix): place the white Perlite seed raising mix into pots or trays and put the seeds about 2-5 mm below the surface and keep moist with plain water.

**ROCKWOOL:** use Rockwool Cubes by wetting down cubes with fresh water, let them drain off excess water, and then insert seed into the cube about 2-5mm below surface. Keep seeds and seedlings moist with fresh water. *Never let them get very wet or they can rot. Just keep moist. Do not allow them to dry out or the seed may die. Just keep moist.* Use fresh water or half strength nutrient only, as they do not have roots yet. Seeds take approximately 3 to 10 days to sprout and when they have 2 or 3 sets of leaves transplant into system and start feeding them normal nutrient. We also recommend a mini-propagator to keep the seeds/seedlings in a higher humidity.

Heatmats will help if temperatures are regularly below 20 degrees \$65 (recommended).

### **How to strike cuttings**

Note Instead of using Rockwool cubes you can use SeedMix which is a mix of Perlite and vermiculite instead.

#### **Step 1 Set up**

Fill Basin with water and [optional] add plant safe Water Sanitant such as 2-4ml of Hydrosshield for every litre of water or a fungicide in the basin. This is to kill any bacteria, virus or fungus before we start. Clean everything with the Hydrosshield solution. This includes the Scalpel, knives, propagator, wash basin, and your hands. Soak Rockwool Cubes in Hydrosshield. I usually leave everything to soak for 10-20 minutes (minimum 6 minutes for Hydrosshield to work) You save the water in the basin for step 4

#### **Step 2 - Selecting cloning material**

The Parent plant should be healthy, and stress free. Around 4 to 6 weeks old is ideal, as cutting should be taken when the plant is out of seedling stage. It is also best if it is still before the flowering or fruiting begins, however there should be no problem with getting reasonable results should the plant be fruiting or flowering. There should be no trace of pests such as the pin-head sized spider mites. The distance between branches (internodal length) on most plants should not be more than 50mm ideally, as this will produce bushier plants.

#### **Step 3 - The initial cuts**

The initial cut is made 25mm below a node (where the branch joins the stem). The stem thickness should be 5-10mm and the outer layer of stem cells should be young fresh tissue, and not be too woody.

Leaf surfaces are required, however too much surface

area will allow the cutting to lose moisture. No more than 1 small leaf, or a trimmed-down large leaf (you will need to trim it back to half size) Before trimming the cutting to its exact size you need to place it underwater.

#### **Step 4 - Cut underwater**

Use the basin or tank from step one with the water sanitant in the water.

Place your cutting under water and make your final cut diagonally (45 degrees) across the stem, just below (5mm) the node. Now cut the node so it is nearly level with the stem.



The reason you cut underwater, is so the stem will not draw air bubbles in when the cut is made.

Air bubbles usually kill a cutting. Air bubbles do not always occur, so it is a preventative action, not an essential one. The dipping in Hydrosshield will kill off any nasties on the stem, so leave the cuttings in the liquid for 6-10 minutes to get the cuttings clean.

#### **Step 5 - Dip in Cloning Gel**

Dip the cutting into the gel to 25mm depth. Gel from \$12. The gel is an organic acid, and can break down - or grow mould and other nasties. So ensure the Gel is fresh, and keep it in the fridge after opening. Discard unused gel after 3 months.

#### **Step 6 - Insert the cutting with a blunt blade**

Insert the round ended kitchen knife into the Rockwool cube.

Using the blade as a sort of ramp, slide the cutting down the blade, into the cube to 25-30mm, and then gently remove the blade.

#### **Step 7 - place into closed propagator**

Place the cutting into the propagator, closing all vents.

#### **Step 8 - Set up Fluorescent lighting to 18 hours**

Fluorescent should be as close as possible to the propagator, within 150mm of the cuttings (6 inches)

#### **Step 9 - Keep between 20°C and 25°C - Both Day and Night Temperatures**

Temperature should be between 20 and 25 degrees. (not warm, not cold) Heating mats can be used if necessary. Find a place that is not warm/not cold on the top of the fridge, on the hot water system, anywhere that is the right temperature. Avoid using Hydroponic lighting other than fluorescents, and certainly avoid direct sunlight. Heat will dehydrate the cuttings, and there are no roots to draw up more moisture.

#### **Step 10 - avoid too much care.**

Keep propagator closed. Check that there is moisture droplets condensing on the inside of the propagator. Spray cuttings once per day. Avoid lifting the lid all the time. Give them a spray before replacing lid. By lifting the lid daily any stale air is removed, and a fresh spray will dehumidify the propagator.

#### **Step 11 - Hardening off**

Open up vents after around 5 days if they are not wilted, and gradually open the lid a little over the next 3 days. If

any wilting occurs, close them up again, and start again in 24 hours.

Keep out of heat, cold and high ventilation, until the roots have settled in. If Rockwool is starting to dry out use a cloning nutrient, or 1/5 strength grow nutrient.

#### **Step 12 - Planting out**

At about 2 weeks, most cuttings have enough roots to be called Clones. Clones are cutting ready to plant out.

Although gardening is a science, each time you take cuttings you will need to observe and evaluate the process. If the cuttings ever seem to wilt badly, or develop symptoms, perhaps you are overdoing something, or trying to push them faster than they want to. If the cuttings want to take 3 weeks or more, you can help with vitamins, and clone nutrients. If they don't look ready, take it easy on them. A little patience has rewards in stronger plants.

**Aero-propagator Cuttings** – take a cutting a little longer than normal, sterilize cutting and blades etc under water with Hydrosshield added. Whilst under water trim 5-10 mm off the end, also trimming any nodes for more strike points to stop any air bubbles being drawn into the stem. Put the cutting into the basket with the stem either poking out the side or in the side of the basket so it is sprayed directly. When roots appear you can draw the stem back into the basket if you like. As long as the stem is being struck by the spray that is fine.

Use FX clone nutrient in the tank and spray with FX everyday minimum. (FX has rooting hormone, root acceleration hormones, vitamin B, nutrients, and a protective leaf gel to stop drying out as well as a wetting agent.)

Keep Hydrosshield in the tank and use fluorescent lighting only whilst rooting. Avoid excessive heat as the clones will dry out. Avoid excessive cold by heating the nutrient tank with a suitable aquarium heater.

If using a aero propagator, use the lid vents to keep the moisture in, vents closed. Take the lid off each day and spray with FX before putting the lid back down again.

Rootlets should appear in 3 days, and after 5-7 days the cuttings should have roots. You can move the clones to another system then, being mindful of the roots

#### **Aeroponic propagators**

include the Turbo Klone 24 \$375, 48 \$495, 96 \$595 and 144 \$695 unit and are very quick and propagators.

(60x40cm) are fast producers of roots, and do not require using Rockwool cubes every time. Put the cutting into the basket, some FX clone nutrient into the tank and turn on the sprinklers. Usually roots occur within 3-5 days, and planting out can



be done by 5-10 days. Often the cutting keeps growing in the propagator as the roots grow that fast. Prices are \$275 Basic, \$315 with thermostatically controlled heating. (with 2 foot flurobay \$400)

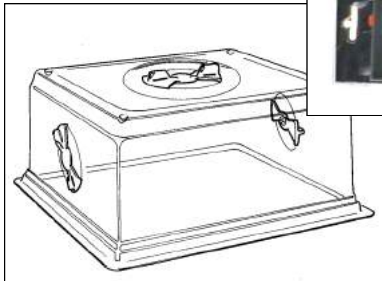


### Transplanting Plants

If you are starting from established seedlings - wash soil off roots and place into the system or pots, then pour the media around the roots. In the case of non-media systems, bare rooted plants may be more suitable.

### Propagation Trays, cell trays and covers

Kwickpot 48 cell tray for mini-propagator \$5  
 Black base tray for mini propagator \$6  
 Clear mini propagator lid 3 vent tall version \$18  
 Propagation Tray Green/Black netted base \$4



### Propagators

2 Vent budget propagator lid and base \$15 heat mat \$40 extra \$45 thermostat \$40 extra (controls many heatmats)

Hydrocentre Mini propagator (extra tall lid, solid base with either an inner netted tray or a 48 cell Kwickpot tray) Easy to use, water every 1-2 days, suits single heatmat, pyramid light system Rockwool cubes or Seedmix (not included) \$25 Heatmat \$40 + thermostat (\$40)

Hydrocentre Double propagator \$50  
 4 vent clear double propagator lid only to suit 60x40cm crates \$25 lid only  
 short 23litre (600x400) crate only for double propagator lid \$25  
 Heatmat \$50 + thermostat (\$40)

### Cloning and cutting solutions

Keep Gels in a fridge after opening. Discard if any mould grows in it, or after 6 months. If not refrigerated, will be less effective after 2 months

Progel 50ml Cloning Gel \$12.50  
 Progel 1 Litre \$100 (check in stock—can get it fast)  
 Progel 5 Litre \$400 (check in stock—can get it fast)  
 50ml Clonex cloning/cutting gel \$13



### Clone accelerators

FX clone nutrient by Grow Research, has a rooting hormone, 2 root acceleration hormones, vitamin B to reduce stress, nutrients, and a protective leaf gel to stop drying out as well as a wetting agent. Spray onto leaves and/or soak cubes/seed raising mix and water young plants with this high powered nutrient. A must to produce fantastic clones/cuttings. 250ml makes 25litres \$12. 1litre makes 100litres \$28 Nulife quick start clone spray 1 Litre \$20



### Seeds, cuttings and clone lighting

60cm PS1 twin T5 Fluro system \$75



### 2 foot flurobay with

2 x18watt Cool White tubes for plants up to 3 weeks old \$65 + lamps

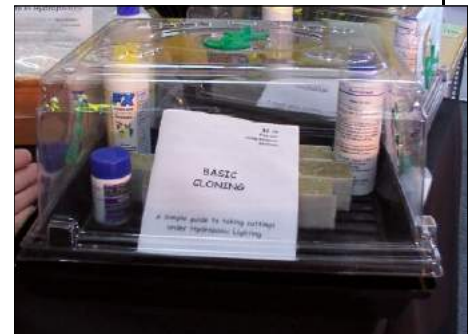
2x18watt GroLux (worth \$12.50 each) tubes for plants up to 6 weeks old \$75

### 4 foot flurobay with

2x36watt Cool White tubes for plants up to 3 weeks old \$95

2x36watt GroLux (worth \$19.50 each) tubes for plants up to 6 weeks old \$110  
 80 Watt Grow and

Clone light \$85 lamp or \$120 lamp and reflector



Cloning kit (\$75worth) for \$60

### Heating mats for propagators

Single mat \$40 Medium Mat \$45 Double mat \$50  
 Plug in thermostat for 1 or more mats \$40

### Rockwool cloning kits

Cloning kits include a propagator, 20 40mm high density Grodan Rockwool cubes, cloning gel, scalpel, Hydroshield, FX clone spray/nutrient, and a cloning booklet. Worth \$75, only \$60

### Miscellaneous Propagation equipment

Scalpel - Disposable \$3.50 - or 2 for \$6  
 Home Cloning / tissue culture kit (call to order) \$99.00

### Seedmix / Perlite / Vermiculite

Seedmix (Fine Perlite and Fine Vermiculite 50:50 mix) or

Perlite in a 3 litre bag \$3  
Perlite 100Ltr \$36  
Vermiculite 100ltr \$38

### Propagating cubes

Hydrocentre have tested a range of rockwool brands and recommend Grodan,

Grodan is the worlds premier Rockwool. Very clean and excellent strike rate, drainage, and root development. Be careful handling dry Rockwool as fibres can irritate skin, eyes, mouth etc.



Wet Rockwool appears to lose these irritating fibre qualities. Soak cubes before use, squeeze off excess moisture, then keep moist only, not wet.

Grodan DM8G 100x100mm cube with 40mm hole  
Each \$1.70 Carton of 180 \$220



Grodan 25/40 25mm cubes for lettuce growers  
Carton of 6000 \$700 (check stock)  
Grodan 36/40 36mm cubes in sheet of 98 \$25  
Carton of 2940 cubes \$600 (Cartons usually in stock)

Grodan 36mm cubes including plastic tray 77 per tray  
Per Tray \$25 Carton of 18 trays (1386) \$399  
(Cartons usually in stock)

40mm wrapped cube [our most popular dense cube]  
Each \$0.50 Carton of 2250 \$850  
(Cartons usually in stock)



Grodan DU4G 75mm cubes with no hole Each \$1 Carton of 384 \$350 (Cartons usually in stock)

Grodan 75mm (with 40mm hole) wrapped cube Each \$1  
Carton of 384 \$350 (Cartons usually in stock)

### Seeds

We recommend Edens Organic/non-hybrid seeds (Edens have lots of fun veggies, flowers etc like 25ft tall Sunflowers 1-2ft flowers, green and yellow striped tomatoes...). See [www.edenseeds.com.au](http://www.edenseeds.com.au) for more info.

## Section 5 Hydroponic Nutrients

You must use nutrients for Hydroponics. There are 12 minerals that plants need for healthy growth, and most brands supply these and perhaps a few other trace elements. The mineral nutrients are the same NATURAL minerals that a soil has, except in the right quantity, usually higher quality (more solubility, no contamination),

so you do not have to worry about what to give plants and when and how. Just add the nutrients to the water you are feeding your plants. Nutrients are the basis of Hydroponics and without basic nutrition plants will not thrive.

There are many brands of nutrients but two basic formulas. A "GROW" solution with higher nitrates for leafy vegetative growth and a "BLOOM" or "FLOWERING" solution with higher phosphorus and potassium for the flowering and fruiting stage of your plants. A Shandy of 50:50 Grow and Bloom is used by many growers that have a mix, or just use the one which suits the majority of plants. Don't be overwhelmed. It is not critical to have the right formula. It only enhances the results like an athlete would prepare a diet to suit his/her training.



### Grow Research

#### Performance Nutrients—Recommended

Brewed Organic Nutrients with over 70 elements. Fantastic performance comparable to top brands, totally natural and safe.

**Grow Research All Purpose nutrients** for outdoor veggies come in a Grow and Bloom formula. A 2 litre box \$25 makes 200litres, a 10litre box \$65 makes 1000litres and 40Litre set (2x20litre) \$210



**Grow Research Performance Indoor** comes in a Grow—leafy vegetative stage

Flower—(optional) for first 2 weeks of flower stage

Fruit—for most or all of the flowering fruiting stage

A 2 litre box makes 250Ltrs \$35, a 10 litre box is \$80 and a 40litre set (2x20Litre) is \$295

**Grow research Single part** 500ml \$10 1l \$18 5L \$65

**Powergro by Nulife** – Available in Grow an Bloom Formulas in a 2ltr set \$30 or a 8Ltr set \$85 or a 40Ltr set \$285

**Hypergro by Nulife** Single part Available in a Grow and a Bloom formula in 1ltr \$20 4ltr \$40 or 20ltr \$150

**CocoFeed by Nulife** – Based on powergro, but modified for CocoCoir. Available in Grow an Bloom Formulas in a 2ltr set \$30 or a 8Ltr set \$85 or a 40ltr set \$285.

### Other nutrients

FX Clone and Seedling Nutrient 250ml \$12 or 1Ltr \$25

Dutch Fest Grow or Bloom set A+B 10ltr \$70

Dutch master Advance Nutrient (not Dutch masters plain

budget nutrient) A+B Grow/Bloom formulas  
 2Ltr \$25 10ltr \$75 40ltr \$250  
 Powders by Grow Research Grow or Bloom Nutrient powder nutrient makes 5kg \$70 25kg \$200 250kg (10 sets) \$1750 (Grow or Bloom) Due to worldwide shortages on some ingredients, please check stock.

General Hydroponics USA 3 part nutrient requires a mix of Grow Bloom and Micro

Micro 946ml/1qt \$30 Grow and Bloom 1qt \$25

Micro 3.792litre/1gal \$70 Grow/Bloom 1gal \$60

4 Gal/ approx 20Ltr packs POA

Optimum Grow and Bloom 2 Ltr \$28, 11 Ltr \$85,

40 Ltr \$265

Canna Vega (grow) and Flores (Bloom) 2L \$38 10L \$110 40L In stock also

Canna Coco—for use with Canna Coco medium

One stage grow and bloom 2L \$35 10L \$20 40L In stock

Canna Terra—For use with Canna Terra Medium

Vega (Grow) 2 litre set \$35

Vega (Grow) 10 litre set \$110

Flores (Flower) 2 litre set \$35

Flores (Flower) 10 litre set \$110

Terra Professional and Canna Coco Grow Mediums 50 litre bag from \$25



### Organic Nutrients

#### BioCanna Range

Canna has now released it's premium organic products across Australia. Bio Vega and Bio Flores are the Grow and Flower nutrients for those wanting to use a truly organic approach to hydroponics. These products meet international organic certification, are used as a one part nutrient in growth or bloom, in conjunction with the Canna

Coco organic growth medium.

1 litre Bio Vega \$35, 1 litre Bio Flores \$35

1 litre Bio Boost Additive \$99

Bio Juice Grow 10 litre \$50

Bio Juice Bloom 1 litre \$20

Bio juice Bloom 10 litre \$50

### Other nutrients available on request

## 6 Nutrient testing and control

### CF and PH control

Nutrient Strength has a lot to do with the type of growth that a plant will achieve. When mixing up a nutrient we can run to a basic two strength rule.

**Full strength nutrients for most plants, Half strength nutrients for young plants like seeds, seedlings, as well as hydroponic lettuce, orchids and African violets.**

This will be easy. In Perlite, the nutrients may be at the right strength going in, but what happens then. Usually plants will take nutrient and water, or just water.

Evaporation will take some more water out of the mix leaving the nutrient to get stronger. By either using a little less than normal strength or by giving just water every now and again we can assist the plant to get the right strength nutrition. In a recirculating system we can mix up the

nutrients according to the pack strengths. As the nutrient level drops we can only add water as we do not know how much nutrient has been used. It is much better for the nutrient to become too low than to get too high in strength as this would cause our plants to slow, even show up as burnt tips on their leaves.

**Suggested CF's (if growing in heat use lower CF)**

CF truncheon testers are easy to use. Put the tip into the

liquid and the lights indicate the strength. You can then add water to reduce the strength or add nutrients to increase the strength to the optimum level. At the ideal level the yields will be heavier, stem stronger, and plant growing steadily. Too low and the plant will yield poorly, be spindly and grow fast and thin. Too high and the plant slows down (less nutrient = faster growth, isn't that unusual)

### CF Truncheon by Bluelab

Easy to use waterproof, 5 year warranty no calibration required (just

Nutrient strength guide based on 2CF plain tap water, and mls/ltr means mls of A as well as same mls of B (except when one part nutrient)

Powergro Grow	1ml/ltr=7	2ml/ltr=13	3ml/ltr=18	4ml/ltr=23	5ml/ltr=27	6ml/ltr=32
Powergro Bloom	1ml/ltr=7	2ml/ltr=13	3ml/ltr=18	4ml/ltr=23	5ml/ltr=27	6ml/ltr=32
Hypergro Grow / Bloom (1 part)	2ml/ltr=7	4ml/ltr=11	6ml/ltr=15	8ml/ltr=19	10ml/ltr=23	12ml/ltr=26
Optimum Grow / Bloom	1ml/ltr=7	2ml/ltr=12	3ml/ltr=17	4ml/ltr=22	5ml/ltr=26	6ml/ltr=29
Cocofeed Grow / Bloom	1ml/ltr=7	2ml/ltr=13	3ml/ltr=18	4ml/ltr=22	5ml/ltr=26	6ml/ltr=30
Dutch Fest Grow / Bloom	1ml/ltr=7	2ml/ltr=11	3ml/ltr=16	4ml/ltr=20	5ml/ltr=24	6ml/ltr=28
Dutch Master Advance Grow / Bloom	1ml/ltr=5	2ml/ltr=9	3ml/ltr=13	4ml/ltr=16	5ml/ltr=19	6ml/ltr=22 7ml/ltr=26
Canna vega (grow) or flores (bloom)	1ml/ltr=8	2ml/ltr=13	3ml/ltr=18	4ml/ltr=22	5ml/ltr=27	6ml/ltr=32

test and clean if necessary) Only truly reliable tester we have found If you don't want to have this meter, then you are better off not having one than one that reads incorrectly. \$135

Pocket tester HM digital High quality waterproof \$75  
Basic HM tester \$45



**Calibration solution 27.7** (also does ppm)  
250ml for checking accuracy of nutrient testers \$8.00



**Nutrient Recommendations**

Seedings 8-10CF  
Lettuce 8-10CF  
Vegetables and Herbs 18-22CF  
Tomatoes 20-35CF higher strength = more tomatoes but slower growth so I'd try 24-26CF or just in with the veggies and grow an extra tomato plant for added yield.

Indoor growers mostly report 22-24 for growing plants, and 26-28 for flowering/fruitletting

Ask us if unsure. See also our nutrient approximate CF chart (left). We have worked out relative strengths of each nutrient. Half strength for seedlings and lettuce at around 10CF, Most veggies grow well around 20CF (in Queensland heat) Tomatoes and heavy flowerers/fruitletters a little stronger at 22-24 grow, and 26-28 flowering. This is only a guide. Watch your plants to see if it is right. Too much will give you tip burn, too little will make the plant thin and tall.

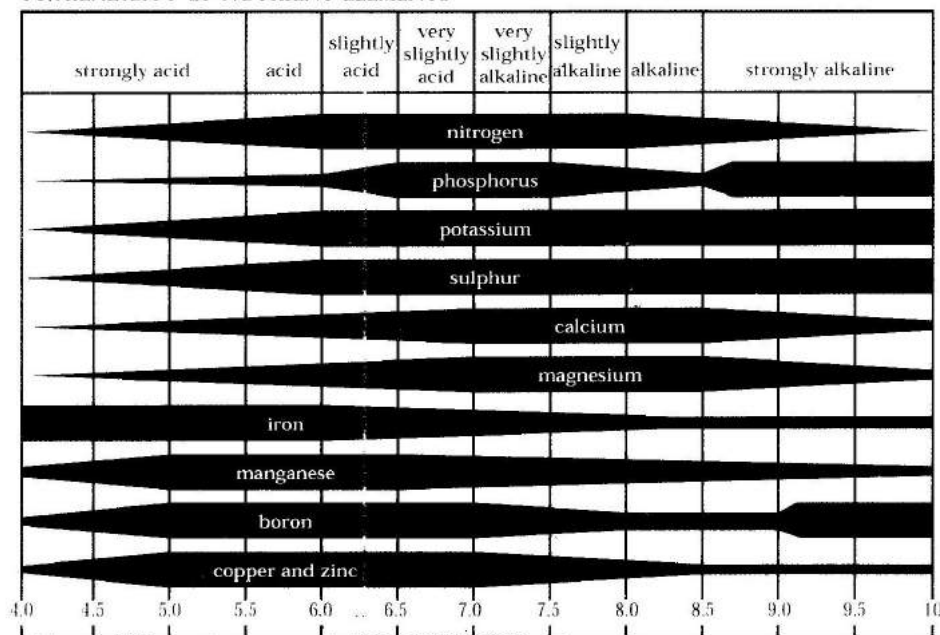
**pH testing**

pH testing is all about keeping the nutrients available to the plant. At many pH levels some nutrients will not be accessible even though they are in the nutrient formulation. Too Acid or too sweet (pH lower than 5.5pH) and the Major elements become less available. Too Alkaline or too sour (pH Higher than 7.0pH) and the minor elements become unavailable. This means nutrient deficiency, and the reason while soil pH is so complex.

In Hydroponics we can easily adjust the pH if required with pH up and pH down. A good nutrient will have a buffering capability that means the nutrient will resist the pH fluctuating. So if you try two nutrients, one may use very little to adjust and you have to adjust a lot and often because it changes a lot. The other one may rarely need adjustment, and when it does it takes a bit of adjustment solution to move anywhere. This is a good nutrient, and probably an indication it is time to change the solution instead of using heaps of pH up or pH down solutions. Best to ask us which nutrient you should get.

If you are using tap water on the Gold Coast, the pH is usually right when mixed according to pack directions. Gold Coast water (and many councils in Australia) make their water between 7pH and 8pH to World Health Organization standard. Nutrients are then given a buffering capacity which includes the ability to stabilise pH and adjust normal water down 1 point into the range of 6 to 6.5pH which is right for plants. A simple pH colour test \$12, or a test at our shop (free) will confirm this. No real pH testing is necessary. PH testing and adjustment is required only to maximize plant potential, however normal growth will be fine without pH adjustment.

AVAILABILITY OF NUTRIENT ELEMENTS



If using rain water, dam water, creek or river water (e.g. Mackay's tap water comes from their river) then have it checked by us, with your own testing kits, or maybe ask a pool store or aquarium store for help if you can't get it to us. A simple test kit will keep you under control. You may not need to adjust as in the above case, but maybe you will. A \$12 test kit should be fine.

To maximise your plants potential, the ideal pH is 6.0 and should be adjusted using an electronic water proof tester. Get a good one. (Note: For years people have bought cheap meters and said to me the pH is right but the plants look sick. Trust the look of your plants. The cheap meter is telling

you the wrong figure and continually adjusting to the wrong figure will make your plants sicker than if you just left it all alone.)

#### Simple test kits

pH Test kit liquid bagged with vial. Fill vial, add one drop of indicator. Check against pH chart on bottle very easy. \$12



#### Electronic HM Digital Water Proof meter.

Excellent meter. There are really is a lot of extremely poor meters on the market. This is the only handheld I would use. I'd prefer the liquid tester over a cheap meter and some more expensive ones. It is accurate to 0.02pH and has a long lasting reservoir of reference gel. \$95 including a 250ml calibration solution.

**Budget pH meter** \$50 with calibration solution.

Replacement Batteries for pen type testers \$2

#### Calibration solutions

pH7.0 pH tester calibration solution 250ml for calibrating standard meters \$8

pH4.0 pH tester calibration solution 250ml for use with meters using 2 point calibration \$8

#### pH Adjustment solutions

Use pH adjustment solutions carefully. If you see any cloudiness when the pH up or down is added, the pH is not really being adjusted by much as most of the pH up or down is reacting with the nutrient and forming insoluble compounds, wrecking your nutrient formulation, creating nutrient deficiencies and using a lot of pH adjuster which is a waste of money. If you see cloudy ness stop immediately and either add much slower, in smaller amounts, mixing thoroughly or add a few drops to a cup of Plain water (not nutrient) and pour the cupful of dilute solution into the nutrient. In a dilute form the pH is adjusting without reacting and you will use much less pH solution – saving you money and saving the nutrient formulation from damage.

#### Growth Technology pH down - 250ml \$10 - 1litre \$25

Only adds Phosphorus in Phosphoric Acid form. Warning, very serious Acid, keep out of reach of children and stupid adults and read all warnings on bottle. You are now very warned!

#### Growth Technology pH Up - 250ml \$10 - 1litre \$25

Only adds Potassium in the form of potassium hydroxide. Warning, very serious Base, keep out of reach of children and read all warnings on bottle. You are now very warned!

NEVER USE Hydrochloric acid as this adds Chlorine to the nutrient. This is poisonous to plants. Chlorine is also poisonous to humans. Do not use fish tank pH adjusters such as sulphur or bicarbonates etc as they should not be used in a hydroponic situation.

#### Nutrient and pH Automatic control (Dosing equipment)

**Bluelab DoseTronic** – adds nutrient to tank when nutrient

drops below your preferred level. Use a float valve and a water tank to automatically add water when water level drops. Keeps nutrient at the exact nutrient strength and pH, and allows you to control type of growth. Suits tanks up to 4000Ltrs. POA (approx \$2500-3500) **Other Dosing systems available—please ask.**

#### Nutrient and Air Temperature and humidity testers

Temperature/Humidity Meter Digital Max/Min, use this units memory to find out what the temperature and humidity was like when you weren't at home.

Why do plants look like that? Is it the night temperature? Is it the day temperature/humidity? \$35

Max/min thermometer with probe \$25

Digital Thermometer with probe \$5

Water Thermometer 0-50degC with suction cup \$4



## 7 - Plant additives, boosters and foliar sprays.

### Nutrients, Additives, Hormones and Growth Regulators

#### **The Top ways to help your plants**

We often get asked about what additives to recommend. Here is a basic guide to producing better plants and understanding additives in order of priority.

#### 1<sup>st</sup> Use some plant Vitamins

Vitamins are our Number 1 most effective way to help a plant do well.

Vitamins for plants help a plant feel better when stressed, and keep a plant healthy.

Vitamins will help with resistance to fungal rots and insect attacks for instance.

While plants manufacture vitamins for themselves, if they have a supply of them, they can turn their energy to producing other elements they need, and thereby speed up growth.



**Grow Research Vitamins** 250ml \$20, 1litre \$55, 5L \$175  
1ml per 10 litres general, 1ml per litre performance

**Superthrive** - 2oz \$19

4oz \$30

1 pint \$80

1 Quart \$140 1Gallon \$375

#### 2<sup>nd</sup> Keep it clean!

Cleaning the water that comes through the tap and the water which is recycled from any pathogen helps keep

the plants strength in growing not fighting. All water is likely to be contaminated by pathogens. Have you ever been fighting a cold, not really got sick, but just been a little slowed down. If you keep your system and root zone really clean you will see an improvement in the plants vigour.

Hydroshield cleans the water with two highly effective cleansers, Hydrogen peroxide, bonded with silver. The silver builds immunity while activates the Hydrogen peroxide to react and keep reacting with any single celled organism, such as green algae, fungal root rots, viruses, bacteria, and also removes chlorine from the water. Dose at 2ml per litre to prevent problems, or dose every 1-3 days to kill any fungal outbreak in the water until plants are healthy again.

Hydroshield 250ml \$12  
Hydroshield 1litre \$28  
Hydroshield 5litre \$85  
Hydroshield 25litre \$350



As an alternative to cleaning by sterilising, you can use a high dose of DRIVE—containing beneficial bacteria to keep nasties away

**Grow research Drive** is the most up to date product with 3 major groups of beneficial organisms and has been proven to reduce or eliminate root rot, increase root size, nutrient uptake and about 10% increase in crop yield among our growers. Has been shown to reduce dead roots through breakdown and reabsorption. Do not use Drive with a sterilising agents like Hydroshield or Pythoff. Drive 250ml \$15 1L \$50 5L \$195

Cannazym Enzymes to break down dead root matter by Canna 250ml \$15 1ltr \$55  
Canna Rhizotonic root tonic 250ml \$33 1litre \$99  
Very good root stimulant.

### 3<sup>rd</sup> Where is the Silica?

Silica is not silicon, it is an element that is important and might be argued is essential to plant nutrition, crop and root protection and weight in a plant. Silica cannot be put into the nutrient formula, due to instability under 7pH in concentrated form, but it should be part of any plants nutrition. Consider silica like a missing link between plant vitality, strength, resistance to infection, and increased harvests. The silica helps strengthen cells, and plants are much healthier from the continual addition of silica.



**Grow research Silica** is a spray, which eliminates mould increases Potassium and Silica through the leaves, and avoids the problems with adding to the tank. Leaf application can supply 3-5x higher levels of silica than through the roots.

Ensure you have a highly soluble form and you will begin to see effect from around 2 weeks onwards. Silica Magic is the most concentrated at 2ml per 10 litres!!! Dutch Master silica is another good form of silica.

Silica-magic plant booster 250ml \$35 1litre \$90  
5 litre \$270

Dutch Master Silica Plus 1litre \$35

### 4<sup>th</sup> Why not spray the foliage?

Have you looked at the way fertilisers are added in commercial operations. Usually by injection of liquid fertilisers into the overhead sprinklers. This is partly because it is quick and easy, however, you can find research that the same liquid added to the leaves (which then runs off into the soil), instead of just fertilising the soil is around 25% more in harvest yields. It also important to note that although root systems may not absorb all the products you might want to provide the plants, the leaves absorb nearly everything such as our amino acids sprays that are more difficult to absorb through the roots than through the leaves.

You can make up sprays by using a nutrient at 25% strength, adding some vitamins, and a wetting agent to ensure the liquid spreads not beads on the leaves for better uptake and lower chance of burning.

### How often to spray?

You can spray - just before your lights go off, or if you can turn off your lights for 1-2 hours, and do so quite often. Usually you can spray every other day if you wish - however, twice per week should show you your desired results.

In rooms where mould conditions can develop - such as rooms with high humidity or low ventilation - Check before spraying your plants with a staff member.

Grow Research Foliar spray—coming soon

Liquid light—used with Saturator to give plants extra energy, by allowing them to absorb more light. Guaranteed results—it really works. Liquid light and saturator Usually \$95 a pair, SUMMER SPECIAL \$55



### Prophecy

A very exciting foliar spray which, when used in the growth stage, has been reported as encouraging much faster growth in the plant. Contains nutrients derived from rice, seaweed and hydroponic minerals. Has to be seen to be believed.

1 litre \$25 2 litre \$85

Available as a free 250ml sample from the shop for a limited time only, one per customer. Please ask to try



Prophecy when you call the store.

#### Saturator

Saturator binds with the cuticle layer and protects the leaves, it then alters it temporarily, to allow the transfer of elements from your foliar spray to the plant. Once it evaporates Saturator then returns the cuticle layer to normal, without any damage to the plant. Saturator allows you to foliar spray your plants with the lights on. It will also reduce standing water on plant surfaces almost eliminating fungal infections caused by excessive foliar spraying. 1 litre \$25



#### Brix +

Used in last week before harvest—Removes chlorophyll, increases net weight, density, structure and natural aromas.

1 litre \$50 5 litre \$165

#### **5<sup>th</sup> Accelerate the plant with natural products that cause faster cell division**

Some additives help the plants grow quicker by making their cells divide quicker.

The leader is Performance BOOST—All organic and enables accelerating flowering rates, increasing energy, bulking up the fruit/flower, and improving sweetness texture and aroma/potency. Very happy customers and excellent testimonials use 2ml per litre for flowering—4ml for massive boost for 1 week. TRY TRY TRY—Won't be disappointed.

250ml \$32 1Litre \$100 5Litre \$375

Organic additives such as Grow Research's Organic Flowering booster, or Monstabud and Megayield use Fermented Carbohydrates to give plants energy to grow and flower faster. Monstabud contains some fertiliser and will increase your nutrient strength. All are used as an additive to nutrient

Grow Research Organic Flowering Booster  
250ml \$20 1litre \$35 5litre \$135

Bio Plant Acids are a unique product that can be used alongside the other products for very fast plant metabolism, meaning faster growth and flowering

Bioearth sea acids – an amazing stimulant  
1litre \$16 5 litre \$50 5litre \$145

Magic Bud Grow - growth additive from Monstabud – Organic molasses, beeswax, guano, alfalfa use at 1ml per litre as a boost or use a CF truncheon. (Could be used as a stand alone nutrient if desired at 8-10 ml per litre) 1litre \$25 5ltr \$75

Monstabud – flowering/fruiting additive – Use throughout flowering/fruiting or change to Ozitonic during last 2-3 weeks. An organic mix of molasses, beeswax, guano, alfalfa use at 1-2ml per litre as a boost or use a CF truncheon. (Could be used as a stand alone nutrient if desired at 8-10 ml per litre)

1litre \$25 5ltr \$75 25litre \$250

Ozitonic - flowering/fruiting last stage additive – Use Ozitonic during last 2-3 weeks to enhance flavour and flush crop. Nutrient strength can drop a little during this time. An organic mix of molasses, beeswax, guano, alfalfa use at 1-2ml per litre as a boost or use a CF truncheon. (Could be used as a stand alone nutrient if used with monstabud), 1litre \$25, 5ltr \$80, 25ltr \$320

Dutch Master MAX in Grow or Bloom Additive, 1litre \$35, 5Ltr Flowering \$90

Megayield flowering booster by Nulife, 1litre \$35, 4ltr \$85  
Nitrozyme additive, 200ml \$25, 500ml \$50

Canna Bio Boost is a premium organic yield increasing agent with purely organic ingredients, a naturally fermented plant extract with bloom stimulating characteristics which also help to create a fuller flavour.  
1 ltr Bio Boost \$120 *Certified Organic*

#### **6<sup>th</sup> Add weight in the flowering/fruiting stage to give you yield/bulk**

Potassium assists in flower and fruit formation and is stored in the flower/fruit during the flowering process. Products like Super Weight and Heavyweight plus use potassium to add weight. Super Weight would be added at 1ml per litre. Other potassium products are Potash plus and Canna PK1314 but may not be as pH stable as other products.

Grow Research Super Weight (1ml per litre or more)  
250ml \$12 1litre \$35 5litre \$90 20litre \$290

Dutch Master Potash Plus 1ltr \$25 5ltr \$65

PK13/14 Weight booster by Canna 250ml \$18 1ltr \$55

Liquid Lead carbohydrate based weight supplement.

1 litre \$35

Weight Plus 1 ltr \$30, 4 ltr \$90

Heavy Weight 1 ltr \$30, 5 ltr \$85

#### **7<sup>th</sup> Get some “wow! That’s an amazing Harvest/ripening activator”**

Cyco Flower and U-Turn are a hobby derivative similar to products used on grapes in commercial farming.

It causes EXTREMELY rapid fruiting and flowering and makes fruit VERY firm and hard immediately.

It stops Growth, and plants will NOT grow more than 1 inch once added.

Do not add until the final height and size required say in week 3 or 4 of a 8 week cycle when plants appear to have formed their flower/fruit but not begun to size up yet. (Do not use for less time as it is unlikely to assist you, and flush out after use to avoid overdosing.)

Cyco A and B (treats 330litres) \$140

U turn and Full Bloom Set (treats 330 litres) \$160

*ROCK and Dutch Master SUPERBUD are not registered products. If you have used these products in the past*

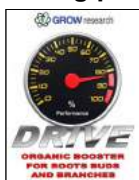
*please call us for advice and alternatives*

### **8<sup>th</sup> Don't remove the growing tip to cause a plant to go bushy, use a height controller**

U turn (was Bonza bud) creates the same effect as 'tipping' a plant without removing the top growth. That top growth will produce more branches and flower/fruit points later on so why remove it? You want a bushier plant? Well the hormone produced in the growing tip is a gibberellin. By removing this hormone you increase the plants bushiness and shorten the distance between the branches. You end up with more branches and therefore more flower/fruit points (for most plants). Using an anti-gibberellin like Uturn / BonzaBud will block the hormone that causes a plant to grow taller, and instead of growing, say 5cm and producing a branch it will produce less, maybe 2-3 cm thus making a plant shorter overall. A shorter plant has more even light from top to bottom and thus increases yield on lower branches. Bonza Bud encourages more side growth and these branches will produce extra fruiting/flowering points per plant also increasing yields. Spray onto plants at 2ml/litre for extremely stretched out plants, or 1ml/litre for normal plants to be shortened slightly. Respray to improve effect as desired or every 3-4 weeks. Spray over plants until liquid runs off.



### **9<sup>th</sup> Build up healthy roots for a healthy and higher yielding plant.**



*Grow research's DRIVE* the most up to date product with 3 major groups of beneficial organisms and has been proven to reduce or eliminate root rot, increase root size, nutrient uptake and about 10% increase in crop yield among our growers. Has been shown to reduce dead

roots through breakdown and reabsorption. Do not use Drive with a sterilising agents like Hydroshield or Pythoff. Drive 250ml \$15 1L \$50 5L \$195

A large root zone creates a healthier plant and helps uptake. Products like Canna Rhizotonic helps roots, especially for new plants/clones to get them established Rhizotonic 4ml per litre for 2 weeks, 0.5ml per litre thereafter 250ml \$33 1litre \$99 5litre \$455



Also AU60 Root Repair – Nulife 1ltr \$25 4ltr 85

### **10<sup>th</sup> Most veggies don't require female specific plants to fruit, but some fruit trees do - Feminising products.**

Female products are really male suppressants, used to reduce the chances of a male as a seedling is raised. It can also be used on a Hermaphrodite (male and female plant) to make male flowers shrivel up and drop off. If you

need these products, ask staff for assistance and follow instructions precisely.

Budwise 50ml makes up 1.5ltrs of spray \$35

### **11<sup>th</sup> Good propagation of cuttings and good seed raising gets the plants off to a good start – the first 2 weeks are more important than any others.**

Use lots of vitamins on young or delicate plants for good results. Clone products include clone gel (see propagation) to dip cuttings into to make stem cells begin to produce roots, Hydroshield (see keep it clean above) to sterilize cubes, cutting blades, and the stem to stop stem rot, Scalpels (see propagation) which are very sharp and sterile to make cuts without damaging the areas roots come out of. FX clone nutrient (see propagation), contains rooting hormones, root development hormones, stress relieving vitamins, a gelatine base to coat the leaves and stop clones drying out as well as organic growth stimulants. You can use by soaking cubes in FX at 10ml per litre, as well as spraying clones daily with 10ml per litre 250ml is \$12 and 1litre is \$28 Mini propagator greenhouses (see propagation) are \$25 with a solid base netted tray and clear 3 vent lids. Heat mats are \$65 extra Small clone light and stand are \$55 or flurobays start at \$65 and \$75 depending on lamps. An 80Watt Grow and Clone light is \$120 with reflector

### **Use of additives when you have any Sick Plants**

Use additives carefully when plants are sick. If you have any root rot, spray vitamins onto plant as Vitamins around roots will strengthen the fungus that is attacking your plant. If mould or fungal attacks on leaves discontinue sprays and apply to roots or avoid everything. Seek Advice from hydrocentre staff. For any advice go to [www.hydrocentre.com.au](http://www.hydrocentre.com.au) or email [info@hydrocentre.com.au](mailto:info@hydrocentre.com.au) or call our shop on (07) 5527 4155

## **8 Growing Media / Soil Substitutes**

**Perlite**—Perlite is a white granule which holds liquid within the granule like a water crystal. Roots can draw the liquid stored in the granule out of the Perlite, such as Perlite "watered" with Hydroponic Nutrient solution. Often used as a soil substitute in pots or containers. It holds around the same amount of water as soil, but more difficult to over water. It suits hand watering in normal pots and saucers, wick systems and Automatic Valve systems. 15Litre bag \$8 100litre bag \$38



**Expanded clay balls**—These are terracotta balls around 10mm across. Just as terracotta pots when "watered" will sweat the moisture through the side of the pot, the moisture held inside the clay ball is "sweated" out on the surface of the ball for the roots to absorb. Pumps need to feed the balls nutrient by trickle feed or by flooding,

usually for 15 minutes every 2 hours. We can overfeed plants in these systems with feeding every 2 hours as large gaps between the balls provide very fast drainage and lots of airspace for the plants root system to remain healthy. 15litre bag \$15 45-50Litre bag is \$38

**Non media - Aeroponics** - Aeroponics usually use small netted pots filled with clay balls for support, but the roots generally are in the air where the nutrient can be sprayed onto them.

**Non Media - Nutrient Film technique** - The roots lie in the channels, and soak up nutrient from the flowing stream. The roots are never under water, and get their oxygen from the channel. (If submerged, roots may rot so make sure the feeding rate is correct!)

**Rockwool** - Spun from liquid rock, this product looks like insulation. It is similar and made from horticultural components. (insulation has fire retardant chemicals and water repellents so are unsuitable for Hydroponics) Used for propagation, and as slabs this is popular in Europe, and is used mostly for Hobby growers in Australia.

**Vermiculite** - Vermiculite is a highly absorbent material able to hold around 200 times its own weight in water. It is added to Perlite and soil mixes if the mix has to hold water longer than normal. Note Some brands of Perlite that hold water poorly are generally cheap and grey, not white. Look for a White perlite such as Chillego brand in Australia. 15litre bag \$8 100litre bag \$38



**Coconut fibre** is available and the quality of it varies a lot. It produces good results, however, take care as I have had some customers with problems especially with root rots from being too wet, and root insect infestations. Use a Coco specific nutrient, as it does make a difference, and rinse really well. If fungus/mould attacks plants this can be coco related and we recommend to use Rhizotonic which contains friendly bacteria to protect against the coco related fungus and moulds. Canna Coco 50litre \$40 BEST Crop Australia Coco 50litre \$30 Good 65litre Semi compressed blocks \$20 ok Cheap stuff form nurseries (don't bother—full of bark and mud and insect eggs)

**Chillegoe™ Perlite and Vermiculites**

Chillegoe Perlite 15litre Bag \$8  
100litre course \$38  
Chillegoe perlite 100Ltr super coarse

\$38

Perlite Vermiculite Mix 15litre \$8  
Vermiculite 15ltr bag \$8 100litre Course or Fine \$38

**Hydroton™ / Hydrogran™/Aqua Clay**

Hydroton / Hydrogran Clay  
15ltr bag \$15 45-50ltr bag \$35 for one—discounts to as low as \$25 per bag for bulk

**RHP Special Mix Clay (Best grade of clay in world—only one made for horticulture)**

Medium 50 litre bag \$45 for one (6-10mm grade) ask for bulk pricing

**Coco**

Canna Coco 50litre \$32—3+ \$30 10+ \$25  
55litre Semi compressed blocks \$20  
Cheap stuff form nurseries (don't bother—full of bark and mud and insect eggs)

**Growool Loose Floc and Slabs (Australian Rockwool)**

Growool PREMIUM FLOC 12.5kg Bag \$ask

**Grodan Slabs (Dutch Rockwool)**

Grodan 37x110x7.5cm unwrapped slab for crop box crates \$28each or pack of 10 for \$220 Bulk pricing available—please ask.

*See Propagation section for Grodan cube Prices*

**9 Irrigation Parts**

**Float Valves**

Autopot smart valve - for Perlite systems	\$35
Cover for Autopot smart valve black	\$10
Small adjustable Float Valve for automatically filling tanks	\$30

**Filters**

4mm filter – for Autopot valves	\$10
13mm inline filter 50 micron barbed ends	\$5.50
19mm Inline filter 50 micron barbed ends	\$5.50

**19mm Fittings and hoses**

19mm hose (soft) Per meter	\$2.75	or	10 meter roll	\$25
19mm Ratchet clip for 19mm hose	25c			
19mm clear hose per meter (30m roll)	\$3/mtr			(check stock)
19mm Elbow barbed 90 degree	75c			
19mm end barbed	50c			
19mm joiner barbed	75c			
19mm reducing tee with 13mm branch	\$1			
19mm Quick Action Valve / Tap	\$3			
19mm Tee Barbed	75c			
19mm top hat grommet	75c			

13mm to 19mm joiner 50c

**13mm Fittings and hoses**

13mm hose supersoft tubing Per meter \$2.50  
 10meter roll \$20

13mm to 19mm joiner 50c  
 13mm increasing tee w/ 19mm branch \$2  
 13mm clear hose per meter (check stock) \$2  
 13mm elbow barbed 50c  
 13mm end plug barbed 25c  
 13mm joiner barbed 50c  
 13mm Quick Action Valve / Tap \$3  
 13mm tee barbed 50c  
 13mm top hat grommet 75c

**6mm Fittings and Hoses**

6mm supersoft hose Per meter \$1.50  
 100meter roll \$100

6mm to 13mm joiner 60c  
 6mm from 13mm tee 75c  
 6mm elbow \$1  
 6mm Joiner barbed \$1  
 6mm tee (used for dripper rings) 75c  
 6mm top hat grommet 75c

**4mm Fittings and Hoses (suggest 6mm—no drips)**

4mm hose Per meter \$1 / roll 200mtr \$130  
 4mm elbow barbed 25c  
 4mm end plug pack of 10 \$1  
 4mm takeoff/joiner barbed both ends 30c  
 4mm takeoff threaded/barbed at either end 50c  
 Adjustable drippers \$1  
 4mm Hole punch spanner \$1  
 4mm Pot Stake to hold dripper lines 50c  
 4mm Tap \$2  
 4mm tee 50c

**Also Available in 25mm fittings and others not listed.**

**Miscellaneous**

Low pressure sprinkler for Aeroponic System \$2.50  
 or with 13mm fitting and grommet \$4

Flood and Drain Plumbing kit  
 (fill and overflow - standard height) \$25  
 (fill and overflow – Double height) \$28

13/19/25mm nut and washer 32mm hole  
 for flood /tank systems \$8

flood screen only - to suit flood nut and washer kits \$4

Extension to height \$3

**10 Pumps**

Choosing a pump size is difficult as your irrigation system could be very free flowing, or provide a lot of back



pressure. We need to consider the length of piping, the number of outlets and of course how high the pump will carry the water as the power of gravity is the greatest force affecting pump performance. Remember to clean your pump inside, as the internal impeller is not covered by warranty.

**Avoid cheap pumps—Dead plants because the pump failed is not a good option.**



**Powerheads**

Aqua One 101 500lph Max 60cm \$24 – also great to pump air into your tank!!!  
 Aqua One 102 800lph Max 1mtr \$28  
 Aqua One 103 Pump 1000LPH Max 1.2m \$45  
 Aqua One 104 pump 2000lph Max 2mtr \$65  
 Aqua One 105 pump 3000l/hr Max 4mtr 85W \$64  
 Aqua One 106 4000+L/hr submersible pump \$125  
 NEW\* HQB 3500 3000 L/hr 3.5mH \$99  
 HQB 5500 5500Lph \$165

**11 Air pumps and Aeration**

Adding air to the nutrient helps reduce pathogens and assists nutrient uptake. It also assists in cooling the nutrient in summer.

**Airpump Kits**

Single Airpump, Air stone and air tube kit \$25  
 Twin Airpump, two Air stone and air tube kit \$30

**Airpumps**

Precision 2500cc Airpump - Single outlet \$16  
 Precision 7500cc Airpump - Twin outlet \$25  
 Precision 12000cc airpump- 4 outlet \$70  
 \*Also water pumps for aeration \*  
 Powerhead AT101 water pump 500LPH with air tube for maximum aerating top of nutrient tank \$30  
 See also AT102 and AT103.

**Airstones and Accessories**

2" air stones \$2  
 10" Air stone PVC encased \$6  
 "Golf ball" stones \$4  
 Airline Check Valve - protects airpumps against water backflow \$2.50  
 Black Airtube 4mm per meter \$1  
 Black Airtube 4mm x 200m roll \$130

**12 Water heaters and thermometers**

Water temperature is very important. It must lie above 18 degrees to ensure nutrient uptake is at a maximum, and below 30 degrees or oxygen levels drop remarkably. We suggest 100W for 50Ltr tank but call for advice as this can vary depending on tank setup.

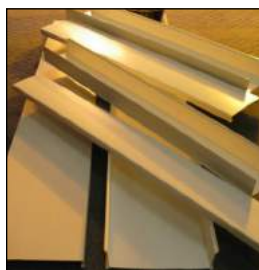
Glass water heater 55W	\$30	for small tank
Glass water heater 100W	\$35	for 100l max
Glass water heater 200W	\$50	for 200l max
Glass water heater 300W	\$55	for 300l max

### Thermometers

Digital thermometer with probe	\$5
Water Thermometer 0-50degC with suction cup	\$4
Digital Thermometer with Remote Probe and Maximum/Minimum memory	\$20

### 13 Channels, Gullies, NFT channels

All NFT channels should be set-up with a fall of 25-40mm per meter and a flow rate of 500ml to 1 litre per minute, with continual flow or with a 15 minute on and 15 minute off timer on the pump



We stock the 2 piece APT Hydroponic Nutrient Film Technique channels which are a Base and Lid configuration.

100x68 gully base and lid to suit lettuce and other short term crops per meter \$15

end cap \$3.50; joiner \$4.50; end with spout \$3.50

155x70 Gully per meter (base and Lid) to suit tomatoes and longer term crops per meter \$27

end cap \$4; 155x70 joiner \$5.50; 155x70 end with spout \$5

225x80mm gully to suit pots or long term crops or Rockwool slabs base and lid per meter \$34

base NO LID per meter \$24

end cap \$7; joiner \$8

225x80 end with spout \$8



### 14 Trays (Flood and drain)



1380 x 770 x 180 \$120

Stand legs \$45 cubic \$65

1080 x 1080 x 180 \$150 stand legs and subframe \$60 cube and subframe as cube \$95

2160 x 1080 x 180 \$260 stand underframe design with cube base \$195 older style wrap around cube with support and sub frame \$250

Also Available basic flat bottom trays

500x380 \$8 60x60x5cm high \$40

120x55x5cm \$68 100x100x12cm \$99



120x120x12cm \$149

19mm grommet and joiner for 19mm hose \$1.50

Flood and Drain Plumbing kit (fill and overflow - standard height) \$25

( or double height) \$28

Extension to height \$3



### 15 Pots

Beware recycled plastic pots that are cheap and can really damage your pH and nutrients, as well as introduce other toxins like lead, arsenic and other compounds into your nutrient.

We sell plastic that is safe for Hydroponics. (Pots are black in colour unless noted.)

### Propagation Pots

50mm NFT / seedlings 25c

Lettuce NFT pot 20c

Orchid Pot netted 70x50mm 30c

Orchid netted pot 80x65 \$35c

Orchid Pot netted 80x100mm 55c

Orchid pot netted 100x75[h]mm 50c

Kwickpot sheet of 48 growing cells 30x37x50mm \$3.00

Kwickpot 48 carton of 110 (30x37x50) \$205.00

### Aeroponic Netted Pots

80mm Aeroponic net pot 90c

140x100mm Aeroponic pot \$1.50

200mmx130mm Aeroponic pot \$3

### Growing Pots

125x75[h]mm Orchid Pot netted 60c

150x100mm Orchid netted pot 75c

160mm standard pot with drainage \$1

175mm x 120mm Orchid netted pot \$1

183mm Square Pot black with drainage \$1.50

183mm Square Pot black no holes \$1.50

200mm standard pot black \$1.10

200mm Pot no holes \$1.40

200x100mm squat Orchid netted pot \$2

250mm Pot Black \$2.75

250mm pot black no holes \$2.75

250x150mm Orchid netted pot \$3.50

250mm squat pot \$2.75

300mm Pot Black \$4.75

300mm Pot no holes black \$4.75

300x120mm Orchid Pot \$4.50

430mm Pot – Black \$9

430mm tub (pot no holes) – black \$9

510mm Pot Black \$15

510mm Pot No holes black \$15

580mm (23") Tub Square Black \$55

### Did you know?

Air is absorbed into the nutrient at the surface. Bubbling aerators break the surface tension and create more air that way (and the bubbles amuse fish in fish tanks). The more water moves, the more it can absorb, so using a water pump will put more air into the water, especially if it is used like a fountain. Higher oxygen=higher nutrient uptake

(95Ltr round and square, black and colours, orders only \$POA, 120Ltr, 160Ltr and 250Ltr also available)

### Standard Saucers

200mm Saucer for pots – GCP \$1  
250mm Saucer black - for up to 250mm pots GCP \$1.50  
330mm Saucer for pots - GCP \$2.00  
Saucer suit 430mm pot - Reko - \$3.50  
510mm Saucer (Reko) \$8

### NFT Channel Pots

LP50 50x50mm slotted lettuce pot 20c  
NFT pot Strawberry/Tomato 93x82 - 50c

### Planter and Window Boxes

Window box 270mm and tray \$7  
255mm Square Planter box Terracotta \$15  
355mm Green Square planter \$15  
Square planter box 355mm terracotta or green \$15  
500mm Window box terracotta no tray \$7  
500mm tray for window box terracotta \$3

### Pot Sox

Pot Sox are a liner that has a mesh fabric at the base to allow you to pull out the plant and throw all media and roots away in 1 easy package. Also reduces drainage being blocked by roots

Pot Sox 20ltr pack of 3- suit 300mm pots \$15  
Pot Sox 30litre x 3 pack - 430mm pots \$16  
Pot Sox 50Litre pack of 3 500mm pots \$18  
Pot Sox 95Litre \$12 each

### 16 Crates and Tanks

300mm Pot no hole 15Ltr \$4.75  
430mm pot no hole 25litre \$9  
510mm pot no hole 50litre \$15  
23litre crate White 600x400 approx. \$25  
25litre black drum, square, handle \$15, (used ones available)  
45L white crate - 600x400 approx - suit 37x110 crop boxslabs \$27 (check stock)  
Lid to suit 45l crop box crate \$8  
60Ltr Black Crate – 650x450 approx - Stack and Nest \$20  
60 ltr stack nest lid Black 650x450 approx - \$7  
65 Ltr crop box crate 600x400 approx - White \$40  
80Ltr Tank with lid 650x450 black \$35  
160Ltr \$75 and 220Ltr \$85

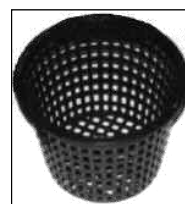
### 17 Video, Book and Magazine Library

Our books, videos and Magazines can be borrowed for up to 2 weeks at a time. You are required to pay the retail price on the book, video or magazine, and we will buy it back from you. The Buy and Sell prices are on the stickers on the front of the item. We will also keep a contact number and try to contact you before replacing



the book, video or Magazine.

You can also buy the books, videos and Magazines to keep, however sometimes new ones will need to be ordered as we try to lend out as many as we can afford to.



Commercial hydroponics – John Mason – Has a great guide on the best techniques for different vegetables herbs and flower crops. \$40

Hydroponics For Everyone – Sutherland – Like a 'Burkes Backyard' style approach to Hydroponics \$35

Hydroponic Gardening Book – Carruthers \$25

Hydroponic Gardening book - Dalton/Smith \$30

Integral Hydroponics Book – \$40

5 Ways To Clone Successfully \$7

Cloning booklet - \$2 (FREE with propagation purchases)

Other titles available at times.

### 18 Seeds

We sell Eden seeds, Organic/non-hybrid.

(Edens have lots of fun veggies, flowers etc like 25ft tall Sunflowers 1-2ft flowers, green and yellow striped tomatoes...). See [www.edenseeds.com.au](http://www.edenseeds.com.au) for more info. Soon we will also stock a selection of High power commercial hybrids for home growers. Ask for more details.

### 19 Timers

HID lighting commonly destroys timers because of the large spark on start and finish.

Digital timer for HID lighting 30amp contactor. This timer is made for HID lighting Battery Backup memory \$55

15min Timer with 96 settings per 24hours – not suitable for lights. Only for pumps \$10

Timer 4 outlet multi timer 15amp \$300

Timer 6 outlet, 8 outlet, 12 outlet, 24 outlet, 48 outlet, single phase, 3 phase, all available.

Pump timers 15m mechanical HPM \$10

1minute digital 14 ons and 14 offs \$28

1second digital over 100 ons and offs \$45

### 20 Pest, mould, fungus and disease control

#### Root Rot Treatment and Prevention

**Hydroshield water sanitiser** – hydrogen peroxide and silver. Kills single celled organisms, such as bacteria, as well as viruses, fungal rots, algae, and neutralises chlorine. Use 2ml per litre to keep system clean once per week, and 2ml per litre every 1-3 days in infected systems until plants recover.

250ml \$10 1litre \$25 5litre \$85 25litre \$325

Pythoff 1Ltr - Root rot treatment Monochlormine, helps control pythium fungus NEW STRENGTH \$50

Pythoff commercial 20Ltr (25g/L) \$POA  
Pythoff 5L NEW STRENGTH \$175  
Test Kit for Pythoff root rot treatment \$22 For commercial uses.

See Additives section for more information.

### **Mould and Fungicides control**

Rotguard—replacement for Fongarid systemic fungicide 5x2gram satchels \$15  
Defuse—kills mould flower rot by spraying—curative. 250ml \$15 1litre \$30 5L \$105  
Mould filters for intake fans—various pricing.

### **Pest control**

#### Eradicator

Amazing drench to get rid of Scarid Fly larvae—Non toxic. 100ml makes 10-20L drench \$20 200ml \$32 1litre \$135  
Scarid 10 - to treat Scarid Fly \$25  
Kill a Mite - to treat mites \$25  
Yellow Sticky Trap \$3 each or 4 for \$10  
Terminator spray pack – organic pesticide \$12  
Dipel Caterpillars and grubs, bacteria gives them stomach ache, non-toxic to other animals. 50g \$12  
Folimat aerosol 350g can for whitefly, caterpillars, moths, aphids, others – Yates  
Maverik 200ml \$15  
200ml Pyrethrum Yates Organic Pesticide \$12  
Rogor 100ml –Yates \$12  
250ml Shoosnake Snake repellent in sprayer \$TNA  
125ml Shoosnake Concentrate makes 2ltr \$TNA  
Confidor—\$15

### **Root insects - Scarid Fly**

Dutch Master Zone – add every 1-3 days until insects are dead. Recommend use Bug Kill for the adult flies, and fongarid as root rot often follows an infestation 1ltr \$25 5ltr \$85

## **21 Measuring Equipment and scales**

Scales and Measuring cups, syringes for measuring dry or wet nutrients.

Digital scales 300g + 0.01g \$40 also 500g \$40

60ml Measuring cup \$1  
Pipette 0.5ml to 3ml measurer/dropper 50c or 3 for \$1  
10ml Measuring syringe \$1  
60ml Syringe for measuring nutrients \$3

## **22 Miscellaneous accessories**

Yates 6 Ltr Pump up Sprayer pack \$40  
500ml sprayer -conical clear bottle and gun sprayer \$4.50  
face masks for Rockwool, perlite etc \$3  
Capillary mat per meter \$7  
30mtr Chain in carry tub \$55.00  
Chain per meter \$3 (cheaper than the hardware store)

## **23 Plant support, frames and Greenhouses**

### **Plant Support**

Cable ties 290mm pack of 100 \$ask  
Support flexible netting 125mm squares, 1m wide, (roll is 1000mtrs) \$2 per meter  
Plant spool \$4.50  
Yoyo spring style plant spool large red hook, 1.7m cord nie co roll. \$4.50  
Garden Stakes (POA)

### **Frames**

For making stands for tables, greenhouses, and growrooms, or just a frame for mesh support. The aluminium 25mm tube is \$7 per meter at half metre lengths.  
(note 1.2m will be charged at 1.5m, 1.8meters as 2meters)  
Fittings are \$3.50 each  
90 degree elbow, 3 way corner, 3 way Tee, 4 way corner, 4 way cross, 5 way corner, 6 way corner.  
Also available in an end stop \$2

Growroom Frames including reflective plastic film for lighting are the same price as the greenhouses listed below.

### **Green Shade Frames**

Custom made from Aluminium frames and shade cloth. Approximate prices below. Other sizes available on application. Requires tying down or other wind control.  
1mx1mx1.8m(h) greenhouse with shade cloth sides, plastic roof, \$175  
2mx1mx1.8m(h) greenhouse with shade cloth sides, plastic roof, \$250  
3mx1.5mx1.8m(h) greenhouse with shade cloth sides, plastic roof, \$375

Shade cloth 1.83m wide 45% per meter \$9  
Shade cloth 1.83m wide x 50m roll 45% \$375

## **24 Vegetable and Herb Guide**

### Tomatoes

Tomatoes are a heavy feeder and thirsty plant however, very resilient, even a full wilted plant will come back usually. Grows well in Perlite, Rockwool, Expanded Clay, NFT, Aeroponics, and probably a wet bit of concrete in the sun, any system seems to work, keep the water up for good results. Tomatoes requires normal to high strength nutrient. i.e. should not be grown in same strength as lettuce. Tomatoes need support. Use a lattice or mesh, a stake, or tomato spools to hold the tomato up. Cutting the top of the tomato off after you have one or two sets of flowers can produce a sturdy plant requiring little or no support. (Called Single or Double trussed tomatoes) Best results if you help pollinate, shake plant, spray with a “mist” of water on the flowers, use a brush or cotton bud

to cross pollinate flowers. Raise from seed, cuttings are generally easy. Buy seedlings and wash off soil.  
Main types of Tomatoes are Supermarket style including Gross Lisse, longest shelf life, poorest taste, can bounce if dropped. Generally regarded by Hobby growers as taste-less and boring. Beefsteak types, more flavour, less shelf life, First Prize, Rouge de-Marmande, others Cherry and mini varieties, produce many small bite size, ripening at different stages, so you can have a more continuous crop. These types turn into weeds in Hydroponic systems growing quickly and can take over your back 10 acres. Do not be afraid to take off excess branches, chop off the top even. Roma, egg shaped types, very tasty, good for sauces, peel and throw in pasta, bolognaise, cooking generally.

#### Lettuce

Very light feeder. Nutrients must be at half strength or tip burn on the leaves will occur with a very bitter flavour. The less nutrient the better the taste as a rough guide. Grows well in Perlite, NFT, Aeroponics, and water is critical. If they dry out they "bolt" or grow upwards with a stem and produce a "flower" which leads to seeds. Bolted lettuce taste bitter, and so stress should be avoided. Grows very quickly, 21 days from seedling is not uncommon. Pick leaves young, and leave plant to grow. Young leaves are tastier than old bitter leaves. May amaze you how nice fresh picked young lettuce tastes. Prone to tip burn from over fertilisation, flush with fresh water at first sign. Fungal problems, wet leaves, catch rain, or leaves lying on wet media or wet channels  
Types of lettuce Hearting types, Iceberg, need cool nights to produce a hard thick crunchy heart. Up to 60 days as there are twice the number of leaves to grow than loose leaf varieties. Loose leaf, includes my favourite, Buttercrunch, and are best picked leaf by leaf, fast grower, can pick leaves at around 17 days to about 25 days old. Coral, very dramatic colour and shape, decorative, tastes plain but crunchy. Endive, spiky shape of leaf, very sharp taste, sort of bitter, nice in a salad mix to spice it up. Best to grow at home is "Cos" lettuce, football shaped leaf, leaves can be cut off and base will regrow. Easier than some of the other varieties to grow.

Sweet Corn- normal leaf growth has brown parts and tips, don't panic, this is normal. All methods should work fine.  
Asparagus - takes a while to grow, 2-3 years. Perlite is best

Rhubarb - All systems

Spinach and Silverbeet - easy leafy vegetable. All methods

Broccoli - Use a bloom solution to get nice 'flowers'. Keep picking early

Cauliflower - To get it white, need to tie down and cover the 'flower' with the plants leaves. Can't wait to see what you come up with to do it. Tastes fine without, looks weird if green. All systems

Pak Choi Like most Asian vegetables, these are easy to

grow, similar to cabbage in growing.

Beans, broad, climbing, butter, common, dwarf - prone to powdery mildew on leaves, recommend some silica in nutrient or as a spray, avoid poorly ventilated humid areas All systems Support trellis mesh best

Peas Grow as for beans. Snow peas very delicious, more you pick the more production. All systems Support trellis mesh best

Celery tie stalks together. Due to bottom curve in the celery stalks, avoid eating the curved bits if you have ever sprayed pesticides (another reason for home growing) all systems

Okra and Squash - very tasty fruit like vegetables all systems Bloom solution may increase 'fruits'

Capsicum and Chilli Peppers - These like bloom solution to keep from 'flower drop', and to improve quantity and quality

Cucumber - support needed, can grow into a large vine all systems

Artichoke - all methods

Zucchini - can become large plants, pick when the right desired size or will grow too big

Rocket- tastes like cucumber, leaves look like Italian parsley, great in a salad, no stomach problems like cucumber All systems

Pumpkin - Vine crop lots of fun for kids as it will grow very quickly. All systems

Melon, Rockmelon, watermelon - vine crops all systems

Brussel sprouts - yum! If you don't like them, kids can use them as projectiles. all methods

Cabbage - need some home made coleslaw? Cabbage is quite easy, all methods

Eggplant - all methods

#### Root vegetables

Not many options Usually grown in Perlite, 20 cm depth minimum. 30 cm better. Handwater or use Automatic valve to feed by gravity.

Onions , Leeks , Shallots – all use Perlite method as well as Radish, Turnip, Carrot

Potato and sweet potato – Cut out eye of potato and plant in the perlite, about 10cm of depth, keep moist. When growth appears, cover with more perlite after a few days, and repeat. By creating a very deep growing system slowly, you increase growth rate and number of 'fruit' you can even rob potatoes early if desired. Avoid pooling of stagnant nutrient in bottom of container. When growth dies off the plants are usually ready to pick, and restart again, after flushing Perlite of old nutrient and old root matter removed.

#### Herbs

Chives and Garlic Chives – easy, use most methods.

Garlic – root crop method is best

Basil – easy, all methods

Cress – includes watercress, easy, all methods

Fennel – easy, all methods

Parsley – easy, all methods



### Sprouts

Sprouts include Alfalfa sprouts and a range of bean sprouts, all available as seeds at Mrs Flannerty's Health food shop and other reputable ones. Put them into a container, or tray fill with water, allow 5 to 15 minutes soaking, drain. (a good misting will do instead of flooding if you like) Do this morning and night. You should have sprouts in a day or two or three. Mix beans for a 'sprout salad'

For Wheatgrass ask us for more specific directions.

### Fruit trees

Fruit trees need to grow in a large container, by which I mean huge. About 50-70cm or more across. Fruit trees mean a commitment, but using a trellis, you can bend the plant into suitable areas along fences, or around patio areas. Fruit trees you can grow include Apples, Bananas, Paw Paw, Citrus (Orange, lemon, lime) and others if desired.

### Flower crops

Roses – well, roses are a great way to keep your lady happy, however, they are prone to rust, and other fungus. You will need to spray these plants for pests if they appear, as well as any fungal discolorations.

Gerberas – Like a cool climate. Expect to get flowers for only 8-9 months per year.

Carnations – Need support to stop the flowers falling over. A mesh laid horizontally is ideal, or tying to a stake.

Gypsophilia (Baby's Breath) – lots of small flowers, great for arrangements.

### House Plants

Most house plants can be grown in pots in Perlite. Watering with nutrients keep them lush and healthy. Don't neglect (some) sunlight as the plant desires.

## **25 Who are we?**

### **Who are we?**

Hydrocentre (formerly Nerang Hydroponic Centre) has been operating since 1998. Scott is General Manager and has been running stores on the Gold Coast since 1991. All our staff are interested in Hydroponics and interested in people, otherwise we wouldn't think this was such a great job to have!

### **Why Shop with Hydrocentre?**

#### **1. Education.**

We believe YOU are the most qualified person to take care of your garden. We are dedicated to increasing your understanding of growing hydroponically so you can deal with your garden well.

#### **2. Our recommendations are not based on what we want to sell.**

We deal with hundreds of satisfied customers. What they tell us works is what we recommend to you.

#### **3. Our research produced our range of Quality**

### **Products and Equipment.**

We try to sell products of higher quality. For instance, we tested several lighting ballasts, and found that some produced a brighter result. More light gives us extra growth! So why shop anywhere else?

We look at return ratios. We require very low returns. For Example, pumps should NEVER fail. In terms of safety; there should be no risk to you, the plants or your crop. Liquid nutrients and additives are tested in store systems and with some of our specialist growers before we will tell anyone they are safe. Lots of product needs to be sold before we can give an opinion.

#### **4. Returns**

In the unlikely event of a failure, just let us know as soon as you can. We will try to repair or replace on the spot if we can. If not, we make it a priority to fix your problem.

#### **5. Friendly Service**

Sounds weird, because so few businesses try to help you enjoy your shopping. We just want to make sure you are happy, and will do our best to make the shopping experience enjoyable.

#### **6. Trust**

We will do more to earn your trust. We will respect everything you want to achieve and make sure we build a relationship with you. After all, we want to see a lot of you. We also want to see your success!

#### **7. Range.**

We believe we provide a great range of products as well as some exclusive products, and serve you with a smile or a joke, while being totally professional. Our mission statement is to try and never disappoint a customer. Its not always possible, but we try hard.

#### **8. We will match anyone's price in South East Queensland.**

**And we keep decent stock on all popular items.** No good getting a good price if you have to wait for it. If you ever have a return or a problem, you'll find it dealt with as if it was our own problem. We often cover items out of warranty, because it's the right thing to do.

**9. Free 10 minute Tour.** Our Free 10 Minute no obligation Hydroponic tour of our in-store displays covers how to grow Vegetables, Herbs, Flowers, Houseplants, Fruit in your own backyard (or under artificial lighting) using Hydroponic Watering methods. Simple methods using gravity or hand watering are available. Electricity is optional. Just drop on by. Our Quick Tours are available without booking during normal shop hours Mondays to Fridays 9am to 5pm and Saturdays 9am to 1pm

Visit our Friendly staff and shop displays or call for information on (07) 55 274 155 or go to [www.hydrocentre.com.au](http://www.hydrocentre.com.au) for more information on our services.

#### **Some thoughts I have had over the years...**

If you saved \$10 by buying a "cheaper" product ..... and the better (\$10 more expensive) product would have lasted longer, or made getting a good result easier, or

made you an extra \$50,.....then it wasn't money saved, it was money lost! So check whether the \$10 cheaper item isn't costing you more later and let us know as we might do a better price if we can. You can only ask!

## **A note from the General Manager**

*I just want to thank You for choosing Hydrocentre as we'd be a lonely place without all the customers we treat as friends, coming in and making this place a great happy place to work.*

*We like to think a Hydroponic Shop is like a good friend, so maybe not everything is perfect all the time.*

*So if something is not the way you expect it to be, PLEASE speak to our staff who are very approachable, and it will be changed for you without delay and with the minimum of fuss. We are here to SERVE YOU!*

*Scott Andrew - General Manager*

## **26 Mail order Information**

**To place an Order - We are FAST - just give us a try**

- Call us on (07) 5527-4155
- email us at [info@hydrocentre.com.au](mailto:info@hydrocentre.com.au),
- Fax us on (07) 5527-4154,
- SMS us on 0402 864986,
- Online store at [Hydrocentre.com.au](http://Hydrocentre.com.au)

whichever you prefer. We will be most happy to process your order. Once a price has been worked out and your items are checked to be in stock we will let you know we are ready for payment, and process that (payment options are over the page)

### **Packing of Goods:**

We send all our goods addressed from S Andrew 4/46 Spencer Road Nerang QLD 4211 - and use plain cardboard, bubble wrap and black plastic wrap to ensure the contents are not pilfered or dropkicked by freight or postal workers. Personal items seem to be given more care

### **Method**

(East Coast - Cairns to Melbourne) Australia Post charge anywhere between \$12 and \$25 a parcel, if you take the effort to put an order in from where you are, the least we can do is get it to you at the lowest cost. If it cannot be posted, freight charges will apply. Other Areas please ask for a quick quote or look at [www.austpost.com.au](http://www.austpost.com.au) and use their postage calculator to do a quick estimate.

### **Where to?**

We will send items that have been paid for care of your local post office, to your address, or care of a depot if being sent by freight. Locations by arrangement and confirmation that it is satisfactory.

### **Records.**

We would appreciate it if you could contact us when you receive the goods, so we can get rid of our paperwork. We keep a record until then so you can let us know if anything is not perfect. It's all quite simple. Once its

finalised there is no need to keep a record.

## **REMEMBER: Contact us to confirm amount before payment**

### **Direct Deposits (Confirm amount first)**

We have an account with the National Australia Bank. You can deposit from **Internet banking** (Overnight from other banks) or a **National Australia Bank Outlet** which will appear in our account immediately

### **The Account Details**

Name of Account: 'R Andrew'

Bank number (BSB) 084852

Account number 799641000

### **SMS or CALL US when you have done this!!**

Please call us 07 55274155 and tell us that a deposit has been made so we can check our account. If you do not do this we may not identify a payment for days.

Alternatively, send us an email, or SMS to Scott on 0402 86 4986

### **Depositor Name and Address.**

You may be required to give a name for large deposits. You should be able to say no to that. We suggest that you don't for privacy sake, and since we don't use any names, any name will be fine, not necessarily yours.

### **VISA and MasterCard Payments**

Do not send credit card details by email. (We will have a secure Internet form within a few months) Please use the phone 07 55 274 155, or use SMS to Scott on 0402 864 986. We need the number, expiry date, name on card, and the ccv (last 3 or 4 digits printed on the back after the credit card details)

### **Sending Postal Orders (confirm amount first)**

Call 07 5527 4155 for details.

### **Other Payment Systems**

We have a PayPal account. We don't do bartercard anymore but we will investigate other options in time.

**Any Further Questions** contact our staff at anytime

Happy Gardening!

NOTES: