

HYDROPONICS



[noun] | From the Greek words hydro (water) and ponos (labour) is a method of growing plants using mineral nutrient solutions instead of soil. Plants may be grown with their roots in the mineral nutrient solution only or in an inert medium, such as perlite, perlite/vermiculite, expanded clay or rock-wool. A variety of techniques exist. Soil-less culture is a broader term than hydroponics; it only requires that no soils with clay or silt are used.



WICK IS TEASED OUT TO GIVE BETTER NUTRIENT DISTRIBUTION

Supports are used to keep container out of the nutrient solution



Most greenhouse plants grown world wide grow in hydroponics or soil-less methods.



Why hydroponics?

- Saves on nutrients, space and water compared to soil growing;
- Plants grow faster and healthier;
- Avoids soil borne bacteria and diseases, such as phytophthora, rhizoctonia and soil nematodes;
- Light weight growing media makes large pots easier to move;
- Grow media is recyclable, sustainable and environmentally friendly;
- Avoids soil compaction and toxicity and aerates the roots;
- Uses natural minerals or organic nutrients with perfect pH each time;
- Recycling nutrient systems avoid contamination of underground aquifers;
- Less bending, no digging, no weeds, more control, more success;
- All year round food production;
- Ideal for seed raising and vertical gardens.

The basics

1. Grow your own herbs or vegetables by seeding directly into Cultilene rockwool. Or wash potting mix off punnet seedlings and plant now.
2. Choose your pot, tub or grow bed tray.
3. Choose a hydroponic growing media.
4. Choose Ag-Grow Grow and Bloom nutrient.
5. pH Up / Down and a test kit is recommended.
6. Once seeds in rockwool have germinated, plant directly into your growing media.



Many types of hydroponic media and nutrients are available



A pH test kit is recommended



AQUAPONICS WA

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Available at **BUNNINGS** warehouse

HYDROPONIC BASICS



Seedling in expanded clay



Nutrient Solutions

Most are two part A+B, designed with strength and purity in mind such as Canna, Dutch Master, Dutch Fest and Nulife. However a simple, strong and complete single part nutrient such as Ag-Grow Grow and Bloom is ideal for beginners. Ag-Grow Grow is nitrogen bias for root, stem and leaf development. Ag-Grow Bloom is phosphorus and potassium bias for enhanced flower and fruiting. Basically use Ag-Grow Grow for green leafy vegetables like lettuce, Asian greens, celery, cabbage etc, as well as during the growing phase of tomatoes, chillies, strawberries, cucumbers and capsicums. Use Ag-Grow Bloom for the flowering and fruiting phase of tomatoes, chillies, strawberries, cucumbers and capsicums.

Tip - shake nutrient concentrate very well before use. Use rain or filtered water where possible.

Nutrient solutions are graded from agricultural through to pharmaceutical levels at the high-end, on the basis of their purity and low amounts of residual sediments.

Nutrient Boosters and pH Solutions

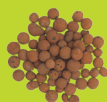
Organic nutrients, mineral boosters and vitamin additives such as Monsta Bud, Boost Juice and PK 13-14 will enhance yields.



Monsta Bud is made from seaweed extract, bees wax and alfalfa with carbon containing humic and fulvic acids. Boost Juice includes vitamin B1 and metabolites. PK 13-14 is a phosphorus and potassium booster used during the flowering phase. Organic nutrients such as Guano - bat and seagull manure and worm castings are available from Aquaponics WA.

pH up and down and pH test kits are used to optimise nutrient pH at between 5.8 and 6.5. pH varies from water source - tap, rain or filtered.

Growing Media



The two most successful mediums for recirculating systems are Expanded Clay and Perlite. Expanded Clay from Liaflor in Germany is a porous, light weight, earthy clay aggregate. It's durable and has exceptional capillary properties. It's reusable and lasts for years.



Perlite is a volcanic mineral, when heated explodes like popcorn. Very light, sterile and pH neutral.



Coco Peat is a natural substance sourced from the husk of the coconut fruit, aged and refined to remove salts. It is suited for run to waste systems and is replaced at crop harvest time. Aquaponics WA Coco Peat is also perfectly suited to worm farms.

Hydroponic Systems

An "Open" or "Run to Waste" hydroponic system applies fresh nutrient solution manually 2-3 times daily with a 15-20% run off. Coco Peat in 30-50L pots hand watered is a perfect example.

A "Closed" or "Recirculating System" recycles the nutrient solution through the growing medium and back into the nutrient tank via a pump. The solution can be continuously or intermittently supplied then dumped each week. Expanded Clay, Perlite and Perlite/Vermiculite is typically used.



Visit our display centre for expert advice:

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