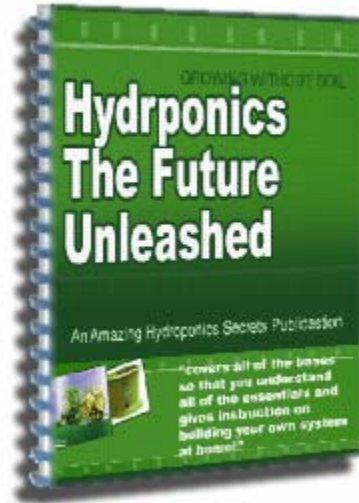


# HYDROPONICS – THE FUTURE UNLEASHED

Presented By  
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The future of gardening has already arrived! And what's more? It already has a history that dates back to ancient times!

Yes, we are talking of '*Hydroponics*' – the art of soilless gardening. The most important ingredient in gardening is soil. And soil is also the most variable ingredient in gardening. In some parts of the globe, we have rich and fertile soil while other parts constitute deserts. Perhaps, it is beyond human imagination to think of many plants that grow without the aid of soil.

Hydroponics does just that. Hydroponics is the science and art of growing plants without soil. Actually, Hydroponics, literally, means, "*water working*", i.e., water acting as the primary source in the process of gardening.

We live in an era where “*The World is Not Enough*”, and the processes, like Hydroponics, are seen as the future necessity for the survival of human race. The scientists are already agog with the opportunities offered by Hydroponics to explore gardening in Space and Moon. The potential of Hydroponics has just been realized recently. And the future is pregnant with many such possibilities that are, eventually, meant to benefit humanity.

## Hydroponics – The History

Hydroponics has an enviable history. Howard M. Resh, in **Hydroponic Food Production** (Fifth Edition, Woodbridge Press, 1997, page 23) observed:

*“The hanging gardens of Babylon, the floating gardens of the Aztecs of Mexico and those of the Chinese are examples of ‘Hydroponic’ culture. Egyptian hieroglyphic records dating back several hundred years B.C. describe the growing of plants in water.”*

The scientists and agriculturists have been experimenting with Hydroponics since time immemorial to cultivate the nonarable land around the world. Hydroponics was applied with great success during World War II when troops stationed on nonarable islands in the Pacific were supplied with fresh produce grown in locally established Hydroponic systems. Before that, airline innovator Pan Am supplied travellers with food grown at a hydroponic garden on Wake Island.

Considering the historical evidence on the use of Hydroponics, the human race is almost condemning itself on the belated response to Hydroponics.

[Learn more about Hydroponics...](#)

## Hydroponics – The Benefits

The advantages of Hydroponics cannot be quantified. Some of the vast merits of using Hydroponics include:

- Using minimum of water, fertilizer, and pest control, makes hydroponics an ecologically sound method to garden.
- No digging or weeding, minimal space required, continuous cropping, superb flavour.
- Non-arable land may easily be facilitated.
- Growing mediums can be re-used and recycled.

- Regular nutrient testing ensures all elements are present in their desired concentrations. Unwanted buildups of undesirable nutrient concentrations, such as nitrites, can be avoided.
- Maintenance and running costs are much lower than traditional gardening. For example an average hydroponic garden running cost could be as low as \$1.00 per week.
- Properly grown hydroponic plants are also healthier and more vigorous because all the necessary growth elements are readily available.
- Hydroponics enables the automation of entire system with a timer. Automation reduces the actual time it takes to maintain plant growth requirements.
- Cultivating plants without soil eliminates the need for vast farmland and allows crops to be produced in greenhouses or even in the desert sands.

[Learn more about Hydroponics...](#)

## **Hydroponics – The Process**

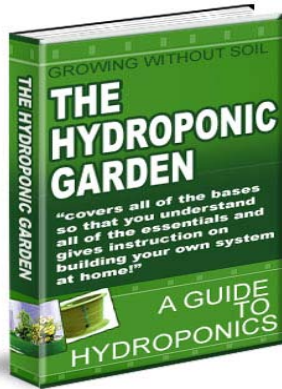
Hydro (*water*) + Ponos (*labour*) = Hydroponics

Hydroponics depicts Soilless Culture. More precisely, it is water-intensive approach towards cultivation of plants, which is devoid of soil. Here are all the ingredients required for a successful Hydroponic gardening –

### ***Soil***

Although there is no soil in a hydroponic garden, the plants must still be anchored. There is a wide range of inert materials, which can be used to support plant roots and we call them “growing mediums”. Heydite, clay pellets, Perlite, vermiculite, and Rockwool are the most popular media. The hydroponic media that work best are pH neutral, provide ample support for plants, retain moisture, and allow space for good air exchange. The type of media you choose will depend on the size and type of plants you wish to grow, and the type of hydroponic system being used.

[Learn more about Hydroponics...](#)



## ***Lighting***

Lighting, in hydroponic gardening is as vital as in the natural gardening. Photosynthesis is the process by which plants use light energy to collect carbon dioxide from the atmosphere and convert it to chemical energy in the form of sugar. The products of photosynthesis serve to nourish the plant and enable it to release free oxygen. Plants use only the spectrum of light that is visible to the human eye. Although the light appears white, it is actually a mixture of all the colours of the rainbow. Pigments, which are the light harvesting units of the plants, absorb certain colours of the spectrum and reflect the rest. Chlorophyll, the main pigment used in photosynthesis, absorbs light in the violet and blue wavelengths as well as in the red, leaving green the colour it reflects, and the plant colour we see. Photosynthesis can also occur indoors, providing the artificial light source used supplies the necessary spectrum and intensity.

[Learn more about Hydroponics...](#)

## ***Growing Techniques***

Growing plants hydroponically is not difficult if one understands the basic principles. As long as plant growth requirements are met, there are numerous hydroponic systems that can be used. Some of these are:

- 1) **Nutrient Film Technique** The nutrient is fed into growtubes where the roots draw it up. The excess drains by gravity back to the reservoir.
- 2) **Drip-Irrigation or Micro-Irrigation** A submersed pump feeds nutrients solution through header tubes to secondary feed lines connected to drip emitters.
- 3) **Aeroponics / Deep Water Culture** Plant roots are suspended in highly oxygenated nutrient solution allowing easy inspection and pruning of roots. Air pumps, compressors or Oz injectors provide oxygen, which is crucial to healthy plant growth.
- 4) **Flood & Drain** A plastic growing tray is flooded periodically by a submersed pump connected to a digital timer (or the ControlFreak!). Medium and root system are soaked, and then drained (via gravity back through the pump) at specific intervals.

- 5) [\*Home Hobbyist Systems\*](#) Hobby systems include deep water and aeroponic systems, which are scaled down versions of commercial systems.
- 6) [\*Passive Planters / Hydroculture\*](#) A nutrient reservoir in the base of the growing container allows the plants to take as much or as little water as they require. Water level indicators show exactly when and how much to water.

[\*Learn in detail about all these techniques along with descriptive graphics...\*](#)

## **Hydroponics – Is it organic?**

At a basic level, it would seem as though hydroponic gardening does pass the “organic” test. In practice, things aren’t that simple. Gardeners use pesticides regularly; although a hobbyist in hydroponics may be able to grow a wonderful crop in the home without using any pesticides, larger-scale hydroponic operations do rely on some pesticide use. The use of pesticides or fungicides (which are not commonly necessary, but may be used in some instances) would take a hydroponic garden outside of the organic realm, by most definitions.

[\*Learn more about Hydroponics...\*](#)

## **Hydroponics – Kinds of foods grown?**

An immense variety of foods can be grown by Hydroponic system of gardening. These can be categorized as:

### **Herbs**

- Basil
- Chamomile
- Chives
- Dill
- Lavender
- Mint
- Tarragon
- Thyme
- Sage

### **Salad Greens**

- Lettuce
- Watercress
- Arugula
- Mustard

- New Zealand Spinach

### Vegetables

- Beans
- Peas
- Squash
- Melon
- Tomato
- Garlic
- Corn
- Eggplant
- Cucumber
- Peanut
- Radish
- Bell Pepper
- Parsnips
- Turnips
- Potato
- Carrot
- Onion

[Learn all about the foods and their medicinal qualities...](#)

Hydroponics was integrated into the space program in the 70's. As NASA considered the practicalities of locating a society on another planet or the Earth's moon, hydroponics easily fit into their sustainability plans. This research is ongoing. And the potential of Hydroponics is just about unleashed in the *glocal* society.

You are just a [click](#) away from entering into the hydroponic world!

***P.S. Don't forget to pick up your copy of "Amazing Hydroponic Secrets- Growing Without Soil " for an unbelievable price - including a complete audio of the whole book! :***

[Amazing Hydroponic Secrets](#)

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