

Accessible Gardening: Hydroponic Gardening

Hydroponics (hydro-ponic) simply means growing plants without soil. Plants growing hydroponically are seen in nature, such as moss growing on a rock or fungus growing on a tree trunk. If you are interested in growing a hydroponic garden, you are not limited to fungus and moss. You can grow almost everything that you would in a traditional garden by using different hydroponic techniques. Hydroponic gardening is becoming popular because you can grow a lot of plants in small spaces; you do not need a large water supply; and you do not even need soil.

Plants growing in soil need a lot of space because their root systems have to search the soil for water and nutrients. This causes their root systems to become very large. Hydroponics cut down how much space a plant needs. Roots will not grow out to search for nutrients because plants can find them easily and directly in the growing mediums and nutrient solutions. These solutions replace soil in hydroponics. Since root systems are not expanding to find food, plants have smaller root systems. This allows you to grow more plants in the same amount of space than you would in a traditional garden. In general, hydroponic gardens require only about 20% of the overall space used in traditional gardening.



Soil not only stores and releases nutrients and water. It also supports plants' root systems. There are two general ways to substitute for soil in hydroponic gardening. The difference between them is how the plants get their nutrients.

- Growing medium. Instead of soil, 'medium' is used. Medium can be made of brick shards, clay pellets, gravel, perlite, or rock wool. It acts the same as soil. It supports the plant's root system and holds nutrients and water that plants need to grow. Plants that grow in medium are usually planted in containers.

- Nutrient solutions. This type of hydroponic gardening only uses a nutrient solution to support and feed plants. There are three different kinds of nutrient solutions:

- Aeraponics. Plants get nutrients by constantly being sprayed with a nutrient mist. The mist sticks to the plants, which soak up nutrients from the mist.

- Continuous flow solution culture. The plant's root systems are directly in the nutrient solution.

- Static solution culture. Nutrient solution is only added to where the roots come in contact with the solution.

Since nutrients and water are fed directly to plants, plants spend less energy searching for food. They can grow bigger, faster, and produce more fruit than plants growing in traditional gardens.



Resources

There are many different ways to make a home-made hydroponic garden. If you are interested in building your own hydroponic garden, the following resources may be useful.

- Virginia's Extension Service has many articles on hydroponic gardening. *Home Hydroponics*, an article by Ruth Soreson and Diane Relf, explains the basics of hydroponics and using it in your garden. Visit www.ext.vt.edu and type 'hydroponic gardening' in the search box.
- For more information on different home-made hydroponic home gardens and nutrient systems, go to www.aces.edu. Type 'hydroponic gardening' in the search box for a listing of articles by Alabama's Extension Service.
- <http://edis.ifas.ufl.edu/topics/lawngarden/types.html> gives detailed plans on how to build your own hydroponic garden.

If you would like to talk to someone about accessible gardening, or would like a garden assessment done, call Green Thumbs, Healthy Joints at **800-841-8436**.



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