UF | IFAS Extension UNIVERSITY of FLORIDA

Hydroponic Systems

Hillsborough County Florida

What is a Hydroponic System?

A **hydroponic system** is the technique of growing plants without using soil as a substrate. Hydroponics utilizes a solution with the necessary nutrients for plants to grow strong and healthy. The seeds are sown in the selected substrate (wool rock, Leca, sawdust, coconut fiber, vermiculite, etc) to create seedlings. The seedlings germinate in the nursery and are then transferred to a place where they can grow until the plants are ready to be harvested or produce fruit.

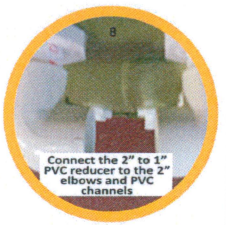
How to Make a Hydroponic System

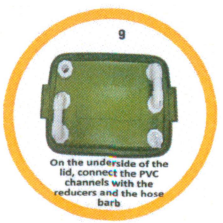
Tools and Materials

- 1 - 10 gallon plastic container with lid
- 1 - solar panel with submersible water pump
- 1 - roll of sealing tape (Teflon)
- 1 - clamp
- 1 - PVC tube sealant
- 1 - ½" hose barb
- Blotting Paper
- Measuring tape
- Sandpaper (#80 and #120)
- Circular Saw (or similiar tool for cutting PVC)
- Drill with 2" auger bit

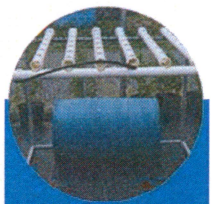
PVC

1 - Schedule 40 pipe, 2" wide 10-foot long
1 - Schedule 40 pipe, 1" wide 1-foot long
4 - 1" elbows
6 - 2" elbows
6 - 2" to 1" reducer coupling
1 - 1" to ½" reducer coupling
1 - 1-foot plastic sleeve 5/8"





Types of Systems



8 channel system connected by individual sleeves

The recirculating sheet system is one of the most used because its cost is relatively inexpensive compared to other systems.

Industrial NFT system located in shade

NFT system located inside a greenhouse, prevents the entry of pests, the entrance of direct light creating an environment suitable for the growth of diverse cultures.

Ebb & Flow system with halogen lamp

EBB & flow system allows plant growth by flood filling and artificial light. It is ideal for growing plants in poor lighting conditions (Indoor).

NFT portable system with solar panel

Portable system with solar panel used to learn about renewable energies and field research. Allows to move easily according to need.

Aeroponic system

Aeroponic systems keep the roots suspended in the air allowing greater oxygenation and absorption of nutrients. As a result, we get more production.

Raft or floating roots System

Raft systems consists of plants grown in a floating material that allows the roots to be kept in direct contact with the nutrient solution.

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