Hydroponic Systems
Wick System

**Bottle Growing System (BGS)**
- Cut 0.5 cm below rim of shoulder
- 12 cm from bottom
- 5 cm from bottom
- Drill 5-mm hole in bottle cap
- Vermiculite
- Planting medium
- Vermiculite

**Hydroponic Wick System**

The *wick hydroponic system* consists of a pot that holds the growing medium and a vessel that contains the nutrient solution. The nutrient solution is supplied to the plant by means of capillary action made possible through a wick. When assembling a system, choose a wick material that is highly absorbent and will not disintegrate easily. The medium must also be able to retain the solution well.
Ebb and Flow

- bucket (in fill position)
- seeds (tomato, cucumber, pepper)
- rockwool cubes
- growing medium (e.g., gravel, aggregate, perlite)
- drain outlet with crushed rock
- neoprene gasket tank compression fitting (from hardware store)

Overflow tube
WATER LEVEL

EBB & FLOW SYSTEM
Drip System
Bag Hydroponic Drip System

The bag culture is basically a vertical or column hydroponic drip system. It consists of a sack made of non-decomposing synthetic fiber, strong enough to hold the weight of the soaked medium.

It is really quite simple to make.

1. Choose a stable and sturdy hanger for your bags. If you prefer, build a structure. Take into consideration the lighting conditions. Remember that the lower plants tend to receive less light.

2. Assemble and layout the feed pipes and tubes.

3. Prepare the sacks. A suitable size is 6 inches diameter and about 5 - 6 feet long. A longer bag will be more difficult to manage.

4. Stuff the sack with the growing medium and dangle it as shown. A suitable medium has good capillary action and does not dry up too easily.

5. Figure out where the holes for the plants will be. Avoid overcrowding. Open small holes on the sides. Start first with a small one and, if need be, gradually make it bigger.

6. Use a pump with good lift power to feed the nutrients from above. This means that the pump must be able to push the solution to the needed height.

7. You may lay out your bag culture either as an open system or a closed one. In the open system, the nutrient solution is discarded after use. In the closed system, the solution is fed back into the bags.

8. For a start, run the system continuously to soak the medium. Then shift to a timing scheme. Each feed duration must be long enough to soak the medium.

9. Your system is now ready for planting. The bag is suitable for small plants and creepers.
Aeroponics
Water culture
NFT
Super simple systems

**SIMPLE NUTRIENT SOLUTION FEEDER**
(Patterned after the water dispenser for birds and poultry)

1. When solution level is above the tiny hole on the bottle neck nothing happens.
2. When the solution level drops below the tiny hole, air rushes into the bottle and solution flows out. Flow stops when level rises above the hole.
3. As level drops below hole cycle begins again.

This is definitely for the birds. Da sekrret is da smart hole.
Passive System
Flood and Drain #2

A SIMPLE FLOOD AND DRAIN SYSTEM

EC, TDS, Ph, Ok

PLASTIC TRAY OR BOX (LINE INSIDE OF BOX WITH PLASTIC)

FLEXIBLE TUBING

PLASTIC PAIL

HOSE FITTING OR RUBBER GROMMET

FLOOD POSITION

GROWING MEDIUM

CROSS SECTION

DRAIN POSITION