

## Building a Hydroponics System Yourself

If you love fresh vegetables, but live in an area where traditional gardening is just not an option, you should consider building a hydroponics system.

Hydroponics is the common term used for soil-less gardening. The technique of growing with hydroponics can be traced back to the Hanging Gardens of Babylon, which is still considered to be one of the Seven Wonders of the Ancient World. It wasn't until the 1890s, however, when a group of German scientists developed nutrient formulas and brought the technique into modern agriculture. Today, the hydroponics method has grown far beyond the simple notion of gardening with the use of water, to gardening with the use of media other than soil.

There are six basic types of hydroponics systems, including wick, water culture, ebb and flow, drip, aeroponic and N.F.T (nutrient film technique). There are other methods available on the market, but they are simply variations on these six basic types of hydroponics.

### Wick Hydroponics Systems

Most indoor gardeners view wick systems as the simplest way to grow plants using hydroponics. The wick system is passive, meaning it has no moving parts. To grow plants using the wick method, all you need to do is place a wick into a reservoir containing nutrient solution. The wick draws the solution into the growing medium, without the need for any moving parts.

Other components of the wick hydroponics system may include:

- \* Grow tray
- \* Growing medium
- \* Air stone
- \* Air pump

The wick hydroponics system will incorporate a growing medium. Perlite, vermiculite, coconut fiber and Pro-Mix are common media used in hydroponics gardening. There is a major drawback to using the wick system. Large plants, and those plants that require a substantial amount of water, may use the nutrient solution faster than the wick can supply it.

### Water Culture

Water culture is one of the easiest of all active hydroponics systems. The components include a floating platform, an air line, an air stone, and an air pump. The platform serves as a support system for the plants, keeping them in place as the roots dangle in the nutrient solution. Outside of the tank, the pump sends air through the line to the air stone, which in turn bubbles and nutrient solution and supplies oxygen to the roots of the plants.

The water culture hydroponics system is the best choice for growing leaf lettuce. This fast-growing plant loves water, making it the ideal candidate for this type of hydroponics system. In fact, lettuce is one of very few plants that will actually thrive in a water culture system.

### Ebb and Flow

Sometimes called the "flood and drain", the ebb and flow hydroponics system works by temporarily flooding the grow tray with nutrient solution, and then draining the solution out of the tray and back into the reservoir. A submerged pump connected to a timer is usually used to complete this ongoing cycle.

When the timer turns the pump on, the nutrient solution is pumped into the grow tray. Then, when the timer shuts the pump off, the nutrient solution flows back into the reservoir. This process is carefully timed, and repeated at several intervals throughout the day. The size and type of plants, humidity, temperature and the type of growing medium used can all affect the number of times the hydroponics system will "ebb and flow".

If you love gardening, but just don't have the space or ideal climate, building a hydroponics system can be the perfect solution.