

Hydroponics: One Answer to Our Shrinking Farmlands

Farmers are facing a new crisis that is threatening their livelihood. In addition to seasonal risks such as drought or torrential rains, the urban sprawl is resulting in fewer farmlands to grow crops. You might think that farmers would give up when faced with such a dilemma. However, modern farmers are turning to hydroponics gardening as the answer to our shrinking farmlands.

Ever since the Biblical times, in the era of Babylon, humans have embraced a means to grow plants without the need for soil. The famous Hanging Gardens of Babylon were the earliest example of hydroponics gardening. Using a simple form of hydroponics, the Babylonians kept a continuous supply of water and nutrients, and successfully cultivated their crops.

Of course, the Hanging Gardens of Babylon are long gone. The idea of hydroponics gardening, however, has flourished. Today, miniature gardens are able to survive indoors, even in the smallest apartment spaces. These "gardens" are no more than water tanks powered with aeration systems that feed steady supplies of nutrients through formulaic solutions. This is the basis of hydroponics, or "soil less gardening."

There are several types of hydroponics systems currently used by hobby gardeners and farmers alike:

Wick Hydroponics Grow System

The Wick system is by far the simplest of the modern hydroponics grow systems. Its main components are:

- * Wick
- * Grow tray
- * Growing medium
- * Air pump
- * Air stone
- * Liquid Reservoir

The wick system is a passive system, meaning there are no moving parts. The nutrient solution is placed inside a reservoir, which can be as simple as a water tank or an old aquarium. A growing medium such as perlite, vermiculite, peat moss or even coconut fiber is added to the tank.

A piece of straw or tube called a "wick" is used to draw the nutrient solution into the growing medium where the plants are rooted. An air pump, located just outside the water tank, is used to pump air to the air stone. This air stone produces bubbles, a necessary step to provide the oxygen needed for the plant roots to survive.

The inherent simplicity has made this type of hydroponics grow system the most common form used by home gardeners. You can easily fashion your own wick system using old containers and aquarium devices that are no longer needed. The only materials that you'll need to purchase are the plants and the nutrient solutions.

The biggest drawback of the wick hydroponics grow system, however, is that large plants or those requiring large amounts of water may use up the nutrient solution faster than the wick can supply it.

Nutrient Film Technique Hydroponics Grow System

Also known as N. F. T., this hydroponics grow system is the method that most people think of when they consider hydroponics gardening. N. F. T. systems are typically composed of the following:

- * Reservoir
- * Grow tray (tube)
- * Nutrient pump
- * Air stone
- * Air pump

The N. F. T. hydroponics system features a constant flow of nutrient solution, so no timer for the submersible pump is required. The growing tray, usually a tube, is pumped full of nutrient solution. This solution flows over the roots of the plants and then drains back into the reservoir. The plants are usually supported in small plastic baskets, with the roots dangling into the nutrient solution.

This type of hydroponics system does not usually use any growing medium other than air and water. It's a less costly system to operate, as you don't have to replace the growing medium after every crop.

Hydroponics gardening is a smart answer to the difficult situation faced by today's farmers. Whether you're a full-time farmer or a hobby gardener, it's no longer essential to have acres of land or even a sprawling backyard to cultivate fresh crops.

