

Hydroponics 101

Yo, Where's the dirt?

You may have heard the term “hydroponic” on the nightly news after federal agents bust another major homegrown marijuana operation or from your pothead neighbor with the strange lights glowing from his backyard shed. The good news is, you can grow your own plants hydroponically and don't have to grow *the weed!* Tomatoes, lettuce, strawberries and a plethora of flowers grow just as well. Hydroponics is the method of cultivating plants in water, without the use of soil. The concept isn't new. Hydroponic technology dates back to pre-Christian Rome. Today however, many countries are growing their crops in greenhouses without soil because they can achieve outstanding results through a variety of extreme climates. Canada will grow hydroponic tomatoes throughout the winter months, while many Middle Eastern desert towns have hydroponic greenhouse equipped with desalination units to grow crops with seawater where the supply of fresh water is limited.

Many scientists believe that crops grown hydroponically will be the future. Hydroponic crops use less water and do not require fertile farmland. Soil-less gardening eliminates weeds while lessening or eradicating soil-borne pests and diseases. As our land becomes more crowded and polluted, less space is available for farmlands. Hydroponic crops can be grown in greenhouses instead of large fields. As our available clean drinkable water is lessening and becoming more precious, crops grown hydroponically are a great idea. Soil-less plants grow faster and use less water, as water is applied directly to the roots and then reused in a pipeline system. Much less water is lost through evaporation and run-off.

Back in the 1980's when I was a college freshman, I had a science professor we called Dr. Gloom, who closely resembled the actor Christopher Walken. At the time, I thought he was a cheerless weirdo who desperately needed to “open his charkas”, but now I realize he just may have been a visionary genius. Dr. Gloom, predicted fresh water, like Helen of Troy, would be the cause for war in the 21st century. The Dirt Diva, always one for a good conspiracy theory and a shameless perpetrator of doomsday scenarios, facts, figures, anecdotes and theme parties, is just now beginning to believe old Gloomy Gus was on to something! The National Nuclear Security Administration's Sandia National Laboratories is testing a

hydroponic greenhouse in New Mexico where they use roughly one-hundredth the fresh water, give or take a few gallons, customarily used to grow forage for livestock. When a national nuclear security lab is testing organic, hydroponically grown plants powered by **solar energy**, no cause for alarm my friend, but the Dirt Diva is telling you, ***Dude, something's UP!***

After stocking up on emergency supplies like a couple cases of fresh drinking water at Costco, I took a little stroll down to the local Hydroponics store and asked how to set up a small hydroponic system for the home gardener. For us oblivious beginners they suggest the "Waterfarm." For about \$50 dollars you will get a 4-gallon reservoir, a 2-gallon growing chamber, an air pump, a pumping column and tube to recycle the water, a drip ring and a 3 part flora plant food kit. You can purchase a small full spectrum fluorescent lamp or place your waterfarm near a sunny window. The kit comes with directions on how to put it all together. If you are growing tomatoes you plant one single seed or seedling in the hydrofarm kit, as one tomato plant will grow high and wide. For smaller plants or flowers, you can put 5-6 seeds or seedlings into your waterfarm kit. Check on your plants every couple of days to see the levels of water and nutrients used. You will need to drain and rinse the water and nutrients in your reservoir every 7-14 days. In a few months, you will have beautifully healthy flowers or tomatoes that you grew yourself through the cold dreary winter.

And guess what? Some of the preeminent physicists, biologists, engineers, and technicians in agricultural technology are right here in the Bay Area. General Hydroponics, located in Sebastopol is considered one of the global leaders in hydroponic technologies and plant nutrients. Hydrofarm, the nation's biggest supplier of hydroponic lighting and equipment is located in Petaluma.

If you too are a novice at growing hydroponically, Dawn at Marin Hydroponics can answer all of your questions. (Don't worry. I'm sure I exhausted her with my litany of "which plug, which light, which tube", yet she didn't roll her eyes like I do when my when my sister calls because she can't grow a nasturtium . . .) While you're there, you can also purchase kits for seed germination, premium fertilizer and pest repellants, for propagating with or without soil.