

Pesto, Anyone?



For \$50 in equipment you can put together a simple recirculating hydroponic system in a few hours and grow basil to your heart's content

Text and photos by Douglas J. Peckenpaugh

Nothing beats the scent of fresh basil in the kitchen. And tasty, too. Drop some crushed leaves into Asian soups, like pho. And, of course, that wonderful substance called pesto is made from basil. Stick it in wraps and salads. It stores for weeks in the frig and can be frozen for longer-term storage.

A while ago I agreed to build a flood-and-drain system for my father-in-law so he could grow two batches of basil in side-by-side troughs on his back deck. He wanted to control a physical variable in one of the systems and use the other as a control.

When I design and build an automated growing systems I seek a device for garden-variety food production with as little ongoing maintenance as possible. As I divine each incarnation, I try to up the sophistication a bit, as well as build in the potential for expansion, while keeping the price within reason.

So I headed out to Brew and Grow, the closest hydroponic retail shop to me where I live in the flatlands of greater Chicago. Local hydroponic retailers are the only source for quality hydroponic supplies outside of mail order. They're also a great place to go for personalized attention. I bought a digital, multiple-stage timer.

The hydro systems I built for my father-in-law included a small Rubbermaid tub for reservoir and a garden trough filled with expanded clay to serve as the growing bed. A submersible pump, electrified through a digital timer, delivered the nutrient simultaneously at staged increments to both systems during the day for one minute each cycle—fully automated and recirculating.

The standard plumbing hoses delivered the nutrient at the top edge of each growing bed. A drain hose facilitated the runoff back into the reservoir on the bottom of each opposite end. A one-minute cycle was sufficient for the relatively nonabsorbent and highly aerated expanded clay media. I also had to take into account the size of the growing beds I bought at the local garden supply store. Larger



Above and right: Basil grows in expanded clay pellet media in a homemade hydroponic unit.





This basil will soon be harvested and supply the grower with a fragrant and flavorful herb.

beds with more-absorbent media would likely require longer cycles.

(I just don't get why Home Depot, Lowe's and other big-box stores don't carry alternative gardening equipment. From my perspective, these chains are largely ignoring a viable customer base. Some simple refinements to smart, logical stock selection would open up an new sales opportunity for the entire hydroponic retail industry. Landscape contractors who work with drip irrigation, sophisticated home gardeners and hydroponic hobbyists could all become regular customers. But that's not my problem!)

I must admit, I'm sometimes tempted to buy commercially available hydroponic setups. After all, it might save me from some frustration I don't need. I get enough of that when I set forth on what becomes a futile search for a piquín-papaya Caribbean shake sauce in a sea of mass-produced, too-vinegary, one-dimensional sauces. Might as well just dump ketchup on my Jamaican jerk shrimp wraps... Maybe I'll dive into commercial waters next season or maybe the season after that. For the time being, I'm content with homemade distractions.

Easy Hydro Basil

Once I set up the system on my father-in-law's sunny deck, the basil plants quickly lifted their leafy stems to the sky and secured a solid grip on the expanded-clay base below.

Here's what I've learned about hydroponic basil production over the years. Provide a large-enough growing bed for moderate root growth and keep irrigation cycles in tandem with heat and light levels, as well as plant maturity. It's also a

good idea to keep the nutrient reservoirs as cool as possible during hot weather. Use containers that house as much nutrient solution as you can handle; the greater the volume, the slower it is to heat during the day. If you live in a warm region, consider burying the reservoir or otherwise keeping the nutrient solution cool with evaporative means. Also, never use translucent containers because sunlight + nutrient solution = algae (and you don't want algae).

Whenever necessary, propagate new plants from sufficiently large pinched tips. Basil is so hardy that you can usually just drop the cuttings into some glasses of water and wait for the white roots to appear. Or you can stick the cuttings into some sterile perlite or other suitable well-aerated media, and keep them barely moist and in low light.

As soon as new growth surfaces, water with dilute vegetative solution. Transplant soon after. Most types of basil take readily to fleshy, softwood propagation.

Intermittent pinching of the main growing stems encourages bushy branching and shrubby growth. This can prevent early blooming and subsequent seed set and flavor loss from the leaves. Reducing any undue stress on the plant can also prevent premature bloom.

Keep in mind that the basil's flavor is at its peak right about the time of flowering. I try to get as large of a plant as possible before I begin pruning and cutting back. From flowering on, I tend to check the plants and prune every few days until replacement.

Hydro Tips

This hydro system will work with any number of different plants, provided grow-

ers make adjustments as needed.

To keep the seals tight, use plumbing-grade silicone caulk. Make sure it dries completely before testing water tightness. Hobbyists can split even the smallest pumps into multiple applications. Just keep an eye on the water flow and don't stretch the system too thin. Make a point to check in on the plants every several days and adjust the cycle as necessary.

Outfitting the system with a means to automatically top off the reservoirs with fresh water and a concentrated nutrient doser adds quite a few dollars to the system but permits completely hands-free operation. I haven't evolved to that point yet, but such technological advances are par for the course in the commercial realm. Since I like to wander amongst my plants pretty much every day, topping off the tanks manually isn't currently an issue for this hobbyist. 🌿

*Douglas J. Peckenpaugh is a year-round organic and hydroponic grower and a former editor of *The Growing Edge*.*

Resources

"Homemade Recirculating Drip Hydroponics," Parts 1 and 2, *Growing Edge*, Vol. 14 No. 6 and Vol. 15 No. 2. Order back issues of *Growing Edge* online at www.growingedge.com/store/back-issues.php. Brew & Grow Stores in Chicago, Schaumburg, and Rockport, Ill., and Brookfield, Wis. 773.395.1500 www.altgarden.com