

A Revolutionary Way To Grow Tomatoes!

Why you should plant everything in a homemade EarthTainer.

By Farhad Manjoo Posted Thursday, April 21, 2011, at 5:46 PM ET

Ray Newstead in his container garden:



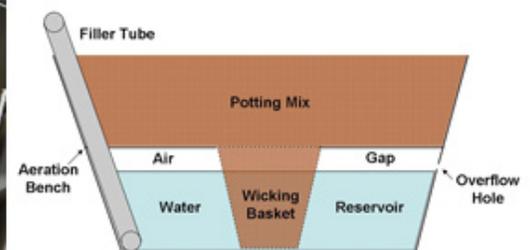
Across the country right now, thousands of people are thinking to themselves, *Hey, why don't I try planting some tomatoes?* Bless them. They're so full of hope, so full of joy at the possibility of being able to eat big, juicy fruit that bears no resemblance to the Nerf balls soaked in tomato-flavored dishwater that we get at the supermarket.

They think it's going to be pretty easy, too. Indeed, for some experts in some places, growing tomatoes *is* easy. Even novices start out strong and then, in about two or three months, plants that had been looking healthy and vibrant will begin to yellow and wilt; they'll fail to bear much fruit or become afflicted with a botanist's dictionary of infestations and diseases. The midsummer postmortem will reveal a host of tortures we inflicted on these poor beings. A lot of us will water inconsistently, drowning our plants one day and starving them the next three. We'll put them in containers that are too small, in soil that doesn't drain well, or we'll plant them in the ground in an area

that gets too little sun. We won't cage them. Some of us will skip fertilizing, and others will overfertilize. Most likely we'll just forget about them—tomatoes need a regular, consistent schedule of feeding and care, and though we're sure we can handle that in April, many of us begin to shirk our duties by July.

Over the last few weeks, I've discovered a better way to grow tomatoes. It's a method that eliminates many of the pitfalls of both in-ground and container-based growing, and that, after an initial frenzy of work, allows you to produce an overflowing bounty of delicious tomatoes (and many other plants) while pretty much forgetting about them.

The system is called the EarthTainer, and it was developed four years ago by Ray Newstead, an executive at the semiconductor company SMSC. The EarthTainer is a "self-watering container," which isn't a novel concept to most gardeners. It's essentially a big pot with two chambers—the top one, containing soil, is where you put your plants, and the bottom one is where you add water. As you can see in the picture below, the two chambers are connected by a central "wicking basket"; through capillary action, water is absorbed from the bottom chamber



through the wicking basket and into the top. It's impossible to overwater your plants in the EarthTainer, and it's almost impossible to underwater them, too: You fill it with water every few days, and your plants drink up only as much as they need.

The EarthTainer

There are many self-watering containers available on the market—one of the most popular, a \$30 product called EarthBox, has been around since 1994. But Newstead's EarthTainer has many advantages over its rivals. For one thing, it's about 50 percent larger than other containers, allowing you to grow much bigger plants. It's got a built-in trellis system, which is ideal for tomatoes, peas, and other plants that need lots of physical support. It is also the product of several generations of refinement. During every growing season since 2007, Newstead has used what he calls "engineering logic" to tweak various parts of the EarthTainer to get it working perfectly. He has changed the size of the wicking basket, he's altered the design of the box's outer walls, and he's remade the trellis system. "What I'm trying to do is come up with a fine-tuned, V12 Ferrari that will efficiently produce healthy, great-tasting, disease-free tomatoes," he says.

But there's one disadvantage to Newstead's system: The EarthTainer is not for sale. Instead, Newstead offers plans for the box online, for free. To make one, you need a few power tools (a jigsaw helps, a drill is required), a handful of parts that you can find at any big-box hardware store, plus a few more esoteric ones that are available only online (or, if you live in a state with favorable marijuana laws, at your local hydroponics establishment). Newstead posted plans for his latest version, the EarthTainer III (PDF), a few weeks ago. Last month, I spent about \$150 on enough stuff to build three EarthTainers. It took me about three hours one Saturday to build my first one, and the second and third took about an hour each. Each unit will last for at least seven or eight years, Newstead says.

This is my first time using an EarthTainer (my previous attempts at tomato-growing have been tragically middling), so I don't know for sure that it will result in perfect tomatoes for me. But many people say that there's no better way to grow vegetables, and after a recent visit to Newstead's suburban Silicon Valley home, I was convinced. In 34 EarthTainers spread around his cozy backyard, Newstead is growing a small farm's worth of tomatoes, peas, corn, cucumbers, and carrots. And he's doing so with almost no regular maintenance; Newstead frequently travels to Japan and China on business, and his plants stay perfectly healthy while he's gone.

Ray Newstead's container garden:

Why does the EarthTainer produce such abundance? Part of the reason is that you're focusing your efforts only on the plants you want to grow. When you put your tomatoes in the ground, all the water and fertilizer that you feed them will spread out over a wide area—so you're fostering a lot of weeds and other vegetation, too. The EarthTainer frees you from weeding, and Newstead estimates it grows tomatoes with 75 percent less water than you'll need for in-ground planting. It lets you use better soil than you've got in the ground, too or, more accurately, better "grow



media," because over dozens of trials, Newstead has come up with a customized tomato growing mix that doesn't use plain old dirt and instead has things like peat moss, perlite, and gypsum. The better growing mix, plus the EarthTainer's excellent drainage, makes plants less susceptible (but not immune) to disease, Newstead says.

Finally, Newstead says that because plants in the EarthTainer sit up much higher than in-ground plants, their roots get warmer, which produces fruit much earlier and later in the season (some of his tomatoes are already beginning to fruit).

Like all container planting, the EarthTainer lets you grow stuff wherever you've got space apartment-dwellers can use it on their patios, and people with backyards can put their plants exactly where they've got sun. But the EarthTainer has a couple of major advantages over conventional container gardening. First, the soil remains exactly as moist as the plants desire. And second, the soil sits atop an "aeration bench" that allows oxygen to reach the plant's root system, mimicking the function of worms in the ground. In other words, in the EarthTainer, Newstead has combined the best parts of in-ground and container gardening, and eliminated the worst.



The InTainer This picture shows Newstead's latest creation a smaller, indoor version of the EarthTainer that he calls the InTainer. He set these up near a window last year, and supplemented with nighttime grow lights he was able to produce a bounty of tomatoes during the winter. This was something of a proof of concept; Newstead's real hope for the EarthTainer is that people will use the system in parts of the world where agriculture is now considered too difficult and expensive. People have set up EarthTainers in the blistering Australian outback, the Arizona desert, Manhattan skyscrapers, and in various parts of Africa. A few years ago, a group of volunteers built a battalion of EarthTainers for an orphanage in Haiti. "I can live without tomatoes," Newstead says, "but for lots of people around the world, it's live-or-die. Now they can finally grow something where they couldn't before."

I'll be taking the next few weeks off from my regular *Slate* column while I research my upcoming series on how robots are stealing humans' jobs. Robots will be writing my column while I'm gone.

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