

Tower Garden Tips

From Suzanne Daigle

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As we finally head into spring and summer.....I hope you are all having great success growing with your tower gardens. In this newsletter I will share information from some of our blog writers who speak about growing both inside and out. I hope you'll find these references helpful.



Gardening
is cheaper than
therapy
and you get
tomatoes

What do you need to be a successful gardener?

(From Living Towers - Florida Keys) Over the years we have seen all kinds of Tower Gardeners. Some of the best Tower Gardeners are kids, but why is that? Because they read the instructions and do just what it says you should do. No more, no less and they DON'T OVER THINK IT! KISS = Keep It Super Simple!

I've said a number of times that the Tower Garden is "The Easiest Garden on Earth". It really is, providing you do as little as possible to it. Don't baby it. Sometimes we are asked whether you need to do anything different

when it rains. Do you move your in ground garden when it rains? Of course not, so why drag your Tower in and out when it rains? Not only will you be reducing the number of hours of direct sunlight it receives, but by moving it unnecessarily you run the risk of damaging larger plants like squash, tomatoes, melons etc.

So what exactly do you need?

I figured out you really only need 5 things, YES 5 THINGS, to be successful with a Tower Garden. Each one is just as important as the next. I know, you are chomping at the bit to find out what they are. Below we breakdown each of them so that you too can be a successful Tower Gardener

1. Sun

UV light is CRUCIAL! ABSOLUTELY CRUCIAL. It can come from the sun or from grow lights. Lack of sunlight is, in my opinion, the BIGGEST reason growers are not successful on their first attempt. Without sun your plants are weak and more susceptible to both pests and diseases.

How much sun do I need? The short answer is, the more sun the better. Minimum hours of direct sunlight are shown below.

My seedlings/plants in my tower are long, stringy and pale. Why? They have not received enough sunlight and they have stretched in search of sunlight. This could happen as a result of filters on windows (if growing inside), not enough direct sunlight (shading caused by buildings, trees or other plants on the Tower Garden), screens (if growing in a screened room), grow lights are not close enough. Unfortunately there is no way to reverse this once it has occurred. You can move them to a sunnier location but, in my experience, the plants are weak and do not always deal very well with the heat of the sun and often wilt then die. You can try but I would get some more seeds started in rock-wool.



Can I grow my Tower Garden or start seedlings by a sunny window? As a rule, NO you cannot. Most modern windows will have a UV filter on them. What does a UV filter filter out? Yep, you got it, UV rays. The very same UV rays your plants need to absorb to grow into strong, healthy, productive crops. If it is a specially designed sunroom you may be able to. However, it is important to remember that your Tower is probably not going to receive sunlight all the way around, like it would outside. So you really need to half the number of hours of direct sunlight your Tower is receiving to get a better average of what each plant receives every day.

2. Nutrients

It goes without saying that if we were to go without food we would eventually starve to death. Our plants need food too and in the Tower Garden that comes in the way of the Tower Tonics (A and B). Adding nutrients can sometimes confuse growers, but it really doesn't have to. The graphic below explains it in a nice easy way!

How Many ml of Mineral Blend do I Add?



3. Water

Water is also CRUCIAL for life. Just as important can be the source of the water. This will determine any treatment it has been through and if you need to do anything with it before growing plants. Cities add chlorine or chloramine to water to disinfect it, to kill germs. Why would we want to

water our plants with it? If you search online you will find varying reports on whether chlorine is detrimental to plants. However, in my experience, it is! If in doubt, filter the chlorine out! (Editors note**** Many opinions and experiences regarding water source. Some will tell you that the chlorine will evaporate out of the water over a couple of days.)

4. pH

It's best to keep your pH between 5.5 and 6.5. When your pH drifts out of this range your plants have a hard time taking up minerals and they will yellow. No minerals = no food = no growth.

5. Electricity

Without electricity our pump doesn't run and our plants are not watered. This one is a no brainer!

What can I do in a power outage? You have a couple of options. You can take the plants out and put them in a tote filled with water. Another option is to use a [battery](#) and an [inverter](#). You could also add a solar panel to lengthen the running time of the battery. I have used a deep cycle marine battery to run a couple of towers at events for two days without a problem.

12 Common Tower Garden Problems and HOW TO AVOID THEM.

BY LOGAN NICKLESON (*with some editing)

Water leaks around growing ports or section seams.

Let's begin with one of the easier problems to fix (or avoid altogether). To function properly, Tower Garden must be on a level surface. If your Tower Garden is leaking, make sure it's level.

If you verify it is level but it still leaks, you may need to simply push the growing sections together more tightly.

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The pump suddenly stops pumping.

If you're about halfway through a growing season and your pump quits working, plant roots may have jammed it.

To fix this:

- Unplug the pump.
- Pull the pump up through the access port.
- Remove the pump filter cover.

- Flush the filter with water to remove any debris.

If your pump still has problems after you complete these steps, reach out to your tower garden representative. (*** Contact Susan Olson or Suzanne Daigle - fishinginff@hotmail.com or 204-271-3279)

To prevent roots from clogging your pump in the first place, trim those that grow down into the reservoir. (It's pretty amazing how long roots can get—I have Swiss chard in the top of my Tower Garden, and its distinctive red roots reach all the way into the reservoir.)

You can trim roots up to half their length without harming your plants. (Best to “tear” the roots with your hands versus using scissors)

pH constantly drifts out of the recommended range.

As you know, your Tower Garden doesn't use soil. Instead, it grows with only minerals, oxygen and water. So the quality of the water you pour into your Tower Garden is pretty critical.

If you use chlorinated, hard or softened water, you'll likely have problems. Fluctuating pH is just one.

Here's what you can do:

- **For hard water**, fill your Tower Garden using an RV water filter.
- **For softened water** (i.e., water from a home softener system), fill your Tower Garden using a reverse osmosis filter system or buy distilled water.
- **For chlorinated water**, which includes most tap water, leave the water out in the sun for 48 hours. Alternatively, run the water through your empty Tower Garden for a day or two.

Tower Garden smells like a (dirty) fish tank.

"Ew... what's that smell?"

It could be rotting plant material—another side effect of not regularly cleaning out your pump.

During the growing season, roots and other plant debris will likely find a way into your pump's filter. If left there, it will begin to decay. And decaying plant material can make the water inside your Tower stink.

Fun fact: The stuff also has the potential to spread disease as it circulates through the growing system.

Just another reason to clean your pump on a monthly basis.

Algae growth on rockwool.

Ever notice slimy green stuff growing near the base your plants? Well, good news—it's not actually a problem.

In fact, algae growth is relatively common (since you're supplying nutrients, water and light—everything necessary for survival). And it's typically harmless to plants. But I'm including it on this list because many new Tower Gardeners assume it's a problem.

That said, if you do notice something growing on the rockwool, make sure it's algae and not one of these types of plant diseases.

Bacterial Diseases

Fast-spreading bacterial diseases are difficult to control. Bacteria are too small to see without a microscope, but symptoms of infection typically include dark streaks on plant foliage. Prevent bacterial diseases from spreading by removing and destroying infected plants upon detection.

Fungal Diseases

The most common plant disease type indoor towers may encounter, parasitic fungi often presents as discoloration, dots or fuzzy mold-like growth on plants. Prevention is the easiest, most effective solution. So prune plants frequently to discourage the stuffy, moist conditions under which fungi rapidly grows and spreads.

If you discover a fungal disease, immediately remove any leaves or plants that show symptoms of infection, and consider treating the remaining plants with natural sprays (e.g., neem oil, potassium bicarbonate, liquid copper).

Viral Diseases

Like bacteria, plant viruses are too small to see with the naked eye. But they often reveal themselves with stunted and deformed plant growth. Insect pests, such as aphids and leaf hoppers, commonly spread viruses. So the best way to prevent them is to prevent pests.

Pests infest your indoor Tower Garden.

When growing indoors, many gardeners want to bring outdoor plants (both seedlings and mature plants) inside. But doing so could be a regrettable mistake, as outdoor plants often bring bugs inside with them.

Even if plants appear to be healthy and show no visible signs of problems, you should still reconsider bringing them inside. They might be harbouring aphids, small caterpillars—both surprisingly hard to spot—or even the eggs of certain pests on the undersides of leaves.

Pests are troublesome enough outside. But once they get inside? It's worse.

Without natural predators indoors, pests multiply by the minute. (OK, maybe not that quickly, but it does seem like it!)

Luckily, reducing the risk of an indoor infestation is fairly easy: just start all your indoor plants fresh, and regularly check your plants for signs of trouble. The earlier you catch a pest problem, the easier it will be to control.

DIY Spray for Virtually All Pests

This is effective for most garden pests and may even help deter rodents and deer. Plus, you likely already have the ingredients. Here's how to make it:

- Chop, grind or liquefy 1 garlic bulb and 1 small onion.
- Add 1 teaspoon of powdered cayenne pepper, 1 quart of water, and mix.
- Steep 1 hour, then strain through cheesecloth, and add 1 tablespoon of liquid dish soap (such as pure castile liquid soap — not dishwashing detergent) to the strained liquid; mix well.

To avoid skin and eye irritation, wear rubber gloves and keep the mixture away from your eyes and nose when preparing and applying it. Refrigerate any remaining spray for up to 1 week in a covered container.

Insecticidal Soap + Neem Oil Spray for Most Insects

This powerful combination is widely used among organic gardeners for aphids, mites, thrips, whiteflies and other small, soft-bodied insects. Hat tip to Future Growing LLC, for the following ratio:

- 1 tablespoon of insecticidal soap
- 1 tablespoon of neem oil
- 1 gallon of water

After spraying, discard any remaining mixture and clean your applicator.

Bacillus Thuringiensis Spray for Caterpillars

Bacillus thuringiensis (Thuricide) is the “go-to” natural spray for caterpillars. You can [pick some up online](#) or in your local garden center. Mix and apply it according to the product label directions.



Seeds won't germinate.

Sprouting seeds can be a little tricky. There are a number of reasons seeds may not germinate. Let's look at three of the most common:

- **Poor seed quality.** For best results, you should start with the best seeds.
- **Old or expired seeds.** Some seeds have shorter shelf lives than others. The germination rate of spinach and onion seeds, for example, tank after about a year. So when in doubt, try using new seeds.
- **Temperature.** Like plants, most seeds have temperature preferences. Generally, the seeds of warm season crops germinate best in warmer environments, while those of cool season crops prefer cooler ones. In fact, some gardeners refrigerate spinach seeds—which are notoriously stubborn—to encourage germination. (If you try that, just be sure to move the seeds out of the fridge as soon as they sprout.) For seeds of warm season crops, considering using a heat mat.

If you address these factors and still have problems, here are a couple tricks to try:

- **Soak your seeds.** Initially soaking seeds overnight often speeds germination, as it helps moisture break through a seed's outer coating.

- **Germinate using the "baggie" method.** Rather than start my seeds in rockwool, I often sprout them using the baggie method—which, in my experience, tends to yield higher germination rates. The process is simple: distribute seeds on a dampened paper towel placed in an open sandwich bag. (This creates a sort of miniature greenhouse.) Check the bag every few days—moistening the paper towel as needed— and, as soon as the seeds germinate, transplant them to rockwool cubes.

Seedlings wilt after transplanting.

Though wilting can be a symptom of various problems, one cause concerns Mineral Blend concentration.

When you're starting a fresh Tower Garden (i.e., one full of small seedlings), you should fill it with a half-strength nutrient solution. That ratio is: 10mL of Mineral Blend A + 10mL of Mineral Blend B per gallon of water.

If you're using full-strength nutrients and your seedlings are wilting, try diluting the solution. Your plants should perk up.

After you've been growing for a month or so, you can increase the solution to full-strength (i.e., 20mL of both A and B per gallon of water).

By the way, another time you should be using half-strength nutrients is in hot weather. Heat evaporates the water more quickly, resulting in a more concentrated solution.

Tomatoes (or other plants) take over.

If I didn't know better, I'd swear some food crops were actually weeds. Indeterminate tomatoes, squash, pole beans and mint come to mind.

Given free reign, these plants and others like them would probably overwhelm the world. They're voracious growers, sending out vines, tendrils and roots to help them ever expand.

This characteristic makes them pretty easy to grow. Unfortunately, it also makes them bad neighbours. If you don't keep a close eye on things, one day you may find your squash plant's hungry tendrils strangling a nearby basil plant, tomato vines sprawling everywhere, mint popping up in unexpected places, beans scaling...everything—you get the idea.

It can get crowded. And when plants grow together so thickly like that, they create the ideal conditions for leaf fungus diseases.

To prevent all of the above, just do a little pruning here and a little harvesting there. This will help keep your plants' growth in check (with the added benefit of making them healthier and more productive).

Plants don't produce.

The first year I tried to grow zucchini, I think I harvested one. (Maybe two.)

What a disappointment!

With declining pollinator populations, or gardening indoors, the garden must "be the bee" to ensure a consistently hearty harvest.

Top Techniques for Hand Pollination

When it comes to pollination, there are two types of plants: those with self-fertile flowers and those with separate male and female flowers.



Use a small paintbrush to stimulate pollen release for self-fertile plants like tomatoes, beans, eggplants, peas, peppers and strawberries

The flowers of these plants have all the necessary parts to produce fruit. So hand pollination is not usually necessary if you're growing outdoors, as even a slight gust of wind can often facilitate pollination. But for good measure, here are two ways you can pollinate a self-fertile plant:

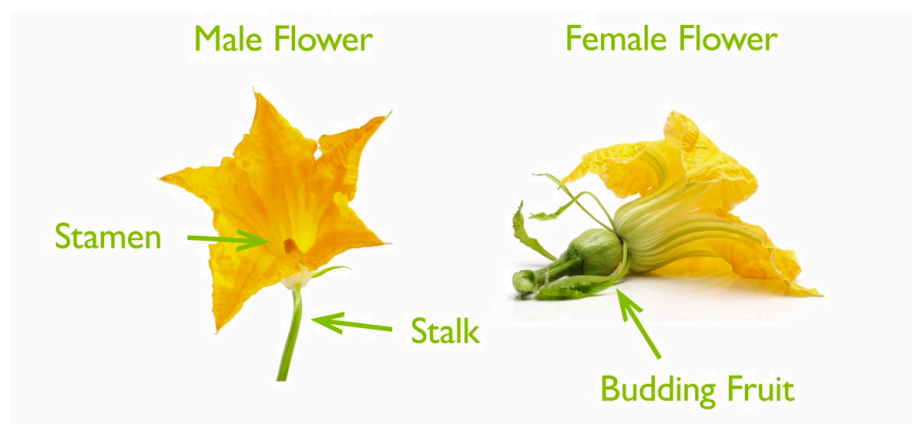
- Carefully shake the plant or blow on its flowers to stimulate pollen release; or
- Gently swab the inside of each flower with a small paintbrush or cotton swab to transfer pollen into the pistil (middle part of the flower).
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How to Pollinate Plants with Separate Male and Female Flowers

Plants that produce separate male and female flowers on the same plant include

- Cantaloupes
- cucumbers
- Pumpkins
- Squash
- Watermelons
- Zucchini

In order for these plants to produce fruit, pollen from a male flower must make its way to a female flower. So naturally, these crops tend to struggle with pollination more than self-fertile plants.



Typically, male flowers (which have slender stalks and pollen-laden stamens) bloom first. These fall off a few days after blooming. After a couple weeks, you should start to see female flowers (which usually have small budding fruits at the base).

It's easiest to pollinate early in the morning when the blooms are open, using the following techniques:

- Swab the inside of the male flower with a small paintbrush or cotton swab, and then swab the inside of the female flower to transfer the pollen; or
- Pick a male bloom, peel off its petals, and lightly dust pollen onto the pistils of the females with the male stamen.

Next Steps

For best results, you should hand pollinate every few days or until you begin to see fruit. If you don't see fruit after a week or so, the problem may actually be something else, such as a lack of light or extreme temperatures.

ONE MORE THING !!!

We'd all love to see your tower garden!

So.....send a photo of you and your garden to me at fishinginff@hotmail.com or text to 204-271-3279 and your name will be entered to win a PRIZE! Tell us what you are growing and your favourite thing about your garden.

**Deadline for entries
Is JUNE 1st!**



