Crisp, juicy, delicately flavored cucumbers are one of the joys of summertime. A chilled cucumber soup can cool you down on the muggiest summer evening and cucumbers make a delicious accompaniment to any lunch or dinner, just sliced and salted.

Cucumbers are ideal for the beginning gardener because with just a little work, a bumper crop of cukes is yours for the picking. Growing cucumbers in a Tower Garden® is even easier than growing them in the ground. No kneeling, no bending, no tilling, no dirt! Of course, there are some tips and tricks you should know about for growing healthy, productive cucumber plants in a Tower Garden®.

Read on to learn how to: choose your cucumber varieties, sow seeds, transplant seedlings, pinch, fight pests, and know when to harvest. Get ready … get set … grow!

THE ANATOMY OF A CUCUMBER PLANT

- **Vine stems:** the main stems of the plant
- **Petioles:** the mini-stems that attach the leaves to the vine stems
- **Flowers:** pretty yellow petals from which the fruit will form once the flower has been pollinated
- **Cucumbers:** the edible part of the plant, covered with prickles and containing firm, juicy flesh and soft seeds
- **Nodes:** the part of the stem where flowers and fruit appear, sometimes more than one cucumber per node, depending on the variety
- **Internodal areas:** the vine stem between nodes (where you should prune, if needed)
- **Tendrils:** thin, curly stems that grow from the intersections of vine stems and petioles and which the plant uses to attach itself to surfaces
- **Leaves**

THE ANATOMY OF A TOWER GARDEN®

- **Rockwool Cubes:** The growing medium used to sow seeds
- **Net Pot:** The container used to plant seedlings
- **Growing Pot:** One of several interconnecting sections of the Tower Garden®
- **Plant Port:** The openings in the Tower Garden® where the plants go

In a Nutshell:

- The seed goes into the rock fiber starter plug…
- The rock fiber starter plug with the seedling goes into the net pot…
- The net pot goes into the plant site…
- There are four plant sites in a growing pot…
- Five growing pots make a Tower Garden®…
GROWING GUIDE: CUCUMBERS

BEFORE YOU PLANT: Choosing Your Varieties

**European Pickling:** These are smaller cucumbers, perfect for pickling. You can grow them on a trellis or another supportive device next to your Tower. That way, the plant has its own place to grow and won’t dangle over the other crops on the Tower and block their light.

**American Pickling:** These varieties are thicker-skinned and also great for pickling. There are many varieties of American pickling cucumbers and they come in all sizes. You’ll want to choose a variety with resistance to molds and mildews.

**American Slicing:** American slicing cucumbers are just right for salads and sandwiches. These are the standard long 7”-9” cucumber you see in grocery stores. If you live in a hot climate, you’re in luck: heat-tolerant varieties are available.

**Seedless and Thin-skinned:** This is the best salad-quality cucumber you can grow. There’s no need to peel them — they’re never bitter, and they have crisp fruit and tender skin.

**Specialty:** Specialty cucumbers come in unusual shapes and sizes, including the heirloom lemon cucumber that’s round, has a yellow skin and is about the size of, you guessed it, a lemon. These are something to talk about!

BEFORE YOU PLANT: Deciding When to Plant

Cucumbers grow vigorously under the right conditions. They love warm weather, and have an optimal growing temperature of 75-85 degrees. When the mercury hits the 90s and stays there, though, the plant will slow in its production of fruit, and some varieties will shut down and stop growing altogether. That’s why it’s important to choose the right variety (i.e. heat-resistant) if you live in an area with hot summers. You may want to plant earlier in the season too.

PLANTING: Seed Sowing and Germination

Your Tower Garden® Kit comes with everything you need to get started growing cucumbers. Remember: the germination range for cucumbers is 65-70 degrees.

**Step 1:** Locate the slab of Rockwool cubes and place in the seed starter tray.

**Step 2:** Thoroughly wet the Rockwool cubes by completely submerging the slab for 30 minutes in Tower Tonic nutrient solution. This will stabilize the pH of your cubes. After 30 minutes, thoroughly flush cubes with fresh water.

  Important: Because the Rockwool repels water, you can’t get away with just spraying it. You really need to soak it!

**Step 3:** Drain all excess water from the seed starter tray.

**Step 4:** Sow one seed per cube.

**Step 5:** Be sure the seed has good surface contact with the cube hole and lightly cover with coarse vermiculite up to the Rockwool cube surface, which will help retain the right amount of moisture. Gently sprinkle a little water over each hole to wet the vermiculite.

**Step 6:** After seeding, put a little water into the bottom of the container. If possible, use filtered water without chlorine. Do not close the lid.

**Step 7:** Place seed starter tray outside in semi-shade (a bench or table will do nicely) until the seeds have germinated. Always keep about 1/8” to 1/4” of fresh water in the bottom of the tray.

**Step 8:** Once the seeds have germinated (about five to eight days or longer in cooler temperatures), IMMEDIATELY place outside in full sun for seven to fourteen days to increase their hardiness.

**Step 9:** Make sure your sprouted seeds have 1/4” of fresh water in the bottom of the tray each morning so your seedlings won’t dry out during the day. Add Tower Garden® fertilizer solution every other morning in place of fresh water.

**Step 10:** Ten to fourteen days after germination, and once the fear of frost has passed, your seedlings should be ready to transplant into the Tower Garden®!
PLANTING: Transplanting into the Tower Garden®

Transplant the seedling into your Tower Garden® when there are two to three true leaves. This should happen 10 to 14 days after germination. The exact timeframe depends on the date of the last frost in your area. You’ll know your plants are ready when they have a good root system growing from the rock fiber starter plugs.

If you’re using a Submersible Heater and a frost blanket, you can start transplanting three weeks before the suggested planting date. Just make sure you heat the water in the Tower Tonic reservoir to a minimum of 70 degrees until daytime temperatures rise to that level.

Step 1: Gently separate the cubes from the Rockwool slab. Do your best to break as few roots as possible.

Step 2: Your assembled Tower Garden® should already have a net pot in each planting port. Place each cube with its newly planted seedling into one of these net pots. Guide any hanging roots from the net pot into the growing pot.

Step 3: Be SURE the bottom of the cube is securely against the bottom of the net pot. This aligns the plant for optimal irrigation inside the Tower Garden® and keeps it from getting too dry.

Where you place your cucumbers within your Tower Garden® will be important due to their vining nature. We suggest placing the plant(s) in the lower tier(s) of your Tower Garden®. This will allow the vines to spill over onto the ground surface. You can also train the vines onto the support cage and let them fountain over the sides.

Just be aware that cucumber tendrils will wrap themselves around anything! Therefore, you may want to train the vines to grow along deck balustrades, fences or your Tower Garden® cage. It’s easy to get semi-curl tendril to attach to a surface — gently take the tendrils and begin wrapping them onto the desired surface. They will quickly establish a hold. Don’t be afraid to train the plant where you want it to grow!

Tower Garden® Tip: Consider growing other plants with an upright growth pattern directly above your cucumbers. Since the cucumber tendrils will attach themselves to other plants, you don’t want another cascading plant directly above, as a cucumber vine can easily overgrow it.

MAINTAINING PLANT HEALTH: How to Keep Your Plants Happy

Tower Gardens are wonderfully free of some of the bothers of traditional gardening: there’s no weeding, tilling, kneeling, or getting dirty! Just a few basic maintenance steps will keep your plants healthy and happy.

Maintain Tower Tonic Levels

Because your Tower Garden® doesn’t use any dirt, your plants are totally dependent on Tower Tonic to get their nutritional

- Maintain the recommended Tower Tonic levels at all times to allow your plants maximum uptake of the nutrients they need to grow.
- With a “young” Tower Garden®, check the Tower Tonic levels twice a week to learn how quickly your plants are utilizing the tonic solution. Later, as your plants grow larger and the roots have reached the reservoir, you’ll probably need to refill the tonic solution every two to three days.

Avoid Plant Stress

It’s well-documented that healthy plants are less desirable to insects! A plant that is stressed in some way — whether from lack of water or nutrients, or from heat, wind or cold stress — becomes an easy target for pests and disease.

Dehydration, starvation, heat, wind, and cold can all cause a plant to wilt. Therefore, the number one rule for keeping plants healthy is to prevent wilting!

- Always maintain a cool temperature within the reservoir. Tower Tonic should never feel warmer than the temperature of your skin.
- On a very windy or extremely hot day, turn the irrigation timer to run constantly for the most stressful hours of the day. Just remember to turn the timer back to its normal cycling times!

Tower Garden® Tip: If your Tower Garden® has to be partly shaded due to your surroundings, it is better to have afternoon shade when the day is the hottest!
**Keep It Clean**

When it comes to your Tower Garden®, clean is good. You don’t have to pass the white-glove test, but keeping your Tower Garden® debris-free discourages plant pathogens.

- Keep your Tower Garden® in as clean an area as possible.
- Remove most mature, yellowing or brittle leaves from the base of the plant.
- Keep loose plant debris and insect debris clear from the top of the reservoir tank, and place the compost of discarded plant clippings well away from your actively growing Tower Garden®.

**MAINTAINING PLANT HEALTH: Managing Pests**

Like most crops, cucumbers are vulnerable to pests. These vary by region and time of year. Fortunately, growing plants off the ground in a Tower Garden® is one of the best ways to avoid pests! Here are the most common pests affecting cucumbers:

### Aphids

Aphids are small, soft-bodied insects that are most commonly green and black in color, but may also be gray, brown, pink, red, yellow, or lavender. They tend to feed on tender, young growth causing it to appear puckered or deformed. Though they are visible to the naked eye, they also leave behind an excretion known as honeydew, which is another method of identification.

**What to do if you have them:** There are numerous methods of aphid control, including botanical sprays such as insecticidal soap, pyrethrum, rotenone and horticultural oils. Beneficial insects such as ladybugs will also help to eradicate the pest.

### Cucumber Beetles

As you can guess from the name, cucumber beetles are a major cucumber pest, especially when the plants are young. Spotted, striped and banded cucumber beetles can be present during all stages of the plant’s development and during the entire growing season. The beetles feed on all parts of the plant, including the fruit and flowers. These pests also act as vectors for transmission of bacterial wilt.

**What to do if you have them:** You can control cucumber beetles by using botanical sprays such as pyrethrum, rotenone and insecticidal soap.

### Spider Mites

Spider mites are a potential cucumber pest, especially in hot, dry conditions. These insects are sap-suckers that cause damage which appears as pale yellow spots ranging in size from specks to large areas on the tops of the leaves. Spider mite damage can progress quickly and go unnoticed due to the insect’s small size. The insects can cause overall stunting of plant growth or even kill the plant.

**What to do if you have them:** You can control spider mites by using botanical sprays such as insecticidal soap and neem oil sprays. Beneficial insects such as ladybugs and minute pirate bugs will also help to eradicate the pest.
MAINTAINING PLANT HEALTH: Managing Disease
Not all plant problems are caused by pests; some are caused by disease. Here are the ones most likely to affect cucumbers:

**Bacterial Wilt**
A serious disease of cucumbers, bacterial wilt is transmitted by one of the major crop pests, the striped cucumber beetle. Seedlings and young plants are most susceptible. Symptoms of this disease appear first in individual leaves followed by the wilting of all the leaves on entire stems, culminating in the death of the whole plant. Infected plants should be removed immediately.

**What to do if you have it:** Minimize the risk of introducing this disease to your cucumbers by managing the cucumber beetle population. Purchase seed and plant varieties that have genetic resistance to bacterial wilt. Keep the area around the Tower Garden® clean of plant debris.

**Botrytis**
A gray mold that thrives in humid yet relatively cool environments, botrytis is a devastating disease that can be exacerbated by poor air circulation. This gray-brown fuzzy growth can appear on plant debris that falls from the plant or on the remaining stem after harvest.

**What to do if you have it:** The best way to control for botrytis is to keep a clean growing environment.

**Powdery Mildew**
This is one of the most widespread and recognizable fungal diseases. Powdery mildew forms a white to grayish powdery growth, usually on the upper surfaces of leaves. Fungal spores are spread by wind and can survive the winter on nearby plants and plant debris. The warm days and cool nights of late summer create an ideal climate for spore growth and dispersal.

**What to do if you have it:** To control mildew, prune your plants to improve air circulation and dispose of infected plants. To control minor infestations, pick off affected plant parts and dispose of them immediately. In the case of a larger outbreak, apply bicarbonate and copper sprays to prevent spread of the infection.

For more information
For additional information on how to handle crop pests, consult your local office of the Cooperative Extension System, a nationwide, governmental educational network that provides useful information on agricultural practices:
http://www.csrees.usda.gov/Extension/

When to replace your plants
If a plant has become too diseased despite control efforts, replace with new plants.

**PRUNING**
Pickling cucumbers do not need to be pruned. While not strictly necessary, pruning other varieties can help increase production. Here are some pruning tips:

- Remove early fruit to allow the plant to produce more vegetation (this will ultimately increase your yield). If more than one fruit develops at a node, thin to one fruit. The exception is the smaller pickling varieties, which can handle growing more than one fruit at the node.
- Trim the vine when it reaches the point where you want it to stop; this will allow the vine to branch at the nodes to produce lateral stems that will add to your cucumber harvest.
- You can also trim the tips of these laterals to keep the plant in a controlled area.
- Don’t go overboard with pruning or you’ll end up with a very dense plant canopy, which doesn’t allow sufficient light to reach the fruit.
HARVESTING

When will those delicious cucumbers be ready for your salad bowl?

- You can expect to harvest 50-70 days after germination.
- Most varieties are mature at 8-12 inches long, but smaller cucumbers are edible. You can pick them at any size, as long as you don’t allow them to get overripe. Overripe cucumbers appear smooth, bloated and yellow.
- Check your plants at least twice a week, and harvest frequently to allow for additional fruit to develop. Keep an eye on those plants! Cucumbers grow very quickly under the right conditions.
- With proper care, you can expect to get one to four pounds of cucumbers a week for roughly 8-10 weeks.

When to replace your plants
Excessive heat will stop the plant from producing fruit and will turn the leaves brown. This is the sign that your cucumber vine should be removed from the Tower. You’ll also want to remove any plants from the Tower if they have excessive insect or disease problems as indicated in the Manage Pest section.