

Growing Plants in Your Tower

So you have built a brand new vertical grow tower... *Now what?*

Crop Selection: The first choice to make is which crop you will grow in your tower as this will determine what type of fertilizer and potential lighting needed to get results. The Bucket Grow Tower was originally created with the intention of growing lettuce and this choice may be the easiest for beginners, but the possibilities are much greater. The tower can produce spinach, arugula, mustard greens, strawberries, several herbs and many other options.



Fertilizer Selection: The fertilizer chosen should cater to the preference of the crop chosen. We recommend using a hydroponic fertilizer. Some fertilizer brands such as DynaGrow has proved itself to work well in the tower. If you can't find a fertilizer specifically designed for your crop just take to the internet to find out what levels of N-P-K in a fertilizer are right for your plant and find a general use N-P-K fertilizer at your local home & garden store that is close to the levels your plant desires. **No matter what fertilizer product you choose, remember to always follow the mixing instructions on the package for best results.**

Light: You WILL need lighting to get the results you want. Just placing the tower in a window is not enough for plants to grow well. If you choose to grow lettuce or other leafy greens in your tower, your lighting requirements will be minimal and can be satisfied by using inexpensive LED light tubes and fixtures available at any home improvement store. If you decide to tackle a bigger challenge and produce a flowering/fruited crop in your tower, then you may need to invest in some horticultural grade grow lights to achieve the best results. Always research your crop beforehand so you understand what kind of lights your plants need.

Starting Your Seedlings

Choose Your Grow Media: The grow tower requires plants to be grown in an inert media that provides support for the stem and roots but gives no nutrients to the plants. Soil does not work because it will wash away and clog the pump. The two types of media that work best in the tower are Rockwool (1 ½”cubes) or Rapid Rooter peat plugs. Both come with a hole in the top for placing your seeds. It is best to wash the rock wool and the rooters before using.

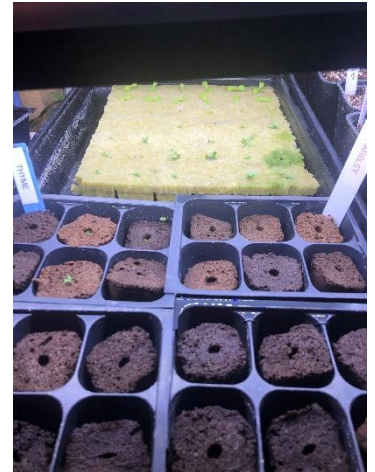


Starting Seedlings:



Start your seeds in six pack containers and have them under lights on a shelf for 2-3 weeks before you intend to put them into your grow tower. It is a good idea to start more seedlings than will actually fit into your tower so you may pick the strongest most promising seedlings to transplant into the tower.

Place one to two seeds in each cube or plug. Plants should be grown on a shelf with lights at most 3” from the container they are grown in. If you don’t have a shelf, grow the plants on a plate on the top of the tower.



Watering the Seedlings:

From planting the seed until transplanting into your tower, you may just water the media and seeds with regular, unfertilized water. Spray bottles are the best to assure you don’t over water. The cubes should be watered daily and kept consistently moist throughout the germination process.

Are they ready?

About a week after your seedlings emerge begin checking the bottoms of the cubes daily. Once you can see little white roots starting to poke out of the bottom of the cubes or plugs and your second set of leaves have emerged, your seedlings are ready to go into your tower.

Putting the Plants into the Tower

Prepare your tower:

Mix the fertilizer of your choice according to the instructions on the fertilizer label and fill the base/reservoir of the tower with 3-4 gallons of this nutrient solution. Do NOT over fertilize, read the directions on the bottle.

If you are using Dyna Grow Fertilizer:

1. When you add water to the tower initially, add 2-3 tsp of fertilizer per gallon.
2. When you add water as the tower is going, reduce it to 1 tsp/gallon
3. If you have too much algae in the water and it gets very green, replace all the water and treat it as you would as if you were starting the tower again.



Add the Plants:

If using rockwool, break your rockwool cube sheet into individual cubes with one plant per cube. Nestle the plant cube or plug into a PVC elbow and gently push it down into the elbow so that it is securely nestled in the elbow underneath the three holes that you drilled. Be sure not to push them too far and lose them inside the tower.

Lights:

Keep the lights on a timer. 12 hours on and 12 hours off is the best schedule for leafy plants. Do not plug the pump into the timer. The pump should be on all the time and plugged in separately.

Harvesting Your Plants:

Plants do not need to be harvested all at once. You can use the leaves as they grow. Pick lettuce leaves from the outside to encourage continuing growth. Do not pick from the middle of lettuce. Herbs should be picked so that you don't remove all the leaves. The plants will sprout new leaves. Always remove any flowers on herbs.



Monitoring and Cleaning Instructions

1. Monitor water levels and replace water, add nutrients to water before adding according to directions on container, as necessary. READ the directions, don't over fertilize!!!! It's a good idea to reduce the fertilizer on water additions after the initial starting of the system to prevent nutrient buildup and overload.
2. Recheck pH and adjust with proper solutions if necessary. Watch leaves for any browning or yellowing. This will let you know if you have enough or too much nutrient in your water.
3. Check the pump. Unscrew the PVC center pipe from the pump. Pull off the half of the pump that has the sponge looking black filter material on it. It should come off with a little tugging. There is a foam filter in there, wash out the plant material and put the pump back together and put back on the PVC pipe and back into the tower.
4. Visit <https://www.youtube.com/watch?v=Webb1cjen6s> or <https://www.nosoilsolutions.com/common-issues-hydroponic-gardeners-face/> for suggestions on troubleshooting growing issues.

Nutrient Suggestions: Choose a liquid hydroponic nutrient based on your preference, organic or not. If you are just doing leafy greens, choose a nutrient specific to growing leaves often labeled "grow". If you are doing a plant with fruit, you will need to change the nutrient once the plant reaches a certain maturity (different with each type), often labeled "bloom", when you wish for them to begin the process of developing fruit. You will need to hand pollinate the plants.



PH Testing – Use a test kit. A liquid test kit is preferable, but strips work as well. Use a solution to raise or lower the pH depending on results. Over fertilizing is often the cause of a wacky pH, but it can be the water you start with as well.

Algae and Pests

Algae growth is normal in a grow tower. It is not toxic or dangerous to the edibility of your plants. Fungus gnats which love algae can be a problem. Here is an article that might help you if you have an algae issue.

<https://plantprovider.com/managing-algae-in-hydroponic-systems-step-by-step/>

Aphids can get on a tower when you introduce houseplants bought at a store or nursery. Use non-toxic sprays to manage like NEEM oil or Safer Insect Soap spray.