

Tower Garden® Fundamentals

All the “What you should do” without all the “Why you should be doing it”

Tower Garden Basics:

- **Water Source:** City tap water or well water. Water source selection factors: 1) Availability. 2) The one with a lower Total Dissolved Solids (TDS) value. 3) The one with a lower total hardness value. 4) Personal choice. Use of bottled, distilled, de-ionized and rain water is not recommended.
- **Filtration:** Regardless of your water source, ALWAYS pass your water through a filter that contains [sediment + activated carbon] filter elements. BEST OPTION: A high volume Reverse Osmosis (RO) filter.
- **Water Hardness:** The softer the better but NEVER use water from an in-home water softening system.
- **Chlorine / Chloramine:** Forget the “leave it out in the sun for a day” removal method. A water filter that includes an Activated Carbon element will significantly reduce chlorine and chloramine levels. Sodium Ascorbate (a specific type of natural vitamin-C) will remove remaining traces of these chemicals (1/4 Tbsp. / 20 gal. water).
- **Nutrients Levels (Tonic-A/B):** 10ml / gal. water (“half-strength”) for seedlings and hot summer months. 20ml / gal. water (“full strength”) otherwise.
- **When to Add Nutrients:** Unless you are using a more precise method to track nutrient levels (ex: a TDS meter), ALWAYS add the target strength of nutrients (ex: half-strength, full-strength, etc.) whenever you add water.
- **Mixing Nutrients:** ALWAYS shake the nutrient concentrate bottles well before using. ALWAYS mix in a separate container unless you are doing a complete 20 gal. TG tub solution replacement. Start by filling a container with water SLOWLY. As you add water to the container, begin adding nutrient concentrates ONE AT A TIME and SLOWLY to the container. Mix/Shake container between each concentrate addition. Temporally unplug the TG nutrient solution pump while adding nutrient solution to the TG tub (or anytime you add anything to the TG tub). Remember to plug the pump back in as soon as you have completed mixing!
- **Checking Nutrient Solution pH:** Check pH on a regular schedule. Frequency depends on many factors. Start with every other day and back-off if you notice no change in pH levels. ALWAYS check pH after adding ANYTHING to the TG tub. ALWAYS wait at least 30 minutes after adding anything to the TG tub before checking pH. Good/OK: Liquid pH Test Kits. Better/Best: pH meter. pH Test Strips are not recommended. ALWAYS thoroughly clean liquid test kit components before and after each use (important). Rinse pH meters before and after each use (important). Store pH meters “wet” (Optimal: Use storage solution. OK: Use 7.0 calibration solution).
- **Nutrient Solution pH:** ALWAYS keep it nutrient solution pH in the range of 5.5 to 6.0 (this is very important). Once in the range, don’t mess with it (fine tuning is not necessary).

- Adjusting pH: NEVER add more than 2 tsp. of Base/Acid adjustment solution at a time. Always mix thoroughly. ALWAYS wait at least 30 minutes between adjustments before re-testing pH.
- Completely replace nutrient solution in TG tub every 30-60 days. Use the spent solution on potted plants and bushes.
- Nutrient Solution Pump: Thoroughly clean inside of nutrient pump when you do a complete nutrient solution replacement (every 30-60 days).
- NEVER let the level of nutrient solution in the TG tub drop below ½ full.
- TG Nutrient Pump Timing (using the Tork 602a timer supplied with the TG): [Outdoor] 15-minutes ON, 15-minutes OFF. [Indoor] 15-minutes ON, 30-minutes OFF. [Optimal] 1-minute ON, 5-minutes OFF (FYI: you will need to get a different timer to obtain sub-15-minute pump cycle time settings).
- Temperature (Environment and Nutrient Solution): 65-75 degrees. F. is optimal.
- Direct Sunlight: 5 hours a day (min). Diffuse sunlight during hot summer months in sub-tropical environments.
- Grow Lights: ON - 14 hours (during daytime ~6am to 8pm), OFF (total darkness) for 10 hours (important).
- Rotate the tower section ¼ turn CLOCKWISE each morning for even sunlight distribution.
- Air Circulation: A gentle breeze, an open window, ceiling fan, air conditioner duct and/or portable fan.
- Prune (remove) brown/dead leaves. Follow proper plant specific pruning practices.
- Roots: The less you mess with them, the better. Remove any roots that make their way into the nutrient tub solution (just reach-in and rip 'em out). Check on a regular basis. Do not wait until you have a large root mass in the tub before taking action. Roots in the tower section: Leave them alone unless they are restricting nutrient flow to the sections below. Smaller plants have a smaller root mass and can be accessed by carefully removing the plant and net pot from the tower section growing port. For larger plants, it may be necessary to carefully separate the tower sections just enough to remove the net pot. In all cases, NEVER remove more than 1/3 of the root mass at a time. If you have a lot to remove, spread removal out over several days.
- Watch for problems: insects, mold, mildew, fungus, etc. Take immediate action - don't let a small issue turn into a big problem.
- Pest Management: For 98% of pest problems, all you need are the three organic mixes described here: <https://futuregrowing.wordpress.com/2014/03/05/3-sprays-that-kill-almost-every-garden-pest>
Use the following soap for Mix #1 described above:
<http://www.amazon.com/Dr-Bronners-Magic-Soaps-Pure-Castile/dp/B00120VWJ0>
A substitute for Mix #3 described above (to treat Powdery Mildew):
1 part dairy milk (fat content doesn't matter) to 2 parts water. Apply same as described in Mix #3 above.

- If growing in an arid location, spray a light mist of water on leaves from a spray bottle once a day, first thing in morning. Overwatering foliage will promote mold, mildew, etc.
- Harvest crops on a regular basis - don't let the TG turn into a jungle.
- As a general rule, avoid sudden and/or extreme changes when working with plants (temperature, pH, nutrient levels, root trimming, pruning, sunlight, etc.). Subtle, baby steps over an extended period of time is far better than quick radical jumps.
- When in doubt, FOLLOW THE TOWER GARDEN GROWING GUIDE!

THE END -- HAPPY GROWING! 😊

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