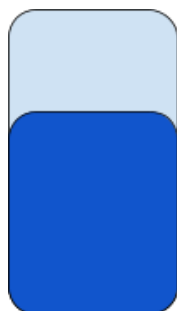




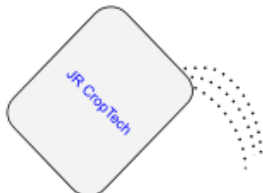
How To Mix A Stock Tank

Always target a 5.6 ph at the drip stake



Step 1; Fill stock tank $\frac{3}{4}$ of the way with water.

Step 2; Agitate water with mechanical tool.



Step 3; Slowly mix in JR CropTech Veg, Flower, or Calcium Product(s)



Step 4; Add water to fill tank the rest of the way to the target volume marker.

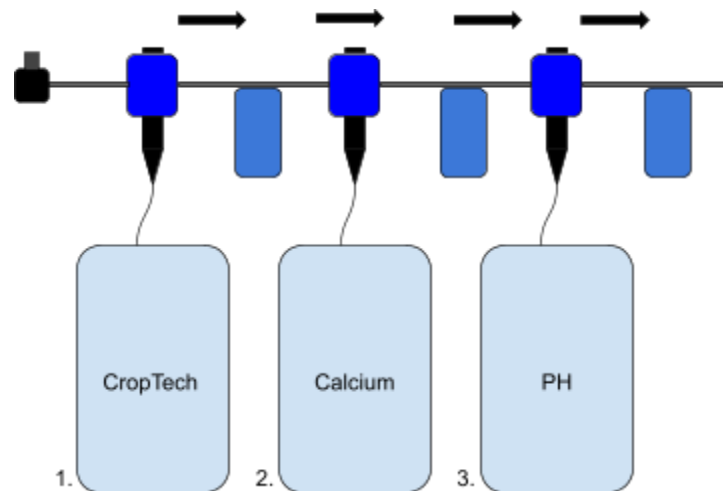
Step 5; Agitate with mechanical tool until all powder is dissolved

1. Wear a protective breathing mask, goggles, long sleeves, and gloves.
2. Fill the stock tank $\frac{3}{4}$ of the way with water**.
3. Use a mechanical tool of choice to vigorously agitate the water.
 - a. For example: mixing pump, drill and paddle, hydraulic jets, motorized agitator, etc.
4. Slowly pour in and mix the total amount of dry fertilizer while water is being agitated. This should take at least 2 full minutes per full bag, but the slower it's poured, the easier the dissolving process is.
5. Mix for approximately 3 minutes per 50 gallons of stock solution being made. Remove mechanical tool and allow water to settle.
6. Fill the stock tank the rest of the way to the final gallon marker with water until the total intended volume of stock solution is reached.
 - a. For best results, use reverse osmosis water for making concentrates.
 - b. Example: 100 gallon stock tank, add 75 gallons of water, mix in 200lbs (8 full bags) of JR CropTech Flower or Veg, and add water until volume reaches 100 gallons
7. Use a mechanical tool to agitate the solution until it is fully dissolved, approximately 5 more minutes at least.

Note: After dissolving the fertilizer completely, only oilless pumps with appropriate chemical-resistant seals or mechanical paddle agitators should be used to agitate the tanks.

****CAUTION:** The dosing instructions are based on total solution (water + fertilizer). For example, if a 100 gallon stock tank is filled with 100 gallons of water before the fertilizer is added, the final solution will have a volume that is greater than 100 gallons. This is because the fertilizer takes up volume itself, therefore increasing the total volume of the final solution.

If using a hydraulic proportional injector such as Dosatron or Mix-rite, set tanks in the following order:



For best results use reverse osmosis water to mix stock tanks and Potassium Bicarbonate for PH up

Nutrient Mixing Instructions

Directions For Use:

Always wear proper PPE when working with fertilizers!

1. Select the desired target EC for the final nutrient solution from the **green** column on the far left of the EC and application rates chart.

- a. **Hand-Mixing:** weigh and add the 3 products needed to make the complete solution according to the amount (weight in grams of dry fertilizer per gallon of nutrient solution being made) shown in the **blue** column of the EC and Application Rates chart.

i. For example, to make 100 gallons of flower nutrient solution with a 2.7 EC, add 625 grams of JR Croptech Flower ($6.25\text{g} \times 100\text{gal}$) + 312.5 grams Calcium Nitrate ($3.125\text{g} \times 100\text{gal}$) + 31.25 grams Calcium Chloride ($.3125\text{g} \times 100\text{gal}$)

ii. Mix the CropTech in first and fully dissolve, then add both calcium products simultaneously and mix until dissolved, then adjust pH.

- b. **Dosing/Fertigation:** See How to Mix a Stock Tank above for proper mixing practice. Select the appropriate **yellow** column on the EC and Application Rates chart according to the style of injection system being used, then set the injection rate for both A and B injection channels/dosers of the fertigation equipment to the setting shown on the row that corresponds to the desired EC (same rate for both Parts).

i. The standard formula calls for the following amounts to be dissolved in each stock tank in order to use the dosing settings from the chart:

1. **Part A:** 2 lbs/gal of CropTech Flower or Veg (e.g. 100 lbs into 50 gal)
2. **Part B:** 1 lb of Calcium Nitrate + 0.1 lb of Calcium Chloride per gallon (e.g. 50 lbs of Yara Calcinit + 5 lbs of Calcium Chloride into 50 gal stock tank)

ii. If using a NetaFlex or any system that uses Rotameters (the clear tube with orange float inside) to measure concentrate flow, refer to the CropTech Specific Gravity calculator for adjusted values. Rotameters are calibrated for plain water and must be adjusted when the solution going through them includes dissolved fertilizers. Similar to how eggs float in saltwater, but not freshwater.

iii. **Intermediate - Expert Users:** If anything other than the standard formulation is desired (e.g. such as higher N during stretch), consult the CropTech Nutrition and Dosing Calculator to determine the amount of fertilizer to put in each stock tank and the dosing settings needed, along with the expected EC and elemental composition of the final nutrient solution. The standard ratio is 2:1:0.1 of Flower:CaNO₃:CaCl₂. For a higher-N adjusted formula, enter

2:1.5:0.075 as the ratio and the calculator will provide all other needed information, including expected EC, amount to dissolve in the A and B stock tanks, and dosing settings. Adjust the Flower grams/gal number until you see the expected EC you want if using that adjusted ratio. Ask a CropTech representative for further information on this topic if needed.

iv. Whether using the standard recipe or an adjusted one created with the Nutrition and Dosing Calculator, ALWAYS set both dosers/dosing channels to the exact same injection rate as each other. This keeps the nutrient ratios where they need to be, allows for easy adjusting of EC, and provides a double-check (if the tanks don't finish at the same time, something is wrong with injection). To adjust EC, simply increase or decrease the injection rate of both Parts A and B equally and make sure they match each other.

v. Example: Injecting both Parts A and B, with stock solutions made according to the standard 2:1:0.1 ratio, into the irrigation water at a rate of 0.69% (or 1:145, see yellow columns) each will provide a final nutrient solution EC of 2.7 mS/cm.

- c. **Note:** The EC and PPM values on the chart indicate the resulting concentration when the fertilizer is added to 0.0 EC water, such as Reverse Osmosis (RO) or distilled. When using water with an EC greater than zero, the final solution EC should be the source water EC + EC from the EC and Application Rates chart.
- d. **For Calcium Nitrate, we recommend:** YaraLiva CALCINIT 15.5-0-0
- e. **For Calcium Chloride, we recommend:** Mora-Leaf Calcium Chloride
- f. There is also a Nutrition and Dosing calculator available for using Andersons PureCal 13-0-0 instead of Yara, but the chart does not apply because the rates are different.
- g. **For pH Up, we recommend:** Potassium Bicarbonate
 - i. Fill stock tank all the way
 - ii. Dissolve 0.05- 0.1 lbs per gallon of concentrate being made
 - iii. Mix until fully dissolved
 - iv. Let sit for approximately 10 minutes before using and/or adjusting injectors if applicable
 - v. Target a 5.6 ph for all substrates and stages of growth

Cleaning Drip Lines Post-Harvest

Acid Flush:

1. Make sure there are no plants in the room before following this procedure
2. Make sure the irrigation system is shut off to all other rooms if they are utilizing the same main line to supply irrigation water
3. Turn off all other injectors
4. Adjust acid doser (or add acid to a hand-made batch tank) until you reach a 4.0 pH
5. Run that 4.0 pH water to the intended room that is being cleaned, through the drippers, for 25 minutes, but **no more than 30 minutes**
6. Adjust pH back to target 5.5-5.7 and run for 10 minutes, or however long is needed in order to fully flush the acid out of the system. Opening PE tubing line ends/flush valves may be needed to speed up the process of getting the higher pH water to the drippers.
7. Turn back on nutrient injectors
8. Run regular nutrient solution to the room until you achieve your usual target pH and EC at the dripper, or if needed, run the below peroxide treatment first and then regular nutrient solution.

Hydrogen Peroxide Sterilization:

1. Make sure there are no plants in the room before following this procedure
2. Treat irrigation lines with a dilution of 1:100 of Zeritol
3. If diluting into a batch tank, use 1¼ fl. oz. for every gallon of water.
4. Run the irrigation system for 10 minutes, or however long it takes to ensure the peroxide made it to the furthest dripper from the source
5. Let solution sit in the line for 15 min
6. Run Zeritol solution again for 5 min opening the ends of the lines briefly to allow any broken down particles to exit the line.
7. Follow up with target EC and pH water until desired rates come out at the dripper

Cleaning disc filters:

1. Wear protective goggles, long sleeves, and gloves.
2. Use Muriatic Acid
 - a. Home Depot and pool stores carry this product
 - b. Make a 10% solution, **do not use direct from bottle**
 - c. example; 100 mL muriatic acid + 900 mL of water
3. Remove discs from the spine and let them soak in the solution, agitate and let soak for 30 min. Run a string through the middle of the removed discs, and tie the ends together, in essence creating a “disc necklace” so the discs will be easier to reassemble on the spine after cleaning.

4. Rinse with water, remove the string, and place discs back on the spine