HYDRO-GRO FERTILIZER USE

Hydro-Gro Vine and Hydro-Gro Leafy are general purpose hydroponic soluble fertilizers that have been formulated for the specific needs of the vegetable plants without considering what is contained in your source water. If the source water contains an electrical conductivity of less than 0.3 mS/cm (300 µS/cm), and is of suitable composition Hydro-Gro can generally be used satisfactorily for crop production. However, simply evaluating your source water based on EC is an incomplete method because it only quantifies the total conductivity of ions dissolved solution and does not describe which ions are contributing to that conductivity. It is always best to have your source water analyzed for chemical composition.

The recipes that follow have been prepared as a guide for use of this premixed fertilizer. The Hydro-Gro Vine and Leafy dry mix shipped to you can be used in one of two ways.
Method 1) The Hydro-Gro, calcium nitrate, and potassium nitrate (only for tomato) can be used to prepare stock solutions, which can then be diluted to produce the feed solution that is delivered to the plants.

Method 2) The Hydro-Gro, calcium nitrate, and potassium nitrate (only for tomato) can be used as dry materials and added directly to your source water to create a feed solution.

Method 1- Preparing Hydro-Gro Vine and Leafy Stock Solutions

Concentrate Tank A (P, K, Mg, S, N, and micro nutrients)

- Add source water to bring the concentrate tank up to 75% of the chosen volume. It is best for this source water to be below 0.3 mS/cm electrical conductivity.
- Using the fertilizer tables (1, 2, 3) below corresponding to your crop of choice, weigh the amount of Hydro-Gro Vine or Hydro-Gro Leafy that corresponds with the volume of concentrate you plan to mix.
- Slowly add Hydro-Gro Vine or Hydro-Gro Leafy and mix well during addition.
- After the Hydro-Gro Vine or Hydro-Gro Leafy is largely dissolved in the initial volume of source water, add additional source water to bring the tank up to the chosen volume.

Concentrate Tank B (Ca, K, and N)

- Add source water to bring the concentrate tank up to 75% of the chosen volume. It is best for this source water to be below 0.3 mS/cm electrical conductivity.
- Using the crop fertilizer table below (1, 2, 3), weigh the amount of calcium nitrate (and potassium nitrate if needed*) that corresponds with the volume used in Concentrate Tank A.
- Slowly add calcium nitrate and potassium nitrate (for boosted tomatoes) and mix well during addition.
- After the Hydro-Gro Vine or Hydro-Gro Leafy is largely dissolved in the initial volume of source water, add additional source water to bring the tank up to the chosen volume.

Table 1: Fertilizer Quantities for Mixing **Stock Solutions** for Tomatoes

Concentrate Tank A Volume (gallons)	Hydro-Gro Vine	Concentrate Tank B Volume (gallons)	Calcium Nitrate	Potassium Nitrate **
1	13 oz.	1	10 oz.	3 oz.
10	7 lbs. 14 oz.	10	6 lbs. 5 oz.	2 lbs. 2 oz.
15	11 lbs. 13 oz.	15	9 lbs. 7 oz.	3 lbs. 2 oz.
20	15 lbs. 11 oz.	20	12 lbs. 9 oz.	4 lbs. 3 oz.
25	19 lbs. 10 oz.	25	15 lbs. 11 oz.	5 lbs. 4 oz.
30	23 lbs. 9 oz.	30	18 lbs. 14 oz.	6 lbs. 5 oz.

** When growing tomatoes and the flowers on the third cluster begin to open, add the prescribed amount of potassium nitrate into Concentrate Tank B (this is called the boosted formula).

Table 2: Fertilizer Quantities for Mixing **Stock Solutions** for Cucumbers

Concentrate Tank A Volume (gallons)	Hydro-Gro Vine	Concentrate Tank B Volume (gallons)	Calcium Nitrate
1	13 oz.	1	13 oz.
10	7 lbs. 14 oz.	10	8 lbs. 5 oz.
15	11 lbs. 13 oz.	15	12 lbs. 7 oz.
20	15 lbs. 11 oz.	20	16 lbs. 9 oz.
25	19 lbs. 10 oz.	25	20 lbs. 11 oz.
30	23 lbs. 9 oz.	30	24 lbs. 14 oz.

Table 3: Fertilizer Quantities for Mixing **Stock Solutions** for Lettuce

Concentrate Tank A Volume (gallons)	Hydro-Gro Leafy	Concentrate Tank B Volume (gallons)	Calcium Nitrate
1	13 oz.	1	10 oz.
10	7 lbs. 14 oz.	10	6 lbs. 5. oz.
15	11 lbs. 13 oz.	15	9 lbs. 7 oz.
20	15 lbs. 11 oz.	20	12 lbs. 9 oz.
25	19 lbs. 10 oz.	25	15 lbs. 11 oz.
30	23 lbs. 9 oz.	30	18 lbs. 14 oz.

Mixing feed strength solution using these stock solutions

To make the feed strength nutrient solution, dilute one gallon of Concentrate A and one gallon of Concentrate B to a total volume of 100 gallons feed solution. Alternately, one quart of Concentrate A and one quart of concentrate B will make approximately 25 gallons of feed solution. Remember to not let the two concentrates mix with each other until they are diluted in water. The Electrical Conductivity should be in the 2.0 to 2.5 mS/cm (2000 to 2500 µS/cm) range for mature tomatoes and cucumbers and

1.6 to 1.8 mS/cm for lettuce when this procedure is followed. When adjusting the nutrient solution during growing, always add equal quantities of Concentrate A and Concentrate B to increase the EC. Additional source water can be added if the EC becomes higher than the target value.

Method 2: Preparing Hydro-Gro Feed Solutions from Dry Ingredients

Table 4: Fertilizer Quantities for Mixing **Feed Solution** for Tomatoes

Feed Solution Volume (gallons)	Hydro-Gro Vine	Calcium Nitrate	Potassium Nitrate
10	1.3 oz.	1.0 oz.	0.34 oz.
15	1.9 oz.	1.5 oz.	0.50 oz.
20	2.5 oz.	2.0 oz.	0.67 oz.
25	3.1 oz.	2.5 oz.	0.84 oz.
30	3.8 oz.	3.0 oz.	1.00 oz.

Table 5: Fertilizer Quantities for Mixing **Feed Solution** for Cucumbers

Feed Solution Volume (gallons)	Hydro-Gro Vine	Calcium Nitrate
10	1.3 oz.	1.3 oz.
15	1.9 oz.	1.9 oz.
20	2.5 oz.	2.6 oz.
25	3.1 oz.	3.2 oz.
30	3.8 oz.	3.9 oz.

Table 6: Fertilizer Quantities for Mixing **Feed Solution** for Lettuce

Feed Solution Volume (gallons)	Hydro-Gro Leafy	Calcium Nitrate
10	1.3 oz.	1.0 oz.
15	1.9 oz.	1.5 oz.
20	2.5 oz.	2.0 oz.
25	3.1 oz.	2.5 oz.
30	3.8 oz.	3.0 oz.