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BRINGING QUALITY BACK

- Increased **oil** production
- Broader **terpene profile**
- **Better looking** flowers
- No **blocked** drippers

GROWERS GUIDE

NUTRIENT SYSTEM FOR COMMERCIAL
CROPPING

 @floramaxnutrients

Analytical Chemists and Horticultural Consultants Since 1966



FloraMaX



LEARN MORE

How to Produce Cuttings

Cuttings enable you to quickly reproduce your favourite plant.

1. Make nutrient solution: Refer to 'Cuttings & Seeds' phase on the FloraMax Dose Chart and Nutrient Management section.

2. Add substrate to pots then water thoroughly with the nutrient solution. Allow to drain well. Pre-clean pots with FloraMax Pythoff PLUS at 8ml/Gal (2ml/L).

3. Take cuttings: Select a healthy mother plant that is not flowering:

- **Step i. Take cuttings from "semi-hard"** material. Ideal length is 3 – 5 inches with one "extra" leaf set (two leaves) at the base that can be removed during step 2 (Fig 5.1).

- **Step ii. Remove lower set of leaves** flush with stem, but without cutting into it (Fig 5.2). Then cut through the stem on a 45-degree angle about 1/4 inch (6mm) below this. Use a sharp and sterile blade and do not tear or crush the stem.

- **Step iii. Insert 1-inch of base of cutting** into FloraMax Cloner (Fig 5.3). Then gently insert stem about

1-inch deep into a slightly undersized, 'pre-made' hole in the centre of the pot (Fig 5.4). *Do Steps 1 to 3 quickly to minimize stresses on the cutting.*

4. Place propagator lid over the cuttings and close vents (Fig 5.5). Relative humidity should be maintained about 90% (open vents slightly if required). To promote root growth and combat wilting, spray 1-3 times per day with a solution of FloraMax Clone Spray.

5. Place under low intensity fluorescent light (or equivalent). Leave on for 24 hours a day. Monitor temperature inside the propagator using a thermometer. Aim for 75-80 deg F (24-27 deg C). Use a 'heat mat' if temperatures are too cold. Raise lights if too hot.



FloraMax Cloner:
8 day-old Vampire Fangs
@thehoneybadger007

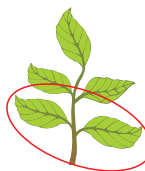


Fig 5.1 Cuttings ideally need "spare" leaves at the base that can be removed later

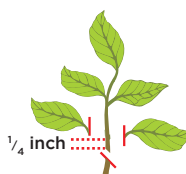


Fig 5.2 Where to cut



Fig 5.3 Insert base of cutting into FloraMax Cloner



Fig 5.4 Insert base of cutting snugly into substrate

6. Check cuttings regularly. Once roots form (typically after 5 – 10 days) the substrate can become dry very quickly.

Remoisten using the nutrient solution.

Top-watering can fail to water the entire root-zone and therefore full immersion of the pots may be required.

TIP: Make note of how heavy plants feel when watered and do NOT water if they still feel heavy.

7. Humidity and disease: Vents can be

'gradually' opened over a few days once roots have formed. This will help prevent diseases and prepare the freshly rooted

cuttings for lower humidity. Also, keep hard surfaces clean and dry, and remove any dead plant matter.

8. Air-pruning. Placing the pots on "mesh" to raise them slightly off the bottom of the tray, kills any roots that try to grow outside of the pot. This promotes a better root structure within the actual substrate (Fig 6.1).

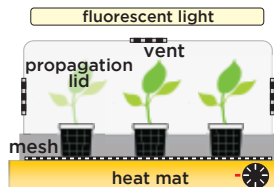


Fig 5.5 A propagation lid, fluoro light and heat mat helps improve the speed of cuttings.



FloraMax Clone Spray produces explosive root growth. P.B., Detroit MI

Transition to Veg Phase

Avoid stressing plant by sudden changes in humidity, temperature, light intensity and nutrient concentration.

When are plants ready for transplanting?

1. Ensure there are plenty of air pruned roots on the outside of the pot. To inspect roots,

gently lift the plant by tapping or squeezing the pot on all sides – particularly from beneath. If there are not many visible roots, or the substrate is falling apart, then the plant is not ready for transplanting (Fig 6.3)



Fig 6.1 Use mesh to ventilate and 'air prune' the base of seedlings.

2. Clones need to be fully "hardened-off" by testing their capacity to withstand the humidity and temperature used in the vegetative phase. Test for an hour or two to begin with.

Keys for transplanting

1. Choose the right pot size. Transplanting to an over-sized pot will discourage roots from searching for water. Use an intermediate sized pot and allow the roots time to fully colonize all the substrate BEFORE replanting into a larger pot (Fig 6.2).



Fig 6.3 Never transplant until roots have fully colonized the propagation cube

2. Ensure that the new substrate is flushed and watered with fresh nutrient solution. Refer to 'Veg' phase on the FloraMax Dose Chart. Root-XS, OrganaBud and Clone Spray will help alleviate transplant stress and maximize root and foliage growth.

3. Be careful changing from fluorescent to powerful HID (or LED) lighting as plants may become stressed. Use a dimmable ballast or lift the lights to a 'safe' height.

Vegetative phase (Veg)

Creating the right environment is essential for promoting vegetative growth and a short,

stocky plant - the ideal 'shape' for indoor growing:

1. Use lights with "blue-rich" spectrum



Impact of **Growth-XS** after 7-days use. *Suncoast Hydroponics & Garden Centre*

and day length of 18 hours.

2. Avoid "stretch" by positioning plants close to the light.

3. Topping and Low Stress Training (LST)

should be done during veg to maximize the number of bud sites and ensure all foliage receives enough light.

4. Humidity and temperature: In veg, maintain 50-70% "RH" and day ("lights-on") temperatures of 68-82 deg F (20-27 deg C). At "night", do NOT allow the temperature to drop by more than 9 deg F (5 deg C).

5. Pest management: Insects spread diseases from one plant to another and destroy foliage and roots (Fig 11.2). Insects can be prevented from entering the system by filtering the air supply. Use a magnifying glass to routinely inspect both sides of leaves, roots and substrate. "Yellow sticky traps" are useful as a forewarning.

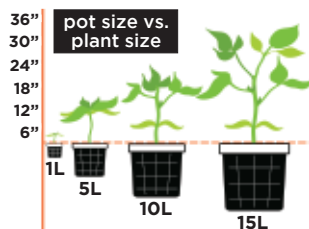


Fig 6.2 Choosing the right pot size is key for enabling roots to fully colonize the medium.

Veg to Bloom

Plants need at least 13 hours of light each day to stay in veg. Plants begin budding when they get at least 12 hours of uninterrupted darkness each night ("12/12"). This must continue until harvest.

When to switch to bloom?

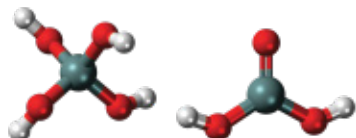
There are 2 main considerations:

• **Strong root system:** "Cuttings" can be switched as soon as desired, however, it is generally best to wait until the clone has a strong root system (typically 2-3 weeks old). For "seedlings", better yields may be obtained from a 6-8 week veg period. Using Growth-XS will accelerate veg and prevent stalled growth.

• **Height of plant:** Depending on the strain, plants will generally double in size during



FloraMax Root-XS: Root growth over 8-days @h2hydroponics, Michigan



FloraMax Silica contains Monosilicic Acid and Metasilicic Acid. This is easily absorbed by plants and is extremely concentrated and stable. Silica helps prevent leaf wilt and improves stem rigidity.

flowering. So, if 'room' height is limited, switch to 12/12 before the plant has reached 50% of the 'available' height.

Bloom phase

As a rule-of-thumb, in the first 2-3 weeks of flowering the plant will continue to grow in height ("flowering stretch") and buds will begin to form. Following this, floral growth will dominate and veg growth will slow then stop. Some general principles:

1. Refer to 'Bloom' phase on the FloraMax Dose Chart.

Resin-XS, OrganaBud and Flowering Enhancer are key for maximizing yields.

2. Lights are switched "off" for 12 hours per day - uninterrupted!

If darkness is interrupted briefly, flowering will be hindered and plants may revert back to veg. Use LED or high pressure sodium (HPS) lamps rich in yellow-red.

3. Increase the air-exchange rate.

Flowering plants tend to prefer a gradual lowering of relative humidity to around 40-60% (high humidity can cause rot and mildew). Also, carbon dioxide consumption is reaching its peak and is often in short supply.

4. General optimum "day-time" temperature is 68-82 deg F (20-27 deg C).

5. To avoid stretch and maximize yields:

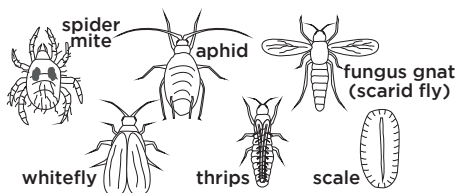


Fig 11.2 Common insects found in hydroponics. Insects spread disease from one plant to another.

- i. At "night" only allow the temperature to drop by a maximum of 9 deg F (5 deg C).
- ii. Keep plants as close to the lamps as possible without causing burning.
- iii. Avoid shading from "close" neighboring plants. "Fewer" plants are generally more productive.

6. Avoid stressing plants by pruning during flowering unless there is over-crowding or damaged growth. Major 'structural' pruning should be conducted during veg.

Topping & LST

When growing indoors, higher yields are obtained by training plants into a low, wide and flat canopy. This form promotes more flowering sites, and positions them in the light's "sweet-zone"

which is ideal for photosynthesis. This 'form' can be achieved through a combination of "topping" followed by Low Stress Training

(LST). Topping is effectively used to obtain multiple, even-sized floral sites. LST is then used to bring these floral sites to the same height to maximize grow lamp efficiency (Fig 8.1).

STEP 1. Topping

When and how to "top"?

Topping is best done when the plant is very young (less than 2-3 weeks old) and has only 2-5 nodes in total. Topping is the removal of the plant's 'top' growth just above a node (Fig 8.2). Once topped, the two axillary buds

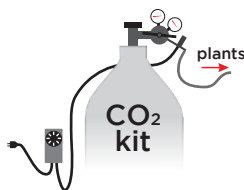
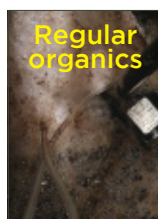


Fig 7.1 Growth rates can be greatly increased by elevating CO2 beyond normal atmospheric levels.



Organic additives are often notoriously messy (L). **FloraMax OrganaBud 0-0-2** runs extremely clean (R) and produces more bud sites, tighter internodes, more vibrant pistils and heavier yields.

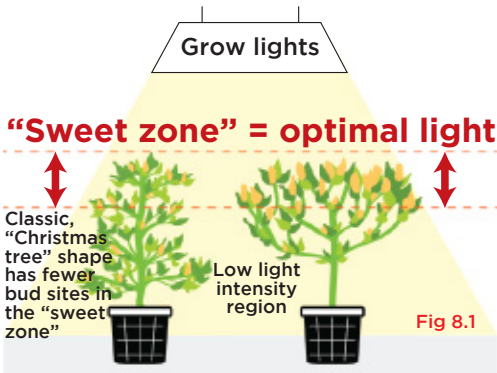


Fig 8.1

Topping and LST are used to position more bud sites in the "sweet zone"

immediately below the cut will then grow out into two new branches. Once these new branches grow out to 1 or 2 leaf sets (or nodes) they can be topped again (Fig 8.3a). This second round of topping will grow out to form four even-sized branches (potential bud sites – see fig 8.3b).

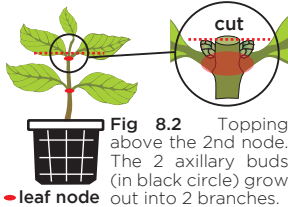


Fig 8.2 Topping above the 2nd node. The 2 axillary buds (in black circle) grow out into 2 branches.

Important points for topping

1. Topping can be done more than twice however doing so will increase time in vegetative phase. Test to see what is most productive. Some experienced growers will top up to 5 times (or more) to obtain 32 branches and can be well rewarded for their efforts.

2. Healthy plants usually take 2-3 days to recover from topping. Never top during flowering as it causes too much stress. Do not top unhealthy plants. Also, avoid topping older, thicker growth as this takes longer to heal.

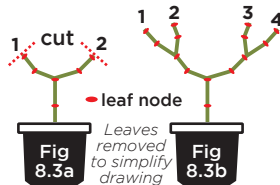
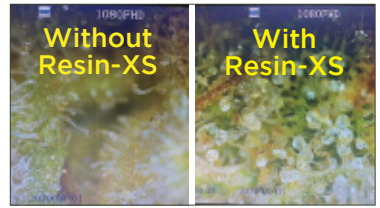


Fig 8.3a A second round of topping will grow out to form 4 even branches (Fig 8.3b).

STEP 2. Low Stress Training (LST)

After topping twice, there are four quality



FloraMax Resin-XS has an extraordinary impact upon trichome size.

branches growing vertically from what was originally the top node (Fig 8.3b). LST involves pulling these branches downwards (to horizontal) and outwards (i.e., "star" configuration) so that all four branches are spread apart from one another, horizontal and at the same height (Fig 8.4). The lower branches from the nodes 'below' where topping occurred are now also closer and more exposed to the light. As these grow up, they can be topped and manipulated using LST.

Important points for LST

1. When to start and finish LST? LST should be started as soon as possible during the vegetative phase.

Flowering phase can commence once all major branches are horizontal and level with each other. Budding can be triggered by switching lights to 12-on, 12-off. LST should continue during early flowering as vegetative growth continues. Maintain a flat, level branch structure. Vegetative growth will eventually stop when the plant is putting most of its energy into flowering. It can be beneficial to remove small, lower growth as this helps improve ventilation through the canopy.

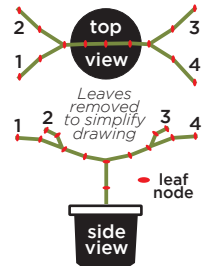


Fig 8.4 LST applied to plant in Fig 8.3b

2. Bending branches: Young growth is easier to bend than older growth. Also, some species/ strains are easier than others. Do not rush to get branches horizontal, do this in stages. When a branch is first bent, growth will be slowed. Foliage will re-orientate towards the light then eventually start to grow. LST again once it grows another 3 inches or so.

© Andrew M Taylor (Head Chemist - FloraMax)

Nutrient Management

To obtain maximum performance from nutrients, it is necessary to follow specific procedures.

1. Use sterile water with low EC

Reverse osmosis water (RO) is ideal because it contains nil harmful salts and will not harm pH. If using treated tap water, ensure it has an EC below about 0.2mS (110ppm). Any water that is stored for more than 2-3 days should be dosed with Pythoff PLUS (2ml/Gal or 0.5ml/L), then stored in the dark for at least 24 hours prior to use.

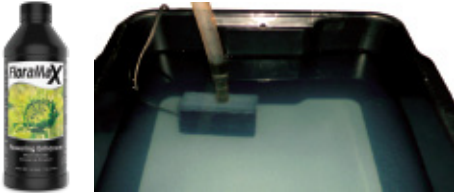


Fig 9.1. Nutrient reservoir with pH above 7: Calcium, sulfate, iron and other trace elements can precipitate in the reservoir and become unavailable for root uptake. **FloraMax Flowering Enhancer** helps “lock” pH below 6.5 and avoids needing a cal-mag.

2. Add nutrient and additives

VegaFlora AB “base” nutrient is highly pH buffered, clean and properly balanced. Use the recommended additives to optimize cropping speed, yield and quality. FOLLOW the dosage chart: Add the majority of water to the reservoir. Then add each product followed by the remaining water. Never pre-mix these products in concentrated form.

3. Check pH is 5.0 to 6.4

- **How to measure pH:** Use an electronic pH meter. Before measuring the pH, ensure that the nutrient is well stirred.
- **Target pH:** It is unnecessary to hold pH at a single point value. If the pH tends to rise, reduce it to about 5.0. This provides a larger pH “safety” margin than, for example, 5.8, and minimizes the amount of pH maintenance.
- **Hard water and highly alkaline well/bore waters:** Lower pH to between 5.0 and 5.5 when the nutrient batch is first made (Fig 9.1).
- **Adjusting the pH:** Add a small amount of pH Down / pH Up. Then stir well and recheck pH. Repeat this process until the target pH is reached. For pH Up, pre-dilute the dose at least 10-fold with water before adding.
- **Recirculating systems:** pH should be checked

Table 10.1 Target nutrient concentration

	Cuts/Seeds	Veg	Bloom
EC (mS/cm)	0.8 - 1.0	1.4 - 1.8	2.0 - 2.2
cF	8 - 10	14 - 18	20 - 22
500ppm-Hanna	400 - 500	700 - 900	1000 - 1100
640ppm-Eutech	512 - 640	896 - 1152	1280 - 1408
700ppm-Truncheon	560 - 700	980 - 1260	1400 - 1540

NOTE: EC/cF/ppm of the water must be added to these figures.

daily, or after the addition of top-up water.

- **Minimizing pH fluctuation:** For recirculating systems, supply at least 10 litres (2.5 gal) of nutrient for each large plant.
- **pH electrode maintenance:**
 - Cleaning:** The electrode must be rinsed with distilled water after use.
 - Calibrating:** It is essential to calibrate regularly using *both* pH Buffer 4.0 and 7.0.
 - Storage:** The electrode tip must be permanently immersed in an electrode storage solution. pH buffers and distilled water are NOT suitable for this.

4. Check nutrient concentration

This can be checked using an EC or TDS (ppm) meter. Burning of roots or foliage can occur if the EC/ppm is too high. If the EC/ppm is too low, deficiency symptoms can occur – see Table 10.1.

- **How to determine the “EC (TDS) target”:** This value can be found on the FloraMax dose chart. It is different for each phase of growth. For example, “Veg week-1” specifies an EC target of 1.4mS. If using a “ppm” meter that cannot produce “mS” readings, the 1.4mS will need to be

Table 10.2. Conductivity to TDS Conversions

mS (mS/cm)	cF	Hanna 500ppm	Eutech 640ppm	Truncheon 700ppm
0.7	7	350	448	490
0.8	8	400	512	560
0.9	9	450	576	630
1.0	10	500	640	700
1.1	11	550	704	770
1.2	12	600	768	840
1.3	13	650	832	910
1.4	14	700	896	980
1.5	15	750	960	1050
1.6	16	800	1024	1120
1.7	17	850	1088	1190
1.8	18	900	1152	1260
1.9	19	950	1216	1330
2.0	20	1000	1280	1400
2.1	21	1050	1344	1470
2.2	22	1100	1408	1540
2.3	23	1150	1472	1610
2.4	24	1200	1536	1680
2.5	25	1250	1600	1750

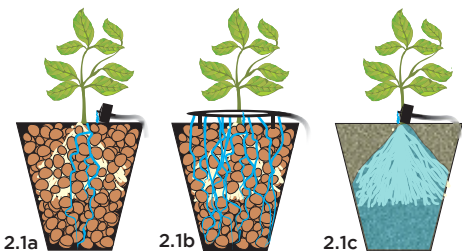


Fig 2.1a Roots are often underfed when plants are top-fed. This problem can be reduced by delivering nutrient at multiple points, **Fig 2.1b**, AND by using a finer medium such as perlite, Rockwool, coco coir or soil - **Fig 2.1c**

manually converted using Table 10.2 i.e. 1.4mS is equivalent to 700ppm on a "500ppm" meter; or 896ppm on a "640ppm" meter; or 980ppm on a 700ppm meter. **CAUTION:** *Nutrient concentration will be grossly incorrect if this is converted incorrectly.*

• **How to check and adjust EC/TDS:** Once the nutrient and additives are added to the reservoir, stir thoroughly then immerse the electrode. Allow the meter to stabilize before recording the reading. If the EC is below target, add extra nutrient until the target is reached. If the EC is too high, add some water then recheck.

• **EC targets with salty water:** When following the dose chart, if the water has for example, an EC of 0.5mS and the EC target is 2.2mS, the final "gross" EC will be 2.7mS (i.e. $2.2 + 0.5 = 2.7$). This may be toxic so monitor plants closely for signs of salt burn. The EC can be lowered to a safe level by adding dilution water to the reservoir.

IMPORTANT: Reservoir "volume" markers, measuring cups and EC/TDS meters are often inaccurate. Hence, to properly utilize EC targets, ensure these items are calibrated before use.

5. Feeding frequency

Feed requirements will depend on the substrate and system type, stage of growth, air

temperature and humidity. Always water sufficiently to ensure the entire root zone is fed and flushed (Fig 2.1).

NFT (no media): Provide 10-20 feeds per hour during daylight, then feed less at night.

Perlite, Vermiculite, Expanded clay: Generally feed once every 1-3 hours during daylight, then feed less at night.

Soil / Coco Coir / Rockwool: Over-watering can cause oxygen starvation, pest invasion (fungus gnat) and fungal diseases. Soil and coco coir can be improved by adding up to 30% perlite or expanded clay. Some guiding principles are:

i. **Nutrients or plain water:** Generally use nutrients at each watering. In some soils though it is better to use nutrients at each alternate watering to help minimize salt build-up.



Fig 11.3 Root browning is a typical symptom of root diseases. **FloraMax Pythoff PLUS** helps prevent this.

ii. **Feed times:** Begin feeds at the beginning of daylight and cease at least 2 hours before night.

iii. **Feed volume:** Nutrient feed volume should produce about 10-20% run-off under the bottom of the pot i.e. Collect 10-20ml for every 100ml of feed. Run-off helps ensure that the root-zone is fed and flushed.

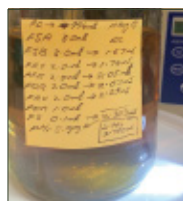
iv. **Feed frequency:** Generally, feed once per day. To determine if plants are ready for feeding, lift the pot to check if it feels light. For coco, it is common to feed several times per day from about veg week-3. For hungry strains, this will maximize yields and prevent deficiency symptoms.



VegaFlora: Rapid veg growth **without a cal-mag** or any nitrogen supplements. @hydropacific, California



Thick stems with VegaFlora. **No cal-mag.** @55hydro, California



Aug 2019 VegaFlora test batch with all additives (EC 2.3mS) including System Maintenance. Original pH 5.99 and now **6.47 after 19-months**. There's minimal deposit on bottom of jar and nil white slimes. @floramaxlab



6. Nutrient disinfection

Poor growth is often due to the failure to treat the nutrient solution. FloraMax Pythoff PLUS and System Maintenance are ideal for this (Fig 11.3) as they are fully compatible with organic additives – *NOTE, regular chlorines and hydrogen peroxide can destroy the organics in FloraMax!*



7. Nutrient stability

For maximum nutrient stability, avoid using an air-stone/ aerator (system dependant), and cover the reservoir to prevent evaporation and light exposure (Fig 13.4). Light can destroy organic additives and accelerates the growth of slimes and pathogens.

8. 'Recirculating' nutrient systems

- **Check water level, EC and pH daily:** Keep the reservoir topped up with water. Do not allow the EC/ppm to fall by more than about 10% - maintain by adding base nutrient (VegaFlora AB or Veg-1). Maintain pH between 5.0 and 6.4.
- **Replace nutrient every 7-14 days:** EC/TDS readings will not warn of an imbalance of nutrient salts, or the accumulation of toxic salts. Therefore, the recirculating nutrient must be discarded and replaced every 7-14 days.

9. Flushing of root zone

Flushing removes salt build-up, dirt and algae from the root zone, substrate and feed circuit. Inspect filters and drippers prior to making fresh nutrient as these can become blocked during flushing.

- **Recirculating systems:** Flush immediately after the nutrient is discarded. Firstly, remove any obvious build-up. Then partly fill the reservoir with fresh water and operate the pump to flush the feed circuit, substrate and root zone. Discard the waste, then repeat the process until the waste water is clear.

- **Run-to-waste systems:** Generally flush every 1-2 weeks, or weekly if water quality is poor. Place water (pH 5-6) in the reservoir and operate the nutrient pump until the run-off is within 0.5mS/300ppm of the input water. Do additional flushing with a hose if the substrate is accessible.

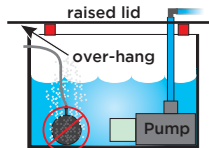
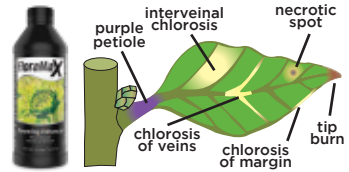


Fig 13.4 For maximum nutrient stability, avoid using an air stone and install a raised lid on the reservoir.

10. Nutrient and root-zone temperature

The nutrient solution and root zone should be

maintained between 20-25 deg C (68-77 deg F). "Hot" nutrient will promote root diseases and "cold" nutrient will slow plant metabolism. Its temperature can be optimized by keeping the air temperature at 20-25 deg C (68-77 deg F).



FloraMax Flowering Enhancer fights common nutrient deficiency symptoms and replaces PK additives.

11. Clean-up between crops

This helps prevent diseases in the next crop:

- **Step 1.** Remove plants and substrate then do as much manual cleaning as possible.
- **Step 2.** Partly fill the reservoir with water and lower its pH to 4.5 - 6.0. Add household chlorine bleach (50g/L chlorine) at 20ml/Gal (5ml/L) and mix well. Ensure good ventilation and low light.
- **Step 3.** Run the pump at least once every hour over a 24-hour period. 'Flooding' may be necessary to contact hidden surfaces.
- **Step 4.** Discard this solution then flush several times with fresh water to remove all traces of chlorine. Drippers may need to be individually dismantled and cleaned.

Foliar Spraying

Foliar sprays are useful for delivering fertilizers, fungicides and pesticides to plants.

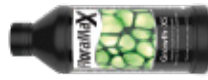
1. **A wetting agent** (or 'wetter') should be added to foliar spray solutions. This increases the sprays capacity to "wet" and penetrate foliage. **NOTE:** FloraMax Clone Spray has an inbuilt wetting agent - NEVER add more.
2. **Test-spray a small patch of leaves** and observe for at least 2 weeks.
3. **The best time to spray** is usually about 1 hour before "daylight".
4. **Avoid spraying when air temperature** is above -25°C (77°F) as absorption is usually poor.
5. **Spray a 'fine' mist.** Drenching foliage can restrict the stomata's ability to absorb. A fine mist will achieve maximum surface coverage, especially on the underside of leaves where the majority of stomata are located.
6. **Spray when wind is minimal** - to avoid waste.
7. **Use low salinity/ soft water.** This will reduce the risk of leaf staining and burning.

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FloraMax VegaFlora A+B Dose Chart

ml / Gal	Light per day (hours)	VegaFlora		Root-XS ^{EC}	Flowering Enhancer ^{EC}	OrganaBud (0-0-2) ^{EC}	Resin-XS ^{EC}	System Maintenance	Silica	EC target (mS/cm)
		A [#]	B [#]							
Cuttings & Seeds* (1-2 weeks)	Week 1	6.5ml	6.5ml	7.5ml		4ml		4ml		1.0
	Week 2	9ml	9ml	7.5ml		4ml		4ml	0.4ml	1.4
	Week 3	10ml	10ml	7.5ml		4ml		4ml	0.4ml	1.6
	Week 4+	11.5ml	11.5ml	7.5ml		7.5ml		4ml	0.4ml	1.8
Veg Phase	Week 1	10ml	10ml	7.5ml		7.5ml		4ml	0.4ml	1.8
	Week 2	10ml	10ml	7.5ml		7.5ml		4ml	0.4ml	2.1
	Week 3	10ml	10ml	7.5ml		7.5ml		4ml	0.4ml	2.1
	Week 4	9ml	9ml	7.5ml		7.5ml		4ml	0.4ml	2.2
Bloom Phase	Week 5	9ml	9ml	7.5ml		7.5ml		4ml	0.4ml	2.2
	Week 6	9ml	9ml	7.5ml		7.5ml		4ml	0.4ml	2.2
	Week 7	9ml	9ml	7.5ml		7.5ml		4ml	0.4ml	2.2
	Week 8+	9ml	9ml	7.5ml		7.5ml		4ml	0.4ml	2.2

AS REQUIRED



Version 25 Aug 2022: For further information see <https://www.floramax.com> | **This dose chart serves as a guide only** and requirements will vary depending on the plant species, EC of raw water, substrate, environment, feed rate, etc. No responsibility for any errors or omissions is accepted.

Instructions (Hydro# / Coco / Soil)

STEP 1. Dosing

Add majority of water* to reservoir. Then add each product followed by the remaining water. Add in the sequence shown in the chart (left to right) and stir thoroughly after each addition. **NEVER** add any chlorine or peroxide or pre-mix products in concentrated form. Avoid adding a "cal-mag". *For DWC Systems see www.floramax.com/resources/ **EC:** (For commercial use) EC contribution (mS/cm) from specified product dose.

STEP 2. pH control

Immediately check pH it is between 5.0 and 6.4. NOTE: if pH is 6.5 or above, it is best to quickly lower it to between 5.0 and 5.5.

STEP 3. Feed frequency

Generally use this nutrient solution with each watering. Note that under-feeding is a common cause of deficiency symptoms especially in larger plants.

STEP 4. Maintenance

- **Maximizing nutrient stability:** Keep the reservoir covered, and if feasible, do NOT use an air-stone/aerator.
- **Recirculating systems:** Regularly check water level, pH and EC. Replace nutrient every 7-10 days.
- **Coco or soil systems:** Flush the medium every 1-2 weeks.
- **Water quality:** RO water is ideal. Avoid waters with EC above about 0.2mS (110ppm).
- **Nutrient deficiencies:** This dose chart will meet the demands of most system types and species. If deficiencies occur, use FloraMax Ca-Mg-Fe at 0.5-lm/L (2-4ml/Gal).
- **"EC target":** Applies with water of 0.0mS. If the water is 0.2mS (for example), then 0.2 must be added to the "EC target". Due to the risk of salt burn, be careful if exceeding EC targets by more than 0.2mS.

Use Growth-XS in veg week 2 or 3 to accelerate crop speed



*Use CLONE SPRAY and CLONER FOOD on cuttings and seeds

FloraMax

Your harvest is our priority

FloraMax VegaFlora A+B



Professional 2-part nutrient for commercial cropping in hydro, soil or coco coir.

- Single formula for veg and bloom. Performs flawlessly from seed through to harvest - nil deficiencies. No "cal-mag" required, even in RO or soft waters.
- Extreme pH stability. pH adjustment is rarely required in soil and coco.
- Very simple to use - there is no waiting, simply measure, pour then stir.
- Handles hard or high pH waters - runs cleaner with fewer blockages and provides exceptionally long reservoir stability.
- Available in 1L, 5L, 20L, 220L & 1,000L.

Root-XS



Produces explosive root growth. Minimizes transplant stress and plants can generally be "flipped" sooner. Produces greener, healthier foliage and fruits with less signs of stress. pH-neutral formula that will not cause foaming, odors or biofilms.

Resin-XS



The #1 BLOOM BOOSTER for serious growers. Enhances resin and oil content and helps promote higher fruit weight. PGR free, and will not induce foul odours or build-ups in the reservoir.

Flowering Enhancer



Three-in-one flowering additive that makes growing easier: **1.** It is a PK additive. **2.** Contains calcium, magnesium and iron i.e. replaces cal-mag additives. **3.** Helps lock pH below 6.5 and improves pH stability by typically 500%.

OrganaBud



Induces more bud sites, increased mass, tighter internodes, more vibrant pistils and improved aroma. Contains purified "extracted" organics: **1.** Maximizes efficacy, **2.** Prevents buildups, blockages, foaming and odors. Ideal for commercial growers.

Pythoff PLUS *NEW*



Helps prevent root rot, blocked drippers and build-up in hydroponic systems. Also used for maintaining stored water and post-harvest system clean-up.

Growth-XS *NEW*



Helps reduce veg phase by 1-3 weeks to enable more crops per annum. Helps prevent transplant and transition shock, and revives stalled vegetative growth.

Ca-Mg-Fe



Cal-Mag + Iron + the full spectrum* of trace elements: **1.** Many nutrient deficiencies are due to trace elements, **2.** Many base nutrients are deficient in trace elements. *Fe, Cu, Mn, Zn, Mo, B.

Clone Spray



Helps improve vigor of clones and seedlings. Has built-in wetting agent.

System Maintenance



Prevents nutrient by-products and blockages. Compatible with organics.

Silica



Contains 16% "silica" as mono-silicic & meta-silicic acid. Helps prevent leaf wilt and increased weight and shelf-life of fruit.

Cloner



Clone gel. Resists cross contamination. 10 year plus shelf life.



Analytical Chemists and Horticultural Consultants **Since 1966**

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