

HUMBOLDT COUNTY'S OWN



**PRODUCT
CATALOG**
+ADVICE FOR GROWERS



HUMBOLDT COUNTY'S OWN

We source all of our ingredients, blend and bottle all of our products in-house.

We're all about quality:

- FDA Food Quality Stainless Steel bottling line.
- Bottles are washed with ionized air and vacuumed before filling.
- Bottles are factory sealed with solid state induction sealer-no cheap tamper proof caps that aren't tamper proof.
- Each batch is numbered for reference.
- Commercial Reverse Osmosis System for most products.
- High powered UV sterilizer system, FDA rated for injectibles.
- Smaller bottles are heavy duty pharmaceutical style with pour lip for accurate measuring.
- Regular product testing by independent lab to assure conformance with standards.



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Where We Came From



Humboldt County's Own, was not created to peddle nutrients. There were no investors, no business plans, no marketing strategy. Just Phil and Gail playing with plants in a tractor shed back in the 90's.



It was all about having fun- reading patents and plant science journals looking for cutting edge ideas and growing what had never been grown before. Our “concoctions” were just for us and, later, for our “family” of friends out Highway 36 in Humboldt County. In 2002 we opened up Eel River Hydroponics in Fortuna and started giving out free samples of our “stuff” to customers. It was our way of drawing customers to the store. Our first products, BushMaster, Gravity, Purple Maxx and Snow Storm Ultra, were completely different from anything ever seen before and each was an instant local hit. We did no advertising. Our success was strictly word of mouth. Stores down in San Francisco heard what our products could do and came up to buy. Soon the national distributors heard the buzz and, one by one, came to our store and offered to take our products across America.

Why We're Unique

HUMBOLDT COUNTY'S OWN PIONEERED THE CONCEPT OF HIGH PERFORMANCE ADDITIVES

We're not part of the industry. We're growers. We came “out of the hills” and feel a kinship with other growers. Our concoctions were made for FUN, for us and our friends, mostly to see what would happen! We would experiment and give out samples to our testers out in the hills. If experienced Humboldt County growers liked one of our concoctions enough to want to buy it, then we would make it.

WE DON'T TELL YOU WHAT TO BUY, YOU TELL US WHAT TO SELL.

That's how our product line evolved and that's why it's different. We make a small number of products because that's all you need! We're the real deal. Our product line is very tight, focused, simple and effective - the way *real* growers want it. **That's why the Big Boys come to us.**

HUMBOLDT COUNTY'S OWN IS THE ONLY COMPANY IN THE INDUSTRY DEDICATED TO THE DEVELOPMENT OF HIGH PERFORMANCE ADDITIVES.

- There's so much more to our products than we can say. Find out for yourself.
- We don't waste our time (or your money) making “flushing agents” or fu-fu sugar water Kool-Aid sweeteners. If we make it, there's a good reason why.

STARTER PACK

EVERYTHING YOU NEED IN ONE BOX



If you're new to growing or you've tried some of our products and want to discover what makes us unique in the industry, then check out our Starter Pack. We strive for quality, yield and simplicity. You get our complete line except for Crystal Burst (because you get Sonic Bloom) and Purple Maxx (because most growers don't need it). That's right, our whole line is just nine products. Remember, growing is supposed to be fun and it's supposed to be simple. See for yourself how simple it can be.

All bottles are standard retail sizes; no cheap sample sizes.

Quarts: Killer Tea , Deep Fusion Micro, Grow and Bloom

8 oz: Deep Breath, Snow Storm Ultra, G10 (Gravitation #10), Magnum

100 gm: Sonic Bloom (Sunshine Powder)

Instructions included. Grow questions? Email: info@HumboldtBottling.com

SNOW STORM ULTRA



THE ORIGINAL TRICHOME STIMULANT.

GIVE YOUR PLANTS THAT "SNOWY FROSTED" LOOK THAT GROWERS & THEIR FANS LOVE.

- Always works.
- Swells trichomes - no other product compares.
- Stimulates the development of new trichomes - even on the leaves.
- Drastically increases resins and oils. (Use Killer Tea for an extra boost.)
- Intensifies and increases terpenes and other fragrance notes.
- Helps prevent accidental pollination.

A must use for greenhouse and outdoor growers. Don't end up with seeded plants because of your neighbor's males or because you didn't spot a hermaphrodite. Just spray once or twice a week during early and mid-bloom.

Foliar usage:

- In veg and early bloom, *if you are not using it in your reservoir*, use 1 teaspoon per gallon 3-4 times per week.
- In bloom, *if you are not using it in your reservoir*, 1-2 teaspoons per gallon of water 3-4 times per week.
- If spraying to prevent pollination use 1-2 teaspoons twice per week during weeks 3-4.

Soil Usage: 1 teaspoon per gallon of water beginning in early veg. Snow Storm is one of our products where more is often better. Some growers increase rate to 2-3 teaspoons per gallon for maximum trichome production during peak bloom cycle.

Hydro Usage: Use 1/2 to 1 teaspoon per gallon beginning in early veg and run continuously. Can increase to 2-3 teaspoons as above.

Clones: Can increase the rate of root growth. Add 1/2 teaspoon per gallon to your feedings. Can also use as a foliar at the same rate 2-4 times per week. Works great in EZ clone type setups. Add Killer Tea for even better results.

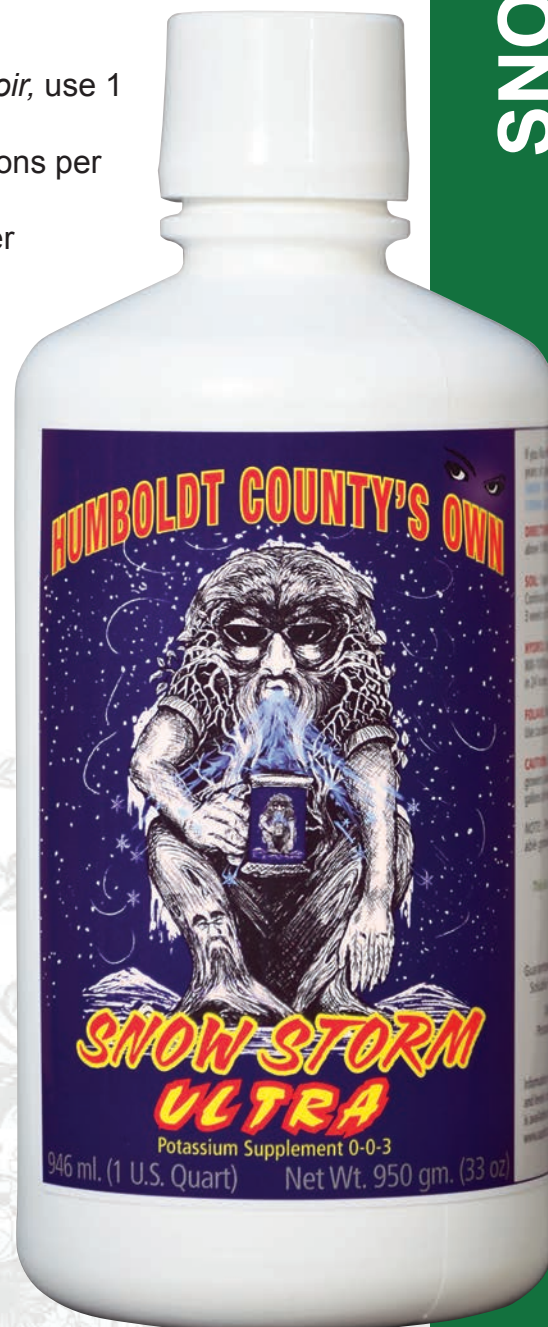
THIS IS *THE* HUMBOLDT COUNTY ORIGINAL

NOT SOME BOGUS SUGAR WATER SWEETENER
THAT DOESN'T REALLY WORK.



8 OZ • 32 OZ • 1 GAL • 2.5 GAL • 5 GAL • 15 GAL • 30 GAL • 55 GAL

AVAILABLE SIZES



SNOW STORM ULTRA

DEEP BREATH

pre-BLOOM BOOST MONO-FLORAL HONEY COCKTAIL

If you are impressed by the immediate and powerful effect of G10 on the size and density of your flowers, wait till you add DEEP BREATH. Our Honey based cocktail “primes the pump” during the vegetative and early bloom stage so plants experience an explosive surge in bulk when G10 is applied. The DEEP BREATH - G10 combo boosts yields to unheard of levels- even for beginners.

IS IT POSSIBLE TO GET CO₂ ENRICHMENT WITHOUT USING CO₂?

CO₂ enrichment is the proven way to get highly accelerated growth rates in greenhouses and grow rooms. Deep Breath contains a monofloral honey which is from one species of flower. We discovered 3 honeys, one from Sicily, one from Serbia and one from the United States, which appear to improve plant growth just like CO₂ enrichment. That’s why we call it Deep Breath. If you’re already using CO₂ and then apply Deep Breath the effects are even more breathtaking. (Pardon the pun). When applied during the first 2 weeks of bloom, flowers will tend to stack more densely along the branch tips when G10 is applied at the beginning of week 3.

[Tip: optimize stacking by applying Snow Storm in bloom]

SHORTEN YOUR VEG CYCLE WITHOUT LOSING YIELD

Commercial growers, Dep Growers, and others love Deep Breath. Bringing your plants to proper size before flowering means higher yields. Doing it in less time will easily give a grower an extra cycle per year.

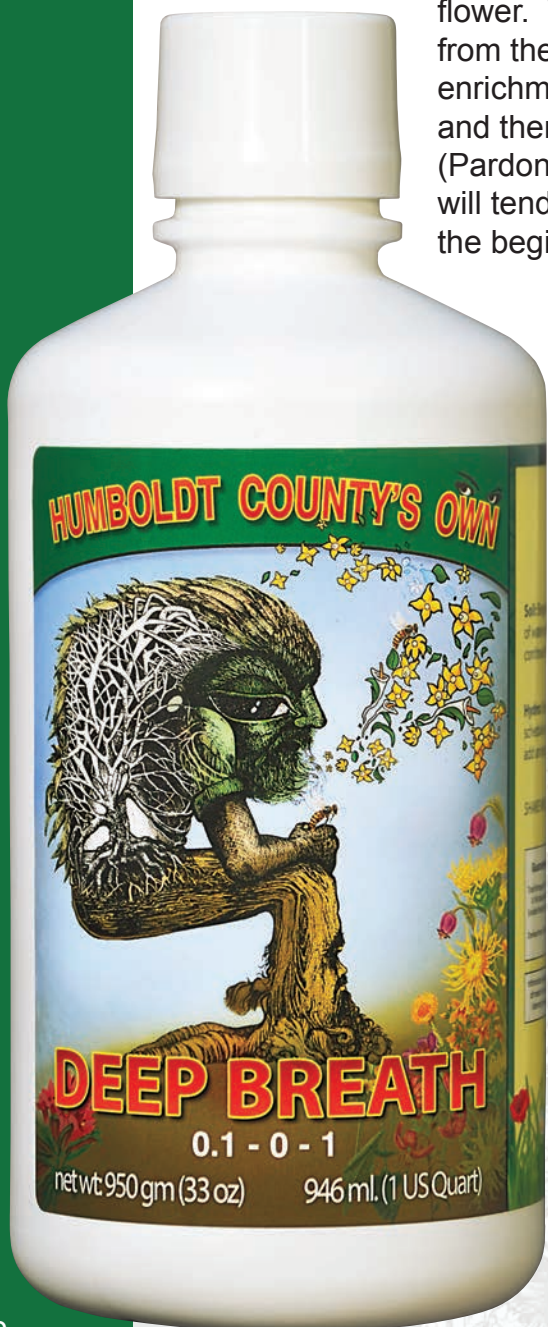
- Begin applying 1 tsp/gallon to cuttings and clones. Foliar feeding every 3 days is best- works faster and saves you money!
- Add Killer Tea to your nutrient mix (don’t foliar feed).
- Once cuttings/clones are about 3-4 inches tall and have developed roots, add 1 tsp/gallon of water (Soil or Hydro) to your nutrients and continue through the first 2 weeks of bloom; then switch to G10 for a powerful finish.
- Works with most nutrient lines.

TAKE A DEEP BREATH AND BLOW IT UP!



8 OZ • 32 OZ • 1 GAL • 2.5 GAL • 5 GAL • 15 GAL • 30 GAL • 55 GAL

AVAILABLE SIZES



G 10 Gravitation #10



G-10 GRAVITATION #10

A BRIEF HISTORY

After the EPA issued a stop sale order on our legendary Gravity Flower Hardener because the label wasn't "approved", we decided to develop a replacement while the issues with Gravity were resolved. We started with our proprietary kelp extract and experimented with ways to take it to a new level. As we always do, we made up experimental versions and sent them out to the hills for testing. They were numbered, Gravitation #1, #2, etc. Based on the feedback we received, we modified the formula and tried again. We had just released G11 when a grower called and wanted 40 gallons of G10 right away. Other calls came in. Everyone wanted #10 but we couldn't sell it until California approved our registration. In the meantime we sent samples to stores that carry our complete line so they could test it and have the first opportunity to stock it in their stores. When the registration came two months later we had advance orders for over \$350,000. Sales continue to grow - for a good reason.

TAKE THE ART OF FLOWERING TO A NEW LEVEL

G10 (Gravitation #10) is a must-have product for serious growers. Nothing on the market will boost your yields like G10. Swells the size and increases the mass of your flowers like no other product. The swelling effect can lead to longer tighter stacking of flowers along the branches - the look that growers and their fans all love. We took our proprietary kelp extract used to make Gravity Flower Hardener to a new level. If you loved our original GRAVITY you need to give G10 a try. It's not the same as Gravity but many growers say it's better because of the drastic size increase.

- Seeing is believing. Even beginners will see huge increases in size and mass in 2 weeks.
- For maximum "Gravity Effect" use SONIC BLOOM (Sunshine Powder) and our pharmaceutical quality KILLER TEA.
- For maximum stacking use DEEP BREATH in veg and the first 2 weeks of bloom.

Soil and Hydro: Use 1 tsp. (5 ml.) per gallon beginning the third week of bloom and continue to harvest. Depending on the strain, dosage can be increased up to 3-4 tsp. (15-20 ml.) per gallon with outrageous results. Save money: foliar feed at 1 tsp/gallon every 3 days for the first 2 weeks.

Don't waste your money on bogus knock-offs.
This is the real stuff.



8 OZ • 32 OZ • 1 GAL • 2.5 GAL • 5 GAL • 15 GAL • 30 GAL • 55 GAL

AVAILABLE SIZES



SONIC BLOOM

with VITAMIN B1, B2, B3, B6

(POWDERED SUNSHINE)

WITH VITAMIN B1 plus MORE!
Outperforms every PK Booster on the market!

- 20 times the vitamin B1 of other popular bloom boosters.
- Increases the size and mass of flowers.
- Stimulates resinous oil and fragrance production in many flowers and medicinal herbs.

During the flowering cycle plants require large amounts of Phosphorus and Potassium for maximum development. The primary ingredient in Sonic Bloom, Potassium Phosphate (KH_2PO_4), is the most concentrated source there is.

Our philosophy at Humboldt County's Own is to keep the growing process as simple as possible, using the least number of products. The reason we have 2 boosters is because we wanted growers to have the absolute best PK booster, but it's just not possible to dissolve the "powdered sunshine" into a liquid concentrate like Crystal Burst. It needs to be dispersed uniformly on the fertilizer. We use a Patterson/Kelly V Blender to disperse it properly- just like pharmaceutical companies. Every teaspoon has exactly the right amount.

- Works well with all nutrient brands.



Soil and Hydro: Highly concentrated, use just 1 teaspoon per 5 gallons of water!

Apply when you first see signs of flower development, usually around the 2nd week of bloom, and continue till a week or so before harvest.



- A lot of growers flush the last week or so to rinse out excess fertilizer. [See glossary for discussion of "flushing"]
- For best results continue to apply Snow Storm, Purple Maxx and Killer Tea during flush. They are designed to be used all the way to harvest because they give an extra kick to the end-stage bloom processes such as trichome boost, resin, fragrance and swelling.
- Don't waste money on "flushing agents".

Use Sonic Bloom OR Crystal Burst, not both.



100GM • 1 LB • 5 LB • 10 LB • 25 LB • 50 LB

AVAILABLE SIZES

CRYSTAL BURST



BLOOM BOOSTER w/ VITAMIN B1

One of the most concentrated liquid PK bloom boosters on the market:

- Increases the size and mass of flowers.
- Initiates and stimulates profuse flower development.
- Stimulates resinous oils and fragrance production in many culinary and medicinal herbs.
- Contains large amounts of Vitamin B1 to help mitigate the stress caused by high performance feeding regimens.

All effective liquid bloom boosters are made from the same ingredient, Potassium Phosphate (KH_2PO_4), which supplies large amounts of Potassium and Phosphorus necessary for flower development.

- When comparing different boosters, what really matters is the PK number (0-15-15). The higher the numbers the more product is in the bottle. Crystal Burst is as concentrated as it can be made without it crystallizing when it gets cold.

CRYSTAL BURST IS 50% STRONGER THAN THE MOST POPULAR BOOST BUT COSTS ALMOST THE SAME! WHY WASTE MONEY?

- Products with higher numbers usually have a pH above 7 which can cause nutrient lock-out or require large amounts of pH down in order to work properly. [See glossary for discussion of nutrient lock-out]

Soil and Hydro: Use 1 teaspoon (5 ml.) per gallon of water.

Works well with all nutrient brands. Apply when you first see signs of flower development around the second week of bloom. Continue till a week or so before harvest.

- A lot of growers flush the last week or so to rinse out excess fertilizer.
- Although growers usually flush with water, Snow Storm, Purple Maxx and Killer Tea are designed to be used all the way to harvest because they give an extra kick to the end-stage bloom processes such as resin, fragrance and swelling. [See glossary for discussion of flushing]
- Don't waste money on "flushing agents".

Use Sonic Bloom OR Crystal Burst, not both.

Beware of products containing Phosphites which are sometimes added to boost PK numbers. Phosphites do not add usable Phosphate and can actually damage your plants at a pH below 6. That's why California law **REQUIRES** warnings on all fertilizers containing Phosphites.



8 OZ • 32 OZ • 1 GAL • 2.5 GAL • 5 GAL • 15 GAL • 30 GAL • 55 GAL

AVAILABLE SIZES



CRYSTAL BURST

PURPLE MAXX

The name says it all. A product so incredible it couldn't be invented on purpose but had to be discovered by accident. This product was originally called Stacker because the owner was trying to develop a natural based cocktail that would "stack" flowers tightly along stems. As fate would have it, two testers out in the hills happened to spray it on their plants and saw something they had never seen before. The owner decided to rename it Purple Maxx.

Humboldt County growers are a tightly knit society so it wasn't long before the word spread. Within 2 weeks we went from giving away 4 oz. samples to selling cases of gallons. Bill Graham from Micro Hydro in San Francisco heard about it, bought everything we had and spread the word down south. Sunlight Supply heard about it, bought it and took it nationwide. It all happened in two months.

Purple Maxx will force color development in susceptible strains so your plants attain full color when it's time to harvest. Also stimulates crystal, resin and fragrance development in all strains just like Snow Storm Ultra.

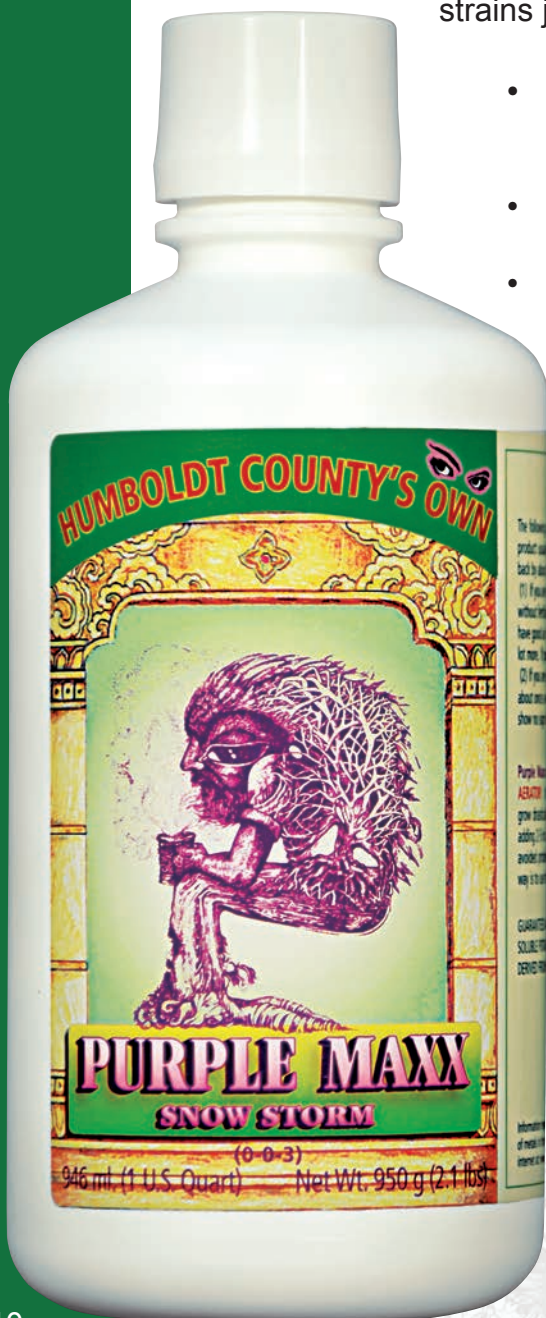
- **Tip:** Use Snow Storm Ultra for trichome, crystal, resin and fragrance development in bloom then switch to Purple Maxx 2-3 weeks before harvest. Save money.
- Many growers delay harvest waiting for better color development and end up with brown rot inside their flowers.
- Why take a chance. Don't wait and hope. Make it happen.
 - Get full color development in susceptible strains.
 - **Save money:** More effective as a foliar feed. One bottle goes a lot further.
 - Can also be used during flush.

Soil Usage: Use 1 tsp/gallon of water beginning 2-3 weeks before harvest. For some strains, increase to 2-3 tsp/gallon for extreme intensification. Best to continue through flush if you are flushing.

Hydro Usage: Same as Soil.

Foliar: For some strains, foliar is more effective. Use 1 tsp/gallon 2-3 times per week. Spray lightly using the finest mist possible- do not wet flowers. Can increase to 2 tsp/gallon if desired.

Growers tell us that many of the newer strains respond very well to Purple Maxx.



8 OZ • 32 OZ • 1 GAL • 2.5 GAL • 5 GAL • 15 GAL • 30 GAL • 55 GAL

AVAILABLE SIZES

DEEP FUSION SERIES

MAKES ADVANCED GROWING SIMPLER



DEEP FUSION SERIES

Many growers desire and appreciate the improved flavor and fragrance of products grown with natural fertilizers but also want the high yields typically associated with potent chemical inputs.

Until now growers had to choose whether to “go organic” or use standard 3 part chemical fertilizers. People who wanted both would pick and choose their own mixes with sketchy or inconsistent results. Worse yet, the feeding routine would get so complicated and such a hassle that growing ceased to be fun.

Humboldt County's Own Deep Fusion *simplifies* the choices by putting more ingredients into less bottles.

OUR UNIQUE 3 PART BASE NUTRIENT SYSTEM “FUSES” THE BEST OF BOTH WORLDS:

ORGANIC BASE NUTRIENTS:

Molasses and **Kelp** are the key organic substrates which are the basis of almost all commercial organic fertilizers.

MOLASSES: a rich source of simple and complex sugars, polysaccharides, esters, vitamins, amino acids, micronutrients and trace elements:

- Particularly rich in Magnesium.
- A rich source of trace elements not found in any fertilizer.
- Its sugars are a superior source of nutrition for the beneficial bacteria in the soil. Makes flavored sugar-water products obsolete.
- It's an effective complexing agent. Forms bio-available complexes with many micronutrients.

KELP: known for centuries to improve plant vigor which is vital to plant health and crop yields.

- Exhaustive research by our kelp supplier has confirmed that the active compound profiles of our kelp are unique when compared to every other seaweed-based product in the world, whether from *Ascophyllum nodosum* or any of the lesser-studied species found globally.
- Enhances root and leaf development.
- Stimulates cell growth and division, shoot initiation and flower formation.
- Contains cytokinin, IAA and other growth factors.

Unfortunately, growers using straight kelp products usually overfeed because the instructions are vague and don't clarify the critical importance of tapering the dose during the bloom cycle.

- Kelp, when overused in bloom, channels nutrients away from flower development and into useless leaf.
- Flower tops will actually “leaf out” at the end of the bloom cycle and yields will nose dive.

Deep Fusion removes the guess work. We put the kelp extract into the Deep Fusion Grow so the kelp supply tapers off through the bloom cycle the way it should. You get the right amount of kelp at the right time which means heavier yields and no more leafy flowers.



YOU SAVE MONEY AND SIMPLIFY YOUR GROW ROUTINE

- No need to buy expensive “bio” kelp/molasses additives
- No need for separate kelp additives
- No need to waste money on bogus flavored sugar water enhancers. Does putting Kool-Aid on your plants really make sense?

CHEMICAL BASE NUTRIENTS:

The chemical base nutrient part of our system is as good as and, in some respects, better than, other base nutrients. General Hydroponics pioneered the concept back in the 1980's and their good reputation is well known. However, while developing our line and testing it in Humboldt County, we discovered that growers kept encountering Magnesium deficiency with their plants, so we took the GH concept and improved upon it by loading Deep Fusion with as much Magnesium as possible. One of the ways we get more Magnesium in solution is by using Molasses. As mentioned above, molasses is a complexing agent and will help hold Magnesium in solution PLUS molasses is rich in Magnesium to begin with. The result is a system that is optimized for the real needs of indoor growers and gives more consistent results than any line we know of.

DEEP FUSION GROW (2-3-6) + MOLASSES + KELP: The NPK numbers tell you right away that our Grow is maxed out with nutrients PLUS molasses and Kelp. Promotes vigorous stem and leaf growth early on and increases effectiveness of DF Bloom in the flowering cycle. Makes traditional kelp products obsolete.

- As mentioned above the reason the kelp is only in the Grow is because it needs to be applied at a heavier rate during the grow cycle and then needs to taper off in bloom- EXACTLY the way the Grow is used.

DEEP FUSION BLOOM (0-5-4) +MOLASSES +MAGNESIUM:

Supplies large amounts of Phosphorus and Potassium for vigorous flower development as well as added Magnesium. Increases the size and mass of flowers and stimulates resinous oil and fragrance production in many culinary and medicinal herbs. Use with Crystal Burst (0-15-15) or Sonic Bloom (0-51-34) for a powerful finish.

DEEP FUSION MICRO (5-0-1) + MOLASSES + CALCIUM: The Micro contains all the standard micronutrients necessary for healthy, vigorous growth. Once again we want to point out that molasses contains numerous other trace elements so the grower gets an extra micronutrient boost. That's part of the reason why the “esthetics” like resin, fragrance and taste are enhanced. It's the same reason that Killer Tea boosts the esthetics and final swell. There's just something about organics.



WHY ALL MICROS ARE NOT THE SAME



It's difficult to keep Iron in solution without it oxidizing and becoming insoluble. It's one of the few instances where the term "nutrient lockout" is accurate. [See the glossary of terms at the back] That's why the Iron in all base nutrient formulas is chelated [See glossary of terms]. For Iron the 3 usual chelators are EDTA, DTPA and EDDHA.

- **Avoid nutrients that use Iron EDTA!** It's not stable under a wide range of pH conditions so the chelate can break down making the Iron insoluble. Large amounts of Iron chelates are used in all Micros and, since Iron EDTA is cheap, a manufacturer can save a lot of money using it.
- Due to issues with Iron EDTA, more advanced chelators were developed: DTPA and EDDHA.
- **DTPA and EDDHA** complement each other and provide more bioavailable Iron for your plants. By using both forms in a Micro, the grower can be certain that the Iron will be available at a wide range of pH values. This is especially important if you are growing outdoors in backyard soil.

SUMMARY:

The Deep Fusion Series is not just another 3 part made by dissolving the usual chemicals into water. A lot a planning and experimenting went into its development. Among the challenges:

- Mixing potent chemical and organic nutrients without having the bottle swell and explode on the shelf. It's not easy to do.
- Coming up with the idea of putting kelp in the GROW so its proper use becomes a no-brainer.
- Playing with the molasses/magnesium combo so that the molasses "complexes" with the Magnesium making it possible to load more into the formula.

OUR DEEP FUSION SERIES IS REALLY
A **FIVE** PART SYSTEM IN 3 BOTTLES

AFTER 30 YEARS THE CONCEPT OF A BASE NUTRIENT
SYSTEM HAS BEEN TAKEN TO THE NEXT LEVEL.



32 OZ • 1 GAL • 2.5 GAL • 5 GAL • 15 GAL • 30 GAL • 55 GAL

AVAILABLE SIZES



DEEP FUSION SERIES



THE FIRST PHARMACEUTICAL QUALITY TEA

**Anyone can
make this.**



We make this.



No more foul disgusting odor. Once a tea begins to stink, the potent growth factors have passed their peak and have begun breaking down. We discovered that by careful timing we could stop the process when the potency was peaking. You can see the difference.

A Different Kind of Tea

Made from potent seabird and bat guanos PLUS pure worm castings – not cheap worm compost. We spent 2 years testing every pure worm casting we could find and discovered that the type of worm makes a drastic difference. Growth factors excreted in the castings make our tea different.

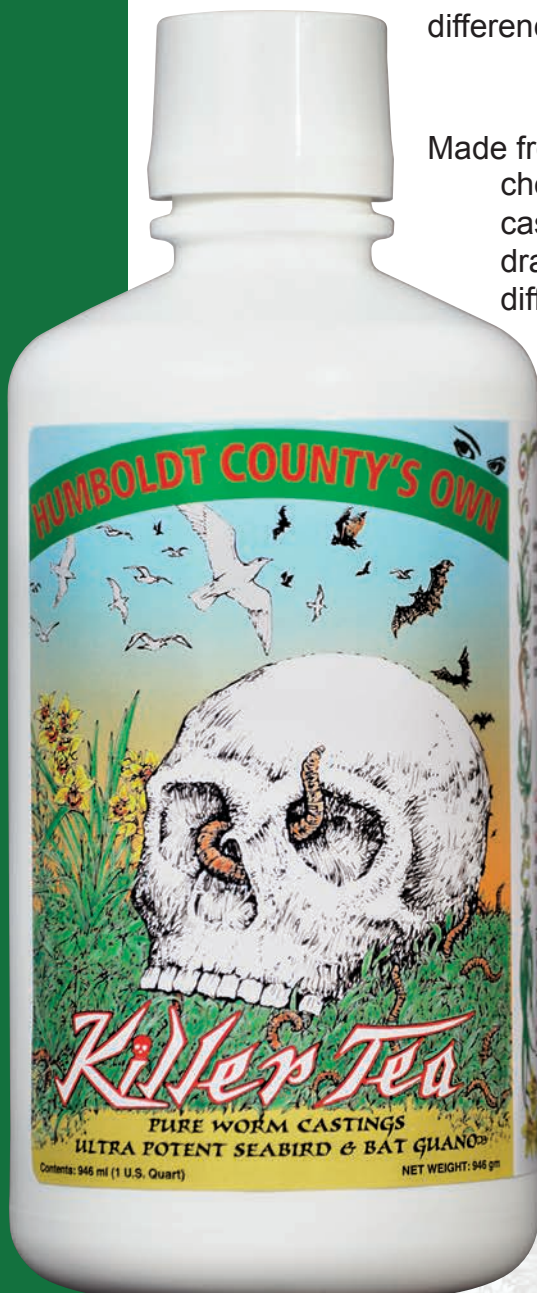
- Ready-to-use. Makes tea brewing obsolete
- 100% natural
- Long shelf life

Improves plant growth at all stages.

Soil, hydro, clones: Use 1 oz. per gallon. In late bloom or during flush, dose can be increased for exaggerated “swell”.

- Can be used with all cloning media including EZ Cloners. Won't clog emitters. For best results spray with Deep Breath at 1 tsp/gallon. (Don't Spray tea)
- Great for rooted cuttings. For best results use with Deep Breath as above.
- Use during veg with Deep Breath to shorten the cycle.
- Use during bloom with Snow Storm to improve fragrance, increase resinous oils and stimulate obscene trichome production on flowers and leaves. Seeing is believing.

**Largest pumpkin in
Humboldt County history
grown with Killer Tea.**



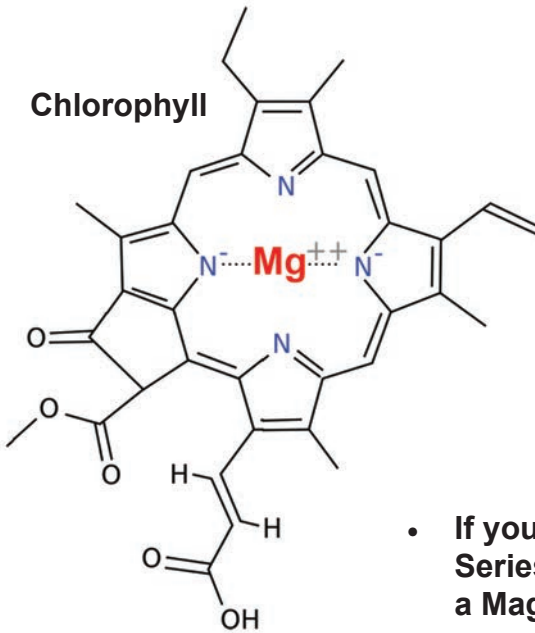
MAGNUM



MAGNUM

MAGNESIUM/ SULFUR SUPPLEMENT WITH VITAMIN B1

Photosynthesis is the process whereby the chlorophyll in the leaves converts sunshine and CO_2 into sugars. It is the basis of ALL plant growth. The diagram shows a typical chlorophyll molecule. Note the Magnesium atom (Mg) at the very center. No Magnesium, no chlorophyll, no photosynthesis.



Magnesium supplements are probably the least “sexy” product in the hydroponic market yet Magnesium deficiency is the most common cause of poor yields besides overfeeding plants. That’s why we loaded up our Deep Fusion Series with Magnesium and for most growers the Deep Fusion Series will supply enough Magnesium to prevent deficiencies. However, some varieties have a greater demand so supplementation may be necessary. For high value crops, many growers will use Magnum as insurance.

- If you’re not using our Deep Fusion Series then you almost certainly need a Magnesium supplement.

MAGNUM is our high potency Magnesium/Sulfur boost with vitamin B1. The Magnesium guarantees an ample supply for chlorophyll synthesis and the B1 helps mitigate the stress caused by high performance bloom regimens. Works well with all popular base nutrients.

- The most common cause of Magnesium deficiency is the high Potassium levels of bloom boosters. Growers use a high PK boost for maximum flower development so a Magnesium deficiency is always a potential threat.
- The primary symptom of Magnesium deficiency is premature yellowing or interveinal fading of leaves.



By the time yellowing is visible, flower development has already been affected and CO₂ consumption, which depends on chlorophyll, has slowed. That affects the whole plant.

- If you are using Deep Breath to increase CO₂ uptake, or you are using CO₂ enrichment, the accelerated growth rate you expect to see will not happen if you have a Magnesium deficiency. Plants grown under normal CO₂ will be even more impaired.

WHY CAL-MAG IS NOT THE ANSWER

1.) A lot of Cal-Mags are loaded with nitrogen (check the label) so you're adding a "grow" nutrient right in the middle of bloom!

2.) Excess Calcium can cause a Magnesium deficiency.

Using a Cal-Mag to treat a Magnesium deficiency is like mixing poison with the cure because Calcium and Magnesium are transported through the plant by similar pathways, so excess Calcium can actually block Magnesium transport! Remember, the Micro part of all 3 part base nutrients is loaded with Calcium. Adding a Cal-Mag can lead to problems because the higher the ratio of Calcium to Magnesium the more the transport of Magnesium is impaired. We've actually seen a Cal-Mag product worsen a Magnesium deficiency!

BOTTOM LINE:

TREAT A MAGNESIUM DEFICIENCY WITH MAGNESIUM ONLY!

If ours isn't available at your local store, use the Mag-Amp product from Cutting Edge Solutions.



32 OZ • 1 GAL • 2.5 GAL • 5 GAL • 15 GAL • 30 GAL • 55 GAL

AVAILABLE SIZES

GLOSSARY OF TERMS



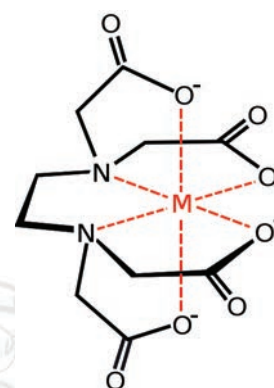
Following is a list of words or terms mentioned in the catalog which may be unfamiliar or misunderstood by some growers. Some information has been simplified for the sake of clarity.

pH: A measure of the acidity or alkalinity of a liquid. It's measured on a scale of 1-14 with 7 representing neutral. Any reading below 7 is considered acidic, any reading above 7 is considered alkaline. In general, nutrient solutions should have a pH between 6 and 7. Above 7 Calcium and Magnesium and other elements begin to lock-out and become insoluble. Below 6 trace elements such as manganese and molybdenum cannot be taken up by plants.

TDS: Initials for Total Dissolved Solids. A measurement of the concentration of nutrients in water. There are several different ways of measuring TDS but the most intuitive is ppm (parts per million). 1 gram dissolved in 1 liter of water has a TDS of 1000 ppm. TDS meters won't give accurate readings of organic materials. In general, growers should keep the TDS between 800-1200 ppm. One of the biggest mistakes growers make is thinking that plants will grow better or faster if they increase the TDS to 1500, 1800 or even over 2000 ppm. More is seldom better. If you flush your plants for a week or so before harvest and they noticeably perk up, then you've been overfeeding them.


Nutrient lock-up or lock-out: Occurs when an element becomes insoluble or unavailable to plants. Most of the time it's caused by the pH of the nutrient solution going above 7 and can be reversed by lowering the pH back to the 6-7 range. The primary elements affected are Calcium and Magnesium. In some cases, such as fertilizers using Iron-EDTA, once the pH stays up around 8 for a time the Iron drops out of solution and is permanently locked out.

Chelate: Pronounced KEY-late. Derived from the Greek word for claw. The example to the right shows an EDTA molecule surrounding a metal. The chelate claw forms a protective sphere around the metal, a sort of ionic barrier that prevents the metal from forming an insoluble precipitate. Each chelator has an optimum range of pH where it is most stable. Iron EDTA for example is stable up to about pH 6.6. Above 6.6 it begins breaking down and the Iron is permanently locked out. Iron DTPA, on the other hand, is stable from about pH 2- 7.5. Iron EDDHA is stable from pH 3-10. Blending DTPA and EDDHA together will efficiently provide Iron over the whole pH range that a grower might encounter.



Phosphate vs. Phosphite: The difference in spelling may be small but the difference in effect on plants is great. Potassium phosphate has the formula KH_2PO_4 whereas potassium phosphite has the formula KH_2PO_3 . Over a period of months phosphite will slowly oxidize to phosphate which is the form that plants utilize. The danger with phosphites is that they are toxic to plants at a pH below 5.8! A lot of people growing hydroponically run their pH close to 5.8 and are flirting with disaster if they are using a phosphite product. California requires a warning on all products containing phosphites. However, not all states require the warning and not all products on the shelves are properly registered so read the label.

Flushing: Many growers stop feeding nutrients to their plants about a week or so before harvest and begin feeding them straight water. The idea is to flush excess nutrients out of the soil and improve flavor and under some conditions it works. One of the main reasons it works is because the grower has been overfeeding his plants for months. Overfeeding your plants is the #1 reason for poor results. Sadly, many nutrient companies encourage it. The best way to go is to water with dilute nutrients or straight water every 4th watering or so in order to prevent chemical buildup in the soil. Note however, that it's ok to continue to use Snow Storm, Purple Maxx, G10 and Killer Tea all the way through-including flush. Don't waste your money on flushing agents. If they were necessary, we'd make one.



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The catalog contains more detailed feeding instructions for the products.

If your grow cycle is longer than 6-7 weeks, use the late bloom column for feeding.



FEEDING SCHEDULE

	ML / GALLON 1 tsp. = 5 ml	ROOTED STARTS	VEG.	EARLY BLOOM Week 1-2	BLOOM Week 3-5	LATE BLOOM Week 6-7	FLUSH
Base Nutrients	MICRO Hydro or Soil	1 ML	5 ML	5 ML	5 ML	5 ML	—
	GROW Hydro or Soil	1 ML	7.5 ML	5 ML	2.5 ML	—	—
	BLOOM Hydro or Soil	1 ML	2.5 ML	5 ML	5 ML	5 ML	—
	MAGNUM	—	—	5 ML	5 ML	5 ML	—
Flower Boost	CRYSTAL BURST	—	—	5 ML	5 ML	5 ML	—
	OR SONIC BLOOM	—	—	1 TSP / 5 gallons	1 TSP / 5 gallons	1 TSP / 5 gallons	—
Yield Boosters	DEEP BREATH	5 ML	5 ML	5 ML	—	—	—
	G 10 Gravitation #10	—	—	—	5-10 ML+	5-10 ML+	5-10 ML+ "Optional"
Additives	SNOW STORM ULTRA	1 ML	2.5 ML	5 ML	5-10 ML+	5-10 ML+	5-10 ML+ "Optional"
	OR PURPLE MAXX	—	—	—	—	5-10 ML+	5-10 ML+ "Optional"
	Killer Tea	10 ML	10 ML	—	30 ML	30 ML	30 ML+ "Optional"

FEEDING SCHEDULE

HUMBOLDT COUNTY'S OWN

