



ESSENTIAL[®] ORGANIC 1-0-1 100% NATURAL ROOT & PLANT STIMULATOR

- Enhances Nutrient Uptake and Cation Exchange Capacity (CEC)
- Improves Seed Germination & Root Growth
- Bigger Yields and Denser Buds

- Controls TDS (Total Dissolved Solids)
- Enhances Taste and Aroma
- Natural Source of Cytokinins

GUARANTEED ANALYSIS:

Total Nitrogen (N) 1%
 1% Other Water Soluble Organic Nitrogen
 Soluble Potash (K₂O) 1%
Derived From: Protein Hydrolysate, Fish Hydrolysate, Potassium Humate.

ALSO CONTAINS NON-PLANT FOOD INGREDIENTS

8.6% Humic Acid (derived from Leonardite)
 10% Cellulose Fiber
 0.06% Kelp Extract(Ascophyllum nodosum)
 0.0125% Wetting Agent (Yucca Schidigera)
 1.2 % Lignin
 3% Monosaccharides(Dextrin)
 2% Ash Content
 13.17 mg / lb. Riboflavin (B2)
 0.314% Vitamin (B6)
 4.5% Total L-Amino Acid
 0.77% L-Glutamic Acid
 0.42% L-Proline
 0.40% L-Leucine
 0.37% L-Aspartic Acid
 0.32% L-Alanine
 0.28% L-Arginine
 0.25% Glycine
 0.23% L-Valine
 0.21% L-Lysine
 0.21% L-Serine
 0.18% L-Threonine
 0.16% L-Phenylalanine
 0.16% L-Isoleucine
 0.15% L-Tyrosine
 0.13% L-Histidine
 0.11% L-Cystine
 0.10% L-Methionine
 Trace% L-Carnosine
 Trace% L-Citrulline
 Trace% L-Beta-Alanine
 Trace% L-Taurine

TECHNICAL SPECIFICATIONS:

pH 5.5
 Weight per gallon 8.99 lbs.

PRODUCT DESCRIPTION:

Essential is a unique, 100% natural product supplying carbon rich organic materials in a readily usable form for soil improvement. This powerful carbon solution functions as a plant bio-stimulator and food source for microbial activity. Sugars, enzymes, amino acids, carbohydrates, a natural

wetting agent, humus molecules and natural plant saponins and cytokinins improve germination, rooting, photosynthesis and overall cannabis plant growth. The cytokinins in Essential improve

seed membrane permeability and increase germination potential, while high concentrations of organic carbohydrates provide the primary energy source for cannabis plants, very important for photosynthesis and other metabolic processes. Essential helps balance the soil's acidity (pH), moisture content and boosts the CEC, making more nutrients available to ensure your crop's best vigor. It can be used on all potting soil media such as coco, Rockwool, peat moss and perlite.

OUTDOOR GROWING:

Essential provides important benefits to outdoor growing such as breaking up soil compaction, neutralizing salts, stimulating microbial activity, increasing water holding capacity and mobilizing soil particles for better oxygen and aeration. It has the ability of mineralizing bound up phosphorus in soils to increase plant and bud growth. Essential encourages root growth, producing cannabis plants with strong roots that are better able to withstand drought and stress conditions. It also stimulates plant growth, healthy flowering and dense, flavorful and fragrant buds.

HYDROPONICS:

Hydroponic or aeroponic systems offer growers the highest yield, but come with challenges in maintaining sufficient macro, micro and organic nutrients, unlike when growing in soils. Lack of proper nutrition to cannabis plants can result in reduced natural flavors, diminished resin production and lessens potency. In both systems roots can be easily damaged if the system fails. The pH of water needs monitoring along with salts. Essential, when used in these systems, provides a balance for pH and salts and supplies natural carbohydrates, sugars, and other rich organic "building blocks" that contribute to elevating flavor and boosting resin gland production and potency.





Essential® 1-0-1	Seedlings and Clones	Transplanting	Growth Phase	Transition and Early Bloom	Full Bloom	Finishing
No. of Weeks			1-4	1-3	4-8	-
Hours of Light			18	12	12	12
Organic Program	60 ml	37 ml	9 - 19 ml	9 - 19 ml	9 - 19 ml	9 - 19 ml
Soil & Soilless Mixes:	60 ml	37 ml	9 - 19 ml	9 - 19 ml	9 - 19 ml	9 - 19 ml
Hydroponic	1-2 ml	1-2 ml	1-5 ml	1-5 ml	1-5 ml	1-5 ml

Apply weekly, amounts listed are to be added per 1 US Gallon (3.79 liters)

Cannabis Application Recommendations		
Application	Rate	Frequency / Notes
All Strains of Cannabis Grown in Soil or Soilless Mixes Indoors and Outdoors	Mix 9-19 ml per gallon water.	Begin applications at time of transplanting or seeding. Apply weekly throughout growing cycle.
	Foliar Applications: Mix 7 ml per gallon water.	Begin applications at time of transplanting or seeding. Apply weekly throughout growing cycle. Spray until run-off.
Hydroponics and Constant Feed	Mix 1-5 ml per gallon of water	Add whenever nutrient solution reservoir is changed. Replenish every 7-10 days or when water is changed.
Seeding	Mix 60 ml per gallon of water.	Drench seed trays until thoroughly soaked at time of seeding.
	Seed Soak: Mix 1 teaspoon (6 ml) of Essential in 1/3 cup of water.	Soak seeds 6-12 hours before planting.
Clones	Dip: Mix 60 ml per gallon of water.	Dip basal end of cuttings, individually or in bunches, for 1-5 minutes in solution of Essential. After planting, drench trays with solution.
	Drench: Mix 30 ml per gallon water.	Thoroughly drench trays, or root cubes after sticking with solution of Essential. Repeat in 5-7 days.
Sizing-Up & Transplanting	Mix 37 ml per gallon of water.	After planting, in new container, thoroughly drench plant with diluted Essential. Repeat in 7 days.

FOLIAR FEEDING:

Essential also can be foliar fed to plants, taking advantage of the dense foliage of cannabis plants. The organic nutrients, sugars, and amino acids stick to the leaf surface and a natural wetting agent and surfactant improves penetration of nutrients throughout the waxy hairs of the plant. Adding Essential to other nutrients as a foliar spray will improve overall nutrient uptake.

Foliar feeding has many advantages, especially when applying high-grade clean-nutrient NovaGreen™ products. Fertilizers applied via foliar feeding are usually 3 to 5 times more effective than standard root fertilizers. Use NovaGreen as part of a regular regimen foliar feed that delivers nutrients via the plants stomata—microscopic openings situated in the middle of two guard cells. NovaGreen’s micronutrients, when applied with foliar sprays, also make elements like iron, otherwise not avail-

able in the soil, water, or a hydroponic solution, more accessible to your plants. Foliar spraying is the fastest “route” to correcting nutrient deficiencies because of the immediate absorption that occurs through the leaves.

Cultivators can continue using NovaGreen products through the flowering stage. Here are the guidelines to follow for a healthy foliar feeding program for your cannabis plants, ultimately producing larger, better, bud-filled harvests with significantly less bud rot.

- Continue foliar feeding until 2 weeks before harvesting
- Make sure the pH for the foliar spray mix is a near neutral pH of 6.5
- If growing indoors, make sure the humidity level stays low through proper ventilation.

SEEDLINGS AND CLONES:

Get your crop off to a fast, strong start. Whether geminat-

ing seeds or producing clones, Essential is a key component in your production process. The rich organic materials contained in Essential will encourage germination, and increase root growth, branching and mass. Cytokinins soften the hard outer shell of seeds, allowing vital nutrients to penetrate the embryo within, setting germination in motion. Saponins produce inhibitory compounds that resist harmful pathogens and infection, protecting the newly generated, vulnerable clones and sprouted seedlings. Carbohydrates, sugars and Humic acid feed the hungry young plants while Yucca, a natural wetting agent, assures adequate moisture absorption.

*Rockwool: When using Rockwool for seedlings and clones do not use Essential with a heating matt.

TRANSPLANTING:

Remember that plants will go through some form of transplant shock for a couple of days after transplant. This slows down the progression of your crop and opens it up to disease. Avoid transplant shock by adding Essential into your transplant water which supplies available nutrients such as sugars, carbohydrates, enzymes and amino acids.

CANNABINOIDS (THC), TERPENES, TERPENOIDS AND FLAVONOIDS:

Essential's vital elements will add to the flavor of cannabis, produce aroma, and of course enhance the all important psychoactive delta-9-tetrahydrocannabinol (THC). Terpenes are the main class of aromatic compounds found in cannabis. Although, over 200 terpenes, and at least 85 different Cannabinoids, have been reported in the plant, only a small minority, has actually been studied for their pharmacological effects. Terpenes and terpenoids also work synergistically with Cannabinoids to modify THC and endow each strain with a specific psychoactive flavor. Genetically, each strain contains a combination of these chemical compounds and are predisposed to naturally generate them. As a grower who spends a great deal of time selecting their strain, it is in your best interest to use products that enhance, intensify, and increase these com-

pounds.

APPLICATION RECOMMENDATIONS AND MIXING:

Essential can be applied to all cannabis strains grown outdoors, indoors and in hydroponic systems and is idea for all potting soil or soilless mixes such as peat, bark, Rockwool, coco, perlite combinations or applied as a soil drench to outdoor field or containerized crops. It can be applied at all stages of the crops cycle including seed germination, clone rooting, potting, plug sizing up and field applications. It can be applied as a soil drench and as a foliar spray. It can be tank mixed with technical materials and fertilizers to enhance their efficacy. Do NOT mix concentrates together. Always fill tank ¾ full with water before adding concentrates.


STORAGE & HANDLING:

Essential can be stored in normal warehouse conditions. Do not store below 32° F. In freezing temperatures, Essential will thicken and may form a precipitate. Return to warm temperatures and shake well before use. Always store in original container and keep tightly sealed. Refer to SDS for additional information on handling, storage, safety, disposal of containers and shipping.

FIRST AID	
IF SWALLOWED:	Call a poison center or doctor if you feel unwell: Rinse mouth.
IF IN EYES:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.
IF ON SKIN:	Remove contaminated clothing and wash skin with plenty of soap and water. If skin irritation occurs, get medical advice/attention.
IF INHALED:	Call a poison center or doctor if you feel unwell.
You may also contact 1-800-992-5994 day or night for emergency treatment information. If medical advice is needed, have product container or label at hand (P101), Keep out of reach of children (P102), Read label before use (P103).	
STORAGE: Keep container tightly closed. May be stored in unheated area, but keep from freezing. Store in areas inaccessible to children and pets.	
DISPOSAL: Dispose of contents/container in accordance with local/regional/national/international regulations. Do not reuse container.	

The following precautionary statements and pictograms are based on The Globally Harmonized System of Classifications and Labeling of Chemicals (GHS) and are mandated by the Occupational Safety and Health Administration (OSHA)

WARNING



H316 Causes Mild Skin Irritation (or Dermatitis in Some Individuals Upon Prolonged Contact)
H320 Causes Eye Irritation (Burning)

Condition of Sale and Warranty: Growth Products, Ltd. warrants that the product conforms to its chemical description and is reasonably fit for the purpose stated on the label only when used in accordance with label directions under normal conditions of use. Handling, storage and use of the product by Buyer or User are beyond the control of Growth Products, Ltd. and Seller. Risks such as crop injury or other unintended consequences resulting from, but not limited to, weather or soil conditions, presence of other materials, disease, pests, drift to other crops or property, or failure to follow label directions will be assumed by Buyer or User. **IN NO CASE WILL GROWTH PRODUCTS, LTD. OR SELLER BE HELD LIABLE FOR CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES RESULTING FROM THE HANDLING, STORAGE OR USE OF THIS PRODUCT.**

