

ESSENTIAL[®] Plus 1-0-1

100% NATURAL PLANT & ROOT STIMULANT

Over the past decade, customers have used **Essential Plus** in a broad variety of applications, on hundreds of different plant materials and in some very challenging situations ...all with astonishing results. From difficult to root "Sundance Hibiscus" to delicate tissue culture plantlets, and from costly Gerber seeds to the difficult Impatiens, Essential has proven its effectiveness with **success after success.**



Sundance Hibiscus is considered “difficult to root” and was therefore selected for this trial. A drench of 4 oz of Essential Plus per gallon was applied water weekly for three weeks, and compared against a standard rooting hormone IBA dip. Essential produced **faster callus formation** then the IBA dip. There was also an



This perennial seed germination trial with Essential Plus on Achillea (yarrow) produced dramatic results. Essential will greatly increase percent seed germination by increasing the **seed coat permeability** to absorb water. It also increase the speed in which seeds germinate.

Impatiens are a notoriously sensitive crop. Essential produced thicker healthier roots as demonstrated in the plug. Essential **improved quality of stand** on plugs, helping them arrive at their destination with little or no damage.



Impatiens are a notoriously sensitive crop. Essential produced thicker healthier roots as demonstrated in the plug. Essential **improved quality of stand** on plugs, helping them arrive at their destination with little or no damage.

Consultant David Plant, displays a 1-gallon pot one month after sticking the liner with a drench of Essential Plus, at the Western Propagator meeting in Tempe, AZ.

Using a combination of Essential Plus and Companion microbial inoculant resulted in **abundant new root growth**.



Growth Products is the proud manufacturer of Essential®
P.O. Box 1252 • White Plains, NY • 10602
Toll Free: 800-648-7626 • Fax: 914-428-2780 • www.GrowthProducts.com

FUNCTION

PURPOSE

Root Initiator and Enhancer

- | | |
|--|---|
| <ul style="list-style-type: none">• Gibberellic Acid and Natural Rooting Extract | <ul style="list-style-type: none">• Promotes cell division and root development• Guaranteed analysis on label• Quickly induces callus formation |
| <ul style="list-style-type: none">• Humic Acid from Leonardite | <ul style="list-style-type: none">• A rich source of auxins that stimulate root growth and branching |
| <ul style="list-style-type: none">• Kelp Extract (Seaweed) | <ul style="list-style-type: none">• A plentiful source of phytohormones that promote cell division and elongation |

Soiless Media

- | | |
|---|---|
| <ul style="list-style-type: none">• Natural Wetting Agent (Yucca Schidigera) | <ul style="list-style-type: none">• Improves water absorption and retentions in difficult soiless media, such as peat and barks |
| <ul style="list-style-type: none">• Contains abundant natural organic materials from fermented plant solubles and simple sugars | <ul style="list-style-type: none">• Neutralizes both fertilizer and chemical salts• Adds much needed organic matter to the soil• Prevents leaching of nutrients in the soil |
| <ul style="list-style-type: none">• Humic Acid | <ul style="list-style-type: none">• Improves micronutrient uptake in alkaline soil• Retains nutrient ions from leaching through soiless media |

Plant Physiology

- | | |
|--|---|
| <ul style="list-style-type: none">• Agonomically correct ratio of Humic Acid to Seaweed | <ul style="list-style-type: none">• Triggers the plant to protect itself against stress from heat, chemical salts and transplant shock• Increases essential leaf moisture during stress• Increases Vitamin E in plant tissue, a natural antioxidant |
| <ul style="list-style-type: none">• Humic Acid from Leonardite | <ul style="list-style-type: none">• Improves crop quality• Reduces terminal extension• Deepens color of leaves, flowers and fruits |
| <ul style="list-style-type: none">• L-Amio Acids from naturally fermented plant extracts | <ul style="list-style-type: none">• Enhances activity and efficacy of fertilizers by better absorption |
| <ul style="list-style-type: none">• Kelp Extract (Seaweed) | <ul style="list-style-type: none">• Early applications produces stronger stems• Improves shelf life of harvested crops• Contains 60 naturally occurring major and minor nutrients for healthier plant growth |

Seeding Enhancement

- | | |
|---|---|
| <ul style="list-style-type: none">• Natural Wetting agent | <ul style="list-style-type: none">• Enhances seed coat permeability• Speeds up germination |
| <ul style="list-style-type: none">• Humic Acid | <ul style="list-style-type: none">• Improves seed coat permeability and root formation |

Essential Plus is truly defined as a “Metabolic Enhancer” ... a biostimulant that initiates and enhances rooting and stimulates plant growth.

Essential Plus is a unique product for today's fast paced horticultural market.

A versatile and effective product

for use on cuttings, seeding and tissue culture and sizing up. It can be used on a broad range of propagation materials. Essential Plus contains over twenty **all natural** raw material, that benefit the plant through its entire growing cycle. As an organic, it is safe for workers to handle and is not subject to environmental regulation. This **holistic** approach produces vigorous plant responses that can not be attributed to traditional N-P-K fertilizers. Essential Plus is a reliable product that provides consistent results through the entire crop cycle, from seed to finished product.

Cuttings Natural Rooting Substance

Essential Plus provides a safe alternative for the propagation of cuttings to chemical hormones like IBA and NAA.

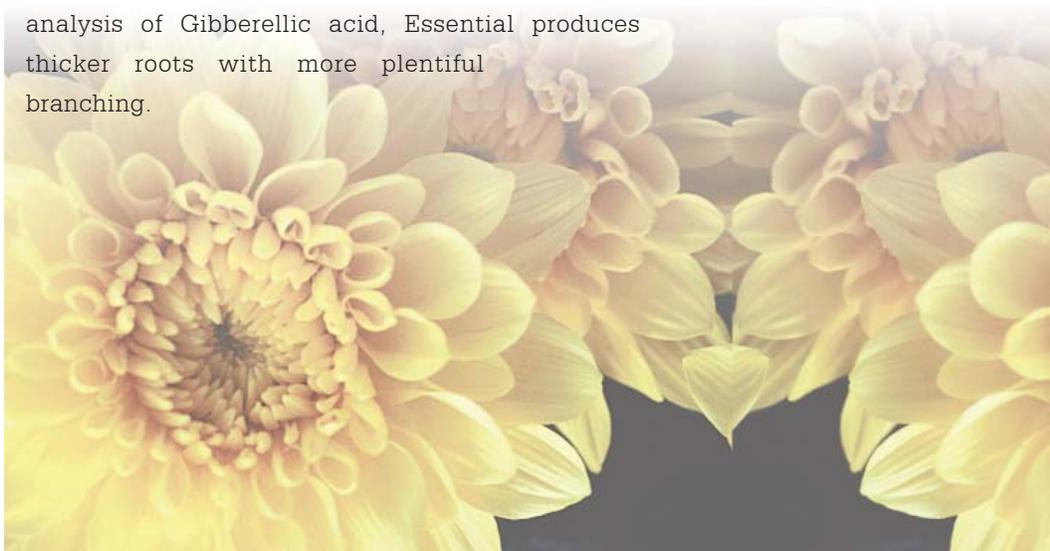
Essential Plus is a true organic solution containing several unique ingredients with auxin-like activities known to stimulate callus formation and rooting on softwood and hardwood cuttings. Essential Plus contains humic acid, sea kelp extract, Gibberellic acid and a proprietary plant extract, all of which promote rooting. Side by side trials with IBA have proven that Essential Plus produces faster callus formation and greater root mass than IBA.



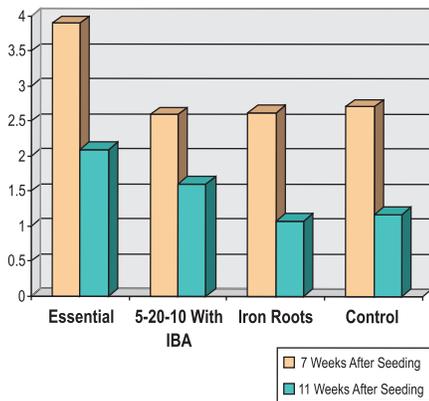
By drenching cuttings with Essential you can avoid costly and intensive labor of dipping cuttings. This will speed up production, save time and money.

Seeding & Germination

Costly and difficult to germinate seeds such as Gerbers or Impatiens, are ... Essential Plus contains two unique ingredients that work together to assure a faster and higher percentage of seed germination. A natural wetting agent and humic acid quickly soften the seed coat allowing water penetration and faster, more uniform germination even on tough seed coats. University trials at Iowa State show a 50 to 70% increase in seed germination and rooting with Essential over both phosphosous and IBA products. Now with a guaranteed analysis of Gibberellic acid, Essential produces thicker roots with more plentiful branching.



Seeding Study Mean Root Growth



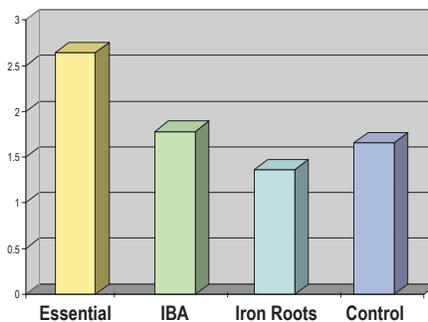
This germination study completed at Iowa State University, compared Essential Plus with an IBA product. Total mean root growth with Essential was superior to all other products. It was also noted that Essential produced the most noticeable response in root development only after 7 days.

Sizing-Up, Transplanting, Re-Potting Subtitle

Essential Plus is one of the few tools available for the grower to overcome the the damages caused by transplant shock and sizing up. Even with the most TLC, root damage, pruning, and leaky roots will set the plant back and delay the crop cycle. The unique ingredients in Essential Plus provide soluble organic nutrients such

as sugars, L-Amino acids and enzymes. These are easily absorbed through the root system and help the plant during transplant shock. Both the humic acid and sea kelp boost the plant's metabolic activities such as photosynthesis, respiration, nucleic acid synthesis and ion uptake. These ingredients then continue to stimulate the root system increasing both branching and total root mass.

Transplant Study Mean Root Growth After 11 Weeks



Every plant undergoes stress after transplanting which causes root damage often referred to as "leaky roots". This will often lead to disease problems. The faster the damage is repaired, the less prone the plant is to disease. This study at Iowa State indicates that Essential was able to quickly repair damaged roots and add new growth.

Tissue Culture Subtitle

Tissue cultured plantlets require special attention. They must acclimate from completely sterile "lab conditions" into the greenhouse environment. Special care must be taken with stage II microcuttings regarding temperature, pH and nutrients. Essential is pasteurized and therefore sterile and can be applied at this stage of transplant keeping the plants as close to the lab conditions and sterile. Once a tray is planted in a peat-based medium, it is important to immediately apply to improve rooting and provide nutrients. Although Stage III plants are more mature and less vulnerable to stress, the same conditions apply. Apply every 14 days through the entire plug stage.

Hydroponics Subtitle

Initiate good seed germination and increased rooting with the use of Essential Plus. After seeding in foam or rockwool cubes allow cubes to soak in a solution of Essential overnight. It can also be put through the irrigation system to improve crop vitality and storage shelf life. Essential Plus is ideal for use on all types of herbs, other leafy crops as well as tomatoes and cucumbers.

Plant Care & Maintenance A Guarantee You Can Stand Behind

Growers are required to provide "A No Questions Asked Guarantee" on their products for the mass merchandizers now-a-days. Only better qual-





ity will give your plant materials the best survival rates once they leave your operation. Essential Plus will provide improved plant quality, including stroger, denser, and more vigorous plants. This added quality response cannot be obtained from the use of traditional plant N-P-K fertilizers. As a “metabolic enhancers”, Essential Plus promotes other aspects of plant physiology, including photosynthesis, hormonal activity, respiration and ion uptake during the plant's growth cycle, preparing the plant to combat future stress. This all adds up to your INSURANCE POLICY on less recalls.

Stress Recovery Neutralize Salts, Repair Phytotoxicity Damage

There are few if any products that can nurse a plant back to health after it has been damaged. Essential Plus can be used as a stand-alone remedy to quickly correct salt injuries from either chemical pesticides use or chemical fertilizers that continually cause salt build-up in greenhouse and container crops. Its rich organic base will neutralize both chemical and fertilizer salts. The combination of both the seaweed and humic acid will “trigger” the plant to protect itself during stress. This trigger causes the plant to produce “antioxidants” that react with toxins, neutralizing them.

Guaranteed Analysis:

Humic Acid	7%
Cellulose Fiber	10%
Natural Rooting Substance0.01%
Gibberellic Acid0.001%
Kelp Extract	0.1%
Carbohydrates	2%
Natural Wetting Agent0.0025%
Lignin	1.2%
Mono / Disaccharides3%
Ash Content2%
Total L-Amino Acid	2.75%
0.53% L-Glycine	0.08% L-Phenylalanine
0.39% L-Glutamic Acid	0.07% L-Isoleucine
0.35% L-Aspartic Acid	0.04% L-Histidine
0.26% L-Alanine	0.02% L-Methionine
0.19% L-Proline	0.01% L-Tyrosine
0.17% L-Leucine	Trace% L-Carnosine
0.16% L-Lysine	Trace% L-Citrulline
0.16% L-Serine	Trace% L-Cystine
0.12% L-Arginine	Trace% L-Beta-Alanine
0.10% L-Threonine	Trace% L-Taurine
0.10% L-Valine	
Riboflavin (B2)	13.17 mg/lb.
Vitamin (B6)	0.314%
Weight per gallon	8.74 lbs.
Derived From: Humic Acid (Potassium Humate), Plant Extracts, Simple and Complex Sugars, North Atlantic Kelp Extract, Hydrolyzed Organic Proteins, Natural Wetting Agent and Carbohydrates	

