Grow Program: Mum Propagation

Feeding Recommendation

Beginning from day of sticking: Water in with Nature's Source 10-4-3 or 10-4-5 at a rate of 300 ppm N and continue through the mist system on the first 3-5 cycles per day. Direct Inject setting of 1:400 (a line cleaner should be used during a fresh water mist to ensure lines stay clean)

The frequency and duration of the mist depends on many environmental factors and varies from season to season and throughout the day.

Once cutting is callused, increase rate to 400 ppm N. Direct Inject setting of 1:300.

At this time, apply an initial application of Plant Probiotic at a rate of ¼ lb. per 50 gallons of water.

A weekly application of Nature's Source Foliar Essentials encourages a more compact growth habit with increased tone, while enhancing nutrient uptake.

Nature's Source Benefits: Nature's Source is derived from oilseed extract, providing a low salt index. Mums grown with Nature's Source will have deeper green foliage, toned with reduced stress, since not being grown with a salt based synthetic fertilizer. More tone provides enhanced shipping quality.

Injector Ratio Chart

ppm N	250	300	400	500	600
	ppm	ppm	ppm	ppm	ppm
Injector Ratio	1:500	1:400	1:300	1:250	1:200

Tank Mix Chart

Desired ppm of N	oz. of 10-4-3 or 10-4-5 per gallon	oz. of 10-4-3 or 10-4-5 per 50 gallons
100	3.5	0.7
300	7.0	1.4
500	10.5	2.0
600	21.0	4.0

Stock tank solutions are not recommended. When stock tank is mixed, Solution should be kept fresh and covered. To be used within 48-72 hours. Sanitize with an organic sanitizing spray on top of solution if held longer than 72 hours.

ALWAYS AGITATE THE PLANT FOOD BEFORE ADDING OT STOCK TANK ALWAYS AGITATE THE DILUTION PRIOR TO EACH USE

Nature's Source is made with oilseed extract which contains 20 plant-essential amino acids, silicon, and organic compounds (see reverse).

Note: This program assumes soil media, water source and climate control is ideal. Adjustments will also be necessary based upon a strain's growth habit and actual flower timing

- Soil Media Use only well drained professional soil media products with a small organic nutrient or compost component with a beginning EC under 1.5 mS/cm
- Water Source Treat high alkalinity water, (above 100 ppm), with acid neutralization for a stabile water pH of 6.5. High EC water, above .5 mS/cm, will require regular EC monitoring and possible remediation through leaching and/or water treatment.
- <u>Strain Adjustment</u> Plan to reduce or eliminate the high rates in Vegetative Stage 2 for dwarf and early flowering strains; some strains may need reduction to half the recommended rate of Nature's Source 10-4-3 or 10-4-5

Referenced Products

Nature's Source® Professional Plant Food 10-4-3

Nature's Source® Nursery & Landscape Special Plant Food 10-4-5

Nature's Source® Plant Probiotic

Nature's Source® Foliar Essentials BioNutrition™ Spray

Website: www.NS-PF.com Email: info@NS-PF.com Phone: 888 839-8722



Oilseed Extract: Key Organic Compounds

Includes 20 Plant Essential Amino Acids, Essential Vitamins, Hormones and Minerals*

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Vitamin C Antioxidant and, in association with other components of the antioxidant system, protects plants against oxidative damagresulting from aerobic metabolism, photosynthesis and a range of pollutants. All vitamins are essential to plant growth and he deal with stress. Vitamin D3 Affects Ca absorption and Ca-mediated cellular functions (signaling). Ca helps hold cell membranes together. Natural vitamin E, antioxidant deactivates photosynthesis-derived reactive oxygen species (mainly 1O2 and OH), and preven the propagation of lipid peroxidation, contribute to plant stress tolerance. Thiamine (B1) B1 can assist at any time in a plant's life with root regeneration where the root system has been damaged or stressed throug high salinity, pathogens such as pythium, nutrient deficiencies and toxicities. Rapidly broken down by microbes in the nutrie solution. (http://www.quickgrow.com/gardening_articles/plant_hormones.html) Riboflavin (B2) Induced expression of pathogenesis-related (PR) genes in the plants, suggesting its ability to trigger a signal transductic pathway that leads to systemic resistance. (http://apsjournals.apsnet.org/doi/abs/10.1094/PHYTO.2000.90.8.801) Phenols Released from decomposing plant litter, can be transformed into insoluble and recalcitrant humic substances, form chelates wi aluminum or iron ions (immobilizes metals). Can lock up heavy metals within the soil, making them immobile. Silica (SiO2) Silica is the 2nd most abundant element in the soil and effectively reduces susceptibility of plants to pest (http://www.jpep.ir/browse.php?a_id=140&slc_lang=fa&sid=18/fxtct%E2%80%BE) Promotes disease and insect resistance, structural fortification, and regulation of the uptake of other ion (http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=2373&context=etd) Indicates antioxidant capacity Indicates antioxidant capacity Plant Growth Hormone Protein Fat HORMONES Gibberellins (GAs) plant hormones that regulate growth and influence various developmental processes, inclu	OTHER ORGANIC COMP	OUNDS **Role			
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	Auxins	a class of plant hormones (or plant growth regulators) with some morphogen-like characteristics. Auxins have a cardinal role coordination of many growth and behavioral processes in the plant's life cycle and are essential for plant body development.			

^{*} Data by third party lab ** Scientifically noted roles of organic compounds in plant production