

FUL-FIL

AMINO ACID FERTILIZER

N 14%, P .7%, K 3.2%,
S 1.5%, CARBON 40%



About FUL-FIL

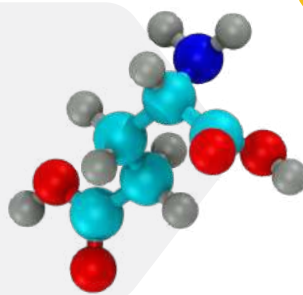
Plant Needs FUL-FIL Amino Acids is a soil and foliar fertiliser which is produced after the microbial digestion of deep sea fish emulsion and crustaceans. This fertiliser has a unique profile and concentrates of 17 essential amino acids as shown below, they are the building block of the proteins and hence essential for plant growth. FUL-FIL is a good chelating agent which can influence nutrient absorptions at leaves and root zones, and helps in transporting nutrients more efficiently throughout the plant. FUL-FIL is a concentrated source of macro and micronutrients. It provides organic nitrogen to your plant and soil. High Organic Carbon of the product will boost beneficial microbes in the soil. Also acts as a natural chelator for other nutrients in tank mix. There are many other amino acids in FUL-FIL are helping the plants to regulate its responses to adopt prevailing environmental conditions each role of individual amino acids has been elaborated in the table below.

What FUL-FIL Can Do

- ✓ Increases Photosynthesis
- ✓ Helps the plants to Overcome the Stress
- ✓ Helps in Protein Synthesis
- ✓ Very Good Chelating Agent
- ✓ Activates Phytohormones
- ✓ Helps in Pollination and Fruit Formation
- ✓ Improves Soil Microflora

17 Essential Amino Acids

Arginine, Aspartic Acid, Alanine, Glutamic Acid, Glycine, Histidine, Hydroxyproline, Isoleucine, Leucine, Lysine, Methionine, Proline, Phenylalanine, Serine, Threonine, Tyrosine, Valine



NAME OF AMINO ACIDS	%	ROLE
Arginine	5.5%	Induces flowering and root development
Aspartic Acid	7.6%	Germination enhancer
Glutamic Acid and Alanine	21%	Chlorophyll production
Serine	5%	Stomata regulation for plant water use
Glycine	19%	Chelate action for up taking other nutrients
Histidine	1.8%	Helps in drought resistance
Threonine	3%	Helps in water stress
Proline	8%	Helps in water stress and increasing pollens
Tyrosine	2%	Manages plant fluids and pollination
Valine	4%	Seed protection and seedling boost
Methionine	2%	Helps in steady ripening
Isoleucine	3%	Salt stress resistance and detoxification
Phenylalanine	3%	Lignin production for stronger cell walls
Lysine	5.2%	Chlorophyll synthesis
Taurine	2%	Moisture absorption and high production

*Please note there may be slight variation in the percentage amino acids

Direction of Use

CROPS	RATE OF APPLICATION (Split application must not exceed max/ ha as instructed below)
Apple, Pears, Almond, Pistachio and Walnut	Maximum recommendation is 8kg/ha - Mix @ 400gm/ 100L of water or maximum 2kg/ha /spray as foliar or fertigate from light cluster till before 20 days of harvest / can apply post harvest as well.
Cherry, Peach, Nectarine, Plums	Maximum recommendation of 8kg/ha - Mix @ 400gm/100L of water or maximum 2kg/ha/spray as foliar or fertigate 7 days after flowering /fruit formation / post- harvest stage. Stone Fruit: Avoid spraying to fruits.
Wine Grapes	Maximum recommendation of 6kg/ha - Mix @ 300gm/ 100L of water or maximum 2kg/ha /spray as foliar or fertigate at berry / fruit development and post harvest stage.
Table Grapes	Maximum recommendation of 8kg/ha - Mix @ 400gm/ 100L of water or maximum 2kg/ha /spray as foliar or fertigate at canes development, berry set and two applications at post harvest stage.
Strawberries, Blueberries	Maximum recommendation of 8kg/ha - Mix @ 400gm/ 100L of water or maximum 2kg/ha /spray as foliar or fertigate at fruit setting time, repeat every 15 days till last pick. Monitoring the nutrient levels through leaf test is recommended.
Avocado, Macadamia, Lychee and Citrus (Lemon, Lime, Orange)	Maximum recommendation of 6kg/ha Mix @ 400gm/ 100L of water or maximum 2kg/ha / spray as foliar or fertigate at pre blooming, petal fall and at fruit formation and also at post harvest. Monitoring the nutrient levels through leaf test is recommended.
Lettuce Cauliflower, Broccoli, Cabbage Endive, Fennel, Kale & Herbs	Maximum recommendation is 5kg/ha - Mix @ 400gm/ 100L of water or maximum 1kg/ha/spray as foliar or fertigate. First application: dip the seedlings (2gm/litre solution) 2nd spray 22 days after planting @ 1kg/ha, repeat every 3 weeks till harvest. Avoid mixing with other harsh chemicals.
Capsicum, Cucurbits, Eggplant, Tomatoes, Watermelons, Pumpkins	Maximum recommendation is 4kg/ha, - Mix @ 400gm/100L of water or maximum 1kg/ha /spray as foliar or fertigate. Spray at leaf initiation stage(700gm/ha), at root development stage, (1kg/ha) repeat every 18 days till harvest as it is a good substitute for other N fertiliser in both conventional and organic production.
Cauliflower, Broccoli and Cabbage	Maximum recommendation is 5kg/ha - Mix @ 400gm/100L of water or maximum 1kg/ha /spray as foliar or fertigate. Spray 750gm/ha 3 weeks after planting (4th leaf stage), 2nd application at head initiation stage, repeat every 3 weeks till harvest.
Red Kidney Beans, Soybeans, Lima Beans, Cannellini Beans, Tofu, Chickpeas, Lentils, Split Peas	Maximum recommendation is 3kg/ha, - Mix @ 400gm/100L of water or maximum 1kg/ha /spray as foliar or fertigate. Spray 750gm/ha 3 weeks after planting (4th leaf stage) and at head initiation stage, repeat every 3 weeks till harvest.
Onions, Carrots, Radish, LeeksTurnips Potato, Sweet Potato. other tropical tuber crops	Maximum recommendation is 4kg/ha - Mix @ 400gm/100L of water or maximum 1kg/ha /spray as foliar or fertigate. Drenching/blanket spray @ 750gm/ha, 4 weeks after planting (or 4th leaf stage) / 2nd application at tuber initiation stage, repeat every 5 weeks.
Home garden plants such as ornamental, flower & fruit trees, vegetables,	Mix 10 grams in 10 litre water cans and apply the mixture @ 1litre/SQM, repeat every two weeks or when required. Can also apply as foliar the above dilution.
Sweet Corn and Baby Corns	Maximum recommendation is 3kg/ha - Mix @ 400gm/100L of water or maximum 1kg/ha/spray as foliar or fertigate. Spray or drench @600gm/ha 3 weeks after sowing. 2nd time @vegetative stage, 3rd @ or before reproductive stage.
Hydroponic and green house crops	Apply 3.5kg/10000L water. Fertigate every two weeks. (Contact Plant Needs agronomist for more information)
Flower Crops	Total 3.5kg/10000L water, by split application. Apply through drip every 3rd week followed by foliar application @ 800gm/1000plants.
Plant Nursery	Apply maximum 4kg/4000 plants, by split application (Foliar spray at 250 gms diluted in 500litre of water/1000 plants). Apply every fortnight.
Turf and Golf Field	Apply maximum 4kg/ha by split application. Apply once a month during spring and summer. Dilution ratio is 500 gms in 1000 litres of water.
Seed Treatment	Dilute 2gm/litre of water to make a solution for treating seeds before sowing. Soak the seed with amino acid solution for at-least 8 hours before sowing.

Instructions

Shake or stir well before use. Read the label for the crop wise recommendation, however product rate should not exceed more than what is recommended in the label. Sensitive plants should be tested prior bulk application. Frequencies recommended in the label are only as guidelines, as the no of application/seasons can be adjusted with cropping situations, weather conditions or soil/plant test results. It is recommended to have prior knowledge of weather forecast before foliar application to avoid any spray drift or possible phytotoxicity.

Storage

FUL-FIL should be stored at ambient temperature conditions. It is recommended to be stored within a well lit area to sustain the product efficiency and quality.

Compatibility and Use

FUL-FIL can be mixed and applied with most commonly used pesticides/fertilisers, however we strongly recommend checking labels for compatibility as well as pre testing in small area prior bulk application.

Disclaimer

Any recommendations provided by Plant Needs Pty Ltd or its employees, reseller or agents are advice only. As no control can be implemented over storage, handling, mixing, application or weather, plant or soil types. No responsibility for or liability for any failure in performance, losses, damages or injuries arising from such storage, mixing, application, or use will be accepted under any circumstances whatsoever.

Plant Needs recommend to contact your local agronomist prior to using this product. The buyer accepts all accountability for the use of this product.

Analysis Report

ANALYTE/ASSAY	UNITS	VALUE
Total Nitrogen (Combustion)	%	14.00
Nitrate Nitrogen	mg/kg	<50
Ammonium Nitrogen	mg/kg	6900.00
Chloride	%	3.10
Dry Matter	%	97.4
Moisture	%	2.6
pH (1:5 Water)		5.3
pH(1:5 CaCl2)		5.3
Electrical Conductivity (1:5 Water)	ds/m	21.59
Total Carbon (Combustion)	%	40.00
C:N Ration		2.90
Phosphorous (Total)	mg/kg	7700
Potassium (Total)	mg/kg	32000
Calcium (Total)	mg/kg	320
Magnesium (Total)	mg/kg	470
Sulphur (Total)	mg/kg	15000
Boron (Total)	mg/kg	18.0
Zinc (Total)	mg/kg	16.0
Manganese (Total)	mg/kg	<5.0
Copper (Total)	mg/kg	1.1
Iron (Total)	mg/kg	39
Sodium (Total)	mg/kg	22000
Molybdenum (Total)	mg/kg	<1.00



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