LT BioSyn, Inc.

HappyGro™

A Natural Plant Growth Regulator That Produces Positive Plant Growth and Development

ACTIVE INGREDIENT:	
Cytokinin, as Kinetin	0.5% w/w
OTHER INGREDIENTS:	99.5% w/w
TOTAL	100.0% w/w

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

PHYSICAL OR CHEMICAL HAZARDS

This product is not compatible with strong oxidizers.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear: Long sleeved shirt and long pants and shoes plus socks. Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

ACCEPTED
OCT 02 2002
Under the Federal Insecticides, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 72639-10

EPA Reg. No. 72639-RN

EPA Est. No.

LT BioSyn, Inc.
11921 Goldring Road
Arcadia, CA 91006
USA

Net Contents: As marked on container

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USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during applications. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Chemical resistant gloves Category A, such as butyl rubber $\geq$ 14 mils, or natural rubber $\geq$ 14 mils, or neoprene rubber $\geq$ 14 mils or nitrile rubber $\geq$ 14 mils
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter without appropriate protective clothing until sprays have dried.

GENERAL INFORMATION

Kinetin, the active ingredient in HappyGro™, is a plant growth hormone occurring naturally in plants. HappyGro™ is formulated with proprietary inerts that affect treated plants and turf to increase cell division, cell differentiation and cell growth. Use of this product will result in quicker green up, higher photosynthesis, and improved plant quality.

CHEMIGATION

Apply this product only through the following types of irrigation systems:

1. Sprinkler including center pivot, lateral move, side (wheel) roll, traveler, big gun, solid set or hand move irrigation systems.

2. Calibrated overhead watering booms

Do not apply this product through any other types of irrigation systems. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems), used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person shall shut the system down and make necessary adjustments should the need arise.

CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option of the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump control stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with the pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

The pesticide supply tank should be agitated throughout the application of HappyGro™. Except for turfgrass, HappyGro™ should be applied at the end of the irrigation period in a sufficient amount of water to allow proper coverage of plant or crop. Fill the supply tank one-half full with water, add the appropriate amount of HappyGro™ to the tank and finish filling the tank with water.

SPRINKLER CHEMIGATION

The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain function-interlocking controls to automatically shut-off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a function pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump; such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. The pesticide supply tank should be agitated throughout the application of HappyGro™.

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The pesticide supply tank should be agitated throughout the application of HappyGro™. Except for turfgrass, HappyGro™ should be applied at the end of the irrigation period in a sufficient amount of water to allow proper coverage of plant or crop but not to exceed 8 fluid ounces of HappyGro™ per acre per application.

Fill the supply tank one-half full with water, add the appropriate amount of HappyGro™ to the tank and finish filling the tank with water.

Suggested Spray Volume (Gallons) Per Acre When Applying HappyGro™:

Crop	Ground	
	Dilute	Concentrate
Vegetables, Field Crops	20	---
Small fruits, Vines, Miscellaneous	150	50
Tree crops	400	50
Citrus	800	100

Depending upon the equipment used and the specific crop, the spray volume applied per acre will differ.

APPLICATION DIRECTIONS

Crop	Amount of HappyGro™ Per 100 gals water	Application Timing	Remarks
Brassica Vegetables such as: Broccoli, Cauliflower, Cabbage & Mustard greens	6-8 fluid oz.	- 1st application: At flowering stage. - 2nd application: 2 weeks after first application. - 3rd application: 7-10 days before harvest.	Foliar application: Apply thoroughly until dripping. Add a non-ionic surfactant for hard to wet crops such as Cabbage.
Leafy Vegetables such as: Celery, Head lettuce, Leaf lettuce and Spinach	4-6 fluid oz.	- Make one application 2 weeks prior to harvest.	Thorough foliar spray coverage is essential.
Cucurbit Vegetables such as: Cucumber, Muskmelon, Cantaloupe, Summer squash, Watermelon and Honeydew	6-8 fluid oz.	- Make 1st application at early fruiting stage. - Make 2 more applications at 2-week intervals.	Enhances the number of flowers and fruit size.
Fruiting Vegetables such as: Tomato, Pepper and Eggplant	6-8 fluid oz.	- Make 1st application at early flowering stage. - Make 2 more applications at 2-week intervals.	To maximize yield, apply at 2-week intervals throughout the growing season.
Corn (Sweet, Field and Popcorn)	12-14 fluid oz.	- Make one application, 6-8 days after full bloom.	Foliar application: Apply thoroughly until dripping.

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Crop	Amount of HappyGro™ Per 100 gals water	Application Timing	Remarks
Tuber Vegetables such as: Potato, Sweet potato, Yam	12-14 fluid oz.	- 1st application: At tuber initiation stage. - 2nd application: 2-3 weeks after first application. - 3rd application: At early bloom stage	Foliar application: Apply thoroughly until dripping.
Root Vegetables such as: Carrot, Radish, Turnip, Ginseng, Horseradish, Parsley (turnip-rooted) and Sugar beet	6-8 fluid oz.	- 1st application: At plant thinning stage. - 2nd application: 3 weeks after first application. - 3rd application: Apply 2 weeks prior to harvest.	Foliar application: Apply thoroughly until dripping.
Citrus Fruits such as: Sweet orange, Lemon and Grapefruit	6-8 fluid oz.	- 1st application: At small fruit stage when fruit size is approx. 6-8 mm. - 2nd application: 40 days prior to harvest. - 3rd application: 20 days prior to harvest	Apply thoroughly until dripping.
Pome/Stone Fruits such as: Apple, Apricot, Cherry, Plum, Plumcot and Peach	6-8 fluid oz.	- 1st application: At small fruit stage when fruit size is approx. 6-8 mm. - 2nd application: 40 days prior to harvest. - 3rd application: 20 days before harvest. If spraying to improve color, second application is not required	Use as coloring agent: 40 fl. oz. product/100 gals water, spray 30 days before harvest. For growth retardation: Use 40 fl. oz. product/100 gals water when new growth is at 3 inches.
Grape	21 fluid oz.	- 1st application: 2 weeks before bud break	Use as coloring agent: 40 fl. oz. product/100 gals water, spray 30 days prior to harvest
	6-8 fluid oz.	- 2nd application: Small berry stage (4-6 mm in size). - 3rd application: 40 days prior to harvest. - 4th application: 20 days prior to harvest. If spraying to improve color, fourth application is not required.	
Strawberry	6-8 fluid oz.	- 1st application at early flowering stage - 2nd application 2 week after 1st application - Repeat applications every two weeks	Apply thoroughly until dripping.

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Crop	Amount of HappyGro™ Per 100 gals water	Application Timing	Remarks
Cotton	6-8 fluid oz.	- 1st application: Apply when plants are in 3-7 leaf stage. - 2nd application: Apply at the pin head square stage	Apply thoroughly until dripping.
	12 fluid oz.	- 3rd application: Apply at first bloom.	
Sorghum	6-8 fluid oz.	- Make one application, 5-8 days after full bloom.	Apply thoroughly until dripping.
Peanut	6-8 fluid oz.	- 1st application: Apply at the 3-5 leaf stage. - 2nd application: Apply at initial pegging.	Apply thoroughly until dripping.
	12 fluid oz.	- 3rd application: Apply 14 days after second application. - 4th application: Apply during pod fill.	
Soybean	6-8 fluid oz.	- 1st application: Apply at the 3-5 trifoliate leaf stage. - 2nd application: Apply prior to bloom. - 3rd application: Apply 8 days after full bloom.	Apply thoroughly until dripping.
Rice	6-8 fluid oz.	- Make one application 8 days after full bloom.	Apply thoroughly until dripping.
Wheat	6-8 fluid oz.	- Make one application 8 days after full bloom.	Apply thoroughly until dripping.

TURFGRASS

For Sod Grass: **HappyGro™** may be applied by ground using 20-40 gallons of water per acre. Apply 2.5 fl. oz. to 6.5 fl. oz. product in 20 gal. to 40 gals. of water, respectively, at a 1:1000 dilution rate.

For Turfgrass: **HappyGro™** may be applied by ground according to the table below using 1-10 gallons of water per 1000 sq. ft.
HappyGro™ may be used for **turf growth suppression** at the dilution rate of 1: 300 (4.2 fl. oz. product per 10 gals. water)

Turf	Amount (HappyGro™/gals water/1000 sq ft*)	How and when to apply
Warm Climate grasses such as: St Augustine, Bermuda, Bermuda hybrids, Centipede	0.13-0.65 fl.oz./1-5 gals of water/1000 sq. ft.	Make applications at 2-week intervals during the growing season.

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Turf	Amount (HappyGro™/gals water/1000 sq ft*)	How and when to apply
& similar warm season grasses		
Dichondra	0.65-1.3 fl. oz./5-10 gals of water/1000 sq. ft.	Treat as above
Cool Climate grasses such as: Bluegrass, Rye, Fescue, and similar warm season grasses	0.13-0.65 fl. oz./1-5 gals of water/1000 sq. ft.	Treat as above

*Apply 0.13 fl. oz. per gallon

ORNAMENTALS

Greenhouse and nursery grown ornamentals

Differences in responsiveness may vary from one cultivar to another or from one set of growing conditions to another. Unless previous experience dictates otherwise, prior to widespread use, test a small number of plants from each cultivar to verify desired efficacy.

Foliage Plants:			
Aglaonema	Ajuga	Anthurium	Aphelandra
Caladium	Cissus	Dieffenbachia	Dracaena
Ficus	Fittonia	Gynura	Hoya
Maranta	Palms	Peperomia	Philodendron
Pilea	Pothos	Schefflera	Schlumbergera
Spathiphyllum	Syngonium	Tradescantia	
Similar foliage plants			
Bedding and Flowering Plants:			
Abutilon	Aglais	Alyssum	Calceolaria
Canna	Carnation	Champaca	Chrysanthemum
Cineraria	Columbine	Coral Bells	Cyclamen
Dahlia	Delphinium	Dianthus	Foxglove
Fuchsia	Gardenia	Gazania	Geranium
Gladiolus	Gloxinia	Impatients	Iris
Jasminum	Lily	Lupine	Marigold
Michelia	Monarda	Osmachus	Petunia
Poinsettia	Portulaca	Roses	Salvia
Scabiosa	Sedum	Sempervivum	Tulips
Vinca	Zinnia	Similar plants	
Woody Ornamentals			
Arborvitae	Aucuba	Azalea	Boxwood
Carissa	Chinese magnolia	English Ivy	Holly
Juniper	Maple	Pine	Podocarpus
Rhododendron	Viburnum	Similar plants	

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Garden Grown Tree Fruits			
Apple	Asian pear	Apricot	Cherry
Fig	Guava	Grape	Jujubee
Kumquat	Lemon	Litchi	Longara
Mango	Orange	Peach	Persimmon
Plum	Prunus	Starfruit	Similar plants

Application Rates and Timing:
Dilute 0.85 fl. oz. of HappyGro™ in 10 gallons of water (1:1500 dilution rate) for plants less than 2 years old. Dilute 1.3 fl. oz. HappyGro™ in 10 gallons of water (1:1000 dilution rate) for mature plants. Repeat applications at 10-14 day intervals when required. Apply the last spray 1-2 weeks prior to sale. Uniform and thorough spray coverage is necessary for best results.

HappyGro™ is not a fertilizer; incorporate good fertilization program practices.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE:
Protect from freezing. Store out of direct sunlight.

PESTICIDE DISPOSAL:
Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:
Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

LIMITED WARRANTY AND DISCLAIMER

NOTICE: LT BioSyn, Inc., warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions For Use. Buyer assumes all risks of use and handling which is a variance in any way with the directions herein. LT BioSyn, Inc., makes no other express or implied warranty of fitness or merchantability. In no case shall LT BioSyn, Inc., or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. LT BioSyn, Inc., and Seller offer this product and the Buyer and user accept it, subject to the foregoing **Limited Warranty and Disclaimer** which may be varied only by agreement in writing signed by a duly authorized representative of LT BioSyn, Inc.

HappyGro™ is trademark of LT BioSyn, Inc.

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