



U.S. ENVIRONMENTAL PROTECTION AGENCY  
 Office of Pesticide Programs  
 Biopesticides and Pollution Prevention Division (7511P)  
 1200 Pennsylvania Ave., N.W.  
 Washington, D.C. 20460

EPA Reg. Number:

93455-1

Date of Issuance:

5/20/2019

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
 (under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

RaiSan

Name and Address of Registrant (include ZIP Code):

Latin America Regulatory Service  
 (LARS), LLC 7110 Harcourt Crossing  
 Indian Land, SC 29707

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product, always refer to the above EPA Registration Number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA or the Act).

Registration is in no way to be construed as an endorsement or recommendation of this product by the U.S. Environmental Protection Agency (EPA). In order to protect health and the environment, the Administrator, on his or her motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under the Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration or registration review of your product when the EPA requires all registrants of similar products to submit such data.
2. Submit storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) data as these data requirements are not satisfied. A one-year study is required to satisfy these data requirements. You have 18 months from the date of this registration to provide these data to the EPA.

Signature of Approving Official:

Andrew Bryceland, Team Leader  
 Biochemical Pesticides Branch  
 Biopesticides and Pollution Prevention Division (7511P)  
 Office of Pesticide Programs

Date:

5/20/2019

3. Make the following labeling change before you release this product for shipment:
  - Revise the EPA Registration Number to read, "EPA Reg. No. 93455-1."
4. Submit one (1) copy of the final printed labeling for the record before you release this product for shipment.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA-approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6. A stamped copy of the labeling is enclosed for your records. Please also note that the record for this product currently contains the following acceptable Confidential Statement of Formula (CSF):

- Basic CSF dated 02/04/2019

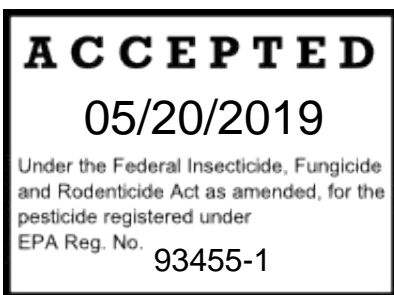
If you have any questions, please James Parker of my team by phone at (703) 306-0469 or via email at [parker.james@epa.gov](mailto:parker.james@epa.gov).

Sincerely,



Andrew Bryceland, Team Leader  
Biochemical Pesticides Branch  
Biopesticides and Pollution  
Prevention Division (7511P)  
Office of Pesticide Programs

Enclosure



## RaiSan

### ACTIVE INGREDIENT:

Chitosan (Poly-D-glucosamine)\* ..... 2.5 %  
OTHER INGREDIENTS ..... 97.5 %  
TOTAL ..... 100.0 %

\*Contains 0.22 pounds of active ingredient per gallon of product  
(equivalent to 26 g of active ingredient per liter of product)

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

Manufactured for:  
Latin America Regulatory Service (LARS), LLC  
7110 Harcourt Crossing  
Indian Land, SC 29707

EPA Reg. No. 93455-      EPA Est. No.

NET CONTENT :  1    3.78    20    200    1000    L

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Wear the appropriate Personal Protective Equipment (PPE)

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators, mixers, loaders, pickers, and other handlers must wear:

- Long sleeved shirt and long pants
- Socks and shoes

Follow 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.

### USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of the gloves before removing. As soon as possible, wash thoroughly and change into clean clothing

### ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal area below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters or rinsate. Do not allow runoff into lakes, streams, ponds or public waterways

### PHYSICAL OR CHEMICAL HAZARDS

For spill, leak, fire, exposure, or accident call CHEMTREC at 1-800-424-9300.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

### AGRICULTURAL USE REQUIREMENTS

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 application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

The restricted-entry interval (REI) is 4 hours, do not allow worker entry into treated areas during the restricted-entry interval (REI).

PPE is 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
- Waterproof gloves
- 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 for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forest, nurseries, and greenhouses.

Do not enter treated area without protective clothing until sprays have dried.

## **I. GENERAL INFORMATION**

RaiSan is a Natural Biostimulant, aimed at improving and increasing the development of crops. It has several combined effects that as a whole produce a significant increase in harvests as a main result. Its active ingredient is a derivative of the Poly-D-glucosamine, a natural biopolymer which is extracted from some crustaceans' exoskeleton. When used properly RaiSan activates the SAR systems (systemic acquired resistance) providing natural defenses in the plants.

### **a. Preparation of sprays:**

1. Fill the application container up to 1/3 of its capacity.
2. Add RaiSan according to the recommended dose with the agitation system on and make up to volume with water.
3. To improve solution of water and RaiSan, use water of pH 6.5 or lower. If pH of the water is over 6.5, use a buffer to reduce pH to 6.5.

### **b. Compatibility**

The product is incompatible with alkaline chemicals. It should not be applied over solutions with pH above 6.5.

To determine the physical compatibility of RaiSan with any other product, use a small container to mix a small amount (et. 1 pint) of spray solution, containing all ingredients in the same order and ratio as the anticipated use. If any indication of physical incompatibility develops, do not use this mixture for spraying. Indications of incompatibility usually appear within 5-15 minutes after mixing. Read and follow all directions and precautions on this label and on the other labels of any products for which a tank mixture is being considered. To improve compatibility, use water of pH 6.5 or lower. If pH of the water is over 6.5, use a buffer to reduce pH to 6.5. When mixing with other products, add the other product(s) to water of pH 6.5 or lower and add the RaiSan to the mixture last.

### **c. Phytotoxicity:**

RaiSan® is not phytotoxic in the labeled application doses and crops

### **d. Chemigation Directions:**

#### **General Requirements for Chemigation**

1. Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move; floor (basin); furrow; border or drip (trickle) irrigation systems. Do not apply this product through any other type of irrigation system.

2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
3. If you have 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.
4. 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.

#### **Requirements for Chemigation Systems Connected to Public Water Systems:**

1. 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 regular serves an average of at least 25 individuals daily at least 60 days out of the year.
2. 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 to 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 flow 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection.
4. 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.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected."
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Agitation is required.
9. Product should be pre-mixed in 55 gallons of water and applied in two hours.
10. Mix 1 liter of Raisan with 55 gallons of water and agitate throughout the application.(two hours).

### **Sprinkler Chemigation Requirements**

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

### **Drip (Trickle) Chemigation and Micro-irrigation Requirements:**

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also 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.
4. The system must contain functional inter-locking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. 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.
7. Agitation is required.
8. Product should be pre-mixed in 55 gallons of water and applied in two hours.
9. Mix 1 liter of Raisan with 55 gallons of water and agitate throughout the application.(two hours).



## **Chemigation Directions**

1. Use a pesticide supply tank for the mixing and application of RaiSan in chemigation systems.
2. Remove scale, pesticide residues, and other foreign matter from the chemical tank and entire injector system. Flush with clean water.
3. First prepare a suspension of RaiSan in the supply tank by filling the tank with 1/2 to 3/4 the desired amount of water.
  - Start mechanical or hydraulic agitation.
  - Add the required amount of RaiSan and then the remaining volume of water.
  - When mixing with other products, add the other product(s) to water of pH 6.5 or lower and add the RaiSan to the mixture last.
  - The suspension of RaiSan must be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing.
4. Maintain continuous agitation in the supply tank during mixing and application to assure a uniform suspension.
5. For center pivot and other continuously moving sprinkler systems, set system to apply 0.1 to 0.3 inches of water with the required amount of mixture evenly and continuously throughout the irrigation cycle.
6. For solid set, wheel-line, drip, micro sprinkler or other stationary system applications, introduce the correct amount of RaiSan mixture from the supply tank into the irrigation water during the middle one-third of the irrigation cycle.

## **Cleaning Application Equipment**

To prevent contamination of the dilute solution of RaiSan by possible pesticides or other chemical residues in the spraying equipment, make sure that the equipment is thoroughly clean before and after use.

**e. General Application Guidelines:**

<b>Crop</b>	<b>RaiSan Use Rate</b>	<b>Number of Application</b>	<b>Application Time</b>	<b>Application Methods</b>
Corn, Soybeans, Peanuts	0.5 Gallons/Acre (0.11 lbs. ai./acre)	4-6	In-furrow at planting followed by foliar sprays every 7 to 14 days beginning at V3 on corn, R2 on soybean and pegging on peanuts	Foliar Spray and/or In-furrow
Grape, Kiwi, Lemons, Oranges, Clementine, Grapefruit, Limes, Tangerines, Peaches, Apricot, Nectarines, Cherry, Apple, Pear, Olive, Blueberry, Raspberry, Blackberry, Avocado, Walnut, Almond, Hazelnut	New Plantings 1.1 gallons/acre (0.24 lbs. ai./acre) Mature Plantings 2.1 gallons/acre (0.46 lbs. ai./acre)	1-2 depending on the general condition of the plants	At peak activity in the roots	Inject into drip or sprinkler irrigation system
Strawberry	1/2 gallon/acre (0.11 lbs. ai./acre)	2-4	At peak activity in the roots	Inject into drip or sprinkler irrigation system
Potato	0.8 gallons/acre (0.19 lbs. ai./acre)	4	Every 10 days, starting 30 days after planting	Inject into drip or sprinkler irrigation system
Garlic	5% by volume mixture (64 fluid ounces/10 gallons mixture) (0.11 lbs. ai./10 gallons mixture)	1	Seed	Immerse seed in solution for 15 minutes prior to planting
Onion Transplant production	1% by volume mixture (12.8 fluid ounces/10 gallons mixture) (0.022 lbs. ai./10 gallons)	3	Make weekly applications starting 30 days prior to transplanting.	Sprinkle soil to wet surface or seedlings to point of runoff
Onion Transplanting	3% by volume mixture (38.4 fluid ounces/10 gallons)	1	Transplanting	Immerse roots in mixture for 30 seconds prior to

	mixture) (0.066 lbs. ai./10 gallons)			transplanting
Greenhouse Tomato	1.5% by volume mixture (19.2 fluid ounces/10 gallons mixture) (0.033 lbs. ai./10 gallons)	1	Seed	Immerse seeds in mixture for 30-second prior to planting
	0.54 to 1.1 gallons/acre (0.12 to 0.24 lbs. at/acre)	4	Apply every 7 days starting 10 days after planting	Inject into drip or sprinkler irrigation system
	1.1 to 1.6 gallons/acre (0.24 to 0.35 lbs. at/acre)	4	Apply every 7 days starting at beginning of physiological maturity	Inject into drip or sprinkler irrigation system
Grapes	0.55 to 1.41 Gallons/Acre (0.12 to 0.31 lbs. ai./acre)	5-6	2 apps at 20 cm shoots then 3 to 4 apps from fruit set up to 20 days before harvest	Foliar spray
Kiwi	0.55 to 1.1 Gallons/Acre (0.12 to 0.24 lbs. ai./acre)	5-6	2 apps at 20 cm shoots then 3 to 4 apps from fruit set up to 20 days before harvest	Foliar spray
Lemon, Orange, Clementine, Grapefruit, Lime, Tangerine	0.55 to 1.1 Gallons/Acre (0.12 to 0.24 lbs. ai./acre)	3-4	Spring - Summer	Foliar Spray
Peach, Apricot, Nectarine, Cherry, Plum, Prune, Olive	0.55 to 1.1 Gallons/Acre (0.12 to 0.24 lbs. ai./acre)	3 -4	Starting at Bloom and every 7 days, up to 4 applications	Foliar Spray
Apple, Pear	0.55 to 1.1 Gallons/Acre (0.12 to 0.24 lbs. ai./acre)	3 -4	One application at fruit set. Then starting in mid-lune every 10 days up to 4 applications	Foliar Spray
Blueberry, Raspberry, Blackberry	0.55 to 1.1 Gallons/Acre (0.12 to 0.24 lbs. ai./acre)	3-4	From sprouting up to fruit-set	Foliar Spray
Walnut, Almond, Hazelnut	0.55 to 1.1 Gallons/Acre (0.12 to 0.24 lbs. ai./acre)	4-6	Start in bloom with female flower exposed Repeat every 7 to 10 days	Foliar Spray

Beans, Carrots, Celery, Cucumbers, Eggplant, Garlic, Ginseng, Herbs, Leek, Lentils, Lettuce, Melons, Onions, Peas, Peppers, Potatoes, Pumpkins, Squash, Strawberries, Sweet Potato Tomatoes	0.55 to 1.1 Gallons/Acre (0.12 to 0.24 lbs. ai./acre)	4-6	Start 25 days after transplanting. Repeat every 10 days up to 6 applications	Foliar Spray
Lettuce, including leaf and head lettuce	0.55 to 1.41 Gallons/Acre (0.12 to 0.31 lbs. ai./acre)	4-6	Start 25 days after transplanting. Repeat every 10 days up to 6 applications	Foliar Spray
Greenhouse and Nursery Plant: Potted plants, Flowers (roses, etc), Vegetables, Herbs, Shrubs, Fruit trees, Vines, Avocado	1% by volume mixture (12.8 fluid ounces/10 gallons mixture) (0.022 lbs. ai./10 gallons)	4-6	Apply every 7 days up to 6 applications	Foliar spray to run- off (25 to 200 gallons / acre).(0.06 to 0.44 lbs. ai./acre)
Nurseries Eucalyptus and Pine Trees	5 % by volume mixture (0.5 gallons /10 gallons mixture) (0.11 lbs. ai./10 gallons)	2	30 and 60 days after emergence	Foliar spray 0.35 fluid ounces of 5% mixture/plant
Eucalyptus transplants	15% by volume mixture (1.5 gallons/10 gallons mixture) (0.33 lbs. ai./10 gallons)	1	Transplanting	Dip roots of seedlings in mixture prior to transplanting
Pine tree transplants	20% by volume mixture (2 gallons/10 gallons mixture) (0.44 lbs. ai./10 gallons)	1	Transplanting	Dip roots of seedlings in mixture prior to transplanting

Turf: Bent grass, Bermuda grass, Bluegrass, Centipede grass, Dichondra, Fescue, Rye grass, Wheat grass, Zoysia grass, St. Augustine	0.55 to 1.1 Gallons/Acre (0.12 to 0.24 lbs. ai./acre)	4-6	When grass is actively growing Repeat applications on 7 day intervals as needed	Inject into irrigation line or apply as a Foliar Spray
Cereal Grains: Barley, Oats, Rice, Wheat	0.55 to 1.1 Gallons/Acre (0.12 to 0.24 lbs. ai./acre)	4-6	Begin prior to period of normal disease development Repeat on 7 day intervals as needed	Inject into irrigation line or apply as a Foliar Spray

## **STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Store in cool a dry place. Avoid freezing.

**PESTICIDE DISPOSAL:** To avoid all wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

Do not contaminate water when disposing of equipment wash water or rinsate. Pesticide wastes may be toxic. Improper disposal of unused pesticide, wash water or rinse water is a violation of federal law.

### **CONTAINER HANDLING: NONREFILLABLE CONTAINER (FIVE GALLONS OR LESS):**

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the contain  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill or by other procedure approved by state and local authorities.

### **NONREFILLABLE CONTAINER (GREATER THAN FIVE GALLONS):**

Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the contain  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill or by other procedure approved by local and state authorities.

## CONDITIONS OF SALE, WARRANTY STATEMENT, DISCLAIMER

The directions for use of this product are believed to be adequate and must be followed carefully, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result due to such factors as weather conditions, presence or absence of other materials, or the manner of use or application, all of which are beyond the control of Latin America Regulatory Service, the manufacturer, or the seller.

Note: Seller warrants that this product complies with the specifications expressed in this label. To the extent consistent with applicable law, Latin America Regulatory Service makes no other warranties, and disclaims all other warranties, express or implied, including but not limited to warranties of merchantability and fitness for the intended purpose. To the extent consistent with applicable law, Latin America Regulatory Service liability or default, breach or failure under this label shall be limited to the amount of the purchase price. To the extent consistent with applicable law, Seller shall have no liability for consequential damages.

Latin America Regulatory Service makes no warranties of merchantability or fitness for a particular purpose or any other express or implied warranty except as stated above.

[In Case of Emergency: Call CHEMTREC: (800) 424-9300]

[Country: Costa Rica]

[Manufactured in Costa Rica by: Agrosustentable S.A. [Company Logo]]

[Batch Code] *{required for non-refillable containers; batch code can be on the label or on the container}*

May 13, 2019