

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

NOV 18 2002

Prasad Rao  
Aventis CropScience  
2 T.W. Alexander Drive  
Research Triangle Park, North Carolina 27709

Subject: Ethrel® brand Ethephon Plant Growth Regulator  
EPA Registration No. 264-257 ✓  
Your label amendment application dated August 12,  
2002

Dear Mr. Rao,

The amended labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable, provided that you comply with the following conditions.

1. You must make the following changes to the label:
  - a. In the "IF IN EYES:" subsection of the "FIRST AID" section, in the second statement add "eye" after "then continue rinsing".
  - b. In the first sentence in the "PERSONAL PROTECTIVE EQUIPMENT (PPE)" section, add "made of any waterproof material" after "chemical resistant gloves".
  - c. In the first sentence in the second-to-last paragraph in the "AGRICULTURAL USE REQUIREMENTS" section, change "chemical resistant gloves such as any waterproof gloves" to "chemical resistant gloves made of any waterproof material, such as nitrile, butyl, neoprene, or barrier laminate".
2. Submit one copy of your final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration may be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

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If you have any questions about this letter, please contact John Bazuin at (703)305-7381.

Sincerely yours,

151

Cynthia L. Giles-Parker  
Product Manager (22)  
Fungicide Branch  
Registration Division (7505C)

Attachment: Label stamped "ACCEPTED with COMMENTS"

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# ETHREL<sup>®</sup> brand Ethephon Plant Growth Regulator

## For Pineapple and Sugarcane

FOR COMMERCIAL OR AGRICULTURAL USE ONLY. NOT FOR RESIDENTIAL USE

For Flower induction and Maturity Concentration in Pineapple  
For Flower Prevention and Biomass Increase in Sugarcane (Hawaii Only)

**ACTIVE INGREDIENT:**  
Ethephon [(2-chloroethyl) phosphonic acid]\* .....39.9%

**INERT INGREDIENTS:** .....60.1%

\*This product contains 4 pounds ethephon per gallon.

EPA Reg. No. 264-257

EPA Est. No. 264-PA-01

### KEEP OUT OF REACH OF CHILDREN

## DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

For **MEDICAL** And **TRANSPORTATION** Emergencies **ONLY** Call 24 Hours A Day 1-800-334-7577

For **PRODUCT USE** Information Call 1-888-AVENTIS (1-888-283-6847)

The use of this product for a variety of plant growth regulation uses is covered by United States and foreign patents including U.S. Patent 4,240,819. No license is granted to use this product in countries other than the United States or for any use not contemplated by this label. Liability for patent infringement may result from use or sale of this product outside the United States.

### FIRST AID

<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>Immediately call a poison control center or doctor for treatment advice.</li> <li>Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>Have person sip a glass of water if able to swallow.</li> <li>Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>

For **MEDICAL** Emergencies Call 24 Hours A Day 1-800-334-7577.

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

**NOTE TO PHYSICIAN:** Treat symptomatically. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. No specific antidote is available. Probable mucosal damage may contraindicate the use of gastric lavage.

### PRECAUTIONARY STATEMENTS

#### DANGER

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Corrosive. Causes irreversible eye damage and skin irritation. Harmful if swallowed or absorbed through the skin. Do not get in eyes, on skin, or on clothing.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirts and long pants, chemical resistant gloves (such as Nitrile, Butyl, Neoprene and/or Barrier Laminate), shoes plus socks and protective eyewear.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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 wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Users should remove clothing immediately if pesticide gets inside. Then wash body thoroughly and put on clean clothing.

Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing. Wash the outside of gloves before removing.

### 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 disposing of equipment washwaters. Do not contaminate water used for irrigation or domestic purposes.

### SPRAY DRIFT

Avoid spray drift. Do not apply when weather conditions may cause drift. Do not allow this product to drift on to non-target areas. Drift may result in illegal residues or injury to adjacent crops and vegetation, in the form of leaf yellowing and defoliation. To avoid spray drift, DO NOT apply aerially when wind speed is greater than 10 mph or during periods of temperature inversions. Use of larger droplet size will also reduce spray drift.

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory below:

### AERIAL DRIFT REDUCTION ADVISORY

[This section is advisory in nature and does not supersede the mandatory label requirements].

#### INFORMATION ON DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

#### CONTROLLING DROPLET SIZE

**Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

**Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

**Number of nozzles** - Use the minimum number of nozzles that provide uniform coverage.

**Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

**Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

#### BOOM LENGTH

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

#### APPLICATION HEIGHT

Applications should not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### SWATH ADJUSTMENT

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator should compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

**WIND**

Drift potential is lowest between wind speeds of 2 - 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**TEMPERATURE AND HUMIDITY**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**TEMPERATURE INVERSIONS**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**SENSITIVE AREAS**

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

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

**Read entire label before using this product.**

**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), notification to workers and restricted-entry intervals. The requirements in this box only apply to uses of this product 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 48 hours. The REI is 72 hours in areas where average rainfall is less than 25 inches per year.

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 over long-sleeved shirt and long pants, chemical resistant gloves such as any waterproof gloves, chemical resistant footwear plus socks, and protective eyewear. For overhead exposure, chemical-resistant headgear is also required.

Notify workers of the application by warning them orally and posting warning signs at entrances to treated areas.

**IMPORTANT**

Do not use this product for purposes other than those listed on the label. Do not exceed the rate of ETHREL® brand Ethephon per acre per year recommended on this label.

Do not apply ETHREL® brand Ethephon through any type of irrigation system.

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:**

NOV 18 2002  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under EPA Reg. No.

264 -  
257

## STORAGE AND DISPOSAL

### STORAGE

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

### PESTICIDE DISPOSAL

Pesticide wastes are hazardous. Do not contaminate water, food, or feed by storage or disposal. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### CONTAINER DISPOSAL

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

## GENERAL INFORMATION

When ETHREL® brand Ethephon Plant Growth Regulator for Pineapple and Sugarcane is applied to plants, the product decomposes within the plant tissue to release ethylene, a naturally occurring plant hormone.

### PINEAPPLE FLOWER INDUCTION

Application of ETHREL® brand Ethephon will induce uniform flower initiation of pineapple plants.

### PINEAPPLE MATURITY CONCENTRATION

Application of ETHREL® brand Ethephon will stimulate uniform shell color of pineapple fruit.

### SUGARCANE FLOWER PREVENTION

A foliar spray of ETHREL® brand Ethephon will reduce or prevent flowering of sugarcane.

### SUGARCANE BIOMASS INCREASE

ETHREL® brand Ethephon application to prevent flowering can result in increased biomass accumulation and increased recoverable sugars.

For recommendations on rates, spray volumes, and spray equipment under varying temperature and rainfall conditions consult your Extension specialist, Aventis CropScience Representative or farm agronomist for his experience with this product in your area.

### SPRAY PREPARATION

Add 1/2 to 3/4 of the required amount of water to the spray tank. Start agitation. Add the required amount of ETHREL® brand Ethephon, and the remaining amount of water. Prepare only as much spray solution as can be used on the day of mixing. Use of previous day's spray mix may result in reduced activity.

Do not spill the concentrated product on spray equipment, or any airplane parts. ANY SPILLS SHOULD BE IMMEDIATELY RINSED WITH PLENTY OF WATER AS ETHREL® brand Ethephon IS CORROSIVE. Use of a nurse tank is highly recommended for avoiding possible spills of concentrated formulation on spray equipment.

### EQUIPMENT CLEANING

Because of the acidic nature of this product, prolonged exposure to spray deposit will damage acrylic plastics, certain paints and metals.

Rinse thoroughly with detergent and water all exposed acrylic plastic-type materials (e.g. aircraft windshields), and painted surfaces within an hour after exposure to spray deposits.

At the end of each day, rinse thoroughly with detergent and water all metal parts of the aircraft and the associated spray equipment exposed to the spray deposits.



CROP AND USE	RATE PER ACRE	SPRAY VOLUME	APPLICATION TIMING	SPECIFIC COMMENTS	RESTRICTIONS
<b>PINEAPPLE</b>  <b>Flower Induction</b> ETHREL® applied to pineapple plants will stimulate uniform initiation of flowering.	1 to 2 quarts	100 to 500 gal/A	'Bearing age' about 12 months after planting. Generally about 6 months prior to desired harvest.	Proper rate will vary with local growing conditions, varieties, plantation management practices and time of year. Use the higher rate where earlier harvest is desired. Apply when pineapple foliage is dry.	Do not graze pineapple forage treated with ETHREL®. Do not harvest pineapples treated with ETHREL® sooner than 2 days after the last application.
<b>Maturity Concentration</b> ETHREL® application will stimulate uniform shell color development	1/2 to 2 quarts	100 to 300 gal/A	When the first fruit begin to change color.	Use a broadcast spray, thoroughly cover both foliage and fruit. Use the higher rate during periods of cool or cloudy weather when normal ripening has slowed.	
<b>SUGARCANE</b>  <b>Flower Prevention</b> ETHREL® application will prevent or reduce flowering and pithy tissue formation.  <b>Biomass Increase</b> ETHREL® used to prevent flowering can also result in increased biomass accumulation and recoverable sugar yield.	1 pint	7 gal/A minimum	Just prior to flower initiation.	Apply by fixed wing or helicopter using equipment designed to give uniform coverage.  Actual biomass increase will be affected by the time between treatment and harvest.  Consider anticipated recoverable sugars as well as biomass to determine optimum harvest date.	Do not harvest sugarcane treated with ETHREL® sooner than 2 months after the last application. Do not graze sugarcane forage treated with ETHREL®.  For Use in Hawaii Only.

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**IMPORTANT: READ BEFORE USE**

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and should be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Aventis CropScience. All such risks shall be assumed by the user or buyer.

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**NET CONTENTS: 1 GALLON**

**Aventis CropScience USA LP  
P.O. Box 12014, 2 T.W. Alexander Drive  
Research Triangle Park, North Carolina 27709**

ETHREL is a registered trademark of the Aventis Group.

ETHREL® brand Ethephon Plant Growth Regulator for Pineapple and Sugarcane (PENDING) Submitted 7/17/02

