



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

AUG 29 2007

Mr. Michael Kellogg  
Agent  
Etigra  
c/o Pyxis Regulatory Consulting, Inc.  
4110 136<sup>th</sup> Street NW  
Gig Harbor, WA 98332

RE: Notification of a Change in Primary Brand Name - Ethephon E-AG 2 Plant Growth  
Regulator  
EPA Registration Number: 79676-60  
Date of Submission: August 2, 2007

Dear Mr. Kellogg:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated August 2, 2007, for the product Etigra - ETI 106 01 G. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the actions requested fall within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions, please call me directly at 703-305-6249 or Joyce Edwards of my staff at 703-308-5479.

Sincerely,



Linda Arrington  
Notifications & Minor Formulations Team Leader  
Registration Division (7505P)  
Office of Pesticide Programs

20f27

Please read instructions on reverse before completing form.

Form Approved. /B No. 2070-0060. Approval expires 2-28-95



United States  
Environmental Protection Agency  
Washington, DC 20460

☐ Registration  
☐ Amendment  
☒ Other

OPP Identifier Number

### Application for Pesticide - Section I

1. Company/Product Number 79676-60	2. EPA Product Manager T. Kish	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Etigra /ETI 106 01 G	PM# 22	
5. Name and Address of Applicant (Include ZIP Code) Etigra c/o Pyxis Regulatory Consulting, Inc. 4110 136th St. NW Gig Harbor, WA 98332 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

### Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

**NOTIFICATION**

AUG 29 2007

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

Notification of a change in primary brand name per PRN 98-10. The new primary brand name is "Ethephon E-AG 2 Plant Growth Regulator". This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

### Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____	
* Certification must be submitted			If "Yes" Unit Packaging wgt.	No. per container	
			If "Yes" Package wgt	No. per container	
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			<input type="checkbox"/> Other _____		

### Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Michael Kellogg	Title Agent	Telephone No. (Include Area Code) 253-853-7369

### Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received  
(Stamped)

2. Signature 	3. Title Agent
4. Typed Name Michael Kellogg	5. Date 8/2/07

30927

**NOTIFICATION**

AUG 29 2007

**Ethephon E-AG 2 Plant Growth Regulator****For Commercial or Agricultural Use Only - Not for Residential Use.**

For use on Tobacco, Tomatoes, Cherries, Grapes, Apples, Walnuts, Peppers, Blackberries, Blueberries and Cantaloupes, Turf, for the removal of Dwarf Mistletoe in Ornamental Conifers and Leafy Mistletoe in Ornamental Deciduous Trees and for the elimination of undesirable fruit on Apple, Crabapple, Carob, and Olive trees.

**ACTIVE INGREDIENT:**

Ethephon: (2-Chloroethyl) phosphonic acid\*..... 21.7%

**OTHER INGREDIENTS:**..... 78.3%**TOTAL:**..... 100.0%

\*1 gallon contains 2 lbs. ethephon.

**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.)

<b>FIRST AID</b>	
<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 eye.</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>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</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>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>HOT LINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	
<b>NOTE TO PHYSICIAN</b>	
<p>Probable mucosal damage may contraindicate the use of gastric lavage. No specific antidote is available. All treatments should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.</p> <p>Victims of severe overexposure by inhalation should be kept under medical observation for up to 72 hours for delayed onset of pulmonary edema. In a victim of overexposure by ingestion, careful gastric lavage is required due to the possibility of stomach or esophageal perforation. This material is an acid but the use of alkaline substances to neutralize it is contraindicated.</p>	

**EPA Reg. No. 79676-60****EPA Est. No.****Manufactured for:**

Etigra™  
501 Cascade Pointe Lane, Suite 103  
Cary, NC 27513  
www.etigra.com

Ethephon E-AG 2 Plant Growth Regulator  
contains ethephon, the active ingredient  
used in Ethrel®.

**Net Contents:**

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
DANGER**

**CORROSIVE:** Causes irreversible eye damage. Wear safety goggles when handling. Harmful if swallowed or absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Do not inhale vapors as this product will irritate mucous membranes.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistance selection chart.

**Applicators and other handlers must wear:**

- long-sleeved shirt and long pants;
- chemical-resistant gloves made of any waterproof material such as nitrile, butyl, neoprene 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 for agricultural pesticides (WPS) [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 exist, 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.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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 contaminate water used for irrigation or domestic purposes. Do not apply directly to water, or to areas where surface is water present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Avoid spray drift to nearby crops, as this product will cause modifications in plant growth. Plant injury or reduced yields may result. Do not plant another crop within 30 days after treatment.

**SPRAY DRIFT**

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment-and-weather-related factors determines 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 drift 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.

When 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 Information, below.

## Aerial Drift Reduction Advisory Information

[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 below).

### 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 largest 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 must 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:** This 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).

### IMPORTANT:

- Do not apply Ethephon E-AG 2 Plant Growth Regulator through any type of irrigation system.
- Do not use this product for purposes other than those listed on the label.

- Do not exceed the rate of Ethephon E-AG 2 Plant Growth Regulator per acre per year recommended on this label.

### 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 made of any waterproof material, such as nitrile, butyl, neoprene, or barrier laminate.
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

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

Ethephon E-AG 2 Plant Growth Regulator is a plant growth regulator which penetrates plant tissues and degrades to ethylene which affects the growth process of the plant. Ethephon E-AG 2 Plant Growth Regulator can be used to produce the following effects in treated crops:

**Apples, Grapes, Peppers,  
Tomatoes:**

earlier maturation and coloring of leaves

**Apples, Cherries, Walnuts:**

loosens crops for easier harvest

**Blackberries:**

earlier ripening, loosens fruit,

**Blueberry:**

concentrates maturation for earlier harvest, reduces undesirable barrenberry fruit

**Cantaloupes:**

helps abscission of fruit

**Sweet Cherries:**

increases hardness of dormant fruit buds, delays spring bloom

(Pacific Northwest)

**Flue-Cured Tobacco:**

uniform coloring of mature leaves, earlier harvest

**Apples, Crabapples, Carob,  
Olive (Ornamental trees only):**

prevents formation of undesirable fruit

**Ornamental Conifers:**

eliminates dwarf mistletoe

**Ornamental Deciduous Trees:**

eliminates leafy mistletoe

**Turf:**

slows growth of turfgrass; suppresses seedhead formation of *Poa annua* and white clover

**GENERAL INFORMATION**

Additional information on how to use this product (including use rates, spray volumes (gallons of water per acre), and spray equipment) or if an application should be made based on weather conditions (such as variable temperatures or anticipated rainfall) can be obtained from your local Extension or Horticultural Specialist, Etigra Representative or Farm Advisors.

**MIXING DIRECTIONS**

Caution: Do not prepare more spray solution than required for one day's use. Do not allow the spray solution to stand overnight. Avoid spilling the concentrated product on any spray equipment or on airplane parts. Ethephon E-AG 2 Plant Growth Regulator is corrosive. **CLEAN UP SPILLS IMMEDIATELY BY FLUSHING WITH PLENTY OF WATER.**

**OTHER PRECAUTIONS**

- Do not allow spray to drift to nearby crop. Ethephon E-AG 2 Plant Growth Regulator will affect their growth and could injure the crop or lead to reduced yields.
- Do not plant another crop in treated fields until 30 days after the last application.
- Use only the additives recommended on this label with Ethephon E-AG 2 Plant Growth Regulator.
- **DO NOT MIX ETHEPHON E-AG 2 PLANT GROWTH REGULATOR WITH AMMONIUM THIOSULFATE. SUCH TANK MIXTURES MAY RESULT IN FORMATION OF TOXIC FUMES.**

**APPLICATION VOLUMES AND SPRAY COVERAGE**

Thorough spray coverage is essential for Ethephon E-AG 2 Plant Growth Regulator to produce maximum effects. Spray coverage is affected by choice of equipment, nozzle selection and spray boom setup as well as spray pressure, plant size and canopy density. For both air and ground applications, choose equipment that will assure thorough coverage of plant canopy (foliage and fruit). The actual spray volume required will vary with the size and density of the plant canopy and the equipment used. In California and Arizona use a minimum spray volume of 5 gallons per acre for aerial applications.

**EQUIPMENT CLEANING**

Ethephon E-AG 2 Plant Growth Regulator is acidic and can damage acrylic plastics, certain paints, and metals when exposed to spray droplets for extended periods of time. To prevent damage, any exposed surface should be rinsed thoroughly using soap and water within one hour of exposure.

## APPLES

Ethephon E-AG 2 Plant Growth Regulator promotes fruit maturity and loosens apples. Hand and mechanical harvest will be easier and more efficient. Ethephon E-AG 2 Plant Growth Regulator can be applied with FRUITONE® N to control pre-harvest drop. This mixture stimulates early development of red color and ripening without loosening fruit.

The effects of Ethephon E-AG 2 Plant Growth Regulator on apples will depend on the rate and time of application of Ethephon E-AG 2 Plant Growth Regulator. Some of the benefits of Ethephon E-AG 2 Plant Growth Regulator include: fruit loosening, uniform ripening and coloring without loosening, thinning and return bloom, and increased flower bud development in young trees. Follow the specific instructions in the table below for the type of effect desired from applications of Ethephon E-AG 2 Plant Growth Regulator.

### PRECAUTIONS AND RESTRICTIONS

- A number of environmental factors can affect thinning and return bloom. Test small plots of trees each year under the program desired to gain experience under local conditions.
- Over thinning and reduced fruit size may result from applications of Ethephon E-AG 2 Plant Growth Regulator. Use caution when applying Ethephon E-AG 2 Plant Growth Regulator to young trees just starting to bear as excessive fruit thinning and fruit size reduction may occur.
- When Ethephon E-AG 2 Plant Growth Regulator is applied to achieve early maturity, the fruit size may be reduced especially if fruit are small at application.
- Reduced fruit quality and size may be noticed in harvested apples if Ethephon E-AG 2 Plant Growth Regulator is applied earlier than 3 weeks before normal anticipated harvest.
- Apply Ethephon E-AG 2 Plant Growth Regulator only to vigorous trees. Weakened trees which are treated will show an excessive reduction in growth.
- Avoid overlap of spray applications in orchards.
- Do not graze or feed cover crops grown in treated apple orchards to livestock.
- Preharvest Interval: 7 days.
- Do not apply more than 8.0 pints of Ethephon E-AG 2 Plant Growth Regulator (2.0 lb ethephon) per acre per year.

### WHEN TO HARVEST APPLES

Monitor fruit daily. The proper harvest period is shorter with Ethephon E-AG 2 Plant Growth Regulator treated fruit than untreated fruit. Harvest fruit before they become overripe on the trees. Check fruit intended for fresh markets for quality and maturity. In addition to fruit color, the internal maturity of apples must be checked using a pressure gauge or other suitable methods. Fruit which are harvested when over-ripe and then stored may soften sooner than untreated fruit.

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Apples - Application Instructions
<b>FOR FRUIT LOOSENING</b>		
Apples  EARLY AND MID-SEASON MATURING VARIETIES (Varieties maturing with McIntosh or earlier)	2 ½	Make Ethephon E-AG 2 Plant Growth Regulator foliar applications 7 to 14 days before normal anticipated harvest. Apply in a sufficient amount of water for thorough, uniform spray coverage of foliage and fruit. A wetting agent may be used to improve spray coverage. The application equipment and size of trees will affect the volume required.  Typical applications of Ethephon E-AG 2 Plant Growth Regulator should be made when temperatures are between 60°F and 90°F, although applications can be made if temperatures are at 50°F but will rise during



Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Apples - Application Instructions
LATE MATURING VARIETIES IN THE EASTERN UNITED STATES (varieties maturing later than McIntosh)	5	<p>the day.</p> <p><b>High temperatures:</b> fruit treated with Ethephon E-AG 2 Plant Growth Regulator may experience reduced color response, however ripening and loosening effects will be accelerated.</p> <p><b>Cool temperatures:</b> longer periods of time between application and harvest may be required.</p>
<b>FOR PROMOTION OF UNIFORM RIPENING AND COLORING OF RED VARIETIES WITHOUT LOOSENING</b>		
Apples  EARLY OR MIDSEASON MATURING VARIETIES (varieties maturing with McIntosh or earlier)	1 - 4	<p>Make Ethephon E-AG 2 Plant Growth Regulator foliar applications with a preharvest drop control chemical registered for use on apples (such as FRUITONE® N). Follow the directions for use on the preharvest drop control label since recommendations may vary depending on location and apple variety. Time applications to begin 2 to 3 weeks before normal harvest and about 1 to 2 weeks before desired harvest date.</p> <p>Apply in a sufficient amount of water for thorough, uniform spray coverage of foliage and fruit. The application equipment and size of trees will affect the volume require. A wetting agent may be used to improve spray coverage.</p> <p>For apples which will be stored after harvest, use the lower application rate. As long as harvested fruit are in good condition, they can be stored in cold air storage facilities.</p>
LATE MATURING VARIETIES (varieties maturing later than McIntosh)	2 - 4	Do not apply Ethephon E-AG 2 Plant Growth Regulator to more acreage than can be harvested in 1 to 2 days.
<b>FOR THINNING AND RETURN BLOOM</b>		
Apples  Most Varieties	1.5 - 4	<p>Make Ethephon E-AG 2 Plant Growth Regulator applications 10 to 20 days after full bloom.</p> <p>Tank mixes of the following products will provided greater thinning: AMID-THIN® W, SEVIN® brand 4F Carbaryl Insecticide, SEVIN® brand 80 WSP Carbaryl Insecticide, SEVIN® brand 80 S Carbaryl Insecticide, or SEVIN® brand XLR Plus Carbaryl Insecticide. Read all labels for specific use directions on apples and follow the most restrictive of the label limitations and precautions. Do not exceed label use rates. Do not mix Ethephon E-AG 2 Plant Growth Regulator with any product with a label which prohibits such mixing. Consult local Extension Specialists recommendations. A non-ionic surfactant may be added to improve effects.</p> <p>In locations where water is alkaline, add buffers to the spray solution to a pH of 3 to 5 for improved performance.</p> <p>Apply in a sufficient amount of water for thorough, uniform spray coverage of foliage and fruit. The application equipment and size of trees will affect the volume require.</p>
Difficult to Thin Varieties, such as Golden Delicious	3 - 6	<p>Ensuring a good crop from one season to another can be a problem when a high percentage of spurs and lateral buds bloom in a single season. The trees in the following year may show a severe drop in bearing. This problem can be avoided by the application of Ethephon E-AG 2 Plant Growth Regulator or a combination of Ethephon E-AG 2 Plant Growth Regulator plus AMID-THIN® W or Ethephon E-AG 2 Plant Growth Regulator plus one of the SEVIN® products listed above. Make applications 7 to 21 days after full bloom. Selection of the best program to use will depend on the amount of thinning required and the biennial bearing history of the orchard.</p> <p>A reduction of "type" and fruit size of Red Delicious apples is expected particularly from applications to trees under stress.</p>

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Apples - Application Instructions
		<b>Higher Rates:</b> reduced fruit size may result.
<b>FOR INCREASED FLOWER BUD DEVELOPMENT</b>		
Apples  NON-BEARING TREES	2 – 8	<p>Make Ethephon E-AG 2 Plant Growth Regulator applications 2 to 4 weeks after full bloom</p> <p>To minimize fruit thinning, time applications to occur 6 weeks after full bloom and after June drop.</p> <p>Apply in a sufficient amount of water to the point of runoff. The application equipment and size of trees will affect the volume required. A wetting agent may be used to improve spray coverage.</p> <p><b>Higher Rate:</b> for use on more vigorous trees.</p>
BEARING TREES	½ - 3	<p><b>Non-bearing trees:</b> Make Ethephon E-AG 2 Plant Growth Regulator applications 2 to 4 weeks after full bloom for increased flower bud development.</p> <p>Ethephon E-AG 2 Plant Growth Regulator may cause excessive fruit thinning and reduced fruit size and yield reduction the year of use. However, vegetative growth should be reduced and flowering increased the following spring. Do not treat trees to initiate flower buds unless they are large enough to support a crop of apples.</p>

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**BLACKBERRIES – OREGON AND WASHINGTON ONLY**


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Ethephon E-AG 2 Plant Growth Regulator applied to blackberries will concentrate maturity and loosen fruit. Harvest efficiency will improve and cane injury from mechanical harvest will be reduced.

**PRECAUTIONS AND RESTRICTIONS**

- Do not spray more blackberries than can be harvested within three days after treatment as considerable fruit may drop.
- To prevent a reduction in berry size, only apply Ethephon E-AG 2 Plant Growth Regulator at the recommended times and rates to healthy, vigorous plants and not to damaged or diseased plants.
- Preharvest Interval: 3 days.
- Do not apply more than 8 pints of this product (2 lbs ai ethephon) per acre per year.

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Blackberries - Application Instructions
Blackberries – Oregon and Washington Only  (Cultivars Chehalem Thornless and Evergreen)	5 - 8	Make Ethephon E-AG 2 Plant Growth Regulator applications as a foliar spray at least three days before harvest. Wait to make applications when air temperatures are between 60°F and 90°F and when rain is not predicted within 24 hours. To obtain thorough, uniform coverage of the foliage and fruit, use sufficient spray volumes. Ethephon E-AG 2 Plant Growth Regulator applications can be made early in the harvest season to reduce the number of pickings, or late in the harvest season for a once-over final picking.

## BLUEBERRIES

Ethephon E-AG 2 Plant Growth Regulator applications to blueberries will concentrate maturity of berries for easier and more efficient harvest. Ethephon E-AG 2 Plant Growth Regulator will abort black barrenberry (*Aronia melanocarpa*) flowers and/or fruit growing in Maine lowbush blueberry fields; this effect reduces the number of undesirable barrenberry fruit harvested with blueberries.

### PRECAUTIONS AND RESTRICTIONS

- Do not apply to cultivars other than those listed in the table below, or excessive steminess and/or premature crops may result.
- Note: Applications of Ethephon E-AG 2 Plant Growth Regulator may increase the number of berries with stems, and berries with slightly decreased fruit size or soluble solids and acidity. Ethephon E-AG 2 Plant Growth Regulator affects berry color more quickly than it will internal ripening.
- Do not make more than one application per season. If Ethephon E-AG 2 Plant Growth Regulator is used for barrenberry control in Maine, do not make a second application for blueberry concentration of maturity or coloring.
- Avoid applications to blueberry plants under drought stress or when excessively high temperatures exist as defoliation and reduced yield may result.

### WHEN TO HARVEST BLUEBERRIES

Harvest should occur when berries have reached maturity, i.e., when colored, which typically occurs one to two weeks after application of Ethephon E-AG 2 Plant Growth Regulator. Monitor berries often. The proper harvest timing for optimum internal and external berry quality is shorter with Ethephon E-AG 2 Plant Growth Regulator treated fruit than with untreated fruit. Berries will ripen faster at high temperatures (90°F).

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Blueberries - Application Instructions
<b>FOR CONCENTRATION OF MATURITY AND EARLIER FRUIT COLORING</b>		
Blueberries  Cultivars Bluecrop, Weymouth, Jersey, Rancocas, Rubel, Bluetta, Erliblue, Wolcott, Croatan, Murphy, Angola, Morrow, Garden Blue, Trifblue and NC901	4-8	<p>Make foliar applications of Ethephon E-AG 2 Plant Growth Regulator in 150 to 200 gallons per acre when air temperatures are 60° to 90°F. Thorough uniform spray coverage of foliage and fruit is essential. A wetting agent such as Triton B-1956 at 0.5 pints per 100 gallons or X-77 at 2.0 pints per 100 gallons will help the uniform wetting of plants.</p> <p><b>High Rate:</b> when using the high rate, use the higher spray volume on large dense foliage bushes or when temperatures are cool.</p> <p><b>Concentration of first harvest:</b> make Ethephon E-AG 2 Plant Growth Regulator applications when 15 to 20% of the berries are blue.</p> <p><b>Concentration of final harvest:</b> make Ethephon E-AG 2 Plant Growth Regulator applications after the first or second picking.</p>
<b>FOR BLACK BARRENBERY CONTROL</b>		
Low Bush Blueberries in Maine	4-8	<p>Make applications of Ethephon E-AG 2 Plant Growth Regulator in 100 to 200 gallons per acre for ground sprayers and 10 gallons per acre for aerial application. Thorough uniform spray coverage of foliage and fruit is essential. A wetting agent such as X-77 at 0.1% of spray volume will help the uniform wetting of plants.</p> <p><b>Lower Rate:</b> use when black barrenberries are at 90 to 100% petal fall</p> <p><b>Higher Rate:</b> use when black barrenberry fruit is 1/8 to 3/16 inch in diameter which occurs generally 7 to 10 days after blueberries are in the same stages of development.</p> <p>Blueberry harvest can generally occur when fruit are ripe, 6 to 8 weeks after application.</p>

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**CANTALOUPE – ARIZONA, CALIFORNIA AND TEXAS ONLY**

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Ethephon E-AG 2 Plant Growth Regulator applications to cantaloupe results in abscission (slipping) of fruit which results in a more efficient and economical harvesting.

**PRECAUTIONS AND RESTRICTIONS**

- Do not apply Ethephon E-AG 2 Plant Growth Regulator if night temperatures are below 60°F.
- Make applications of Ethephon E-AG 2 Plant Growth Regulator to fruit that have a fairly uniform fruit set, have vines in good condition, and have fruit with marketable soluble solids and internal flesh color. Treatment of fields where soluble solids are running less than 10% is not recommended.
- Ethephon E-AG 2 Plant Growth Regulator applications may cause some yellowing or rapid aging of vines, and some plants with poor vigor will not respond properly to Ethephon E-AG 2 Plant Growth Regulator applications.
- Rotation Crop Restriction: Do not plant another crop in treated fields within 30 days after treatment.
- Preharvest Interval: 2 days.
- Do not apply more than 3 pints of this product (0.75 lb ethephon) per acre per year.

**WHEN TO HARVEST CANTELOUPE**

Treated fields should be monitored closely. Harvest fruit when the quality is acceptable for marketing. Do not allow fruit to remain in the field too long or this quality will decline. Typically fruit can be harvested 2 to 5 days after treatment; however temperature will also affect the time to harvest after applications.

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Cantaloupes - Application Instructions
Cantaloupes – Arizona, California and Texas Only	3	<p>Make applications of Ethephon E-AG 2 Plant Growth Regulator in a minimum of 40 gallons per acre for ground sprayers.</p> <p><b>Texas Only:</b> apply in a minimum of 10 gallons per acre for aerial application.</p> <p>Thorough uniform spray coverage of foliage and fruit is essential for uniform abscission.</p> <p>The effects of Ethephon E-AG 2 Plant Growth Regulator occur faster at higher temperatures.</p> <p>Time applications to occur once fruit quality (i.e., soluble solids and flesh color) have reached marketable levels since Ethephon E-AG 2 Plant Growth Regulator applications do not increase these qualities. Applications made too early will yield fruit with poor color and unacceptable soluble solids.</p>

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**CHERRIES - EXCLUDING CALIFORNIA**


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Ethephon E-AG 2 Plant Growth Regulator applied to cherry trees will loosen fruit and allow an early, uniform ripening. These effects reduce the shaker force needed for mechanical harvest of fruit, and thereby increases efficiency and recoverable yields, while maintaining fruit quality and reducing tree injury. In the Pacific Northwest, Ethephon E-AG 2 Plant Growth Regulator applied to sweet cherries increases dormant bud hardiness and delays bloom the following spring.

**PRECAUTIONS AND RESTRICTIONS**

- DO NOT USE ON CHERRIES IN CALIFORNIA.
- Fruit drop with stems attached may occur if applications are made too early.
- Applications may cause early leaf yellowing and drop and gummosis.
- Severe gummosis may occur if temperatures during and after application remain high. Trees that experienced severe gummosis the previous year should not be treated to prevent tree damage.
- Excessive gummosis will occur if applications are made to trees that are of low vigor or have experienced severe stress (such as winter injury, drought, or disease), and particularly if high temperatures and/or drought conditions follow treatment. Make applications when air temperatures are between 60° and 85°F. Do not treat when air temperatures exceed 85°F.
- Irrigation of orchards after application may prevent drought stress which can lead to gummosis.
- Applications to sweet cherry trees under the fall bud hardiness treatment may cause slight gummosis and reduced individual fruit sizes.
- Do not apply until all fruit, including those inside the tree canopy, are in stage 3 (defined as when fruit undergo rapid size increase and change from bright green to yellow background color).
- Thorough, uniform coverage of fruit and foliage is important. Use caution when applying with concentrated sprays and avoid erratic application as these can lead to gummosis and tip dieback.
- Preharvest Interval: 7 days
- Do not apply more than 4.0 pints of this product (1.0 lb ethephon) per acre per year.

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Cherries - Application Instructions
Tart Cherries	Dilute Spray: 1  Concentrate Spray: 2/3 - 1	Make applications of Ethephon E-AG 2 Plant Growth Regulator as either a dilute or a concentrate spray. Concentrate sprays are typically less than 100 gallons per acre. Use sufficient water for thorough, uniform coverage. Several factors (such as trees size, density of trees, and type of application equipment) will determine the optimum spray volumes to select.
Sweet Cherries (including varieties such as Windsor, Napoleon-Royal Anne, Emperor Francis)	Dilute Spray: 3-4  Concentrate Spray: 2 - 3	When the lower use rates are used, the treatment to harvest interval may be longer.
Sweet Cherries – Pacific Northwest Only	3	<b>To increase dormant fruit bud hardiness and to delay spring bloom</b> An application of Ethephon E-AG 2 Plant Growth Regulator in the first two weeks of September increases fruit bud hardiness by decreasing the chance for winter injury and delays bloom by 3 to 5 days, which may help avoid frost injury. Bloom delay from treatment of early flowering varieties may help to coincide pollination from other varieties.

## GRAPES – CALIFORNIA AND ARIZONA ONLY

**TABLE GRAPES:** Ethephon E-AG 2 Plant Growth Regulator applications cause early uniform color development in the table grape varieties listed below which allows a more efficient harvest of quality fruit.

**GRAPES GROWN FOR RAISINS:** A foliar spray of Ethephon E-AG 2 Plant Growth Regulator will speed the maturation of Thompson seedless grapes and result in higher quality raisins containing less acids and increased sugars.

### PRECAUTIONS AND RESTRICTIONS

#### Table Grapes

- Do not use rates higher than 1 pint/A to avoid an increase in cracked fruit. The higher rates should be used only when grapes had difficulty in coloring in previous seasons.
- Ethephon E-AG 2 Plant Growth Regulator applications to certain grape varieties may cause berry softening which limits or influences storage of grapes.
- Do not store Tokay grapes.
- Preharvest Interval: 14 days.
- Do not apply more than 2 pints of this product (0.5 lb ethephon) per acre per year.

#### Raisin Production (Thompson Seedless)

- Grapes which are under stress from insect damage or moisture stress should not be treated. Monitor treated vineyards closely and harvest when grapes are mature as indicated by sugar acid levels.
- Do not apply more than 2 pints of this product (0.5 lb ethephon) per acre per year.

### WHEN TO HARVEST GRAPES

Monitor treated vineyards closely and harvest when grapes are mature—usually two weeks or longer after application—as indicated by color and sugar acid levels. Harvest grapes before the berries become too dark. Contact your Farm Advisor or Extension Viticulturist for more information regarding local experiences with Ethephon E-AG 2 Plant Growth Regulator on grapes.

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Grapes - Application Instructions
TABLE GRAPES (such as Cardinal, Emperor, Flame Seedless, Red Malaga, and Queen)  California and Arizona Only	½ - 2	<b>High temperature conditions (above 85°F):</b> apply Ethephon E-AG 2 Plant Growth Regulator at ½ to 1 pint per A. <b>Low temperature conditions (but above 65°F):</b> apply Ethephon E-AG 2 Plant Growth Regulator at the higher use rates.  Thorough, uniform coverage of the fruit and vines are needed for optimum effect. Use sufficient water using conventional ground sprayers. Make applications when 5 – 30% of the berries show color.
TOKAY GRAPES California and Arizona Only	1 – 2	Make applications when 5 – 15% of berries show color.
RAISIN PRODUCTION (Thompson Seedless) California and Arizona Only	1 - 2	Make foliar applications at 5% berry softening and when 5 – 30% of berries show color.  Ethephon E-AG 2 Plant Growth Regulator speeds the maturation of Thompson Seedless grapes and produces grapes with reduced acids, increased sugars and increased raisin quality. Contact your Farm Advisor or Extension Viticulturist for more information regarding local experiences with Ethephon E-AG 2 Plant Growth Regulator on grapes.

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## PEPPERS

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Ethephon E-AG 2 Plant Growth Regulator can be applied as a foliar spray to peppers and leads to early, uniform ripening and coloring for more efficient harvesting, packaging and handling of fruit.

### PRECAUTIONS AND RESTRICTIONS

- Do not make applications when temperatures exceed 100°F, or if prolonged temperatures of 95°F or more are expected after treatment. Applications under these conditions will cause excessive fruit ripening, yellowing of foliage, defoliation and immature fruit abscission.
- Do not treat when average temperatures are below 60°F as these temperatures may reduce or negate the effects of Ethephon E-AG 2 Plant Growth Regulator. Ethephon E-AG 2 Plant Growth Regulator will not ripen immature, green fruit.
- Applications may cause yellowing and general aging of treated leaves.
- Preharvest Interval: 5 days.
- Do not apply more than 4 pints of this product (1.0 lb ai ethephon) per acre per year.
- Under certain conditions tank mixtures of Ethephon E-AG 2 Plant Growth Regulator with desiccants containing sodium chlorate could result in the formation of hypochlorous acids which on heating will emit toxic chloride fumes.

### WHEN TO HARVEST PEPPERS

Monitor the crop in several locations for crop stage and degrees of maturity. Do not apply Ethephon E-AG 2 Plant Growth Regulator too early or if there is a lack of uniform, mature, green fruit (due to split fruit set or other soil cultural practices) or total yields may be reduced. Typically fruit can be harvested 14 or more days after treatment when fruit reach desired color and maturity.

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Peppers - Application Instructions
Peppers	1 ¼ - 4	<p>For optimum results, ensure thorough, uniform coverage of spray solution to fruit and foliage by selecting the appropriate application equipment (ground or air) and spray volumes.</p> <p>Make Ethephon E-AG 2 Plant Growth Regulator applications to bell peppers when 10% of fruit turn red and chocolate in color and to chili and pimento pepper varieties when 10 to 30% of fruit turn red and chocolate in color. Be sure that there are sufficient mature green fruit to produce desired tonnage since Ethephon E-AG 2 Plant Growth Regulator will not ripen immature, green fruit.</p> <p><b>High Rate:</b> for situations when cool temperatures are anticipated (less than 65°F), or when dense foliage is present. Also use when higher spray volumes (3-4 pints/40 gal/A) are required.</p> <p><b>Lower Rate:</b> for use with lower spray volumes (1 ¼ to 2 pint rate in 20 gal/A).</p> <p><b>Note:</b> Using the 3-4 pint rate in less than 40 gallons per acre may cause foliage burn under hot dry conditions.</p>



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### TOBACCO – FLUE-CURED ONLY

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Ethephon E-AG 2 Plant Growth Regulator when applied as a foliar application to flue-cured tobacco causes the mature leaves to uniformly turn yellow. This feature provides flexibility in scheduling harvest and also reduces curing time. The applications can be made by directing the spray to the bottom or middle part of the plant or by spraying over the top of the plants.

#### PRECAUTIONS AND RESTRICTIONS

- Do not apply Ethephon E-AG 2 Plant Growth Regulator to immature leaves as this can result in unsatisfactory coloring, weight loss and reduced leaf quality.
- Do not allow the crop to over ripen in the field after using Ethephon E-AG 2 Plant Growth Regulator since this may cause some reduction in yield and quality.
- Do not treat before an anticipated major storm which could prevent harvest and result in crop loss.
- Do not apply Ethephon E-AG 2 Plant Growth Regulator if rain is expected within 6 hours.
- Do not harvest tobacco treated with Ethephon E-AG 2 Plant Growth Regulator sooner than 2 days after application.
- Do not apply more than 8 pints of this product (2 lb ethephon) per acre per year.

#### APPLICATION TIMING

For best results, apply Ethephon E-AG 2 Plant Growth Regulator to mature leaves. Treatment of immature leaves can lead to leaves that are not acceptable in color, quality or dryness. The correct timing for application can be tested by spraying a few plants in several different locations of the field. If the leaves begin to yellow within 24-72 hours, the leaves are mature. If some treated leaves do not change color within 72 hours, do not apply Ethephon E-AG 2 Plant Growth Regulator until another test is carried out a few days later to determine if the leaves are mature. To prepare a test spray solution, add 4 tsp. Ethephon E-AG 2 Plant Growth Regulator to 1 qt. water. Apply about 1 oz of the test spray solution as a fine mist and thoroughly cover the leaves. Immature leaves won't change color.

When the test shows that the desired number of leaves per plant change color, calculate the number of acres to treat in order to fill the barn.

Remove yellowed leaves before making an Ethephon E-AG 2 Plant Growth Regulator application as this will help yields and prevent leaf drop. Typical growing conditions will require the lower rates specified in the table below. If the higher rates are used, only apply if temperatures are below 65°F on the day of application.

#### WHEN TO HARVEST TOBACCO

Within 24 to 72 hours after the Ethephon E-AG 2 Plant Growth Regulator application, mature, sprayed leaves will begin to turn yellow, but the exact timing is dependent on the weather so that under cooler temperatures, yellowing will be delayed while under warm, sunny conditions, yellowing occurs faster. Monitor weather conditions and intensity of tobacco leaves color to determine timing of harvest. Usually within 48 hours after the Ethephon E-AG 2 Plant Growth Regulator application the leaves have reached the desired color intensity and can be harvested.

To avoid reduced yields and quality, harvest the tobacco before it over-ripens in the field after an Ethephon E-AG 2 Plant Growth Regulator application.

#### CURING ETI 106 01 G TREATED TOBACCO

A number of factors must be considered when curing treated tobacco. These factors include, but are not limited to tobacco condition, timing between application of Ethephon E-AG 2 Plant Growth Regulator and harvest, weather conditions, and type of curing. Best quality tobacco is obtained when the curing process is closely monitored during late leaf coloring and early leaf drying stages.

Application of Ethephon E-AG 2 Plant Growth Regulator to tobacco begins the coloring process before harvest, so the amount of time required in the coloring phase and drying phase may be reduced. Harvested green leaves will need to be colored for a few hours. Harvested yellow leaves will require adjustment of temperature and ventilation so the tobacco dries as quickly as possible without scalding. At the point of 75% dried state, the leaves can be treated using normal procedures for curing. However, Ethephon E-AG 2 Plant Growth Regulator-treated leaves cure faster, so cure treated and untreated leaves in separate barns.

Type of Application	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Tobacco - Application Instructions
Directed Spray	4	Apply Ethephon E-AG 2 Plant Growth Regulator with drop nozzles and TG or OC spray tips designed to apply 50-60 gal/A at 35-40 psi and at tractor speed of 2-3 mph. Best results are obtained when thorough sprays are directed to the leaves to be ripened. Adjust the sprayer so that there are 2 nozzles per row placed low enough to direct the spray to the leaves. For this type of application, harvest when 20% or more of the leaves have yellowed.
Over-the-top Spray	4-8	<p>Apply Ethephon E-AG 2 Plant Growth Regulator in a minimum spray volume of 40 gal/A.</p> <p>Make applications only to the mature leaves left on the stalk. Use the test procedure described in the Application Timing section above to determine if remaining leaves are mature and will respond to applications of Ethephon E-AG 2 Plant Growth Regulator.</p> <p>Apply the lower rate of Ethephon E-AG 2 Plant Growth Regulator for mature crop or if experience indicates that a minimum ripening inducement is required. The higher rate is used for heavy, more rank crops or when temperatures are lower than normal.</p>

## TOMATOES

**TOMATOES FOR PROCESSING:** Ethephon E-AG 2 Plant Growth Regulator applied foliarly will speed the ripening of tomatoes which leads to a uniform maturation of fruit. The uniform maturation generates a high yield of ripe tomatoes which are obtained from a once-over harvest. This early maturation extends the harvest season and allows growers to select when to harvest for more efficient handling of the processed commodity.

**TOMATOES FOR FRESH MARKETS IN CALIFORNIA:** Ethephon E-AG 2 Plant Growth Regulator applied foliarly will speed ripening of tomatoes and increase early yields of marketable tomatoes.

### PRECAUTIONS AND RESTRICTIONS

- Apply Ethephon E-AG 2 Plant Growth Regulator only when there is sufficient mature green fruit to produce the desired tonnage since Ethephon E-AG 2 Plant Growth Regulator does not ripen immature green fruit. Foliage may become yellow or age after an Ethephon E-AG 2 Plant Growth Regulator application.
- Do not treat plants with poor root systems or if growing under stress (from poor soil conditions, drought, disease, or insect damage) because these weakened plants will lose their foliage cover, and risk sunburn and sunscalding, especially under high temperature conditions.
- Do not apply Ethephon E-AG 2 Plant Growth Regulator if temperatures are expected to remain above 105°F. For sensitive varieties, do not apply if temperatures are above 100°F to prevent foliar damage. Particularly sensitive varieties include VF 10, VF 315, VF 145, 21-4, and 13L. Use the lower rates on these varieties when temperatures are high.
- Do not apply Ethephon E-AG 2 Plant Growth Regulator as a tank mix with sun protection products, sun protection whiteners, spray adjuvants or other additives.
- Do not apply Ethephon E-AG 2 Plant Growth Regulator to more acres than can be harvested in 2 to 3 days.
- Do not use on greenhouse tomatoes or on varieties which soften rapidly or shatter when ripe.
- Pre-harvest interval: 3 days.
- Do not apply more than 6.5 pints of this product (1.63 lb ethephon) per acre per year.

### WHEN TO HARVEST TOMATOES

Observe treated fields closely and harvest fruit at proper maturity after application of Ethephon E-AG 2 Plant Growth Regulator.

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Tomato - Application Instructions
Tomatoes for Processing	1 ¼ - 3 ¼	<p><b>Early and Midseason Crops OR High Temperatures</b></p> <p>Make the application of Ethephon E-AG 2 Plant Growth Regulator when enough mature green fruit will give the tonnage required and when 5-15% of the fruit are red and pink (includes breakers). To determine the proper application date, check the fruit weight and calculate the percent fruit which is red and pink, including breakers. Do not rely on fruit size alone and check for specific directions to determine treatment stage for your situation.</p> <p>Foliage and fruit must receive a thorough coverage of Ethephon E-AG 2 Plant Growth Regulator. Spray equipment (ground or air) and spray volumes should be selected that will provide this uniform spray coverage.</p> <p>When temperatures exceed 85°F, the lower rate is effective.</p>

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Tomato - Application Instructions
		<p>Do not overlap spray swaths to prevent severe foliage injury. If banded spray applications are made, the amount of Ethephon E-AG 2 Plant Growth Regulator should be reduced in proportion to the area actually treated.</p> <p>Continue normal cultural practices after application and prior to harvest. Before making the application of Ethephon E-AG 2 Plant Growth Regulator, contact the processor to check delivery schedules and quotas.</p> <p>If you have questions on how to use Ethephon E-AG 2 Plant Growth Regulator, contact your local Etigra Company Representative, Extension Horticultural Specialist or Farm Advisor. They can advise you especially if fields have variable plant vigor due to differences in soil conditions or cultural practices and can provide rates of fruit ripening as affected by temperature, within the rate and timing limitations shown on the label.</p>
	3 ¼ - 6 ½	<p><b>Late Season or Coastal Crops or Cool Temperatures</b></p> <p>Make the application of Ethephon E-AG 2 Plant Growth Regulator when enough mature green fruit will give the tonnage required and when 5-30% (for optimum response, 5-15%) of the fruit are red and pink (includes breakers).</p> <p>Foliage and fruit must receive a thorough coverage of Ethephon E-AG 2 Plant Growth Regulator. Spray equipment (ground or air) and spray volumes should be selected that will provide this uniform spray coverage.</p> <p>If night temperatures are expected to be cool (below 65°F) or if foliage is dense, use the higher rate of Ethephon E-AG 2 Plant Growth Regulator.</p> <p>When temperatures exceed 90°F, fruit may ripen sooner. When temperatures fall below 65°F, the development of the fruit's natural color may be delayed and result in a longer period of time needed between application and harvest.</p>
Tomatoes for the Fresh Market - California	1 ¼ - 5	<p>Make an Ethephon E-AG 2 Plant Growth Regulator application about 3-6 days prior to the desired harvest date but be sure that the desired tonnage of fruit has reached marketable size and maturity. No more than one harvest is expected from areas treated with Ethephon E-AG 2 Plant Growth Regulator.</p> <p>Foliage and fruit must receive a thorough coverage of Ethephon E-AG 2 Plant Growth Regulator. Spray equipment (ground or air) and spray volumes should be selected that will provide this uniform spray coverage.</p> <p>For late season crops, if temperatures are generally below 85°F and if foliage is dense, use the higher application rate and longer preharvest interval (3 days). When temperatures exceed 85°F, the lower rate is effective and does not damage foliage especially in sensitive varieties.</p> <p>To time harvest of different blocks of fruit on different days, apply Ethephon E-AG 2 Plant Growth Regulator to a different block each day. Then harvest the blocks daily in the same sequence.</p>

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**WALNUTS – CALIFORNIA ONLY**


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Applications of Ethephon E-AG 2 Plant Growth Regulator to walnut trees will loosen the nuts for a more efficient mechanical harvest. As a result of this application, nuts can be harvested earlier, their hull more effectively removed, and yields increased from a once-over harvest.

**PRECAUTIONS AND RESTRICTIONS**

- Reduced nut quality may occur if application is made before the packing tissue brown (mature) stage.
- Applications may cause some leaf drop, which is enhanced if trees under stress (vigor, drought) are treated.
- Use caution when measuring the dosage. Injury to trees (excessive defoliation, reduced catkin formation and twig dieback) may occur if higher than recommended rates are used.
- Preharvest Interval: 5 days.
- Do not apply more than 5 pints of this product (1.25 lb ethephon) per acre per year.

**WHEN TO HARVEST WALNUTS**

Sample nuts from different parts of the tree to determine the percent nut maturity. When the packing tissue between the kernel halves has turned completely brown, the nuts are mature.

**Advancing Harvest** – Make an application of Ethephon E-AG 2 Plant Growth Regulator when 95-100% of the nuts have reached maturity. Continue to inspect the nuts to determine the harvest date, which typically occurs 10-16 days after the application. However, walnut varieties and weather conditions will determine the time when adequate hullability will occur. A second shake should be scheduled 10-12 days after the first shake.

**Once-Over Harvest** – Before deciding on a once-over harvest, contact an Extension Specialist or Farm Advisor to determine if your situation warrants this type of harvest. A number of factors will play a role in the walnut maturity timing for this type of harvest (i.e., variety, growing conditions and weather). Make an application of Ethephon E-AG 2 Plant Growth Regulator to mature walnuts 10 days before the expected harvest date. The timing of harvest may actually range from 7-12 days after treatment.

Crop	Ethephon E-AG 2 Plant Growth Regulator Pints/Acre	Walnuts - Application Instructions
Walnuts – California Only	3 - 5	<p><b>For optimum results:</b> Use spray concentrations between 300 and 900 ppm. These concentrations can be determined by checking the chart below. Make applications when the air temperature is between 60 and 90°F. The walnuts hull must be thoroughly covered by the spray solution to ensure maximum hull split and nut loosening. Application equipment designed to provide penetration of the entire tree such as large air carrier sprayers or volute sprayer attachments are recommended.</p> <p><b>High rate:</b> use under conditions of low humidity or low temperatures. Note that the time from application to harvest may be shorter with higher rates than with lower rates.</p> <p>At higher air temperatures (&gt;90°F) and low humidity, Ethephon E-AG 2 Plant Growth Regulator may evaporate and be less effective.</p>

**HOW TO PREPARE ETHEPHON E-AG 2 PLANT GROWTH REGULATOR SPRAY SOLUTIONS  
FOR USE IN WALNUTS**

ETI 106 01 G Rate Pints/A (lb /A)	Spray Volume (gallons/A)				
	100	200	300	400	500
	Concentration (ppm)				
3 (0.75)	900	450	300	--	--
4 (1.00)	--	600	400	300	--
5 (1.25)	--	750	500	375	300

-- = Not Recommended

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**FRUIT ELIMINATION – ORNAMENTAL USE ONLY**


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**TO ELIMINATE UNDESIRABLE FRUIT:** Ethephon E-AG 2 Plant Growth Regulator will reduce or eliminate undesirable fruit development on ornamental apple, crabapple, carob and olive trees.

**PRECAUTIONS AND RESTRICTIONS**

- For optimum results, make applications before fruit set.
- Avoid applications if trees are weak or under stress from drought, insect or disease pressure to prevent excessive leaf drop or twig drop.
- Applications of Ethephon E-AG 2 Plant Growth Regulator may cause some leaf drop or temporary leaf yellowing.
- Do not apply Ethephon E-AG 2 Plant Growth Regulator to small red fruited varieties of crabapple to avoid unsatisfactory fruit elimination.
- Do not use Ethephon E-AG 2 Plant Growth Regulator on commercial fruit production as a thinning agent.

Crop	Ethephon E-AG 2 Plant Growth Regulator Rate	Ornamental Fruit Trees - Application Instructions
Apples Crabapples	8 to 12 fl. oz./20 gal	Make Ethephon E-AG 2 Plant Growth Regulator foliar applications in a minimum of 20 gallons of water per Acre. Ensure application gives a thorough, uniform coverage of tree foliage. Time application to occur at the flower bud to full bloom stage, but before fruit set. Do not over-apply Ethephon E-AG 2 Plant Growth Regulator or excessive leaf drop and/or tree defoliation may occur. Use the higher rates under cooler temperature conditions.
Carob ( <i>Ceratonia siliqua</i> )	6 fl. oz./20 gal	Make Ethephon E-AG 2 Plant Growth Regulator foliar applications in a minimum of 20 gallons of water per Acre. Ensure application gives a thorough, uniform coverage of tree foliage.
Olive ( <i>Olea europaea</i> )	12 fl. oz./20 gal	

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**ORNAMENTALS - MISTLETOE REMOVAL**


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**DWARF AND LEAFY MISTLETOE REMOVAL:** Ethephon E-AG 2 Plant Growth Regulator applied to ornamental conifers or ornamental deciduous trees will remove the mistletoe species noted in the table below.

Crop	Ethephon E-AG 2 Plant Growth Regulator Rate	Mistletoe Removal - Application Instructions
<b>FOR DWARF MISTLETOE REMOVAL</b>		
Ornamental Conifers	2 pints/20 gal	Make Ethephon E-AG 2 Plant Growth Regulator foliar applications in a minimum of 20 gallons of water per Acre. Direct sprays to dwarf mistletoe shoots and ensure thorough coverage of shoots with spray solution. Non-ionic surfactants at the recommended use rates help increase the coverage of spray on shoots. Time applications to occur prior to mistletoe seed dispersal.
Douglas Fir Ornamentals	1 pint/20 gal	When Ethephon E-AG 2 Plant Growth Regulator is applied in conjunction with silvicultural mistletoe management, the spread of the mistletoe parasite to other parts of the tree and other trees is avoided.  Ethephon E-AG 2 Plant Growth Regulator may speed the normal mature needle drop that occurs in the fall.  Do not apply higher rates to Douglas fir to prevent excessive needle drop.
<b>FOR LEAFY MISTLETOE REMOVAL</b>		
Ornamental Deciduous Trees	2 quarts/20 gal	Make Ethephon E-AG 2 Plant Growth Regulator applications in a minimum of 20 gallons of water per Acre. Direct sprays to mistletoe shoots and ensure thorough coverage of shoots with spray solution. Non-ionic surfactants at the recommended use rates help increase the coverage of spray on shoots. Time applications to occur after fall leaf drop through mid-winter. Retreatment of mistletoe regrowth should be made during the indicated application period.  Retreatment may be necessary for severe mistletoe infestations and for mistletoe found in mesquite.



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**TURF**


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**Not for Residential Use**

Applications of Ethephon E-AG 2 Plant Growth Regulator to turf can be used to suppress seedheads of *Poa annua* and white clover and to suppress growth of turfgrass on golf courses and commercial turfgrass.

**PRECAUTIONS AND RESTRICTIONS**

- Do not allow entry to treated areas until sprays have dried.
- Make applications to turfgrass with good root systems growing under favorable conditions. Avoid applications if turfgrass or the roots are stressed from poor soil conditions, drought, disease or insect damage.
- Make applications in sufficient amounts of water so that uniform coverage of the grass is achieved.
- Ethephon E-AG 2 Plant Growth Regulator should only be applied to actively growing turf and which has not become dormant. Do not apply Ethephon E-AG 2 Plant Growth Regulator if excessive thatch is present in the turf.
- Use of more than 2 applications of Ethephon E-AG 2 Plant Growth Regulator to suppress *Poa* seedhead formation may cause scalping on creeping bentgrass cultivars.
- Although Ethephon E-AG 2 Plant Growth Regulator has been used successfully on many bentgrass cultivars, test new cultivars for tolerance to Ethephon E-AG 2 Plant Growth Regulator on small areas before applying ETU 106 01 G on large areas.
- Spreaders or stickers are not required when applying Ethephon E-AG 2 Plant Growth Regulator. If tank mix partners are used with Ethephon E-AG 2 Plant Growth Regulator, test the tank mix on a small plot before using on large areas.
- Ethephon E-AG 2 Plant Growth Regulator is acidic. Long term exposure to spray deposits will damage acrylic plastics, certain paints and metals. Any plastic materials and painted surfaces which came in contact with Ethephon E-AG 2 Plant Growth Regulator spray mixture should be washed thoroughly with detergent and water within one hour after exposure.
- Do not apply more than a maximum of 30 oz. of Ethephon E-AG 2 Plant Growth Regulator per 1000 sq. ft. per year.

Sites	Ethephon E-AG 2 Plant Growth Regulator Rate	Turf - Application Instructions
<b>For <i>Poa annua</i> and White Clover Seedhead suppression</b>		
Golf courses including Greens, Tees, Fairways, and Roughs	5 fl. oz./1000 sq. ft.	Make a foliar application of ETU 106 01 G before new seedheads emerge. Apply Ethephon E-AG 2 Plant Growth Regulator in 1 – 2 gallons of water per 1000 sq. ft. Two to three weeks may be required for suppression to be observed. Make a repeat application if needed but no sooner than 2 weeks after the previous application.
Commercial Turfgrasses, including Bentgrass, Kentucky Bluegrass, Perennial Ryegrass, Tall and Fine Fescue, and Bermudagrass		
<b>For Growth Suppression of Turfgrasses</b>		
Golf course turf including Greens, Tees, Fairways, and Roughs	5 fl. oz./1000 sq. ft.	Ethephon E-AG 2 Plant Growth Regulator applications to turf will slow the growth of turfgrasses. Fewer mowings will be required and less clippings will be generated. Best results are obtained if Ethephon E-AG 2 Plant Growth Regulator is applied during the day when temperatures are 65°F and rising. Wait to make an Ethephon E-AG 2 Plant Growth Regulator application until the
Commercial		

Sites	Ethephon E-AG 2 Plant Growth Regulator Rate	Turf - Application Instructions
Turfgrasses, including Bentgrass, Kentucky Bluegrass, Perennial Ryegrass, Tall and Fine Fescue		turfgrass mowing heights have been established for the season. Do not make multiple applications of Ethephon E-AG 2 Plant Growth Regulator in areas where excessive thatch has accumulated since Ethephon E-AG 2 Plant Growth Regulator must reach the turfgrass to be effective.  Multiple applications of Ethephon E-AG 2 Plant Growth Regulator may be made at the following intervals after the previous application: Bentgrass – 4 weeks Kentucky Bluegrass – 7 weeks Perennial Ryegrass – 7 weeks Tall/Fine Fescue – 4 weeks
<b>For <i>Poa annua</i> and White Clover Seedhead suppression - Tank Mixtures of Ethephon E-AG 2 Plant Growth Regulator with Primo MAXX™ (or T-Pac E-Pro MEC Plant Growth Regulator)</b>		
Golf courses including Greens, Tees, Fairways, and Roughs  Commercial Turfgrasses, including Bentgrass, Kentucky Bluegrass, Perennial Ryegrass, Tall and Fine Fescue, and Bermudagrass	Ethephon E-AG 2 Plant Growth Regulator at 5 fl. oz./1000 sq. ft.  <b>PLUS</b>  Primo MAXX™ (or T-Pac E-Pro MEC Plant Growth Regulator) at 0.125-0.25 oz./1000 sq. ft.	Ethephon E-AG 2 Plant Growth Regulator can be tank mixed with Primo MAXX™ (or T-Pac E-Pro MEC Plant Growth Regulator) at the given rates to suppress seedhead formation and to promote turfgrass quality. Although multiple applications of the tank mix may be made, do not exceed the number of applications or total use rate or timings for either product applied once. Follow the directions for use on each product label for the most restrictive application interval for turfgrass. Temporary discoloration of turfgrass may occur if the tank mix is applied when frost is present.

#### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in original container and keep tightly closed. Store in a cool, dry place.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. 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) empty containers. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

#### CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of Etigra or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold Etigra and Seller harmless for any claims relating to such factors.

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