



# ETHREL

## LIQUID PLANT GROWTH REGULATOR

Accelerates tomato ripening, accelerates apple and  
Blueberry coloring and fruit maturity, loosens cherries for  
Easier harvest, promotes colour and reduces curing time of  
Flue cured tobacco, and reduces lodging in cereals

### COMMERCIAL

GUARANTEE:  
ETHEPHON.....240 g/L



REGISTRATION NO. 11580  
PEST CONTROL PRODUCTS ACT

### READ THE LABEL AND BOOKLET BEFORE USING

**Product Information:** 1-888-283-6847

**Bayer CropScience Inc.**  
Suite 200, 160 Quarry Park Blvd. SE,  
Calgary, AB T2C 3G3

IN CASE OF SPILLS, POISONING OR FIRE, TELEPHONE EMERGENCY RESPONSE  
NUMBER COLLECT 1-800-334-7577 (24 HOURS A DAY).

NET CONTENTS:  
[1 L, 2 L, 4 L, 4.54 L, 10 L]

## **PRECAUTIONS:**

KEEP OUT OF REACH OF CHILDREN. Harmful if swallowed. May cause eye damage. Wear a long-sleeved shirt, long pants, goggles or faceshield and chemical resistant gloves during mixing, loading, application, clean up and repair. Mixer/loaders must wear either a respirator with a NIOSH/MSHA/BHSE approved organic-vapour-removing cartridge with a prefilter approved for pesticides OR a NIOSH/MSHA/BHSE approved canister approved for pesticides. Avoid contact with skin and clothing and do not inhale vapours as this product will irritate skin and mucous membranes.

## **ENVIRONMENTAL HAZARDS:**

TOXIC to aquatic organisms and non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE.

## **FIRST AID INSTRUCTION:**

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**In case of eye contact:** Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

**In case of skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for treatment advice.

## **TOXICOLOGICAL INFORMATION:**

This product is very acidic and highly corrosive. Contact with skin or mucous membranes will result in irritation. Medical Personnel should contact Bayer's Medical Information Services, Toll-Free: 1-800-334-7577.

## **STORAGE:**

Store in tightly closed containers and prevent from contacting feeds, fertilizers, plants, seeds or pesticides. Do not subject to freezing temperatures.

## **USE PRECAUTIONS:**

Avoid spray drift to nearby crops as this product may cause temporary modifications of plant growth.

Do not contaminate water used for irrigation or domestic purposes.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's website at: [www.croplife.ca](http://www.croplife.ca).

## **DISPOSAL:**

### **RECYCLABLE CONTAINER DISPOSAL:**

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

### **DISPOSAL OF UNUSED, UNWANTED PRODUCT:**

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for cleanup of spills.

If container is damaged and/or contents spilled contact manufacturer for instructions. Wear protective clothing and impervious gloves before handling spills or damaged products. For spills do not allow product to spread. Prevent entry into ditches and waterways. Cover spill with inert sweeping compound such as dry sand, clay or sawdust and place contaminated material into an approved waste container. Place damaged container into approved waste container and mark with contents.

## **NOTICE TO USER:**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the Pest Control Products Act to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

Ethrel is a registered trademark of Bayer.



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**DANGER**



**CORROSIVE**

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## DIRECTIONS FOR USE

### DIRECTIONS FOR APPLES:

ETHREL Plant Growth Regulator can be used to (1) stimulate early red colouring and accelerate fruit ripening, (2) increase flower bud development in both spur and non-spur type trees, and (3) promote loosening of processing apples for easier harvesting.

Thorough uniform spray coverage of leaves and fruit is important. A wetting agent may improve spray coverage. Treat when air temperatures are between 16°C and 32°C. However, applications may be made at 10°C under rising temperature conditions.

**IMPORTANT: Harvest fruit at proper maturity.** Observe treated fruit carefully as the proper picking period is shorter with ETHREL Plant Growth Regulator treated fruit than with untreated fruit. Do not allow fruit to become overripe on trees. Fruit intended for fresh market must be checked for quality and maturity, not just colour. Colour alone is not an adequate guide for fruit maturity; use a pressure gauge or other suitable method for determining internal maturity. ETHREL Plant Growth Regulator applied earlier than 2 weeks before normal anticipated harvest may result in reduced fruit quality.

ETHREL Plant Growth Regulator treated fruit should not be held in cold storage longer than two months. Do not place ETHREL Plant Growth Regulator treated fruit in controlled atmosphere storage. If fruit is slightly immature when harvested, scald may result; if over-mature when harvested, the fruit may soften sooner than untreated fruit.

### **(1) TO PROMOTE EARLY RED COLOURING AND APPLE RIPENING WITHOUT LOOSENING:**

Apply a foliar spray of ETHREL Plant Growth Regulator mixed with a preharvest drop control chemical. A stop drop material is necessary to prevent premature dropping and must be applied the same day as ETHREL Plant Growth Regulator. Begin spraying 2 to 3 weeks before you would normally begin harvesting and about 2 weeks before desired harvest date.

Apply 1.75 to 3.50 litres of ETHREL Plant Growth Regulator per hectare. Use sufficient water for thorough uniform spray coverage, generally 2000 to 4000 litres per hectare depending on size of trees. Use the lower rate on early and midseason maturing varieties and under higher temperatures. Use the higher rate on late season maturing varieties and under cooler temperatures. Since recommendations for chemical control of preharvest drop vary according to location and variety, follow directions on the label. Consult your local Fruit Specialist at the Provincial or Federal Research Station for his experience with these products in your area.

## **(2) TO INCREASE FLOWERING OF YOUNG APPLE TREES:**

Apply a foliar spray of ETHREL Plant Growth Regulator to nonbearing trees, 1 to 2 weeks after peak bloom period (determined by bearing trees in the area). On young orchard trees just beginning to initiate a few flowers, delay applications until 3 to 5 weeks after full-bloom to avoid overthinning and misshapen fruit (calyx and pinched). Vegetative growth is reduced during the season of application, promoting flower bud development the following spring. Trees should be large enough to support a crop of apples before being treated. Consult your local Fruit Specialist for recommendations on different varieties.

For spur type trees, mix 2 litres ETHREL Plant Growth Regulator in 1000 litres of water (6 litres in 3000 litres) and apply as a normal dilute spray to the point of runoff. For non-spur type trees, mix 4.25 litres of ETHREL Plant Growth Regulator in 1000 litres of water (12.75 litres in 3000 litres) and apply as a normal dilute spray to the point of runoff. For concentrate sprayers, apply 7 litres ETHREL Plant Growth Regulator per hectare for spur types or 14 litres per hectare for non-spur types, in 500 litres of water. This rate may completely defruit the current crop from trees, particularly when applied earlier than 4 weeks after full bloom.

## **(3) TO LOOSEN PROCESSING APPLES FOR EASIER HARVESTING:**

Apply a foliage spray to apple trees 7 to 14 days prior to normal anticipated harvest. Pick apples as soon as they reach the degree of loosening desired for easy mechanical harvesting, generally 7 to 14 days after treatment. Observe treated fruit closely for abscission response since temperatures above 24°C. accelerate fruit loosening and promote preharvest drop.

1. EARLY AND MIDSEASON MATURING VARIETIES (such as Tydeman, Milton, Wealthy and McIntosh).

Apply 2.75 litres of ETHREL Plant Growth Regulator per hectare. Use sufficient water for thorough uniform spray coverage, generally 1500 to 4000 litres per hectare depending on the type and delivery of sprayer used and size of trees.

2. LATE MATURING VARIETIES (such as Cortland, Red Delicious, Rome, Idared and Jonathan).

Apply 5.5 litres of ETHREL Plant Growth Regulator per hectare. Use sufficient water for thorough uniform spray coverage, generally 1500 to 4000 litres per hectare depending on the type and delivery of sprayer used and size of trees.



## **DIRECTIONS FOR BLUEBERRIES:**

A foliar spray of ETHREL Plant Growth Regulator concentrates maturity of blueberries for easier and more efficient harvest. A foliar spray of ETHREL Plant Growth Regulator will abort black barrenberry (*Aronia melanocarpa*) flowers and/or fruit growing in lowbush blueberry fields reducing the number of undesirable barrenberry fruit harvested with blueberries.

### **1. FOR CONCENTRATION OF MATURITY AND EARLIER FRUIT COLOURING IN HIGH BUSH BLUEBERRIES:**

Use only on Bluecrop, Weymouth, Jersey, Rancocas, Rubel, Bluetta, Eriblue, Wolcott, Croatan, Murphy, Angola, Morrow, Garden Blue, Triblue and NC901 cultivars. *Application to other cultivars may cause excessive steminess and/or premature drop.*

Apply a foliar spray of ETHREL Plant Growth Regulator at a rate of 5.5 to 8.5 litres in 1500 to 2000 litres per hectare of water. Use the higher spray volume and rate on large dense foliage bushes or when temperatures are cool. Treat when air temperatures are 16°C to 32°C. Thorough uniform spray coverage of foliage and fruit is essential for maximum fruit maturation and colouration. The use of a wetting agent may improve spray coverage.

To concentrate first harvest apply ETHREL Plant Growth Regulator when 15 to 20% of the berries are blue. To concentrate final harvest treat after the first or second picking. Harvest blueberries at proper maturity when coloured, generally one to two weeks after treatment. Observe fruit daily as the proper picking period for optimal internal and external quality is shorter with ETHREL Plant Growth Regulator treated fruit than with untreated fruit. High temperatures (32°C) accelerate fruit ripening.

ETHREL Plant Growth Regulator treatments may increase fruit with stems, slightly decrease fruit size, soluble solids and acidity. ETHREL Plant Growth Regulator may not induce internal ripening as rapidly as fruit colour. Make no more than one application per season. If used for barrenberry control, do not make a second application for blueberry concentration of maturity and colouration.

### **(2) FOR BLACK BARRENBERRY CONTROL IN LOWBUSH BLUEBERRIES:**

Apply 5.5 to 8.5 litres per hectare of ETHREL Plant Growth Regulator in approximately 1000 to 2000 litres per hectare for ground sprayers and approximately 100 litres per hectare for aerial application. Refer to "Aerial Application – Directions for Use" section at the end of this label. Thorough uniform spray coverage is essential. To aid in uniform wetting of plants, the use of a wetting agent is suggested. Use the lower rates of ETHREL Plant Growth Regulator when black barrenberries are between 90 to 100% petal fall and use the higher rates of ETHREL Plant Growth Regulator when black

barrenberry fruit is 0.3 to 0.5 cm in diameter. This is generally 7 to 10 days after blueberries are in the same stages of development. Harvest blueberry fruit when ripe generally 6 to 8 weeks after application.

Do not treat blueberry plants under drought stress or excessively high temperatures as defoliation and reduced yield may result.

## **DIRECTIONS FOR CHERRIES:**

ETHREL Plant Growth Regulator loosens fruit for easy removal by hand or machine and promotes early uniform fruit maturity.

Apply a foliage spray to cherry trees 7 to 14 days before you normally begin harvesting and about 7 days before desired harvest date. Treat when air temperatures are between 16°C and 32°C. Use only on vigorous trees that have not experienced severe stress such as winter injury, drought and disease since gummosis may be increased.

Fruit clusters on shaded inside branches should be of marketable size and have some colour development or signs of ripening prior to treatment. Applying earlier than two weeks prior to the normal peak harvest period may loosen immature or poorly coloured fruit and may prevent fruit from reaching normal size. Observe treated fruit frequently for condition of crop.

HARVEST FRUIT AS SOON AS THEY LOOSEN, generally 7 to 14 days after treatment. Do not allow fruit to become overmature. Most ETHREL Plant Growth Regulator treated cherries will be stemless when harvested.

SOUR CHERRY VARIETIES: Apply 2.75 litres ETHREL Plant Growth Regulator per hectare. Use sufficient water for thorough uniform coverage, generally 2400 litres per hectare depending on the type and delivery of sprayer used and size of trees.

SWEET CHERRY VARIETIES: Apply 5.5 litres of ETHREL Plant Growth Regulator per hectare. Use sufficient water for thorough uniform coverage, generally 2400 litres per hectare depending on the type and delivery of sprayer used and size of trees.

## **DIRECTIONS FOR TOMATOES:**

ETHREL Plant Growth Regulator promotes earlier uniform and concentrated tomato ripening and is especially valuable for fruit intended for processing. Apply when 5 to 30% of fruits are partly red and red. To determine this application time, pull a few

plants, shake off fruit, weigh or count, and determine percent of total which are partly red and red.

3.75 litres of ETHREL Plant Growth Regulator will treat 1 hectare of tomatoes (0.9 kg ethephon per hectare). Mix 3.75 litres of ETHREL Plant Growth Regulator in 30 to 500 litres of water and broadcast spray uniformly over 1 hectare of foliage and fruit.

When temperatures are expected to average less than 18°C and vegetative growth is dense, mix 6.4 litres of ETHREL Plant Growth Regulator in 30 to 500 litres of water and broadcast spray uniformly over 1 hectare of foliage and fruit.

HARVEST FRUIT AT PROPER MATURITY, generally 14 to 21 days after treatment. Observe treated fruit frequently for condition of crop. Cool temperatures can slow colour development and extend the period between treatment and harvest.

Some defoliation or yellowing of foliage following treatment will be observed.

## **DIRECTIONS FOR TOBACCO:**

A foliar spray of ETHREL Plant Growth Regulator reduces curing time and promotes colour development in the upper 6-7 leaves (tips and undertips). ETHREL Plant Growth Regulator increases the capacity of the curing kiln by shortening the curing time and allows adjustment in harvest schedules.

**Proper time for treatment:** Successful results with ETHREL Plant Growth Regulator call for treatment when leaves are mature....not overly rank green when sprayed. To easily determine the proper time for treatment and to determine the number of leaves per stalk that are ready for harvest, test spray several plants in more than one location in each field and observe their response. Mature leaves will begin yellowing in 24 to 72 hours. If the test plants fail to yellow the number of leaves desired after 72 hours, wait a few days to permit further natural maturing, then make another test spray or "maturity" check.

Prepare your test spray by mixing four teaspoons of ETHREL Plant Growth Regulator in one litre of water. Spray each test plant with about 30 mL of this mixture, covering all leaves with a fine mist. ETHREL Plant Growth Regulator will not color immature sprayed leaves.

## **DIRECTIONS FOR USE:**

For the promotion of colour development and reduced curing time of the upper 6-7 leaves (tips and undertips) of flue-cured tobacco, apply ETHREL Plant Growth

Regulator at a rate of 2.75 to 3.75 litres/ha in 225 to 275 litres of water at a pressure of 345 to 520 kilopascals (kPa). Use the lower rate in normally maturing tobacco when experience indicates minimum ripening inducement is required. Use the higher rate when crop is heavier and has a tendency to be more rank.

If undertips are already well coloured, then harvest them prior to treating the tips with ETHREL Plant Growth Regulator. If the tips alone are treated use the lower rate of ETHREL Plant Growth Regulator.

Treat only when leaves remaining on stalk are mature.

**DO NOT TREAT LEAVES WHICH ARE ALREADY QUITE YELLOW OR OVERMATURE.**

Do not treat crops which are under water stress or nutrient stress.

Apply the ETHREL Plant Growth Regulator spray as a fine mist using three 8002 or 8003 nozzles, one spray tip over the centre of the plant and one on each side so all leaves are covered thoroughly...similar to the application pattern of systemic sucker control agents. Avoid spraying to run off into leaf axils as this may promote leaf drop.

### **USE PRECAUTIONS:**

Treat only the acreage of tobacco which can be harvested and banded in one day.

Application made to immature leaves may result in no or slight partial yellowing. **DO NOT TREAT LEAVES WHICH ARE ALREADY QUITE YELLOW OR OVERMATURE.** Do not treat crops which are under water stress or nutrient stress. Do not allow crop to overripen in the field after using ETHREL Plant Growth Regulator since this may cause some reduction in yield quality.

Do not treat before anticipated major storm which could prevent harvest and result in crop loss.

### **HARVESTING AND CURING:**

The yellowing process is weather dependent...cool cloudy days will delay a colour development and yellowing may not occur, while hot sunny weather can speed up the process. Depending on the weather you may want to harvest when leaves are slightly on the green side even if it means a few hours in the kiln to complete the colouring phase.

Do not allow your tobacco to become overripe before starting your harvest. Leaf drop can occur when tobacco is overripe and left on the stalk. Harvesting should be completed not later than 72 hours after treatment.

Curing procedures are as much an art as a science and each cure must be judged on the basis of tobacco condition, weather and type of curing facility before prescription temperature and ventilation schedules can be established. To obtain maximum quality care must be taken to observe and control the curing process closely, especially during the late "colouring" and early "drying" stages of the leaf.

The use of hygrometers (wet and dry bulb thermometers) is highly recommended to monitor moisture levels in the kiln. Consult your local tobacco extension representative for information on the current use of hygrometers.

ETHREL Plant Growth Regulator treated tobacco will have started the colouring process when harvested, reducing the time required in the colouring phase of curing. Treated tobacco should be dried faster. Excess moisture may result in leaf spotting, therefore, adequate ventilation must be provided. If tobacco leaves are green or contain some green when harvested, it may be necessary to colour them for a few hours. If the leaves are completely yellow, the temperature and ventilation must be adjusted in a manner to dry the tobacco as fast as possible without scalding. Once the leaf is dried (3/4 dry) the grower should follow normal procedures for curing. Since ETHREL Plant Growth Regulator treated leaves cure faster, treated and untreated leaves should not be cured together in the same kiln.

## **DIRECTIONS FOR CEREALS (SPRING WHEAT, WINTER WHEAT):**

Vigorously growing winter wheat in areas of good soil moisture and high fertility will often lodge. Lodging can decrease recoverable grain and increase the time needed to harvest the crop. Severe lodging will reduce the crop yield and may decrease grain quality due to higher moisture, sprouting, molding and uneven kernel size.

ETHREL Plant Growth Regulator is effective in reducing lodging. ETHREL Plant Growth Regulator acts by releasing ethylene in the plant tissues which reduces cell elongation and crop height. ETHREL Plant Growth Regulator applications also strengthen the straw.

ETHREL Plant Growth Regulator should only be used on crops that are prone to lodging. When applied correctly, ETHREL Plant Growth Regulator will reduce the height of the crop by 2 to 15 cm. It will also reduce necking. An occasional delay in crop maturity may occur. This is normally not greater than five days and is generally less than that caused by lodging.

Consult local fertilizer dealers or extension agents for recommendations on optimal fertility programs that would be suitable for use in conjunction with ETHREL Plant Growth Regulator. Soil fertility tests should be used to determine fertilizer needs.

ETHREL Plant Growth Regulator is an important tool for intensive cereal management programs.

Straw of the treated crop may be fed to livestock.

Management practices aimed at maximizing yields may increase the incidence of foliar diseases which may reduce crop yields.

### **RATE OF APPLICATION:**

CROP	CULTIVAR	RATE		
		(Litres per hectare)	(Grams active per hectare)	(Hectares treated by one 10 litre jug)
Spring Wheat		1.0 - 1.5	240 - 360	6.7 - 10.0
Winter Wheat (Eastern Canada Only)		1.25 - 2.5	300 - 600	4.0 - 8.0
<b>In prairie dryland areas do not use over 1.25 L/ha (300 g/ha)</b>				

### **RATE SELECTION:**

Adjust ETHREL Plant Growth Regulator rates according to environmental and growth conditions. Use the higher rates on crops that are highly fertilized, (more than 100 kg/ha of total available nitrogen) and have ample moisture, (more than 25 centimetres of precipitation or 35 centimetres of irrigation during the growing season) and are prone to lodging. Use the lower rate of ETHREL Plant Growth Regulator unless lodging conditions are expected to be severe.

### **TIME OF APPLICATION:**

Apply when most of the tillers are between early flag leaf emergence to swollen-boot stage (Zadoks stages 37 to 45). Do not apply ETHREL Plant Growth Regulator after more than 10% of the awns have emerged (Zadoks 49). Consult chart. Correct timing is critical for successful results and to ensure crop safety.

<b>Growth Description</b>
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<p>Last (flag) leaf visible but still rolled up</p> <p style="text-align: center;"><b>(diagram)</b></p> <p style="text-align: center;"><b>Zadoks Scale : 37</b></p>	<p>Sheath of flag leaf completely grown out, head swollen but not yet visible</p> <p style="text-align: center;"><b>(diagram)</b></p> <p style="text-align: center;"><b>Zadoks Scale: 45</b></p>
<b>RECOMMENDED ETHREL PLANT GROWTH REGULATOR TREATMENT TIME</b>	

<p><b>Growth Description</b></p> <p>Second node formed, next-to-last leaf just visible</p> <p style="text-align: center;"><b>(diagram)</b></p> <p style="text-align: center;"><b>Zadoks Scale : 32</b></p>	<p><b>Growth Description</b></p> <p>Awns or head just showing</p> <p style="text-align: center;"><b>(diagram)</b></p> <p style="text-align: center;"><b>Zadoks Scale: 49</b></p>
<b>TOO EARLY TO APPLY ETHREL PLANT GROWTH REGULATOR</b>	<b>TOO LATE TO APPLY ETHREL PLANT GROWTH REGULATOR</b>

### DETERMINATION OF GROWTH STAGE:

Monitor crop carefully to assure correct application stage. The window of application is up to 14 days, but may be as short as 5 days. Crop should be checked regularly after Zadoks stage 32.

Determining the growth stage of the crop is best accomplished by sampling several plants from around the field and examining them carefully.

Early growth stages may not be easily identified by externally visible signs. It is best to split the plants open to locate the position of the developing nodes, flag leaf and head.

**It is normal to have some variability in stages among plants in the field. Applications to excessively variable fields may not give the desired results.**

### CAUTION:

- **Do not** allow mixed solutions to stand overnight. Clean all equipment promptly after spraying is completed.
- **Do not** apply within 35 days of harvest.

- **Do not** add surfactants or wetting agents to the spray solution. Tank-mixing ETHREL Plant Growth Regulator with adjuvants of any kind may result in severe crop injury and reduce yields.
- **Do not** use ETHREL Plant Growth Regulator if the crop is under any type of stress such as drought, excessive moisture, excessive heat, disease or crops which have already lodged. Applications to stressed crops may result in severe yield losses. ETHREL Plant Growth Regulator may increase undesirable secondary tillering particularly if applied too early, or at a rate which is too high, or if the crop is under stress, resulting in a net reduction in yield.
- **Do not** apply if rainfall is expected within 5 hours. The benefits of ETHREL Plant Growth Regulator are most pronounced when used on cultivars which are best adapted for a particular geographic region.
- **Do not** graze the treated immature crops or cut for hay; there are not sufficient data available to support such use.

#### **APPLICATION EQUIPMENT:**

Thorough and uniform coverage of upper plant leaves is essential for optimal results, calibrate the sprayer carefully prior to applying ETHREL Plant Growth Regulator and be certain that spray pattern is uniform. Low booms, inadequate pressure, or poor nozzles which concentrate spray patterns may cause crop injury. Avoid overlaps while spraying.

**Ground:** Suitable ground sprayers for application of ETHREL Plant Growth Regulator include truck sprayers, tractor sprayers and high clearance trailer sprayers.

Do not use this product with control droplet applicators, Sprafcoils®, Spray Coupes or Floaters. Do not apply with flood jet nozzles.

The spray boom must be at least 50 cm above the crop canopy. Use of flat fan nozzles is recommended.

Use of tramlines is recommended to improve accuracy of application and to reduce damage from crop trampling.

**WATER VOLUME:** 100 to 300 litres per hectare.

**Aerial:** When applied on cereals, ETHREL Plant Growth Regulator can be applied by air. Calibrate aircraft regularly to ensure an even spray pattern. Use markers and take precautions to avoid overlapping spray swaths.

**WATER VOLUME:** 30 litres per hectare or more.

#### **IMPORTANT NOTES:**



Use of irrigated crops requires that irrigation be maintained until hard dough stage (Zadoks 87). If the irrigation is discontinued too early, crops may begin to suffer drought stress which can reduce yield potential. ETHREL Plant Growth Regulator is most suitable for cereals grown under centre pivot irrigation systems. ETHREL Plant Growth Regulator may be used on field watered by wheel move, flood, or gun irrigation system only if provisions can be made to assure adequate moisture until harvest.

Use of irrigation scheduling services, where available, is highly recommended. Alternatively moisture probes should be employed. In most irrigated regions best results will be achieved when 35 centimetres or more of water is applied.

## GENERAL DIRECTIONS FOR USE

DO NOT apply this product in a way that this product will contact workers or other persons, either directly or through drift.

Only handlers wearing personal protective equipment may be in the area being treated during application.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 hours.

### FIELD SPRAYER APPLICATION:

- **For application to spring wheat and winter wheat, DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) coarse classification. Boom height must be 60 cm or less above the crop.
- **For application to lowbush blueberries, tomatoes and tobacco, DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60 cm or less above the crop.
- **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty.

### AIRBLAST APPLICATION:

- **For application to apples, sweet cherries, sour cherries and highbush blueberries.**
- **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty.
- **DO NOT** direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows.

- **DO NOT** apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side.

#### **AERIAL APPLICATION:**

- **For application to spring wheat and winter wheat, DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) coarse classification.
- **For application to lowbush blueberries and tomatoes, DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification.
- **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty.
- **DO NOT** apply when wind speed is greater than 16 km/h at flying height at the site of application.
- To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wingspan or rotorspan.

#### **Aerial Application Instructions and Cautions:**

- Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.
- Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.
- Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

#### **Aerial Use Precautions:**

- Read and understand the entire label before opening this product. If you have questions, call Bayer CropScience Inc at 1-888-283-6847 or obtain technical advice from the distributor or your provincial agricultural representative.
- Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *National Aerial Pesticide Application Manual*, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides..
- Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.
- Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not

spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

#### **Aerial Application Operator Precautions:**

- Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.
- It is desirable that the pilot have communication capabilities at each treatment site at the time of application.
- The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.
- All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

#### **BUFFER ZONES:**

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer and spot treatment, soil drench and soil incorporation.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of Application	Crop		Buffer Zones (metres) Required for the Protection of:		
			Freshwater Habitat of Depths:		Terrestrial Habitat
			Less than 1 m	Greater than 1 m	
Field Sprayer	Lowbush blueberries and tomatoes		1	1	1
	Tobacco and winter wheat		1	0	1
	Spring wheat		0	0	1
Airblast	Sweet cherries, sour cherries, apples (to promote early red colouring, apple ripening, and to loosen processing apples for easier harvesting)	Late growth stage	1	0	3
	Highbush blueberries	Early growth stage	3	1	10
		Late growth stage	2	1	5
	Apples (to increase the flowering of young apple trees)	Early growth stage	5	2	15
		Late growth stage	3	1	10
	Aerial	Winter wheat	Fixed and rotary wing	1	0
Spring wheat		Fixed wing	1	0	15
		Rotary wing	1	0	10
Tomatoes		Fixed and rotary wing	1	1	20
Lowbush blueberries		Fixed and rotary wing	1	1	25

## **IMPORTANT NOTES:**

ETHREL Plant Growth Regulator sprays deposits, when left on aircraft acrylic plastic type windshields for longer than 1 hour, may react with this material, forming an opaque film or spots on the surface which cannot be removed by washing with water or any other cleaner. Rinse windshields with water immediately after each tankload of ETHREL Plant Growth Regulator has been applied. Thoroughly rinse the aircraft with clean water after each day ETHREL Plant Growth Regulator is applied.

ETHREL Plant Growth Regulator could also affect certain paints. If accidental deposits on painted objects such as cars, trucks, agricultural equipment, etc. occurs, these objects should be rinsed with water as soon as possible (within 1 hour) to prevent permanent staining of the painted surface.

Ethrel is a registered trademark of Bayer.

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