

**POISON**  
**KEEP OUT OR REACH OF CHILDREN**  
**READ THE DIRECTIONS BEFORE OPENING OR USING**

# **Agro-Essence**

# **Ethephon 720**

# **Growth Regulator**

**ACTIVE CONSTITUENT: 720 g/L ETHEPHON (an anti-cholinesterase compound)**

**For crop thinning, loosening or ripening in various crops and for accelerating boll opening, defoliation and pre-conditioning before defoliation of cotton as specified in the Directions for Use**

**THIS LEAFLET IS PART OF THE LABEL**

APVMA Approval No.: 67521/56263



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## DIRECTIONS FOR USE RESTRAINTS

DO NOT apply to weak or stressed plants.

DO NOT apply if rain is expected within 8 hours of application.

DO NOT apply if day/night temperature is expected to be below 18°C.

DO NOT apply to cotton if bolls have been killed by frost.

DO NOT pre-treat with a desiccant (chlorate) before using Agro-Essence Ethephon 720 Growth Regulator.

DO NOT mix with hard (alkaline) water.

DO NOT apply before sufficient mature unopened bolls have developed to produce the desired yield.

CROP	ACTION	STATE	RATE (high volume)	WHP	CRITICAL COMMENTS
<b>APPLES</b> Jonathan, Delicious	Advancement of maturity, improvement of red colour	Qld, NSW, Vic, SA, WA only	35 to 65 mL plus non-ionic wetter per 100 L water (add 'stop drop')	7 days	Ensure fruit has reached marketable size before treatment and keep trees under observation after spraying. Apply 2 to 3 weeks before normal harvest period and 7 to 14 days before desired harvest date. Ensure fruit is picked at the correct stage of maturity, as fruits not harvested will quickly become over-ripe. <b>Note:</b> For best results spray when temperatures are between 15° and 32°C. Continuing low temperatures will advance maturity but may reduce colouration, so use lower rate. Use higher rate for quicker response. Add a 'stop-drop' to prevent premature loosening of fruit. Thorough coverage is essential. Apply to fruit only for the fresh fruit market or short-term storage.
Tydemans Early		Tas only	25 mL/100 L water (add 'stop drop')		
Gravenstein, Golden Delicious, Jonathan and Red Delicious	Thinning *	Vic, SA only	15mL plus non-ionic wetter per 100 L water		Apply at full bloom OR up to 1 week following full bloom. A second thinning spray 10 to 14 days after the Agro-Essence Ethephon 720 Growth Regulator spray may be necessary. On Gravenstein and Golden Delicious apply carbaryl or 5 to 7.5ppm NAA (use higher rate for maximum thinning). On Jonathan and Red Delicious apply carbaryl or 4ppm NAA.
Golden Delicious, Stark Crimson and Legana		Tas only	35 mL plus non-ionic wetter per 100 L water		

CROP	ACTION	STATE	RATE (high volume)	WHP	CRITICAL COMMENTS
Golden Delicious, Red Delicious, Jonathan, Granny Smith		WA only	35 mL to 40 mL plus non-ionic wetter per 100 L water		<p>Only use high concentration when heavy set expected.</p> <p><b>* Note: For all thinning applications:</b> The complex nature of fruit set and the possible variable action of chemical thinners due to weather conditions, make it difficult to give set recommendations and growers should consult their local agronomist.</p>
Lady William			45 to 65 mL plus non-ionic wetter per 100 L water		
All varieties	Aid complete removal of fruit from trees and encourage a biennial bearing habit (Excessive vegetable growth will be suppressed and the following bloom stimulated.)	NSW, SA, WA only	65 to 135 mL plus non-ionic wetter per 100 L water	7 days	<p>Apply just prior to full bloom OR 5 to 6 weeks later during early morning or late afternoon when slow drying conditions occur. Ensure thorough coverage of foliage and flowers or fruit. Note: Under normal weather conditions use lower rate for Delicious and higher rate for Jonathans as they are difficult to de-fruit. Consult the local Department of Agriculture for specific recommendations on other varieties. Warm weather following treatment will improve results, but if temperatures below 18°C prevail after spraying, fruit removal may be reduced, in the latter case use a higher dose rate.</p> <p>Fruit will loosen in 7 to 10 days and thinning should be complete within 2 to 3 weeks. Limbs can be lightly shaken to aid removal after this time.</p>
	Retard vegetative growth and stimulate flowering of young apple trees in the following season				<p>Apply from full bloom to 6 weeks after full bloom. Ensure thorough coverage. Trees should be large enough to support an increased crop of apples before being treated. Increase rate towards 135 mL/100 L to maximise thinning and stimulation of blooms during the following season. DO NOT apply if harvesting fruit in same season as flowers or fruitlets will be partially or completely thinned.</p>
<b>CHERRIES</b> Ron's Seedling, St. Margaret, Napoleon, Florence	Promotes evenness of maturity; early colour development	NSW only: Young district	20 mL/100 L water	7 days	<p>Treatment with Agro-Essence Ethephon 720 Growth Regulator: Apply when approximately 20% of the fruit show pink to red colour development, normally 7 to 10 days before harvest. Ensure thorough coverage of leaves and fruit.</p> <p>Note: High temperature at spraying or following spraying may accelerate results. DO NOT spray when mean daily</p>
		Orange/Bathurst district	40 mL/100 L water		

CROP	ACTION	STATE	RATE (high volume)	WHP	CRITICAL COMMENTS
					temperatures exceed 32°C. DO NOT spray when rain is expected within 24 hours OR when temperatures are low (17°C or less) as this will delay or reduce the effect of Agro-Essence Ethephon 720 Growth Regulator. Fruit will mature 3 to 5 days earlier than normal and will be loosened to allow easier harvesting. A high proportion of fruit will readily separate from the stalk when harvested.
<b>TABLE GRAPES</b> Barlinka	To promote early uniform colouring	NSW, SA only	15 to 20 mL plus non-ionic wetter per 100 L water	14 days	Apply when 5 to 30 % of the berries are coloured (2-4 weeks prior to expected harvest). Use the higher rate to maximise the colouring effects required. Ensure thorough coverage of bunches although the foliage needs not to be completely covered.  Note: Agro-Essence Ethephon 720 Growth Regulator may slightly reduce firmness of grapes. DO NOT use on grapes intended for long storage.
Red Emperor, Red Prince, Red Malaga, Cardinal, Muscat of Hamburg		NSW, Vic, SA, WA only	25 to 40 mL plus non-ionic wetter per 100 L water		
Flame Seedless		WA only			
<b>WINE GRAPES</b> Semillon	Aids to mechanical harvesting	NSW only	40 to 130 mL plus non-ionic wetter per 100 L water	7 days	Apply 7 days before expected harvest. Thorough coverage of upper and lower leaf surfaces is essential. <b>Note:</b> Some leaf yellowing and leaf fall, which is not detrimental to vines, may occur. The concentration to use will depend on a number of factors such as seasonal conditions, crop size, weather conditions, before and after application, and trellis type. Therefore, before applying consult the local Department of Agriculture for specific recommendations.
<b>MANDARINS</b> Imperial	Thinning to increase fruit size, to reduce size of heavy crop and to even out the production cycle	Qld, NSW, SA, WA only	35 to 40 mL/100 L water	Not required	Apply during the early stage of fruit development for thinning and correction of the habit of alternate heavy and light crops. Apply as foliar spray when fruitlets are about 10 to 15 mm in diameter and when natural fruit drop is occurring. This is usually in November in Qld, December in SA and intermediate in NSW, WA and Vic. Weather conditions influence the degree of thinning and care must be taken not to over-thin. <b>Note:</b> Fruitlets should fall off 7 to 14 days after application. Aim to apply 13 to 15 L of spray per 4 to 5 m high tree. Use the higher
		Vic only	25 to 35 mL/100 L water		
<b>ORANGES</b> Navel		NSW, WA only	35 to 40 mL/100 L water		
Valencia		NSW, SA, WA only			
		Vic only	40 to 45 mL/100 L water		

CROP	ACTION	STATE	RATE (high volume)	WHP	CRITICAL COMMENTS
					rate when a very heavy crop is evident. DO NOT apply in cold weather (less than 18°C) OR when rain is likely within 1 to 2 days of spraying. DO NOT add surfactants or wetting agents as leaf fall may be increased. See also General Instructions.
<b>MACADAMIA NUTS</b> Own choice	Aid harvesting by promoting uniform nutfall	NSW, WA only	165 mL plus non-ionic wetter per 100 L water	7 days	Apply late March to early May when nuts are mature. Vary rate according to degree of loosening required. <b>Note:</b> Nuts will be stimulated to fall within 10 to 14 days after spraying. Mechanical shaking may be used 7 to 10 days after spraying. Ensure thorough coverage of foliage and nuts. Ensure tops and insides of trees are adequately sprayed. A small quantity of older leaves will fall after treatment, but production will not be adversely affected. DO NOT use on Teddington variety.
H2 Variety			55 to 105 mL plus non-ionic wetter per 100 L water		
<b>PEACHES</b>	Advancement and concentration of maturity	Vic only: Goulburn Valley	15 mL plus non-ionic wetter per 100 L water	6 weeks	Apply once as foliar spray after commencement of the final fast growth stage. Timing depends on variety. Determine by measuring twice weekly, fruit circumference, of 20 tagged fruit/block. After rapid growth stage determined, wait 3 to 4 days for further confirmation, then spray. Thorough coverage is essential. <b>Note:</b> Instances have been recorded where this product, when applied in peaches at apparently the correct time, has resulted in premature fruit drop, fruit gumming and fruit splitting. See also General Instructions.

CROP	ACTION	STATE	RATE		WHP	CRITICAL COMMENTS
			General	Boom Sprayer		
PINEAPPLES (plus Urea)	Initiation of flowering	Qld, WA only	80 mL + 5 kg Urea/100 L water (Apply 30 mL solution/plant)	1.6 + 100 kg Urea in 2000 L water/ha (Boom spray)	7 days	Apply in March. <b>Note:</b> Rate should be doubled for plant crops, which are growing vigorously at the time of application.
			40 mL + 5 kg Urea/100 L water (Apply 30 mL solution/plant)	0.8 + 100 kg Urea in 2000 L water/ha (Boom spray)		Apply in May-June OR September-October. <b>Note:</b> See above – February/March application of Urea.
			25 mL/10 L water (Apply 30 mL solution/plant)	6.0 L in 2000 L water/ha (Boom spray)		Apply February-March. <b>Note:</b> Use on the final crop in the block before eradication of the crop. Pineapples treated at the above time will be ready for picking 7 to 10 months after application.
PINEAPPLES (without Urea)	Initiation of flowering in ratoon		7 mL/10 L water (Apply 30 mL solution/plant)	1.5 L in 2000 L water/ha (Boom spray)		Apply in May-June OR September-October. Note: See above – February/March application without Urea.
			-	1.7 L in 1000 L water/ha		Agro-Essence Ethephon 720 Growth Regulator for ripening should only be used on even crops successfully induced for flowering with Agro-Essence Ethephon 720 Growth Regulator. DO NOT use on fields intended for ratoon production. Treatment should be made when the forced fruit are beginning to show their first colour break. An initial harvest may be necessary to remove more advanced fruit before applying Agro-Essence Ethephon 720 Growth Regulator. The remaining treated fruit will be ready for harvest at least 7 days following the Agro-Essence Ethephon 720 Growth Regulator
PINEAPPLES	Fruit ripening					

CROP	ACTION	STATE	RATE		WHP	CRITICAL COMMENTS
			General	Boom Sprayer		
						ripening application. Note: DO NOT use on fruit intended for the fresh fruit market. Agro-Essence Ethephon 720 Growth Regulator for ripening is NOT SUITABLE FOR USE ON SUMMER PLANT CROPS because of scattered fruiting and high risk of forcing young suckers. Where natural fruiting has occurred prior to chemical induction, these natural fruit must be picked before Agro-Essence Ethephon 720 Growth Regulator ripening. Treatment too early can result in a loss of yield and a reduction in fruit sugar levels.

CROP	ACTION	STATE	RATE	WHP	CRITICAL COMMENTS
<b>SUGAR CANE</b>	Cane ripening	Qld, NSW, WA only	1 L/ha	6 weeks	Use in March-April to accelerate ripening in cane and increase c.c.s. Use on cane planted for early harvest, with harvest no later than August. Apply to actively growing and non-stressed cane with at least eight non-stressed green leaves. Cane varieties Q115, Q119, Q137, Q124, Q96, H56-752 and CP44-101 have all shown high to moderate response to Agro-Essence Ethephon. Shortening of some internodes and yellowing of leaves may occur without any effect on cane yield. Test any new varieties prior to application.
<b>TOMATOES</b>	Accelerate ripening, increasing yield of marketable fruit	All States	1.2 L in 440 to 880 L water per hectare	7 days	Apply once in the season. Ensure thorough coverage of fruit and foliage, when fruit is 5 to 30% pink or red. To determine this pull a few plants, shake off fruit, weigh and determine above percentage. Optimum harvest maturity is expected 14 to 21 days after spraying. DO NOT use on greenhouse crops. Note: Temperature below 18°C retard colour development and may extend the interval between treatment and harvest. Treatment may cause some yellowing of foliage or defoliation. Sun scald or exposed fruit may occur under high temperature conditions following treatment.

CROP	ACTION	STATE	RATE	WHP	CRITICAL COMMENTS

CROP	SITUATION	STATE	RATE	CRITICAL COMMENTS
COTTON	Defoliation, Acceleration of boll opening	Qld, NSW, WA, NT only	2-3 L/ha in a minimum of 20 L water/ha	<b>FOR ENHANCED DEFOLIATION AND BOLL OPENING OF COTTON</b> Apply when the number of mature unopened bolls is sufficient to produce the desired crop. Use the lower rate in warm, optimum conditions. Use the higher rate for stressed plants, rank growth, or adverse cool conditions (e.g. if day/night temperature after treatment is expected to be below 22°C). Ensure thorough and uniform coverage of bolls.
	Pre-conditioning of the crop before a normal defoliation is to occur		1.3 L/ha in a minimum of 20L water/ha	<b>FOR PRE-CONDITIONING BEFORE DEFOLIATION</b> Apply when there are sufficient mature unopened bolls to produce desired yield. Apply defoliant 4 to 7 days later. Ensure thorough and uniform coverage of bolls.
	Defoliation #		0.5-1.0 L/ha in a minimum of 20 L of water/ha	Use in a tank with a registered rate of thidiazuron. Apply when there are sufficient unopened bolls to produce the desired yield. Total application volume should be no less than 20.0 L/ha. Ensure thorough and uniform coverage of bolls and leaves. # This mixture will also provide some acceleration of boll opening, however a subsequent application of a boll opener may be required to complete boll opening.

**NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER CONTRARY TO THIS LABEL  
UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION**

### WITHHOLDING PERIODS

APPLES, CHERRIES, MACADAMIA NUTS, PINEAPPLES, TOMATOES, WINE GRAPES:	DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION
TABLE GRAPES AND COTTON:	DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.
PEACHES AND SUGAR CANE:	DO NOT HARVEST FOR 6 WEEKS AFTER APPLICATION.



## **GENERAL INSTRUCTIONS**

When adding a non-ionic wetter, use a rate as recommended on the wetter label.

## **IMPORTANT**

**APPLES** - Advancement of fruit maturity and improvement of red colour:

- Ensure fruit has reached marketable size before treatment and keep trees under observation after spraying.
- Ensure fruit is picked at the correct stage of maturity, as fruit not harvested will quickly become over-ripe.
- Continuing low temperatures will advance maturity and colouration; continuing warm to high temperatures, both day and night, will advance maturity but may reduce colouration.
- Apply to fruit only for the fresh fruit market or short term storage.

## **Apples – Thinning**

The complex nature of fruit and the possible variable action of chemical thinners due to weather conditions, make it difficult to give set recommendations and growers should consult their local agronomist.

## **Apples – Fruit Removal**

- Apply to trees to remove unwanted fruit and encourage a biennial bearing habit. Excessive vegetative growth will be suppressed and bloom the following season stimulated.
- Weather conditions are very important – warm weather following treatment will improve results, but if temperatures below 18°C prevail after spraying, fruit removal may be reduced. In the latter case, use the higher dose rate.
- Fruit will loosen in 7-10 days and thinning should be complete within 2-3 weeks. Limbs can be lightly shaken to aid removal after this time.

## **Imperial Mandarins and Valencia Oranges**

Apply during the early stage of fruit development for thinning and correction of the habit of alternate heavy and light crops. Weather conditions influence the degree of thinning and care must be taken not to over-thin.

**EXCLUSION OF LIABILITY:** As the degree of thinning may vary according to the conditions and over-thinning is possible, the decision to incur these risks is taken by the user, and the manufacturer and vendor exclude themselves from all conditions, representations, warranties, whether expressed or implied by the statute or otherwise and accept no responsibility for any losses which follow from the use of the product on mandarins or oranges as far as this is legally possible under the Trade Practices Act or any State legislation.

## **COTTON**

A foliar spray with Agro-Essence Ethephon 720 Growth Regulator will accelerate opening of mature unopened bolls and enhance defoliation, which can result in earlier harvest and increased recoverable yield and quality. Some premature drop of small immature bolls may occur.

Harvest at optimum boll opening and optimum defoliation. Too late harvest may reduce quality and lint.

### **COTTON - APPLICATION**

DO NOT apply before sufficient mature unopened bolls have developed to produce the desired yield of cotton. Bolls are mature when the seed coat turns light brown, the embryo fills the seed cavity with an abundance of creamy colour and cotyledons are well defined.

### **COTTON - TREATMENT SEQUENCE**

- Light canopy: Apply Agro-Essence Ethephon 720 Growth Regulator then apply defoliant 4 to 7 days later.
- Moderate to heavy canopy: First apply a pre-conditioner, then apply Agro-Essence Ethephon 720 Growth Regulator as soon as sufficient leaves have dropped to expose the target bolls, usually 4 to 10 days later.

### **COTTON - APPLICATION METHOD**

Apply by placement technique under the following range of conditions to achieve a target droplet density of 60 droplets per sq. cm. Wind Direction: Cross Wind  
Wind speed range: 6-20kph Air Temperature: Maximum 32°C Delta T: Maximum 10°C

## **SUGARCANE**

Agro-Essence Ethephon 720 Growth Regulator may be applied by air or ground spray equipment. Apply in 30 L water/ha by air, and 110- 150 L water/ha by ground spray equipment. Apply during March-April on cane due for harvest no later than August. Consult your local Agro-Alliance agent or BSES officer.

## **TOMATOES**

- Temperatures below 18°C retard colour development and may extend the interval between treatment and harvest.
- Treatment may cause some yellowing of foliage or defoliation.
- Sun Scald of exposed fruit may occur under high temperatures conditions following treatment.

### **MIXING & APPLICATION**

Add Agro-Essence Ethephon 720 to half the required volume of good quality water in the spray tank, then add the remaining volume of water while agitating the mixture. Do not use alkaline

water. Prepare only enough spray solution for immediate use, and do not allow to stand. If tank mixtures are prepared, maintain good agitation and use promptly. Apply as a thorough uniform spray to achieve good coverage. For aerial application apply in at least 20 L/ha water. Agro-Essence Ethephon 720 is corrosive to acrylic plastics, certain paints and metals. Flush and rinse all exposed equipment including aircraft surfaces with detergent and water after use.

### **COMPATIBILITY**

DO NOT mix with desiccants containing sodium chlorate as this could result in emission of toxic chlorine fumes. Agro-Essence Ethephon 720 may be tank-mixed with defoliant products. Since the formulations of other products are beyond the control of Agro-Alliance (Australia) Pty Ltd tank mixtures should be tested before commercial use.

### **PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS**

DO NOT apply under weather conditions, or from spraying equipment that may cause spray to drift onto nearby susceptible plants/crops, cropping lands or pastures.

### **PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**

Dangerous to fish. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

### **STORAGE AND DISPOSAL**

Store in the closed original container in a dry, cool, well-ventilated area away from children, animals, food, feedstuffs, seed and fertilisers. DO NOT store for prolonged periods in direct sunlight.

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point.

If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

### **SAFETY DIRECTIONS**

Product is harmful if swallowed. Attacks eyes. Repeated minor exposure may have a cumulative poisoning effect. Protect eyes while using. When preparing spray and using the prepared spray, wear elbow-length PVC gloves and face shield or goggles. Wash hands after use. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

### **FIRST AID**

If swallowed, do NOT induce vomiting. Give a glass of water. If swallowed, splashed on skin or in eyes, or inhaled, contact a Poisons Information Centre on 13 11 26, or a doctor at once.

Remove any contaminated clothing and wash skin thoroughly. If swallowed, activated charcoal may be advised. Give atropine if instructed. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

## **MATERIAL SAFETY DATA SHEET**

Additional information is listed in the material safety data sheet (MSDS).

## **CONDITIONS OF SALE**

The use of Agro-Essence Ethephon 720 Growth Regulator being beyond the control of the manufacturer, no warranty expressed or implied is given by Agro-Alliance (Australia) Pty Ltd regarding its suitability, fitness or efficacy for any purpose for which it is used by the buyer, whether in accordance with the directions or not and Agro-Alliance (Australia) Pty Ltd accepts no responsibility for any consequences whatsoever resulting from the use of this product.

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