

# ReTain™

PLANT GROWTH REGULATOR

SOLUBLE POWDER

## Active Ingredient:

CONTAINS 150 g/kg AVIGLYCINE HYDROCHLORIDE (AVG) IN THE FORM OF A WATER SOLUBLE POWDER.

### HAZARD CLASSIFICATION

6.9A, 9.1A, 9.3C

### APPROVED HANDLER

This product must be under the control of an approved handler when used by a commercial contractor, or applied onto water.

This product must not be used for any purpose or in any manner contrary to this label unless authorised under appropriate legislation.

### HARMFUL

- May cause organ damage from repeated oral exposure.

### ECOTOXIC

- Very ecotoxic to algae. Avoid contamination of any water supply with product or empty container.

### HANDLING PRECAUTIONS

#### STORAGE

- Store in original container tightly closed and in a locked, dry, cool area, away from foodstuffs. Store in accordance with NZS 8409 Management of Agrichemicals.
- Stores containing 100 kg of ReTain™ Plant Growth Regulator are subject to signage, and more than 100 kg require emergency response plans.

#### PERSONAL PROTECTION

- When mixing or applying wear water proof gloves and overalls. Avoid breathing spray mist. Do not eat drink or smoke while using.
- Remove protective clothing and wash hands and face thoroughly before meals and after work.

(continued)

### HANDLING PRECAUTIONS (continued)

#### EQUIPMENT

- Apply using well maintained and accurately calibrated spray equipment.

#### DISPOSAL

- Burn empty container if circumstances such as wind direction permit, otherwise bury in a suitable landfill.
- Dispose of product only by using according to label or at an approved landfill.

#### First Aid:

If swallowed do NOT induce vomiting. For advice contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor immediately.

If splashed in eyes, wash out immediately with water. If hair or skin contact occurs, remove contaminated clothing and flush skin and hair with running water. If inhaled, move victim to fresh air immediately. Begin artificial respiration if breathing has stopped. Obtain medical attention.

#### Spillage:

Wear appropriate protective clothing and prevent material from entering waterways. Sweep up solids without generating dust. Wash area with water and absorb with inert material. Dispose of water safely.

#### Record Keeping:

Records of use as described by NZS 8409 Management of Agrichemicals must be kept when using ReTain Plant Growth Regulator.

## Directions for Use:

USE	TIMING	RATE	CRITICAL COMMENTS
	<b>Adjuvant:</b> <b>For crucial information regarding use of adjuvant and fruit spotting please refer to Special Considerations section.</b>  ReTain Plant Growth Regulator <i>must</i> be used with either Silwet® L-77, Sylgard® 309 or Freeway® organosilicone surfactant in order to obtain the optimum response, except for use in Southern Snap apples - refer to specific comments below. Use a final concentration of 50-100 ml/100 litres in the spray tank as per the specific directions below. Use the lower rate in hot, dry, growing seasons where the surfactant and other products such as calcium may persist longer on the fruit. Reduced surfactant rate will marginally reduce the performance of ReTain Plant Growth Regulator. Do not use a surfactant concentration more than 100 ml/100 litres.		
<b>STONEFRUIT (except cherries)</b>			
Increase fruit firmness and size, and increase fruit quality and storage potential	Apply 7-14 days prior to the anticipated <i>beginning</i> (Go Date) of the normal harvest period.	830 g/ha in 1000-1200 L water/ha	<b>Adjuvant:</b> Use one of the approved surfactants at a final concentration of 50-100 mL/100 L in the spray tank.
<b>CHERRIES</b>			
Extend flower life	30-60% flowering	830 g/ha in 1000-1500 L water/ha	ReTain Plant Growth Regulator will extend flower life which may increase fruit set under poor pollination conditions or in varieties with low natural fruit set. The use of surfactants is not recommended.
<b>APPLES</b>			
Delay fruit maturation (delay the harvest period) and increase fruit size, improve fruit quality and storage potential	Apply 21-28 days prior to the anticipated <i>beginning</i> (Go Date) of the normal harvest period – except for those varieties detailed below.  <b>Braeburn and Cox's Orange Pippin</b>  Apply 14-21 days prior to the anticipated <i>beginning</i> (Go Date) of the normal harvest period.	830 g/ha in 800-1200 L water/ha	<b>Adjuvant:</b> Use one of the approved surfactants at a final concentration of 50-100 ml/100 L in the spray tank for all apple varieties except those detailed below:  <b>For crucial information regarding use of adjuvant and fruit spotting please refer to Special Considerations section.</b>  <ul style="list-style-type: none"> <li>• <b>Gala, Royal Gala, Jazz, Envy and related varieties (includes all crosses and sports):</b> Adjuvant: Use one of the approved surfactants at a final concentration of 50 ml/100 L in the spray tank.</li> <li>• <b>Southern Snap:</b> Adjuvant: Use Regulaid® at 250 mL/100 L as Southern Snap is particularly sensitive to organosilicone surfactants.</li> </ul>

(continued)

## Directions for Use: (continued)

USE	TIMING	RATE	CRITICAL COMMENTS
<b>APPLES (continued)</b>			
Improve fruit quality and storage potential of later picks in the normal harvest period	Apply 7 days prior to the anticipated <i>beginning</i> (Go Date) of the normal harvest period.	830 g/ha in 800-1200 L water/ha	Slows the rapid maturation of later pick fruits of multiple-pick varieties such as Gala (e.g., 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> picks) increasing harvest quality and storage potential.  Will NOT delay the start of harvest.  <b>Adjuvant:</b> Use one of the approved surfactants at a final concentration of 50-100 ml/100 L in the spray tank for all apple varieties except those detailed below:  <b>For crucial information regarding use of adjuvant and fruit spotting please refer to Special Considerations section.</b>  <ul style="list-style-type: none"> <li>• <b>Gala, Royal Gala, Jazz, Envy and related varieties (includes all crosses and sports):</b> Adjuvant: Use one of the approved surfactants at a final concentration of 50 ml/100 L in the spray tank.</li> <li>• <b>Southern Snap:</b> Adjuvant: Use Regulaid® at 250 mL/100 L as Southern Snap is particularly sensitive to organosilicone surfactants.</li> </ul>
ReTain Plant Growth Regulator can be applied to apples at both timings if the benefits of both are required			

### Withholding Period: Apples and Stonefruit (except cherries) – 7 days

**Cherries: DO NOT apply later than full bloom.**

**Export Crops: Contact your exporter for any specific restrictions.**

**It is an offence for users of this product to cause residues exceeding the relevant MRL in the Food Notice: Maximum Residue Levels for Agricultural Compounds.**

**General Information:** ReTain Plant Growth Regulator contains 15% of AVG. AVG is a fermentation metabolite that inhibits the endogenous production of ethylene in plant tissues. Ethylene affects plant processes such as fruit maturation, ripening, and abscission. Inhibiting ethylene production with ReTain Plant Growth Regulator may provide several benefits for apple and stonefruit (except cherries) growers, including one or more of the following: Improved harvest management (i.e., delayed harvest from one to two weeks), reduction of preharvest fruit drop, delayed fruit maturation that allows for natural enhancement in size, maintenance of fruit firmness, improved fruit quality (e.g., reduced incidence and/or severity of fruit disorders) and enhanced storage potential.

Responses vary between different varieties. Some varieties naturally produce low levels of ethylene and the effect of ReTain Plant Growth Regulator is likely to be less than in varieties which produce high levels of ethylene. For apple varieties which produce high ethylene levels during harvest (e.g., Gala, Royal Gala and Pacific Rose™), the maturation delay may be 7-14 days, while for low ethylene producing varieties (e.g., Fuji, Granny Smith), the delay may only be 2-5 days. Other varieties, such as Cox's Orange Pippin, produce high levels of ethylene but generally well after harvest. This means that the effects of ReTain Plant Growth Regulator are more likely to be seen in Cox's after storage than they are during harvest.

The maturity delay with stonefruit is less apparent than in apples, however, depending on variety the delay is likely to be 0-5 days. Many varieties of ReTain Plant Growth Regulator treated stonefruit have significantly enhanced firmness over the harvest and storage periods.

For more information on specific varieties please consult your distributor.

ReTain Plant Growth Regulator can be used to extend flower viability in cherries by delaying flower and stigmatic senescence, thereby offering a better chance for pollination and fertilization under poor set conditions which may result in better fruit set.

Timing of ReTain Plant Growth Regulator application may impact results as applications too early (pre-bloom) or too late (full bloom or later) will significantly reduce efficacy of the treatment. Application must be made between 30-60% flowering/bloom.

#### Special Considerations:

Do not apply ReTain Plant Growth Regulator:

- when trees may be nutrient, water, insect or disease stressed;
- to apples within 7 days of any calcium spray or when calcium residues are likely to be present;
- if calcium or other sprays are likely to have resulted in lenticel damage;
- in the late afternoon or early evening if fruit is still warm;
- with management tools that affect apple maturity such as girdling, etc.;
- if trees have been treated with kaolin clay;
- if rain is expected within 6 hours of ReTain Plant Growth Regulator application.

Apply when drying conditions are slower such as in the early to mid-morning period in order to ensure adequate absorption.

If using foil mulch, or reflective films, apply ReTain Plant Growth Regulator, then lay down the foil mulch, or reflective films.

Do not apply products containing either 1-naphthylacetic acid or chlorothephon after treatment of blocks with ReTain Plant Growth Regulator.

Allow a 24 hour interval between application of ReTain Plant Growth Regulator and application of any other sprayed agricultural product, or overhead irrigation.

Keep water pH between 6 and 8 for best results.

#### FRUIT SPOTTING:

Due to factors such as but not limited to calcium use, sunburn, variety and climatic conditions (e.g., high humidity and low rainfall) the use of surfactants may in some circumstances increase the risk of fruit spotting in some apple varieties.

Higher surfactant rates on these varieties may lead to fruit spotting. The increased use of calcium spray in these varieties can lead to fruit spotting and this may be increased if the calcium is present when surfactant is used. This will occur during periods of dry weather when calcium sprays are not washed off and/or with higher temperatures and/or higher humidity which prolongs drying times.

Growers must determine their own risk of fruit spotting and accept responsibility for any spotting as a result of the decision to spray.

**New varieties:** Users must take into account the above factors and trial it on a small area over a number of seasons to determine the suitability of using ReTain and surfactant on each variety.

Contact your local Nufarm representative for more information.

#### Timing of Application:

Apply ReTain Plant Growth Regulator at the recommended timings listed above prior to the anticipated beginning of the normal harvest period (i.e., the first pick or Go Date) for each variety and block to be treated for the current season. The normal harvest period for a particular orchard block refers to the time when trees not treated with ReTain Plant Growth Regulator would be harvested.

The optimum response is achieved when ReTain Plant Growth Regulator is applied at these timings, applications made either too early or too late may reduce the efficacy of the product.

#### Mixing:

Prepare spray solution by mixing the required amount of product with water in a clean, empty spray tank. To minimise foaming, add the surfactant last and minimise agitation. Discard any unused spray material at the end of each day.

#### Compatibility With Other Agricultural Products:

Do not tank-mix ReTain Plant Growth Regulator with agricultural products other than DiPel® DF or the previously specified organo-silicone surfactants. Compatibility data for ReTain Plant Growth Regulator with other agricultural products are limited.

Registered pursuant to the ACVM Act 1997, No. P4890

See [www.foodsafety.govt.nz](http://www.foodsafety.govt.nz) for registration conditions.

Approved pursuant to the HSNO Act 1996 Approval Code HSR000763

See [www.epa.govt.nz](http://www.epa.govt.nz) for approval conditions.

#### CONDITIONS OF SALE

##### CAUTION: READ THIS NOTICE BEFORE OPENING THE CONTAINER

If you open this container you will be deemed to have accepted the conditions below.

As no control can be exercised over the manner in which or the condition under which this product is used, all conditions and warranties expressed or implied, other than those required by statute are excluded. No responsibility will be accepted for any damage or injury whatsoever arising from storage, handling, application or use of this product.

Valent BioSciences and ReTain are registered trademarks and/or trademarks of Valent BioSciences Corporation, IL, U.S.A.

DiPel® DF is a registered trademark of Valent BioSciences Corporation, Illinois, U.S.A.

FreeWay® is a registered trademark of Nufarm Limited.

Silwet® L-77 is a registered trademark of Momentive Performance Materials.

Sylgard® 309 is a registered trademark of Dow Corning Corporation, U.S.A.

Regulaid® is a registered trademark of KALO, Inc., U.S.A.

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PROPER SHIPPING NAME	HAZARD CLASS	UN No.	HAZCHEM	PACKING GROUP
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (aminoethoxyvinylglycine hydrochloride, 15%)	9	3077	2X	III

L56101016



Distributed by:  
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Tel: (1) 847-968-4790

List No. 12017-43-01  
04-9182/R12

Net Contents: 415 g



# ECOTOXIC

# ReTain™

PLANT GROWTH REGULATOR

SOLUBLE POWDER

A naturally occurring plant growth regulator for use in Stonefruit (except cherries) and Apples to increase fruit firmness and size, and increase fruit quality and storage potential and for use in Cherries to extend flower life.

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OPEN  
HERE

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