



# RainGard™

**Your Best Defense  
Against Cherry Cracking**



**COLIN CAMPBELL (CHEMICALS) PTY LTD**  
100% Australian owned & operated. Established 1940  
HORTICULTURE · FRUIT COATINGS · TURF  
[www.campbellchemicals.com.au](http://www.campbellchemicals.com.au) (02) 9725 2544



## RainGard™ Features and Benefits

RainGard™ is a patented preharvest treatment developed by Washington State University. RainGard is an emulsion of different vegetable oils that creates a hydrophobic film on the fruit.

RainGard is applied as a protective film on cherries to decrease uptake of rain water by the fruit. RainGard™ helps maintain cuticle integrity throughout the final stages of fruit growth, thus reducing cracking susceptibility.

### Features of RainGard:

- Tested extensively in the US on all cherry varieties. 4 years of Australian trials and 3 years of semi commercial use
- It can be tank mixed with most commonly used pesticides.
- Leaves no unsightly residues/marks on the fruit surface- **it does not dull the fruit**
- Application of treatments is not restricted to the occurrence of rain.
- RainGard™ does not induce fruit dehydration nor does it hinder the natural process of photosynthesis hence the cherry will grow naturally.
- RainGard is rainfast as soon as it has dried (usually within 2 hours depending on weather conditions)
- RainGard does not interfere with use or effectiveness of pesticides.
- No export restrictions, no residues

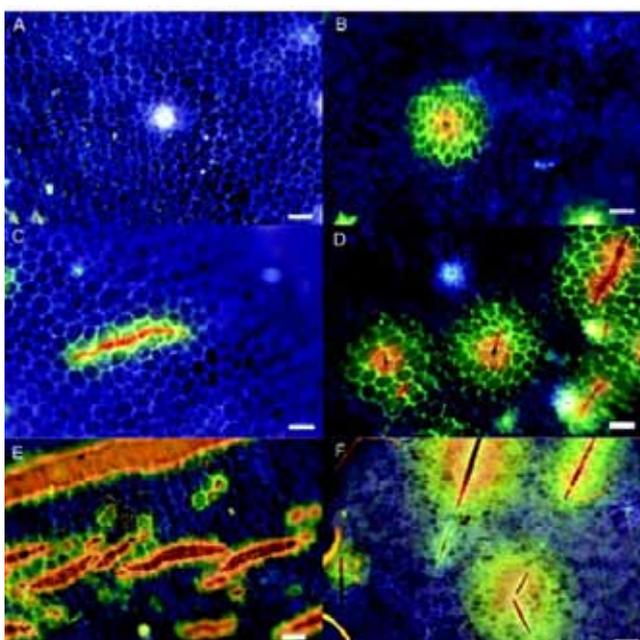


Figure 1. Fluorescence micrographs of sweet cherry fruit surface. (A) Intact fruit surface with stoma. (B-C) Small microcracks; typical of fruit in early stages of development. (D-F) More and bigger microcracks; typical of fruit in the latest stages of development (Stage III).

Source: Adapted from Peschel and Knoche (2005) J. Amer. Soc. Hort. Sci., 130:487-495.

### Why do Sweet Cherries Crack?

Rain cracking is one of the main limiting factors for production of high quality cherries worldwide. A number of factors have been implicated as contributors to cherry rain cracking. Rapid uptake of rain water absorbed through the fruit surface, rapid change in water status of the whole tree, and even high relative humidity have all been recognized as factors causing cherry rain cracking.

The natural barrier to water uptake is the fruit's cuticle. The presence of microcracks in the cuticle that develop during rapid fruit expansion in stage III ("final swell") has been reported to be a crucial element in cherry cracking susceptibility.

As cherries grow, fruit skin gets progressively thinner and both number and size of microscopic cracks on the cuticle increase. This makes the fruit more susceptible to rain cracking (Figure 1).

Multiple applications of RainGard™ can increase the integrity of the cherry cuticle and have been proven to reduce susceptibility to cracking during rain events.

RainGard Sp

Start at straw (approx

Application program - 4 applications every 7-10 day

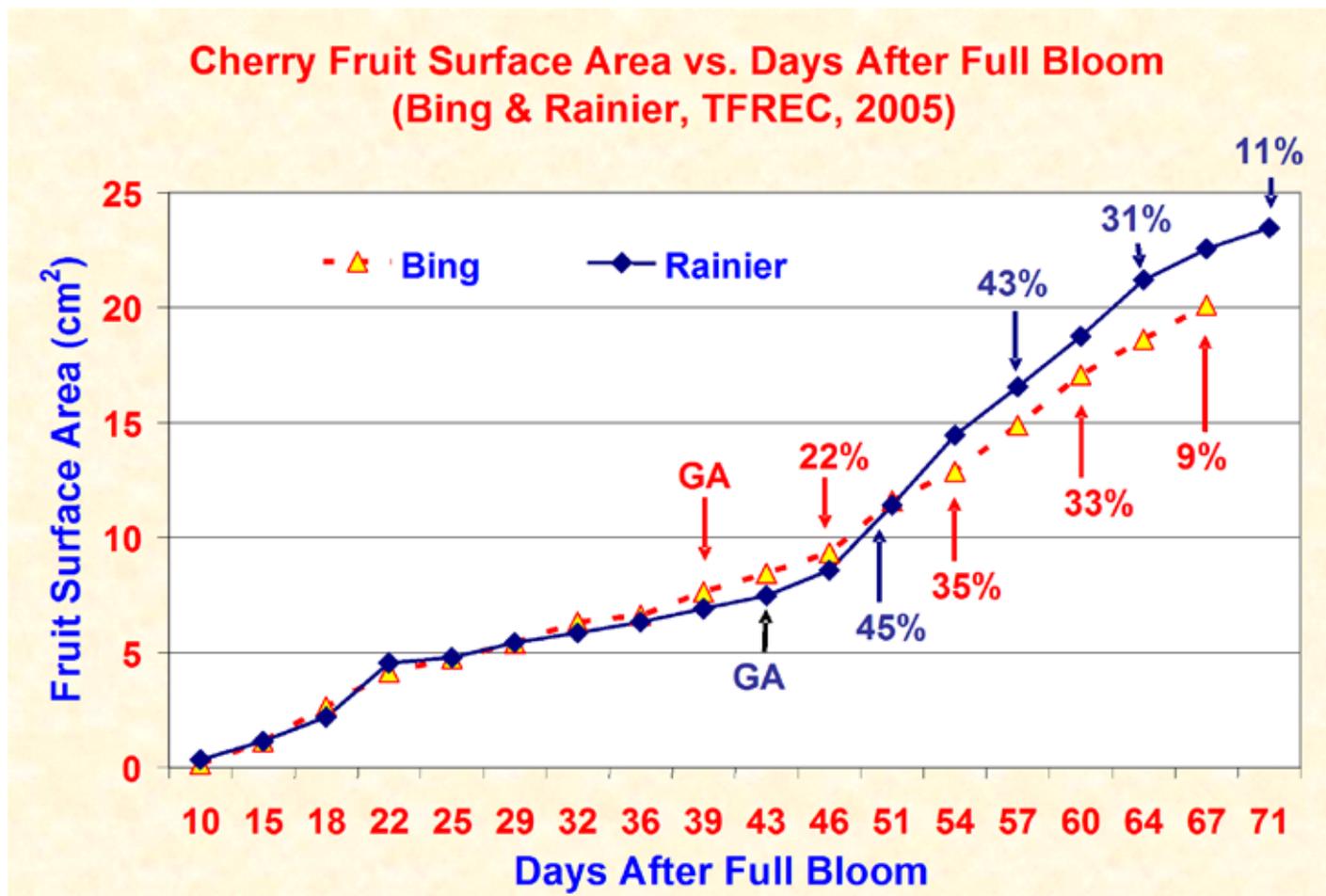
If rain event is forecasted

Rate: 8L RainGard in 10

### Why 4 spray program

Maintaining cuticle integrity during the last stage of fruit growth will help reduce the incidence of rain cracking.

Surface area of a cherry increases rapidly from straw approx (5 weeks before harvest for Australian conditions) Surface area of the cherry increases in excess of 3 times for 'Bing' and 'Rainier' varieties during this time (as seen below in the graph). This rapid increase on surface area together with a low elasticity rate of the protective hydrophobic film, explains why a program of 4 applications would be needed.



**RainGard is available in 24L buckets**

Spray Program:

(5 weeks from harvest)

Days (if no rain is forecast longer interval can be used.

Use at shorter intervals)

100L water per hectare



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**CHERRY PRODUCT REFERENCE GUIDE**  
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PRODUCT	DISEASE / PEST CONTROLLED	RATE PER 100L	RESISTANCE GROUP	MODE OF ACTION
<b>PRE HARVEST</b>				
<i>Insecticide</i>				
<b>Apollo</b> 500g/L <i>Chlofentozine</i>	Twospotted mite ( <i>Tetranychus urticae</i> ), European red mite ( <i>Panonychus ulmi</i> ) Bryobia mite	<b>EITHER</b> 30mL/100L <b>OR</b> 30mL/100L in a tank mix with the registered rate of a knockdown miticide.	10A	contact
<b>Bacchus</b> <i>Bacillus thuringiensis Berliner subsp. aizawai strain GC-91</i>	Various <i>Lepidoptera</i> spp,	50g-200g	11C	stomach
<i>Fungicides</i>				
<b>Cheers</b> <b>WeatherShield</b> 720g/L <i>Chlorothalonil</i>	Brown Rot – Fruit Blossom Blight Shot-hole Stone Fruit Rust Transit Rot	160mL	M5	contact
<b>Ippon</b> 500g/L <i>Iprodione</i>	Blossom Blight Brown Rot	50mL-75mL	2	Systemic
<i>Other</i>				
<b>RainGard</b>	Cherry Cracking Suppressant	8L/ha in 1000L water	n/a	n/a
<b>24/7</b> 905 g/L DI-1-P-MENTHENE	Cherry Cracking Suppressant	5L/ha in 2000L water	n/a	n/a
<b>Armobreak &amp; Armogan</b>	Dormancy Breaker use 3-5 weeks before budbreak	2L/100L Armobrak + 20L/100L Armogan in 800L-1300L water/ha	n/a	n/a
<b>POST HARVEST</b>				
<b>Ippon</b> 500g/L <i>Iprodione</i>	Brown Rot Transit Rot	100mL	2	Systemic
<i>This is only a guide always read the label for more information and other registrations</i>				



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