

# Surround® WP

## Crop Protectant

Surround contains 950 g/kg kaolin

**PROTECTION YOU CAN SEE.  
PERFORMANCE YOU CAN TRUST.**

### Testimonial from Matthew Maunder Agronomist Koala Cherries



Koala Cherries operate orchards in three regions, including northern Victoria, just outside Cobram. This location typically experiences warm, hot summers, especially after harvest, during the critical stages of flower bud differentiation. Such conditions can lead to cherry double fruit disorder, also known as double pistil formation or cherry fruit doubling.

#### How does cherry double fruit disorder affect your growing operations, and what impact has it had from a packhouse and commercial point of view?

"Cherry fruit doubles are unsaleable, and therefore reduce orchard profitability and increase picking/packing costs. Due to prohibitive labour costs of hand removing doubled fruit early in their development, double fruit remain on the trees until commercial harvest. This results in inefficiencies in irrigation and fertigation going into the development of the double fruit that will not be saleable come harvest."

#### Did applications of Surround® WP Crop Protectant after harvest improve the following year's yield?

"Treatment of our trees after harvest with Surround WP, particularly on the cultivars Bing and Merchant, reduced the average incidence of doubling per tree from 5.7% down to 1.7% in the subsequent season. Further applications were made last summer (2023/24) and again, we saw a decrease in doubling, from 6.4% to 2.1%, which improved yield overall."

Was mixing and applying Surround WP to the orchard straightforward?

"When Surround WP was poured slowly and consistently into an agitating tank, we were able to apply the product without any concerns."

With cooler, wet summers potentially behind us, what would you say to a grower thinking about applying Surround WP to their cherry trees after harvesting this season to prevent cherry double fruit disorder next year?

"We would advocate growers consider making applications. **Surround WP was able to reduce the incidence of doubling on our farm by 70% in the relatively cooler summer of 2022/23 and 67% this past summer of 2023/24.** Sudden spikes of hot weather will increase the incidence of doubling, so we are looking forward to assessing this year's yield and doubling results after Surround WP applications were made last summer."

#### Calculated Return on Investment

Depending on the summer, two or three applications of Surround WP may be required to reduce doubling.

**This investment is predicted to yield an impressive return on investment of 310–480%.**



Cherry double fruit disorder

## CHERRY DOUBLE FRUIT DISORDER

**Cherry double fruit disorder is a physiological condition resulting in a large suture/crack in the cherry.**

Cherry tree fruiting buds are typically comprised of 1–5 flowers. Approximately 4–10 weeks after harvest, flower/fruiting buds for the following season undergo floral organ differentiation (development). Flower buds exposed to high temperatures during this developmental period are susceptible to this fruiting disorder, resulting in reductions in fruit quality and yield.

Certain cultivars are more sensitive than others. Cultivars which experience higher levels of cherry double fruit disorder (Micke *et al.* 1983) include:

- Merchant
- Bing
- Stella
- Van
- Early Burlat

Application of Surround WP Crop Protectant during floral organ differentiation protects the developing flower bud from high temperatures and has proven to reduce cherry double fruit disorder in the subsequent season. Field trials in North America (Whiting and Martin 2008) saw reductions in fruit doubling by 45% in cv. Tieton and 52% in cv. Bing, in contrast to untreated trees, when three applications of Surround WP were applied in a four-week period. Incidence of doubling in untreated trees averaged 30% of fruit per tree in Tieton and 4% of fruit per tree in Bing.

Australian trials conducted in northern Victoria in the summer of 2022 on cultivars Merchant and Bing resulted in an average fruit doubling of 5.7% in untreated trees, in contrast to only 1.7% in the Surround WP-treated trees. During this cooler-than-average summer, applications of Surround WP resulted in a yield increase of approximately 373 kg/ha of saleable fruit, in contrast to trees that did not have Surround WP applications. Similar reductions were observed after treatments the following season.

Based on kaolin, a naturally occurring, inert white mineral used in food and toothpaste, Surround WP particles are



engineered to reflect significantly more of the sun's heat and radiation than any other sunscreen product.

Unlike other sunscreen products, the unique and specially engineered kaolin particles in Surround WP provide a 3-D structure on the plant surface, reflecting harmful infrared and ultraviolet radiation. Consistent coverage with Surround WP can also lower canopy temperature and thus, reduce heat stress on the whole tree. Ultimately, this can contribute to a net increase in photosynthesis.

The convenient WP formulation provides:

- Easy mixability in water
- Good coverage capacity
- Controlled adhesion to the plant

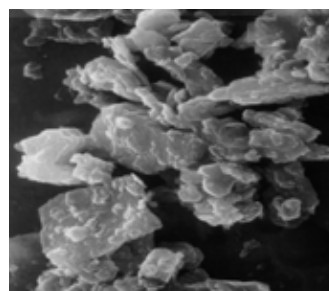
Surround WP represents a real breakthrough in plant surface protection.

### Recommendation:

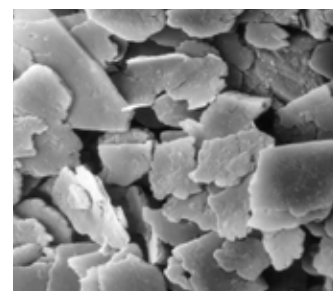
Apply Surround WP at 5 kg/100 L prior to the flower bud development window and before any high heat event >30°C. Ensure a constant coverage of Surround WP is evident throughout the canopy during the flower bud development period, with subsequent applications at 2.5 kg/100 L.

Micke WC, Doyle JF and Yeager JT 1983 Doubling potential of sweet cherry cultivars. California Agriculture, March-April: 24–25.

Whiting MD and Martin R 2008 Reducing sweet cherry doubling. Good Fruit Grower, 59(4): 24–26.



Calcined kaolin in Surround WP



Hydrous kaolin (uncalcined)

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