

Innovation. Quality. Solutions.

# Surround® WP

## Crop Protectant

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

### Plant Surface Protection in Processing Tomatoes means Higher Packouts of Quality Produce and a more Profitable Operation

Sunburn and heat stress take a major toll on processing tomatoes. As part of a planned treatment program, Surround® can significantly reduce losses from sunburn, bleaching and heat stress, resulting in increased fruit quality, greater plant vigour and higher marketable yields. That can add up to greater profitability.

### Surround Represents a Breakthrough Opportunity for Plant Surface Protection in Processing Tomato Crops

When applied before severe summer conditions set in and maintained throughout the hotter months, Surround covers plant surfaces with a protective film – a layer of specially engineered kaolin particles that reflect harmful infrared and ultraviolet radiation.

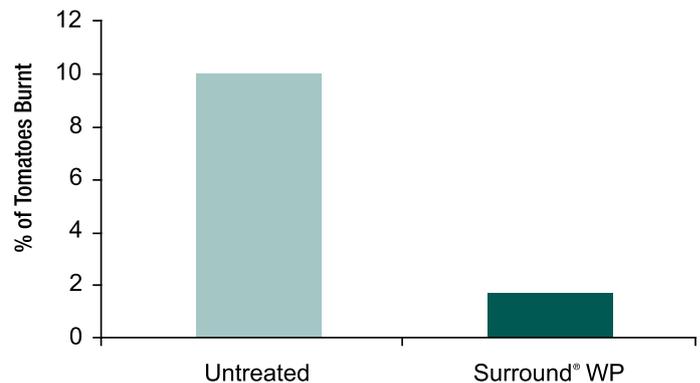
### Proven to Reduce Sunburn Damage by up to 80 Percent

When applied according to label directions, Surround has been shown to reduce sunburn in tomatoes by up to 80 percent, significantly increasing profitable yield. Damage reduction depends on application rate and timing as well as the severity of sunburn damage and stage of canopy collapse.

Sunburn can occur in tomatoes when air temperatures reach 28°C. Some tomato varieties can lose 20 percent of production to sunburn damage, bleaching and heat stress, with even greater losses in times of extreme heat. On top of this loss is unmarketable fruit that is left unpicked.

Australian growers have successfully used Surround since 2001 in apples, wine grapes, citrus and other fruit and vegetables with significant reductions in sunburn, bleaching and heat stress.

#### Sunburn Control in Tomatoes



By reflecting the damaging heat and radiation of the sun, Surround reduces sunburn significantly, resulting in higher yields of quality tomatoes. This study shows an 80 percent reduction of damage.

Data source: 2002/2003 season – Shepparton, Australia – Cultivar 'Rebel' - 50 + 25 kg/ha

### Engineered Particles Protect Against Heat Stress

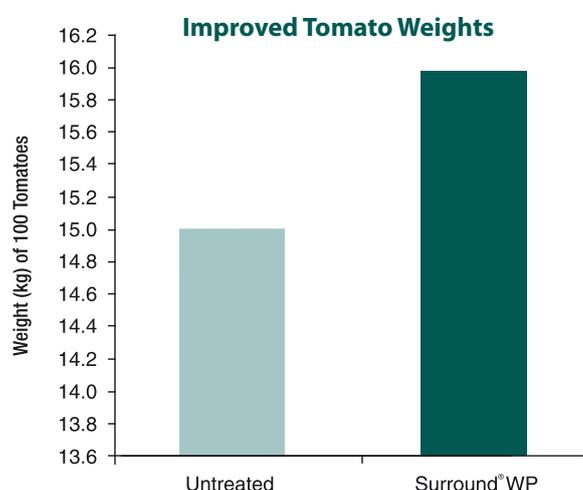
Excessive heat can stress the entire tomato plant, causing irreversible damage to plant function and development. Temperatures higher than 32°C can interfere with pollination and fertilisation, contributing to poor fruit set. Higher temperatures significantly affect blossom and fruit drop, fruit shape and fruit colour. High daytime temperatures can increase evaporation, resulting in high transpiration rates and poor water uptake, thereby reducing plant vigour. This can lead to early canopy collapse, ultimately exposing the fruit to more heat and solar radiation and increasing the potential for damage.

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In trials in Victoria, where temperatures regularly exceeded 32°C, Surround reduced the temperature of treated tomato leaves by 4°C to 5°C. The shape and size of Surround particles allows photosynthetically active radiation to pass through the film. By reducing heat stress, plants are able to photosynthesise longer each day in summer. This has been measured in local and international trials with Surround treatments demonstrating increased tomato weight and yield.



When applied to crops before severe sunburn conditions begin, Surround has been shown to significantly increase tomato yield.

Data source: 2002/2003 season – Shepparton, Australia – Cultivar ‘Rebel’ - 50 + 25 kg/ha

There is nothing like Surround. Surround provides superior reflectance of UV and infrared radiation because of its unique formulation. Based on kaolin, a naturally occurring, inert white mineral used in food and toothpaste, Surround particles are engineered to reflect significantly more of the sun’s heat and radiation than any other sunscreen product.

The convenient WP formulation provides:

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

Offering all these qualities, Surround represents a real breakthrough in plant surface protection.

## For Best Results, Maintain Surround Coverage Throughout the Sunburn Season.

The information provided herein may include extracts from the product label and does not constitute the complete directions for use. READ THE PRODUCT LABEL THOROUGHLY BEFORE OPENING OR USING SURROUND

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### Strategic Application Timing = Effective Protection

As a planned spray, Surround reduces sunburn and heat stress giving growers the opportunity to markedly improve quality and packout.

For best results, apply Surround before heat events to create a protective white barrier film. Build multiple layers with successive applications to improve protection.

A visual inspection of film deposition and coverage is essential to fine-tune spray coverage.

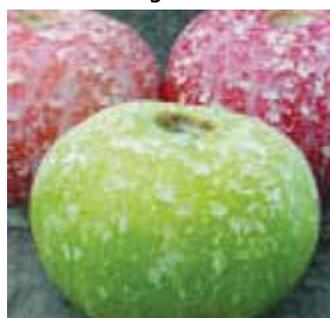
Surround applications will have no effect on sunburn damage that has taken place prior to application.

### Recommended Application Rates

- Calibrate sprayer and spray according to plant row volume
- Spray to ‘near drip’ coverage (before the point of runoff)
- Reapply to maintain coverage after heavy rain, wind erosion or new growth (see Figures 1 and 2)

### Remove Surround at Processing – Mandatory Directions

Figure 1



Well-coated fruit

Figure 2



Fruit requiring re-application

Normal tomato processing systems usually remove virtually all Surround film from fruit surfaces. Traces of residue should not affect quality of processed products. Check with the processor before use to ensure that Surround-treated produce is acceptable for processing.