

Surround® WP

Crop Protectant



Proven to Outperform Competitors

Periods of high temperatures, intense solar radiation and challenging weather conditions are an increasing concern for Australian growers, who are recognising the need to protect crops against sunburn and heat stress. Although estimates of crop loss vary, claims of up to 40% damage are often quoted. As pressure on grower margins increases, it is more important than ever to harvest the highest possible percentage of quality fruit and vegetables from every hectare or megalitre of water. Improving packout percentages is one of the most effective ways of improving farm profitability.

Surround® reduces crop damage caused by sunburn and heat stress when used according to the product label. Surround is made from natural kaolin that is refined and processed to provide an optimum formulation for protection against sunburn and heat stress. As a co-development of the United States Department of Agriculture and Engelhard Corporation in the 1990s, Surround was first trialled in Australia in 1998, and ongoing research over many years has refined its use throughout a wide range of crops.

The production process for Surround is unique, and includes a step known as calcining, or superheating. The result is a clean, white, multi-dimensional and highly reflective structure that is found only in Surround.

Sunburn damage on fruit and vegetable crops is caused by an interaction of ultraviolet (UV) and infrared (IR) radiation reaching fruit and vegetable surfaces. Therefore, products which most effectively prevent UV and IR light from reaching fruit and vegetable surfaces will most efficiently protect them from sunburn.

Side-by-side laboratory tests commissioned by the manufacturer Tessenderlo Kerley compared products claiming sunburn protection, and proved that the level of protection against UVa, UVb and Near Infrared Radiation (NIR) varies greatly. Significantly less UVa, UVb, and NIR penetrated Surround films compared with each of the competitor products tested, primarily because Surround's patented composition both blocks and reflects more UVa, UVb, and NIR.

The comparisons were conducted by a highly regarded independent laboratory in the United States. They measured sunburn protectant film depositions at a range of application rates up to the label maximum to determine how much UVa, UVb and NIR was reflected or passed through to the surface below. Included among the five products tested were three formulations of products claiming sunburn protection in Australia.



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Figures 1, 2 and 3 show that Surround outperformed tested competitors against UVa, UVb and NIR. The Surround treatment had a higher percentage of sprayed material adhered to the surface, with the Surround formulation providing a more effective barrier than the competitor products.

These results help to explain why Surround has a proven track record of providing consistent protection against sunburn in Australia. There is a solid base of evidence from growers and researchers that Surround consistently performs extremely well.

Figure 1. Relative Reflectance of UVa at a Range of Deposition Levels.

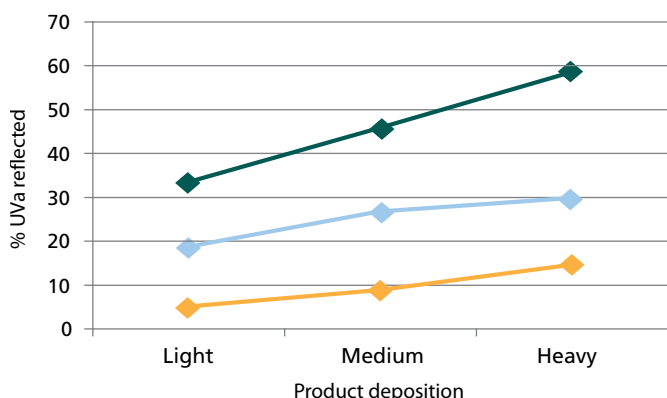


Figure 2. Relative Reflectance of UVb at a Range of Deposition Levels.

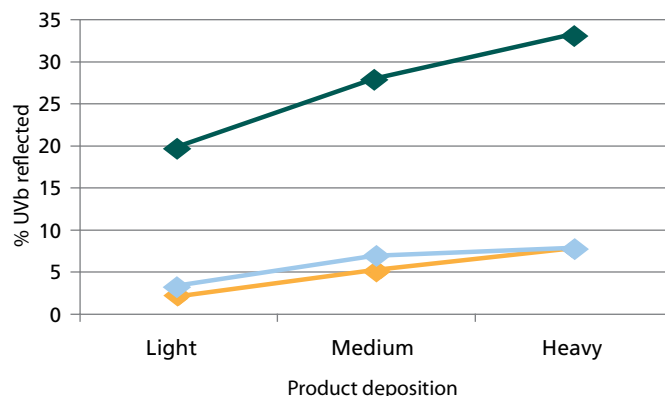
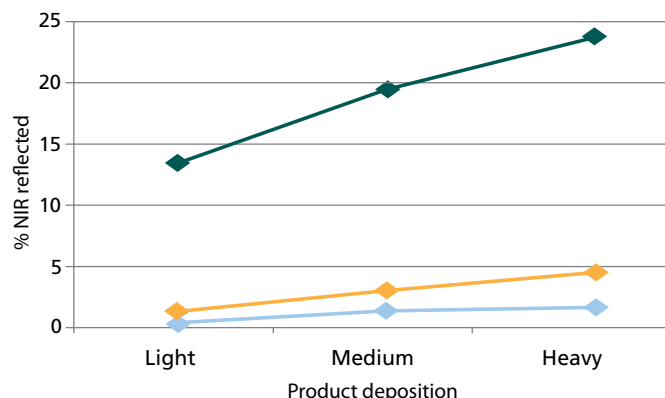


Figure 3. Relative Reflectance of NIR at a Range of Deposition Levels.



 Surround applied at 3%
  Product containing calcium carbonate applied at 2%
  Product containing uncalcined kaolin applied at 5%

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



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