

Parasol - liquid sunscreen for fruit and vegetables

PARASOL from Crop Care - a new thin particle film to reduce sun damage to Australian fruit, vegetables and seedlings.

The problem – sunburnt fruit & vegetables

Sunburn on fruit and vegetables is a growing problem for the horticulture industry. Australia is going through one of the driest, hottest eras on record, and growers are experiencing the effects of this on a daily basis. Heat is not the only issue; the decreased ozone layer allows more damaging UV light to reach the crops.

20 to 40% of orchard and field fruit and vegetable produce is estimated to be damaged by sunburn, and susceptibility is increasing.

Supermarkets and consumers are also demanding a more perfect skin finish – rejecting produce that is bleached or discoloured by the sun. So there is increasing incentive to look into sun protection for produce.



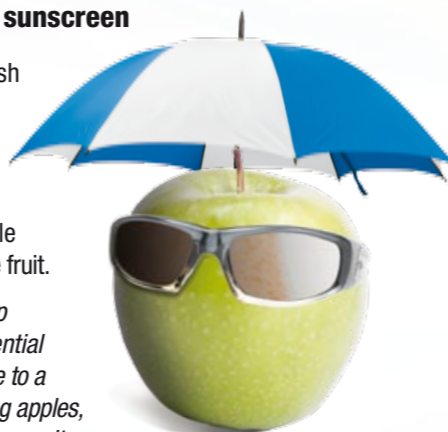
The answer - Parasol liquid sunscreen

Parasol was developed by Purfresh for the USA apple industry. The thin-film sunshield - made from food-grade calcium carbonate crystals - filters out the damaging part of the sunlight spectrum, while allowing beneficial rays to reach the fruit.

Australian distribution partner Crop Care believes Parasol has the potential to economically reduce sun damage to a broad range of food crops - including apples, pears and other pome fruit, mangoes, citrus, avocados, tomatoes, capsicums melons, olives and wine grapes - in both northern and southern Australia.

The liquid can be sprayed directly onto produce throughout the growing season to build a fine, even, reflective sun-protection coating. It is rainfast in up to 40mm of rain.

Parasol - with its small particle size - is easy to store, mix and spray. It won't settle in the spray tank, and is less abrasive to equipment and produce.



Tips for good results with Parasol

- Apply before any sunburn occurs - sun damage cannot be reversed.
- Apply every 7 to 14 days - depending on weather, and fruit or vegetable growth. Extra applications are recommended during prolonged high temperature, high UV exposure, and after heavy rainfall or irrigation.
- Aim for a thorough, uniform, thin coating over the produce throughout the stress period. Cover and protect all surfaces directly exposed to the sun.
- Best results with air blast, high pressure handgun or boom spray. Parasol can also be applied by air. Adjust fan speed for an even film on produce. Direct spray nozzles for thorough coverage of fruit.
- Reduce water volume to improve coverage and prevent run off from exposed upper surfaces.
- *Apples, citrus & pears.* Apply Parasol when fruit is 20mm diameter – or earlier if hot weather is likely to damage young fruit - again 7 to 14 days later, then every 2 weeks to maintain a protective film over the fruit.
- *Mangoes.* Apply before hot weather and sun damage occur, again 7 to 14 days later to maintain adequate film, then every 2 weeks or as required during ripening.
- *Tomatoes, capsicums & cucurbits.* Apply before sun begins to damage fruit; apply every 7 to 10 days or as soon as possible after picking when foliage has been disturbed.
- *Seedlings.* Parasol can protect seedlings and young plants from heat stress. Apply before hot weather causes damage, and reapply every 30 days or more often to protect young plants.
- *Post harvest removal.* Parasol residues are relatively easy to remove by wiping or brushing the produce and taking care in the stem and calyx area. In a commercial packing line, a water-filled dump tank with pH of 5.5 or less and a brush section is recommended, followed by a fresh water rinse prior to any pre-packaging applications.

Industry Comment

NORTHERN AUSTRALIA

Darren Jenkins, technical representative, Crop Care, Ayr, Queensland

“The liquid sunshield Parasol will be a brilliant addition to crop-protection techniques for growers in the north – especially late and early in the season when the weather is severe.

“There are other sun-shield products around but they are not broadly used. Growers have generally been waiting for a product that is user friendly for the operator, the spray equipment, and the crop. Parasol looks like the answer.”



Gary Muller, capsicum grower, Bowen, central Queensland

Capsicum grower Gary Muller, Euri Creek East, near Bowen in central Queensland saw positive results from spraying the liquid sunscreen Parasol onto a small area of the family's capsicum crop in the extreme late November heat.

Pickers noticed a difference, harvesting 50 (about 8%) more buckets of marketable fruit from the sunscreen-treated rows, compared with a similar-sized untreated area.

After a second spraying the second pick was estimated to yield 5-10% more fruit. 8 days after spraying, packing-shed workers noticed no difference between treated and untreated fruit, so there was no noticeable residue.

Gary Muller: “A practical sun-protection product for the crop is something capsicum growers have been seeking for a long while.

“Capsicums sunburn very easily, probably causing 20 to 30 % fruit loss during the worst periods. The worst time for sunburn damage is when the fruit is unprotected by foliage – towards the end of the season and during winter when bushes are small. Any fruit left after the first pick generally becomes unprotected due to disturbance of the foliage during picking.

“We definitely got a result from the sunscreen Parasol under the worst conditions – both for the fruit and for the product. We had no trouble applying Parasol – just used our normal boom spraying gear without changing anything.

“We'll do more trials next year and may also try Parasol on newly transplanted seedlings early in the year to reduce stress.”



SOUTHERN AUSTRALIA

The potential for Parasol use in apples is good, as sun damage appears to be increasing.

Apart from the impact of a warming climate, newer apple varieties provide less canopy protection to the fruit, which is also contributing to the increasing incidence of sun damaged fruit.

Growers like the idea of using a liquid sunshield that is easy for the spray operator to use and apply. The product looks good on the tree, with even, protective coverage of foliage and fruit.



Apple grower Norm Priest, Priest Brothers, Upper Pakenham, Victoria (above left) likes to apply apple sprays with low volumes of water (eg 350 litres/ha on trees that would take 2000 litres/ha at full dilution). This season he has tested the new liquid sunshield Parasol using low water volumes on Granny Smith apples, which are particularly prone to sun damage.

Mr Priest is pictured with Patrick Gibbons from the USA company Purfresh, which through their distribution partner Crop Care, is introducing Australian fruit and vegetable growers to the new concept in sun-protection for their produce.



This season at Bon View Orchards - operated by Michael Ajani, Officer, Victoria - apples have been sprayed with the new liquid sunshield Parasol (at 3 X concentration). The coverage is even, with droplets staying in place, rather than running down to the underside of the apple. Reducing fan speed of air-blast spray equipment helps place Parasol in the right place on top of the fruit. The newly-engineered thin-film sun shield blocks harmful UV light but not the wavelengths needed for natural fruit colouring.



Parasol - a new liquid sun-protection film being introduced this season to Australian fruit and vegetable growers by Crop Care.

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Parasol supplied to Crop Care by Purfresh

