

REDUCING SUN AND HEAT DAMAGE IN AUSTRALIAN PINEAPPLES

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QUEENSLAND pineapple growers are urgently looking for ways to minimise the proportion of their crop that is downgraded to low-value juicing fruit. A major cause of fruit quality loss is damage from the sun.

Damage tends to occur during very hot days – particularly during December to February, when there is no breeze to remove heat buildup from around the plants.

Sun-damaged fruit develop a bleached, yellow appearance, making them unsuitable for the fresh market. Hot conditions can also cause ‘boiled’ fruit, with premature flesh translucency and breakdown - which can occur at this time of year, when winter fruit is subjected to unseasonably hot conditions during spring.

Pineapples are susceptible to solar damage at planting, early plant development, flower induction, early fruit development and just prior to harvest – a critical stage when the pineapple matures and fills. The maturing fruit move out of the plant canopy shade and become exposed to the sun.

Fruit in ratoon crops lodge frequently, exposing more of the pineapple to the sun. This season Queensland growers will be using a new liquid sunscreen Parasol in their effort to produce more marketable fruit per hectare.

The thin-film sunshield of fine calcium carbonate particles in Parasol is sprayed directly onto the crop to build up a protective coating that blocks harmful UV and IR light, while allowing photosynthesis and fruit colouring to continue. Because sun damage cannot be reversed, the aim is to build an adequate level of coverage before the hot weather, and to maintain that level throughout the season.

Trials planned for this season in pineapples will measure the proportion of sun damaged fruit in plots treated with Parasol, compared with untreated fruit.

Shaun Heidrich is the Australia/New Zealand regional manager for agricultural sunscreen products for Crop Care – in conjunction with US manufacturer Purfresh: “Early work with Parasol on pineapples in Australia points to a promising answer to sun damage. “Pineapple growers have been seeking a solution, but have had problems removing the products previously tested from the fruit. Parasol, however, was shown to be easily removed from the pineapple surface at wash-off during the initial testing.”

Recent predictions from the Intergovernmental Panel on Climate Change indicate the impact of sun and moisture stress is likely to increase. Their 4th report showed the 1990s were the warmest decade ever recorded, that the last 100 years have been the warmest of the millennium, and that the trend is likely to continue into the future.

Mr Heidrich said that most crops suffer some form of solar stress, and that it was timely for growers to consider protecting their crop against losses through sun and heat damage.

Trials with Parasol have shown reduced sun damage and moisture stress in a wide range of fruit and vegetable crops around Australia.

* The loss in mangoes due to sun damage was reduced by more than 20% when treated with Parasol - a potential return on investment of \$21 to \$32 per tree (based on Brisbane 2007 market stats for Kensington Pride mangoes), or \$3570 to \$5440 per ha (at 170 trees/hectare), plus potential benefits from increased fruit quality and size.

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* The use of Parasol on Granny Smith apples last summer in Victoria improved the yield by 20% for an additional return of \$8000 per hectare.

* Application of Parasol to capsicum crops in central Queensland has helped protect both the capsicums and transplanted seedlings from sun damage.

* Trials on Hass avocado trees in the hot Atherton Tableland spring have shown a reduction in moisture stress in trees coated with a reflective film of the liquid sunscreen.

Trials are also planned with lychees and cocoa.

Applied by ground equipment or through aircraft, Parasol is now available for use in Australia to protect a range of horticultural crops including apples, pears, stone fruit, citrus, tree nuts, olives, grapes, avocados, bananas, mangoes, lychees, guavas, pawpaws, pineapples and vegetables – including capsicums, tomatoes, potatoes, onions, cucurbits, and lettuce as well as seedlings, ornamental and nursery plants, cotton and peanuts.



ELIMBAH pineapples sprayed with Parasol sunscreen (right) and untreated pineapples (left) will be assessed for the proportion of sun-damaged fruit and subsequent return on investment for this season.



PINEAPPLES and sunshine are synonymous, but the fruit can be rendered unsuitable for the fresh market because of sun and heat damage. These pineapples have been sprayed with a reflective coating of Parasol sunscreen.



THE liquid sunscreen was easy to wash off the pineapples in the packing shed.



SPRAYING a protective sunscreen film on pineapples.

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