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New brown spot treatments under spotlight

Grower

Allen and Susan Jenkin

Location

Mundubbera, Qld

Project number

CT13029

Project

Fungal disease control

Key points

Testing Emperor brown spot fungicide treatments

Growers may need to spray more often

Qld growers active trial participants

THROWING open their gates to research teams is par for the course for citrus growers in the Wide Bay-Burnett region of southern Queensland.

Allen and Susan Jenkin of Ironbark Citrus at Mundubbera, about 400km north-west of Brisbane, are among those making parts of their orchards available for use in on-farm trials.

The family-owned operation grows, packs, markets and exports Fremont, Sunburst, Nova, Low-seed Murcott and Honey Murcott mandarins – more than 3000 tonnes of fresh fruit annually. In addition, Ironbark is Australia's sole supplier of the exclusive variety Royal Honey Murcott, which was developed by the Jenkins and is usually harvested in June. Ironbark produces more than 540t of Royal Honey Murcotts every year.

Calamondin and Nagami cumquats are a secondary line, yielding about 500 and 750 five-kilogram cartons a year, respectively.

Ironbark is one of the state's biggest exporters of citrus to Southeast Asia, Europe and the Middle East and its leading source of boutique mandarins under the Ironbark and Bluegum labels.

Together, the Jenkins' two properties – Rosewood and Roselea – support about 140 hectares of citrus trees.

Peak production occurs between March and September, with all fruit being treated and forced-air-cooled on farm in a 100-pallet coldroom complex to ensure maximum freshness throughout an extended shelf-life.

These Case Studies have been funded by Horticulture Innovation Australia Limited using the national citrus levy and funds from the Australian Government.

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New treatment efficacy

The Jenkins' recent trial – known officially as project CT13020 – was led by plant pathologist Dr Andrew Miles, a senior research fellow at The University of Queensland's Centre for Plant Science and Queensland Alliance for Agriculture and Food Innovation. It focused on testing the efficacy of new fungicide treatments against Emperor brown spot, a disease caused by a specific strain of the fungus *Alternaria alternata* first observed in Emperor mandarins in the 1960s.

For the past 30 years it has been widespread in the Murcott orchards of the Central Burnett region, where the Jenkins farm.

Emperor brown spot produces surface blemishes and in extreme examples attacks the shoots of vigorously growing young trees and leads to fruit fall.

It is not carried by the fruit itself so does not affect either domestic distribution or export.

In the Jenkins' case, participation in Dr Miles' trial yielded less information than expected purely as a result of unpredictable climatic conditions.

"This particular disease is very much driven by mild temperatures – 20-25°C – and prolonged periods of leaf wetness: a few days of drizzly rain when things never dry out, or fog," Andrew said.

"In the 2015-16 season we had a very, very dry autumn-winter period. It made for great production – I don't think anyone had a bad year with Emperor brown spot; that was a bonus for the industry – but for us with this fungicide trial it was bitter-sweet.

Allen Jenkin in the trial plot on his Mundubbera farm.

"The years when we get our best trial results are actually the high-pressure years when much of the industry's struggling to control things."

Andrew said the trial did return results on a secondary level, however.

The absence of background disease in the 2015-16 season allowed the researcher to assess residual efficacy of fungicides as protection in the field. "The classic assumption is that growers should spray monthly but it's actually much shorter than that," he said. "This has shown that the products are in their prime for only about a week and then they start to decline very quickly in how effective they are."

Grower-researcher partnership

Allen said Andrew runs the trial.

"What we do is provide the trees – up to about 80 – and be careful that we don't spray them as part of our normal management practices. Andrew identifies and marks the trees off and we comply with his requests.

"We manage the compliance. If there's a new unregistered chemical, for example, we need to be mindful of how the fruit is disposed of during each trial period.

"As part of his research Andrew comes in and collects that fruit and inspects it all by hand.

"We also take care not to spray the trial trees – that's just a matter of making sure the spray operators know where the trial area is. Andrew has them all well marked out."

Allen said they became involved in the fungicide-trial project through the entomologists who work with them.

"They might know a block that's having a particular problem and they recommend that block to a researcher, who will then come to speak to the landholder.

"Around our district most of the growers have at various times participated and collaborated in research projects with either private researchers like Andrew or work on behalf of the government with the Department of Primary Industries. It's not an uncommon thing to be doing this." 🍋

Citrus Australia Limited.

(ACN 130 238 792)

115 Lime Avenue Mildura Vic 3502
PO Box 10336, Mildura Vic 3502 Australia

T (03) 5023 6333

F (03) 5023 3877

E admin@citrusaustralia.com.au

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