PACKER NEWSLETTER

A newsletter for Australian citrus growers and packers

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John Golding
NSW Department of Primary Industries
email john.golding@dpi.nsw.gov.au
telephone 02 4348 1926

Australian Citrus Postharvest Science Program (Hort Innovation CT15010)

Welcome back to the Packer Newsletter

This issue contains an introduction to the new Australian Citrus Postharvest Science Program (CT15010), an introduction to fungicide resistance surveys being conducted in different regions around Australia and a new research angle on managing postharvest decay without the use of synthetic fungicides.

Inside this issue

Introduction and thanks…

I wish to personally thank Peter Taverner, Nancy Cunningham and the postharvest team at SARDI for servicing the Australian citrus industry and producing the Packer Newsletter for many years. Peter and the team have made the Packer Newsletter a mainstay of practical and up-to-date postharvest information for growers and packers. To capture this valuable information we are making the back issues of the Packer Newsletter available on-line at the Citrus Australia website. We are endeavouring to index and archive all the Packer Newsletters so they can be searchable and easily available. The Packer Newsletter contains a wealth of practical information which has been published and well received for many years. The Packer Newsletter will be continuing with the new Postharvest Program. I am now leading the Australian Citrus Postharvest Science Program (CT15010). This project is funded through levies from Australian citrus growers which are managed by Horticulture Innovation. The Australian Government provides matched funding for all Horticulture Innovation's research and development activities. NSW Department of Primary Industries also making significant co-investment into this Program.

I am based at NSW Department of Primary Industries at Ourimbah, on the NSW Central Coast, and I will be visiting and touring all growing regions around Australia to ensure postharvest practices are improved to reduce postharvest losses and optimize fruit quality to the consumer.

John Golding. NSW DPI

What is the Australian Citrus Postharvest Science Program?

The Australian Citrus Postharvest Science Program (CT15010) is the new Hort Innovation research and development project that will deliver new information and innovative technologies to improve the quality of Australian citrus.

A key focus is to develop a program with ultra-low chemical residues. While managing orchard sprays and using integrated pest and disease management (IPDM) approaches have worked to reduce chemical use and residues in producing Australian citrus, using postharvest chemicals to control decay makes it difficult to achieve ultra-low residues.

New chemistries and alternative decay control approaches will be developed and adopted to assist industry meet market requirements.

The main aims of the Program are to:

- develop and assess chemistry and other emerging technologies to address postharvest issues for the Australian citrus industry
- help industry adopt existing and new postharvest applications through a program of postharvest presentations covering the different growing regions
- keep industry informed on technical developments in postharvest science and applications through targeted communications using online platforms and other channels
- identify options for individual growers and packers to engage postharvest services on a fee-for-service basis for advice specific to their business.

The outcomes of this Postharvest Science Program will be essential to ensure the Australian citrus industry's competitiveness by guaranteeing high quality, safe and nutritious fruit onto domestic and export markets. This will improve the value and market access of Australian citrus.

I will visit all growing regions to discuss postharvest and market access issues with growers and packers and will also give presentations in the later stages of the project. I have already visited packingsheds in SA, Vic and NSW and I am looking forward to meeting other growers and packers around Australia.

The program will use existing communication channels such as Australian Citrus News, the Packer Newsletter and develop on-line training and information packages on key postharvest issues. This will ensure growers have access to relevant and practical information to improve fruit quality and market access.

Project update - Assessing resistance to postharvest fungicides

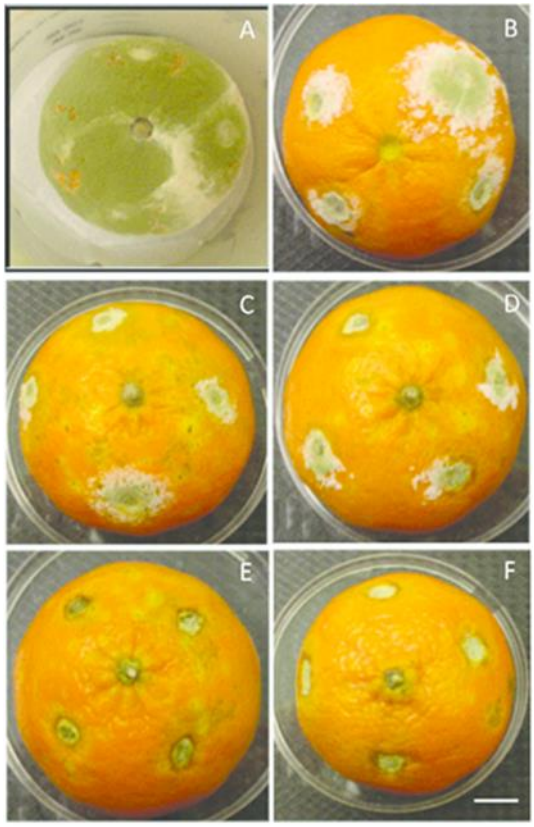
With the season going well, it is time to consider the use and effectiveness of postharvest fungicides. It is essential that postharvest fungicides remain effective and any potential residues remain well below importing countries Maximum Residue Limits (MRLs). However, resistance to postharvest fungicides by decay pathogens, such as green mould can develop with poor management of fungicides in the packing shed. Resistance to fungicides reduces the effectiveness of the fungicide and can create decay problems in the market.

The Australian Citrus Postharvest Science Program (Hort Innovation CT15010) is just finalising regional surveys to test the level of fungicide resistance and raise awareness of the need to properly manage postharvest fungicides. Updates of this activity will be presented in future issues of the Packer Newsletters and Citrus Australia eNews.

Preparing plates for fungicide resistance testing around Australia

A possible new control measure for the control of green mould during storage

Chitosan is a natural compound derived from prawn shells. It is applied as a coating to fruit and vegetables and has been shown to have wide antimicrobial properties against fungi and bacteria. The effects of postharvest applications of chitosan have been recently investigated by researchers in Morocco. They looked at its effects on the growth of green mould and mandarin fruit quality. The results showed that green mould development was significantly reduced by chitosan treatments (below). In addition, there was no negative effect of the treatment on fruit quality (fruit firmness, surface colour, juice content, and total soluble solids). Indeed chitosan-coated fruit resulted in significantly less water loss.



Research paper:

El Guilli M. *et al.* (2016) Effectiveness of postharvest treatment with chitosan to control citrus green mold. *Agriculture* 6, page 12. doi:10.3390/agriculture6020012

For further information, please contact John Golding, NSW Department of Primary Industries

Telephone 02 4348 1926

or email john.golding@dpi.nsw.gov.au

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