

PACKER NEWSLETTER

A newsletter for Australian citrus growers and packers

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Australian Citrus Postharvest Science Program (Hort Innovation CT15010)

Chairman® – new postharvest fungicide for the Australian citrus industry

A new postharvest fungicide for the control of green and blue mould and sour rot will be launched later this year.

Chairman® is produced by Syngenta which has the active ingredients of propiconazole and fludioxonil and is registered for the control of green and blue mould and sour rot. Fludioxonil is also currently registered as Scholar® and is used for the control of green and blue mould. However propiconazole is a new chemistry for the Australian citrus postharvest fungicide program. This is an exciting development for industry, as new fungicide chemistries for the postharvest control of citrus decay are rare and particularly for sour rot control.

The current recommendation for sour rot control is the use of guazatine (the active ingredient in Panoctine® / Zanoctine®). This fungicide works very well, but some citrus importing countries such as Japan have essentially prohibited this chemical for citrus, and cannot be used in these export programs. The development of alternative sour rot control with Chairman® is a welcome addition to the postharvest fungicides required for the control of decay. But it is essential to check importing countries MRLs to ensure that Chairman® and all chemicals can be used.

Chairman® is a combination of the active ingredients of propiconazole and fludioxonil. Propiconazole is new to the citrus postharvest

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toolbox and is a demethylation inhibitor (DMI) and is classified as a FRAC Group 3 chemical. Fungicides are classed into different groups, FRAC groups, according to the way they work. Cross resistance to postharvest fungicides is possible between different fungicides that are in the same FRAC group. Another important fungicide in the same FRAC group (Group 3) as propiconazole is imazalil. Imazalil is one of the work-horses of the Australian citrus industry and it important to maintain its efficacy in controlling decay.



Infecting oranges with green mould spores before fungicide treatment.

The Chairman® label and safety data sheet (SDS) must be consulted and followed before use:

<https://www.syngenta.com.au/product/crop-protection/post-harvest/chairman>

Comparison of Chairman® fungicide with other postharvest fungicides against green mould

As part of the Hort Innovation Australian Citrus Postharvest Science Program (CT15010), we conducted some comparisons of current conventional fungicides with the new Chairman® fungicide against green mould.

Navel oranges were infected with green mould spores and treated with fungicides Chairman®, fludioxonil, TBZ, imazalil. A water dip treatment was used as the control. To test the effect of timing of the fungicide treatment after inoculation, fruit were dipped at different times before/after being infected with decay spores:

- (a) 16 hours before inoculation (Pre),
- (b) 6 hours after inoculation,
- (c) 12 hours after inoculation,
- (d) 24 hours after inoculation, or
- (e) 48 hours after inoculation.

The results showed that Chairman®, fludioxonil, TBZ and imazalil have good control of green mould after infection. The results also show the importance of applying fungicides as soon as possible after harvest (within 24 hours). Delays in fungicide application (> 24 hours) reduces the efficacy of fungicides.

Fungicide screening <i>P. digitatum</i>										
(15 fruits, total decay and with spores)										
NSW DPI_270718										
PRE	Control		Fludioxonil		Chairman		TBZ		Imazalil	
	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores
REP 1	13	12	9	8	9	6	8	5	6	3
REP 2	15	15	10	7	8	3	6	5	5	4
REP 3	14	14	7	6	10	7	5	4	5	3
6 H	Control		Fludioxonil		Chairman		TBZ		Imazalil	
	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores
REP 1	14	14	0	0	0	0	0	0	0	0
REP 2	14	14	0	0	0	0	0	0	0	0
REP 3	15	15	0	0	0	0	0	0	0	0
12 H	Control		Fludioxonil		Chairman		TBZ		Imazalil	
	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores
REP 1	15	15	0	0	0	0	0	0	0	0
REP 2	15	15	0	0	0	0	0	0	0	0
REP 3	11	9	0	0	0	0	0	0	0	0
24 H	Control		Fludioxonil		Chairman		TBZ		Imazalil	
	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores
REP 1	15	15	1	1	0	0	0	0	0	0
REP 2	15	15	3	0	0	0	0	0	0	0
REP 3	15	15	1	0	0	0	0	0	0	0
48 H	Control		Fludioxonil		Chairman		TBZ		Imazalil	
	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores	Decay	Spores
REP 1	15	15	12	5	7	5	0	0	1	0
REP 2	15	15	9	9	6	4	0	0	0	0
REP 3	15	15	9	8	11	6	0	0	1	0

The number of fruit with green mould decay following fungicide treatment at different treatment times (dipped before infection, or 6, 12, 24 and 48 hours after infection).

Top student to work on the Hort Innovation 'Australian Citrus Postharvest Science Program'

John Archer has been appointed as a PhD candidate / student with the University of Newcastle and will be working on the Australian Citrus Postharvest Science Program (CT15010). He will be looking at ways to improve the storage and decay control of citrus. John has worked with NSW Department of Primary Industries for many years and is being co-funded through the Hort Innovation project and the University of Newcastle. This partnership will assist the industry develop new knowledge and innovative technologies to improve the quality of Australian citrus.

John will be based at the Central Coast Primary Industries Center and will visit packers and growing regions in the coming months.



John Archer inoculating oranges in the postharvest laboratories at NSW Department of Primary Industries at Ourimbah.

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

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