

Title The effect of fludioxonil on reducing strains of the pathogens *Penicillium digitatum* and *Penicillium italicum* on various cultivars of Australian citrus

Author Cunningham N, Lucas N and Taverner P

Citation Program and Abstracts, 11th International Citrus Congress (ISC Congress), 26-20 October 2008, Wuhan, China. 333 pages.

Keyword citrus; orange; lemon; green mould; blue mould

Abstract

Australia exports fresh fruits to many regions including North America, Asia, Europe and the Pacific. In order to keep these expanding markets, Australian citrus packers are facing increasing demand for fruit to be treated with fewer chemicals. Currently Australian citrus packers have a few chemistries available for use: benzimidazole and imidazole based synthetic fungicides that can be used for export and domestic markets and guazatine based fungicides that can be used for domestic markets only. Fludioxonil, which belongs to the phenylpyrrole group of fungicides, is being used by countries such as the USA and Europe and is considered a 'reduced risk' fungicide. Research has shown that it is an effective citrus postharvest treatment for thiabendazole resistant isolates of *Penicillium digitatum*. A new fungicide group in rotation with existing fungicides has the potential to improve fungicide resistance management. This study examined the effectiveness of fludioxonil in controlling *Penicillium* moulds on Australian grown citrus fruit. Fludioxonil was tested for efficacy against the postharvest disease causing fungi *Penicillium digitatum* and *Penicillium italicum* and a resistant strain of *Penicillium digitatum* on Australian grown citrus fruit, the cultivars navel oranges cv 'Washington', mandarins cv 'Honey murcott' and lemons cv 'Lisbon'. Fludioxonil gave better control of *P. italicum* and *P. digitatum* on lemons than when same fungi occurred on oranges or mandarins. Trials with a resistant strain of *P. digitatum* showed that fludioxonil was far more effective than when thiabendazole alone was used. There was no major phytotoxicity responses on any cultivars tested even when high rates of fludioxonil (1500 ppm) were used. The results of the study suggest that fludioxonil may require enhancement to achieve commercially acceptable levels of control in some citrus cultivars. The use of heated solutions and or combinations with other fungicides to improve efficacy is discussed.