**Title** Hot water drenches for control of soft rots on washed kumara (sweet potato)

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**Abstract**

Kumara (sweet potato) roots are prone to soft rots after washing and prior to retail sale. Rots are caused mainly by the fungal pathogen *Rhizopus stolonifer*. For many years kumara packhouses in New Zealand have relied on Botran® fungicide (a.i. dicloran) to minimise rots in washed kumara. Finding a non-chemical alternative to dicloran is vital if the fledgling kumara export industry is to reduce its reliance on fungicides and expand in the future. Laboratory studies over 2 years using inoculated kumara roots demonstrated the potential of hot water drenching (HWD) to control soft rots after washing. HWD was as effective as dicloran. A temperature of 55°C was the most effective HWD treatment and a 45 s drench was slightly more effective than 20 s. In 2008, Delta Produce Ltd of Dargaville (the largest kumara packhouse in New Zealand and a kumara exporter) tested HWD in a scale-up evaluation. Five runs were carried out comparing HWD, fungicide and a tap water wash control. The incidence of soft rots in stored kumara roots following HWD (55°C for 45 s) or dicloran fungicide was very similar. Mean rot levels were 1.7% for HWD, 2.3% for dicloran and 4.9% for the control treatment. No loss in quality of kumara skin or flesh was detected as a result of HWD treatment. HWD shows promise as an alternative treatment to fungicide for reducing or even eliminating soft rots in washed kumara (sweet potato). The process needs further testing to give industry confidence that it will work in practice, especially engineering input to design the most cost-effective HWD system.