

## Abstract

Access for Australian grown cucurbits into New Zealand is currently possible using a number of risk mitigation strategies. One option is the 'winter window' agreement which allows access of cucurbits into New Zealand from the 1 May to the 30 September without the need for a postharvest treatment. Outside this 'winter winter' period there is heavy reliance on chemical treatments to meet postharvest quarantine requirements. The use of chemical treatments is under review by regulatory bodies and it is likely that the availability of chemical treatments for disinfestation will be severely restricted within the next few years. If alternative treatments are not in place, exports of fruit fly host commodities to New Zealand will be severely constrained. It is therefore necessary to develop effective, preferably non-chemical, alternative postharvest treatments.

Non-chemical, non-damaging postharvest disinfestation heat treatments have been developed for zucchini, button squash, rockmelon, honeydew and watermelon against cucumber fly (*Bactrocera cucumis*). Experimental methodology was based on New Zealand Ministry of Agriculture and Forestry Standards, and included research to determine the most heat tolerant immature stage of cucumber fly and large scale confirmatory trials treating the most tolerant immature stage in fruit. Over 30000 insects were treated in the large scale confirmatory trials with no survivors which exceeds 99.99% mortality at the 95% confidence level.

While this research aims to meet the quarantine requirements of New Zealand they also meet the requirements of Australian states for interstate trade. This research will lead to the development of commercial treatment protocols negotiated through Biosecurity Australia for export to New Zealand and through the Domestic Quarantine and Market Access Working Group for interstate trade.