

New research supports use of ACTIGARD[®] post-harvest

In 2019, Syngenta, Zespri/KVH, and Plant & Food Research collaborated on a research project to gain a better understanding on how Hayward vines respond to ACTIGARD applied post-harvest.

Background, Results and Best Practice – Questions & Answers

Q. Why is it important to spray kiwifruit vines for Psa control post-harvest?

A. Post-harvest is a high-risk period for Psa with cool, wet weather favouring infection. Hundreds of thousands of wounds are also created per hectare during harvest (fruit stalks) and leaf fall (leaf scars), providing potential entry points for Psa into vines, with infection often not visible until Spring.

Q. How does ACTIGARD work post-harvest?

A. Anecdotal experience in New Zealand indicates that ACTIGARD can activate the kiwifruit vines natural defence response post-harvest, in the same way as it does in the Spring by inhibiting Psa infection developing within the plant following entry via wounds. This research project was designed to verify this.

Q. Why is post-harvest Psa efficacy research more challenging?

A. There is a 4 to 5 month interval between post-harvest applications and Spring symptom expression, meaning other variables could influence results. Also, if commercial orchards are used for post-harvest research, growers could not be expected to withhold Spring application(s) to measure the carry-over effect, as this would expose their orchard to undue risk.

Q. How does this latest research project overcome this challenge?

A. *“The best way to understand the effect of ACTIGARD in the post-harvest window is to look for changes in the defence gene expression in the ACTIGARD treated vines compared with untreated vines. An increase in gene expression is likely to equate to an increase in protection against Psa,”* according to Tony Reglinski, Senior Research Scientist with Plant & Food Research.

Q. What were the key findings of this research project?

A. Genes that are understood to activate a kiwifruit vines natural defence were ‘switched on’ soon after a post-harvest ACTIGARD application. This is a similar effect to a Spring application, giving confidence that ACTIGARD can deliver the same Psa control post-harvest. Early and late harvest Hayward vines were responsive to ACTIGARD and gene upregulation was at the highest level after 6 days. This confirms it takes 5 to 7 days to fully activate the plants natural defence response to Psa after a post-harvest application of ACTIGARD.

Q. What is the best way to use ACTIGARD post-harvest?

A. Apply ACTIGARD at 200 g/ha plus copper as soon as possible after harvest to protect fruit stalks. If canopy condition allows (i.e. leaves still mostly green) and infection risk remains high, make a second ACTIGARD application with copper 21 days later. Take care to avoid spray drift onto adjacent unharvested blocks and decontaminate sprayers before spraying other products on unharvested kiwifruit.

For more information please call the Syngenta Technical Advice Line on 0800 333 336 or visit our website at www.syngenta.co.nz