

A reminder of hygiene for pruning tools

A recent project commissioned by the Kiwifruit Biosecurity Steering Group and funded by the Zespri Innovation Biosecurity portfolio looked to investigate and compare the efficacy of three different sanitiser types in disinfecting pruning tools against *Ceratocystis* wilt in kiwifruit. This work contributes to the readiness of the kiwifruit industry should this pathogen arrive in New Zealand. The outcomes from this project reiterate the evidence of tools as high-risk pathways in the transmission of diseases between healthy vines.

Ceratocystis fimbriata is a pathogenic fungus that can cause the plant disease *Ceratocystis* wilt. In kiwifruit, the disease can reduce fruit size, form lesions, and sometimes kill the vine. The first reports of this pathogen on kiwifruit, were in Brazil in 2010, causing some cultivars to experience up to 50% vine loss on-orchard. These impacts and the lack of control tools has ranked this pathogen as a significant biosecurity threat to the New Zealand kiwifruit industry and is the highest-ranking pathogen on KVH's 'Most Unwanted' list of threats. KVH has been working in partnership with Biosecurity New Zealand (BNZ) on readiness plans for this threat, and with Zespri Innovation to deliver research to ensure we have the tools and knowledge to respond or withstand an incursion of this organism.

A current focus is to understand how we might limit spread if *Ceratocystis* was detected on a kiwifruit orchard in New Zealand. Insects, rootstock, plant material and pruning tools are often of the high-risk transmission pathways of *Ceratocystis* wilt spread between healthy and sick vines. Pruning tools infected with fungal spores can spread the disease within and between orchards if not cleaned properly, and are of high-risk in pathogen spread, as tools cut into vine tissue and open plants up for disease entry.

Of the three sanitisers tested in this project, one in particular (hot water at 80°C for 15 seconds) was proven to be most effective. However, we realise that using hot water on orchard to sanitise tools may be impractical, therefore more work is underway to research the efficacy of New Zealand based sanitisers that are commonly used by growers for pruning tool disinfestation to reduce Psa spread. For example, Citrox Saniwash 14T, SteriGene®, Virkon S Inovet®. These sanitisers will be evaluated against *Ceratocystis* and will help inform which sanitisers available in New Zealand are most effective against *Ceratocystis*, and if we need to reach out offshore for alternatives to add to our sanitiser toolbox.

Key highlights from this research are the importance of sanitising tools with effective and recommended sanitisers (find a recommended sanitiser list on the [KVH website](#)), and the benefits of having on-orchard biosecurity plans. KVH on-orchard biosecurity plans ensure growers understand their risks, agree what happens on their orchard, source and trace clean plant material, check and clean tools, machinery, footwear, and equipment, and report the unusual (find the on-orchard biosecurity plans in hard copy and online on the [KVH website](#)).

This research showcases the merits of employing good tool hygiene practices on orchard in which are key in combatting the spread of not only *Ceratocystis* wilt on kiwifruit, but other unwanted diseases should they arrive in New Zealand.