

By Innovators Ltd CEO Jonathan Lowy

☒ These are dark days for the kiwifruit industry, a sector that until a few short months ago was thriving. Last season, grower optimism was high, driving productivity to new heights as they expanded to meet the demands of new and hungry markets. At that time gold alone was a significant export earner worth NZ\$1.5 billion (US\$1.26 billion) a year.

Now however, New Zealand kiwifruit growers are feeling the cold wind of crop failure blow through their lives. Psa has destroyed many hard won orchards just as it has in China, Japan, Italy, Chile and other parts of the world.

For a sector where the average grower age is 58 this presents a terrifying scenario and starting again is tough. The cost of grafting new G3 gold kiwifruit varieties start at NZ\$60,000 (US\$50,672) per hectare, however growers have little certainty as new varieties have unknown levels of disease resistance. It's hard for growers to know where they will be next season - the harvest has been all right, but afterwards there has been dieback in the vines. This autumn season will be crucial with the storms, as the impact of Psa is greater when vines are cold, wet and wounded.

It is a brave grower who invests in these new vines, but faced with a mortgage that initially funded the orchards and the current situation where productivity has plummeted to the point where the debt will never be repaid, there seems little choice.

Sadly this is being played out in a slow-moving wave across the country. Worse still, it was an avoidable tragedy that is a replay of the failures of the sector across Europe and Asia. New Zealand's isolation has delayed the attack of Psa for long enough to make the industry one of the world leaders, only to have victory snatched away before it was truly won.

So what can be done? All the biosecurity and containment paradigms in the world won't put this genie back in the bottle, so any solutions need to accommodate the realities of global diseases within productive yet vulnerable monocultures.

There might be a way, and it happens to be with one of our products - CereMist, which presents a novel approach to disease management. We don't pick the treatment - they already exist; 50 plus chemistries that kill Psa in the lab.

The trouble is, when applied by the usual flood spray methods at an intensity and frequency that is still too low to hold the disease back, these chemistries can damage the vines with phytotoxicity.

Killing them with kindness is still killing them.

Our approach was to go back to first principles; target the treatments where and when they're needed. Respond to growth conditions with a precisely aimed big stick and respond as fast as the bacterium does.

CereMist dispenses in the canopy precisely what is required, at the optimum moment and with particle sizes selected for float, adhesion and endurance, and then does it again and again. Whatever the best treatment is - sterilants, coppers or ABs - CereMist can apply it.

Smaller quantities are delivered so there's no chance of phytotoxicity and unmeasurable spray drift, and the application protocol can be updated as our knowledge grows.

CereMist attacks the disease the way it attacks the vines. With no let up, no mercy and a steady pressure that is going to be impossible to resist, fighting back with simple tools that do a wonderfully complex job, adapting as fast as any disease.

With smaller levels and a more diverse crop-specific application, we will be ready for whatever challenges our fragile monoculture faces.

CereMist is a novel spray dispensing system for the treatment of Psa-V in kiwifruit. Development of the CereMist system was carried out by the New Zealand based product development company, Innovators Ltd.

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