



AT A GLANCE

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THE FIRST 48 HOURS

Kiwifruit vines are relatively tolerant to many environmental impacts, but one thing they don't cope well with is having their root systems waterlogged. Previous flooding events in Wanganui and Coromandel have shown that vine health outcomes are not good if there is surface water for more than 48 hours. After this time, the roots begin to die due a lack of oxygen.

This means that the first 48 hours are a critical period when, if at all possible, the orchard should be drained of water. In some cases, this drainage will occur naturally, but for some sites this may mean pumps need to be used to pump the water out. However, if there is little natural fall on the orchard, the orchard is at low elevation, the drains are full, or the flood waters have not yet receded this may be very difficult, if not impossible.

AFTER THE WATER IS GONE

It is likely that the floods would have deposited significant volumes of silt across the orchard. If this is not managed, it can be more damaging than the water. Silt is very fine and effectively seals off the soil environment – so roots that were deprived of oxygen by excess water may continue to be sealed

off from the atmosphere and still not able to access oxygen.

Identifying a good way to manage this silt can be difficult as it is not recommended to use any heavy machinery on the soil until it is properly dried out. The longer-term impacts of compaction are significant and should not be disregarded.

Digging silt away from trunks is a good way to allow air back into the soil. While this is a heavy manual job it is worth doing to save the root system from oxygen deprivation.

Once the silt has dried out, it may be possible to push it away. However, this is often impractical, and in this situation, under-planting a deep-rooted crop such as rye or fescue may help to break up the silt layer and add structure.

NEXT SEASON

Even if vines are only under water for 24 hours, significant root death may have occurred. The recommendation from growers who have been in this situation in previous seasons is to be realistic about crop loads – vines often seem fine until flowering as they are utilising stored resources, but then they collapse as the requirement for resources increases at flowering.

Rather than lowering overall cropload by tying in less canopy in winter, growers suggest the best approach seems to be to tie in a full canopy, and then reduce the crop load by removing all the flowers from every second cane.

LONGER TERM CONSEQUENCES

Phytophthora is common in sites with poor drainage, and previously flooded orchards may find that this is an issue as well. Ongoing management of drainage and waterlogging will be critical.

Compaction caused by driving on waterlogged solid is difficult to remedy and the best advice is not to cause it in the first place if possible.

WHO TO CONTACT

For specific questions, contact Sylvia Warren, Grower Liaison Manager for Edgecumbe on 022 101 8550 or send email queries to contact.canopy@zespri.com



CHECKLIST FOR FLOODING



DRAIN

It's really important to get rid of as much water as possible in the first 48 hours. After this point, the vine root system will start to die due to lack of oxygen and vine outcomes are poor.



DIG

Once you can get into the orchard, remove as much silt as possible from around the trunks. If left alone, silt can seal up the soil and prevent aeration of the roots, causing further root death.



DON'T DRIVE

Keep vehicles and heavy machinery off wet and waterlogged soils. Compaction has long term consequences and causes significant drainage and soil health issues.



PLANT

Consider under-planting with deep-rooting species such as rye or fescue that can break up the silt layer and help bring structure to the soil.



REDUCE

Be realistic about crop loads for next season. Consider taking all the flowers off every alternate cane. Vines can seem fine till flowering, then collapse as the requirement for resources increases.



CONTACT

For specific enquiries, contact Sylvia Warren, grower liaison manager for Edgecumbe, on 022 101 7659 or email contact.canopy@zespri.com