South West NRM

# Case Study

## A tailored approach to regenerative farming

Mitchell East and partner Jennifer Riseley with their passionfruit vines

# Introduction

## Regenerative agriculture is in Mitchell East's blood. Before he was born, his parents Garry and Tracey had already revegetated eroded land and spent years trying to improve soil with carbon-based inputs and less chemicals.

Their experiences were not without mishaps. So, when he came home to farm passionfruit under the Willarra Gold banner eight years ago, his eyes were wide open.

*"The most important thing Dad learnt was always save the crop. Don't be too proud to be chemical-free and watch your crop get infected by a fungal disease. The last thing you want to do is take the wrong advice and start losing money, and I think that's what a few farmers who go down this path have to learn. There are tools there that, if you farm on a commercial scale, you need to use."*

*Nevertheless, management of his 1400 passionfruit vines has changed dramatically over the past eight years. He has seen "fairly good results"* from foliar feeding and using humates, fish and fulvic acid, but even better results since he started to use compost and mulch four years ago.

*"We saw a massive difference in water retention when we started mulching (with oat or barley straw). Sometimes I think I'm under-watering, but the moisture meters tell me I'm not. Before, when we had fairly bare strips underneath the vines, we were watering 3-4 times a day. Now it's down to 1-2 times and with time periods cut in half."*

Mitch says over-watering is the worst thing you can do for passionfruit vines due to their susceptibility to soilborne disease. But even best practice irrigation can't keep disease at bay. A more integrated approach is required.

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*"The advice I had was to stop using fungicides and go biological, because you'll be able to keep the plant healthy enough to fight the disease. So, I decided to do it over the whole crop because that's what I kept hearing."*

It was another hard lesson that has led Mitch to offer his own advice.

*"Only trial practice change on an area that you are willing to lose, because nine times out of ten a method you change is going to fail (so manage the risk)."*

Mitch believes the trial failed because the disease issue was already too big for biological products to deal with.

*"If you've already got a plant that is a bit old and susceptible to a disease, it probably has some disease that is being kept at bay with fungicides already. When you stop using fungicide the disease goes rampant. You can't take a plant where there is disease present and completely get rid of it with biological approaches when you've been using chemical fungicides."*

*The most important thing Dad learnt was always save the crop. Don't be too proud to be chemical free...*

## Mitch now takes a more tailored approach, reducing the need for chemicals, but not discarding them altogether.

It starts with a complete renovation every 4–5 years when disease pressure grows.

*"It's a big job, but the benefits far outweigh the effort. We pull everything out, the vines, poles, wires and irrigation (and the kikuyu) and start again.*

*"Fungal disease comes from a lack of light and air movement. When the vines are young, they have heaps of light and air going through and no dead wood for fungal spores. That's when we start with a biological approach to get the plant strong and resilient.*

*Then, when you start to see some disease, generally 3–4 years later, you can sparingly apply your chemical fungicides (and start planning for replanting again). This helps to minimise chemical use and build the plant's natural ability to protect itself. But it's a slow solution and can take years to see a real benefit."*

*We pull everything out, the vines, poles, wires and irrigation (and the kikuyu) and start again.*

## Mitch tries to help beneficial soil biology when he prepares for new vines by preparing the soil with a multi-species cover crop sown after spreading one ton of compost and 500 kg of chicken manure pellets.

When that is ready to graze, he brings animals into the system.

*"It's a sacrificial crop to stimulate soil biology and clean out any soil disease. Then, in spring I fence it off and put a heap of sheep in for a day or two, bring them back about two weeks later and repeat that 3–4 times until I'm ready to start preparing the ground for planting vines."*

Regular monitoring is a big part of Mitch's journey in regenerative agriculture, trialling a range of soil health indicators (worm counts appear most useful) as well as new products such as biochar.

*"When we replant we put compost and biochar under the plants for a couple of years.*

*Early trials haven't shown whether it actually works but the theory is that in the long-term it should be a physical habitat for microbes. But we keep monitoring."*

Australian Government

National Landcare Program

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