

Soil Sense Series

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Composting: Lessons from a Soil Sense farmer

Kate Thompson calls herself a gardener rather than a grower - though she is new to growing avocados - that doesn't mean what she does can be dismissed.

Kate's avocado orchard used to be quite badly affected by phytophthora in some blocks, but since she and employee, Luke O'Neill introduced a composting and compost tea program, they have been able to maintain healthy trees and improve the soil biology. According to Luke, composting is definitely helping with the phytophthora situation and the soil is more resilient and will keep improving over time.

They make compost every 6 to 8 weeks and it is applied as soon as it's ready. The main raw materials for the compost pile are tree prunings and old windbreaks, lucerne hay, gypsum and rock phosphate also any grass clippings from around the farm are used. The new pile is inoculated with the material from the old pile. Kate says about one third of the new pile is material from the old. Temperatures are monitored daily and the pile is turned regularly once the required temperature has been reached.

The compost is applied as a mulch on the surface of the orchard about 10 -15cm deep. Luke added that the "compost is cultivated in but not by us, the worms do it."

On the orchard floor Kate and Luke have introduced pinto peanut, as it is both a legume providing nitrogen and a groundcover protecting against erosion and weeds. In fact, the orchard is full of different plants. Kate and Luke are fostering a range of plants in the orchard to encourage a diverse range of beneficial, insects and birds. Many of the grasses and legumes are left unmown for this same reason and to increase the organic matter in the soil. Native species have been planted in any small open space between the avocado blocks which also encourages native bees, birds and insects. If and when there are weed problems, they use a system of heavy mulching to smother them as the new, more suitable groundcover is established as well as some hand weeding.

Kate stresses the importance of taking regular soils samples for both chemical and biological health and then actively using the results to make management decisions.

Using these results compost teas are brewed and sprayed as ground sprays twice a year to help boost soil biology diversity and numbers

Compost tea is also applied to the trees as a foliar spray every month from flowering to late fruit set.

Contour banks were built by the previous owner to capture most of the rainfall before it runs away and prevents erosion from excess runoff. .

Despite the fact that copper based sprays have been used heavily in the past, there are now many worms on the property. It has been found that in soils high in copper, it may be possible to dilute the effect of the residue by applying organic material and maintaining the soil in a generally healthy state. This reduces the bioavailability of the residues making them less toxic.

Kate is hoping that in the future, once the soil biology in the orchard is in balance, it will be a simple case of ensuring the soil organisms have enough food so they can take care of the nutrient cycling and plant protection.

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