



Robert Quirk

You may have heard of Robert for the work he has done on his Tweed valley sugarcane property in relation to Acid Sulfate Soil (ASS). However, he does a number of other things as well that all help improve the health of his soil as well as providing a good cane yield.

Robert uses his green cane tops as mulch. This means he doesn't burn his cane and the vital carbon found in the trash is returned to the soil instead of going up in smoke. The key to using the cane trash is the addition of nitrogen to facilitate its breakdown so it doesn't build up to a height where it encourages conditions for disease or pose a

problem for farm machinery. Robert applies 2kg/ha of nitrogen to the cane trash after harvest with a boom spray.

Robert believes the addition of organic matter has enabled him to start growing legume crops during the cane fallow period, something he hasn't been able to do successfully for 30 years. The soybeans or lab lab are not fertilised nor is the soil cultivated prior to sowing. They are simply planted directly into the trash. All grow well and supply nitrogen for the next crop, improve soil structure and provide a bit of a cash crop. Another fallow plant Robert has used has had additional unforeseen benefits. A crop of oats reduced nematode levels drastically.

In addition to all this he mounds up the soil and plants cane into the mounds. Raising the land for the growing cane is important on a property that is very close to sea level. Before the mounds are created lime is added at 5t/ha and then the top 20mm or so is scraped into mounds. This means the lime application rate in the mounds is now closer to 10t/ha.

To reduce the risk of soil structural problems such as compaction from the heavy machinery use in cane farming Robert employs the technique of control traffic or tram tracking. This means that the mounds in which the cane grows are never driven over and heavy machinery is confined to the inter-row areas. Along with the addition of the organic matter from the cane trash and a legume crop every 4 or so years means that minimal soil structure damage occurs (as you can see in the photo).

The addition of cane trash increases Robert's soil organic matter, which in turn helps cycle nutrients and binds up the environmentally damaging by-products of ASS discharge such as aluminium and iron. More organic matter also means the need for cultivation is reduced as soil structure is maintained and enhanced while soil biota numbers and diversity increase as soil disturbance is minimised. One of the biggest pluses, though, has to be the reduced need for fertiliser. Robert estimates that he needs 25% less fertiliser than he did before he started mulching with trash with no decline in productivity.

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