

# Can improved soil biology increase nutrient availability?

This HAL funded project is comparing the impact of conventional fertiliser regimes with an alternative regime of humates and minimal fertiliser application on fruit quality and soil microbiology. Two sites have been established. Site 1 in the Derwent Valley was established in November 2012 and has now been running for 1.5 growing seasons. Two cultivars, Sweetheart and Staccato, are being examined at this site. The second site in the Huon Valley was established in March 2013. The cultivar under study at this site is Lapin.



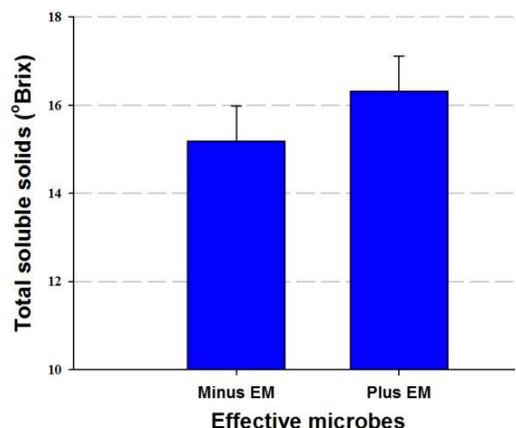
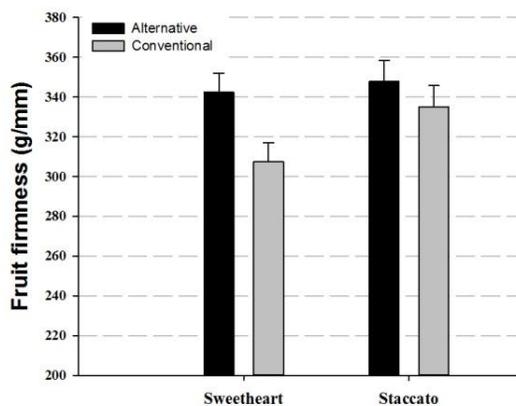
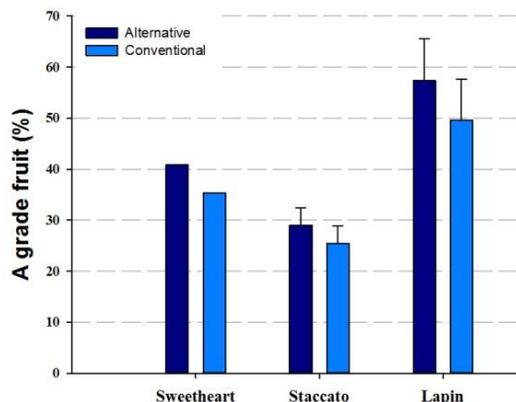
As well as examining soil life, fruit quality parameters being studied include: fruit weight, diameter, firmness, sugar content, juice pH or malic acid content, skin puncture force, colour, and stem retention force.

Results from the first harvest show that, in all cultivars, the proportion of A-grade fruit was 17-20% higher in the alternative regime compared with the conventional regime. There were no differences between treatments in most fruit quality parameters, but the alternative regime produced firmer fruit than the conventional regime. Monthly addition of effective microbes (EMs) to the soil increased fruit sugar content in Sweetheart.

In Lapin, reject fruit was reduced from 13% in the conventional regime down to 4% in the alternative regime. EMs reduced fruit cracking by 33%.

Root samples have been collected from each site by PhD student Abdelsalam Abobaker and are currently being analysed for mycorrhizal colonisation.

This project is still in its early stages and is planned to run for another three years to enable evaluation of longer term effects of minimal fertiliser inputs combined with the application of organic matter in the form of humates.



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