

A Report on the Value of Biochar and Wood Vinegar:

Practical Experience of Users in Australia and New Zealand

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AUSTRALIA NEW ZEALAND
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2.2 Wood vinegar users

A total of six wood vinegar users were surveyed (fig. 2).

Wood vinegar's use for crop yield effect was the main motivation for use (29%). Following this was soil drought tolerance, soil carbon enhancement and reduced reliance on synthetic chemicals (14%).

The average price for wood vinegar as quoted by users was \$4.63 per litre, though prices ranged from \$2 to \$12 per litre. Average acquired volume was 700 L, ranging between 80 L and 3000 L per season. All volumes were acquired through producers, no wood vinegar was self-made.

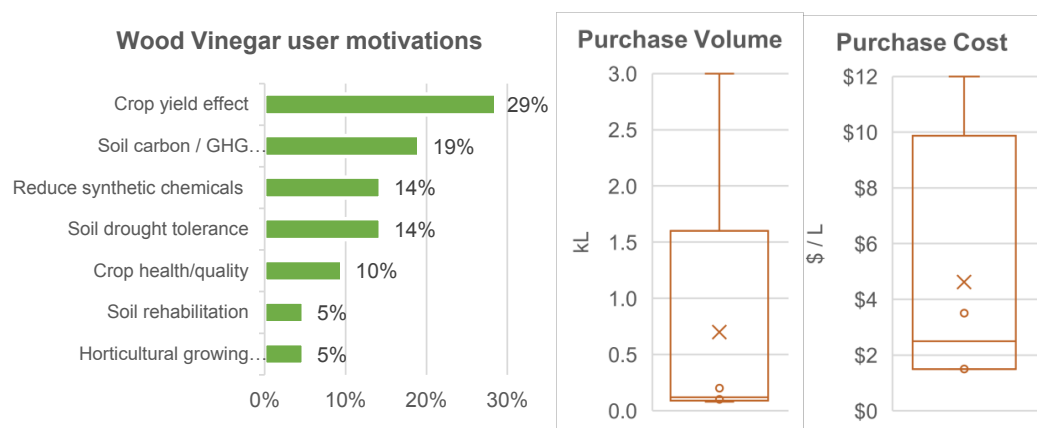


Figure 2. Wood vinegar user motivations, acquired volumes (per acquisition) and purchase costs.

Users of wood vinegar were generally targeting higher value crops, including nut plantations (3), orchids (1) and vegetables (1) with one user applying to cereals (1) for the purpose of improved seed germination.

Use frequency ranged from weekly to annually. Application was achieved through foliar spray to established plants in 4 of 6 cases or was mixed in with seed using a grain auger prior to planting in 2 of 6 cases. Mixing methods varied depending on benefits sought. One user seeking improved yields through foliar application applied at a rate of 2mL vinegar per litre of water. Another seeking improved germination of seeds applied 20L of wood vinegar per metric tonne of seed prior to sowing. Another user who was using wood vinegar as a fungicide applied at a rate of equal parts vinegar to water.

Benefits sought by users included:

- Reduced pest and disease pressure resulting in healthier trees
- Growth promotion and pest control
- Reduced fungal disease
- Reduced Pinks fungal (Macadamia)
- An increase in germination rate and crop health for lupins and wheat



Wood vinegar

Benefits that were observed:

- Reduced pest pressure and less fungal pressure (Macadamia)
- Higher quality produce – *“my reject nut has fallen from high 2% to low 2% and crack-outs are 1% better”* (Macadamia)
- No harm to any beneficial insects but suppression of pests & husk spot observed (Macadamia)
- Good for cleaning husk spot from trees three days before adding Trichoderma for husk spot control (Macadamia)
- Trees were much healthier, and more resistant to disease (Macadamia)
- Reduced use of chemical fungicide (Macadamia)
- Plant more resistant to disease with greater strike rate on new planting (Macadamia)
- Quicker root establishment after repotting, reduced incidence of bugs and disease problems (orchids)
- Healthier plants (orchids)
- Reduction of insect damage (sucker insects and mildew / fungal diseases)
- Did not have to cut limbs off trees (because of elimination of Pinks fungal in Macadamia)
- 20% increase in germination rate for Lupins. No change in germination rate for Wheat. Treated seed areas showed increased vigour through the growing period.

Comments:

“A standardised declaration of the concentration of pyro-ligneous acid should be clearly given on the label. There are different brands available and without this information it is difficult to know the correct dosing rate.”

“Wood vinegar has good potential to eliminate black layering on turf grass (bowling greens and golf greens) @10mL per Litre. Further testing in this area would be productive.”