

## A NEW PHOSPHOROUS ACID FORMULATION FOR THE EFFECTIVE CONTROL OF *PHYTOPHTHORA* ROOT ROT OF AVOCADO ORCHARDS

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Root rot of Avocado trees has been the most destructive and economically limiting factor in avocado production worldwide. In all the years that this problem has been researched no single solution has been found and an integrated approach seems to be the only answer to control and manage this disease. An integral part of this disease management strategy is the phosphorous acid based fungicides. In an effort to improve the uptake, transport and to reduce phytotoxicity to trees Dr Anthon Hough investigated different compounds to dissolve phosphorous acid. Ocean Agriculture, in collaboration with Dr Hough, formulated Avoguard 500 SL. Avoguard 500 SL contains a high level of phosphorous acid, which makes it possible to use less product, and is very rapidly translocated in the tree, making injections time efficient as well as giving rapid and long lasting protection against *Phytophthora* root rot.

Trials were conducted to confirm the enhanced uptake and effective control of Avoguard 500 SL. Trees were injected with a standard potassium phosphonate (Phosguard 400 SL) product and Avoguard 500 SL at the same rate of active ingredient, 0.4 g / m<sup>2</sup> in order to compare the levels of phosphorous acid in the roots after treatment. Two applications were done in the season coinciding with the periods of most active root growth. Samplings of trees roots were done 4, 8 and 12 weeks after the second application and root residue analysis was done at SGS accredited laboratories in South Africa.

Root residue analysis from the first trial done shows that Avoguard 500 SL applied at a standard rate of 0.4g a.i. / m<sup>2</sup> resulted in an average of 37% more phosphorous acid in the roots than the Phosguard 400 SL, thus giving better and longer lasting protection against root rot.

A second trial was conducted to confirm the ability of Avoguard 500 SL to recover severely root rot affected trees. Trees in the trial block showed severe root rot symptoms and were severely defoliated. On evaluation of the efficacy trial the trees had improved greatly and the results was impressive with trees having a dense rich and dark green canopy, most injected trees was in excellent condition and did not seem to need further treatment in the near future. Avoguard 500 SL has been shown to be the most suitable treatment for Avocado root rot. Tree recovery is faster than with conventional treatment and phytotoxicity is much less.