

POTTED TREE TRIAL - SUMMARY

To assess the efficacy of current Citrus Gall Wasp (CGW) management tools and screen prospective treatments, a potted tree trial was undertaken by Fruit Doctors during the 2014-2015 CGW season. The trial was divided in three broad categories: egg laying deterrent sprays, insecticides targeting eggs and insecticides targeting larval stages.

The following products, application timing and dose rates were investigated:

	Product	Application Timing	Rate
EGG LAYING DETERRENT SPRAYS	Paraffinic Oil	5, 7, 10 and 14 day spray intervals during wasp exposure.	0.5% 1.0%
	Surround	Single application prior to wasp exposure.	5kg/100L
INSECTICIDES TARGETING EGGS	Exirel	Single application sprayed prior to wasp exposure. Single application sprayed at the conclusion of the wasp exposure period.	75mL/100L 150mL/100L
INSECTICIDES TARGETING LARVA	Actara	Single application 4 weeks after wasp exposure.	30g/100L 60g/100L
	Confidor	Single application after wasp exposure.	2mL/tree
	Exirel	Single application 4 weeks after wasp exposure.	75mL/100L 150mL/100L
	Movento	Single and double application. Sprayed after wasp exposure.	40mL/100L
	Transform	Single application 4 weeks after wasp exposure.	40mL/100L

Rootstock nursery trees were enclosed in insect rearing cages to enable wasp pressure to be regulated. Two different wasp pressures were investigated to simulate moderate and high pressure scenarios. Fresh wasps were added on a daily basis over a two week period.

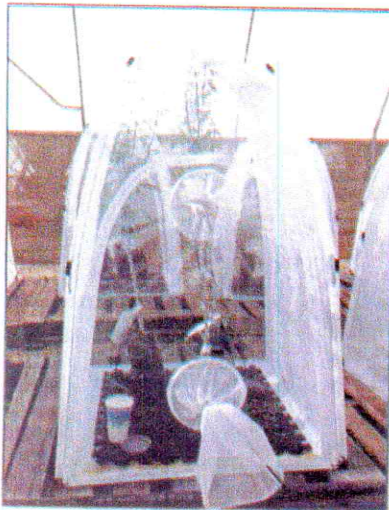


Figure 1. Individual cage containing nursery trees.



Figure 2. Caged trees at local greenhouse.

RESULTS

Results are still to be finalised as the number of exit holes will be counted once wasps emerge in spring however an indication of the efficacy of treatments has been gained by measurement of gall area.

Egg Laying Deterrent Sprays

The rate of oil does not appear to have an influence on deterring wasp activity. Results were highly variable when comparing spray timing intervals with no positive correlation found when spray intervals were shortened. Oil treatments have been advocated by industry for CGW management however further reliance on this treatment as a means of control is questionable in light of these results.

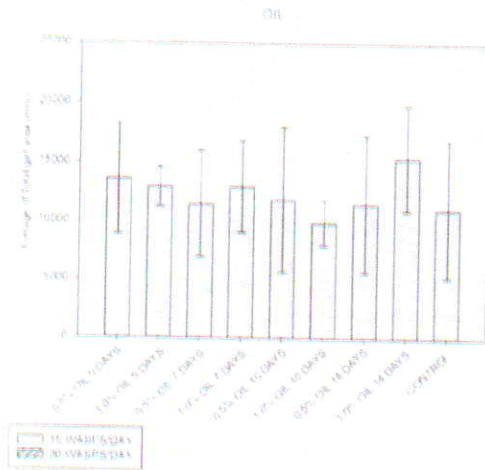


Figure 3. Oil spray treatments (low wasp pressure).

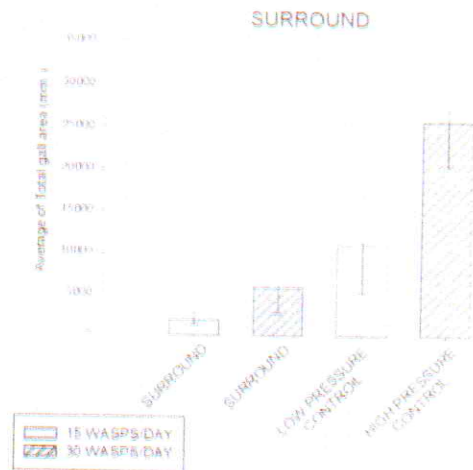


Figure 4. Surround treatments.

Surround appears to deter CGW egg laying activity. Surround reduced the gall area by approximately 80% under lower wasp pressure. As wasp pressure increased so too did the level of galling, implicating that deterrents will be more effective under lower wasp pressure.

Insecticides Targeting Eggs

At this point in the trial, Exirel showed no ovicidal activity.

Insecticides Targeting Larva

Actara, Exirel and Transform treatments do not appear to have an effect against larval stages. The use of single and double rates of treatments did not yield any significant difference.

Galls did not form with the use of Confidor at either low or high wasp pressure. Observations showed damage from egg laying activity during the wasp exposure period but the application of Confidor was effective in preventing larva from developing. In small, nursery grown trees Confidor is an effective tool against CGW.

Movento appears to have some efficacy against CGW. A single application of Movento showed no significant difference in average total gall area when compared to the control treatment. The double application of Movento showed a large reduction of total gall area in two of the three replicates. Further investigation into timing of applications and pest stages targeted is warranted.

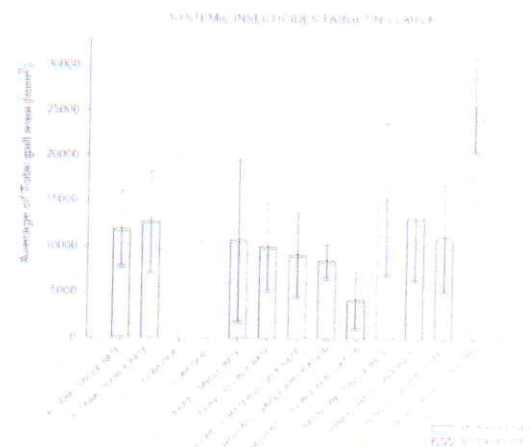


Figure 5. Insecticide treatments.