IPFP Satellite Project

EVALUATION OF OMNI OIL APPLIED NEAR BLOOM FOR APHID CONTROL

Bill Olson and Sean Miller

BACKGROUND

Organic dried plum growers can not use organo-phosphate or pyrethroid insecticides while some other growers, trying to be stewards of the environment, prefer not to use these insecticides. Both groups generally encounter aphid outbreaks during the growing season and could benefit from information about controlling aphids with products other than organo-phosphate or pyrethroid insecticides.

OBJECTIVES

The objectives of this trial are to see if oil applied during the bloom period could effectively control Leaf Curl Plum Aphid (LCPA) Brachycaudus *helichrysi,* and/or Mealy Plum Aphid (MPA) *Hyalopterus pruni.*

PROCEDURES

In a 0.5 acre dried plum test plot located at the California State University Farm – Chico, California a trial was established in a randomized complete block design consisting of 10 single tree replicates of seven treatments. Treatments were applied at 100 GPA by air blast backpack sprayer to determine if any of the treatments would control LCPA and/or MPA.

Oil treatments, rates and timing were:

	Treatment Timing	
Treatment	Green Tip	Petal Fall
1. Omni Oil @ 2%/Vol.	X	
2. Omni Oil @ 2%/Vol.	X	X
3. Omni Oil @ 2%/Vol.		X
4. Omni Oil @ 4%/Vol.	X	
5. Omni Oil @ 4%/Vol.	X	X
6. Omni Oil @ 4%/Vol.		X
7. Untreated Check		

Green tip applications were made on March 12th, 2004 and petal fall applications were made 10 days later on March 22nd, 2004.

The presence or absence of LCPA and/or MPA was determined on May 7th, 2004 by evaluating each tree in the test plot. If 10 % or more of the tree canopy was occupied by aphids it was scored as a “significant" aphid population.

RESULTS

	Treatment Timing		% Trees with Aphids		% Trees with "Significant" Aphids**	
Treatment	Green Tip	Petal Fall	LCPA*	MPA	LCPA*	MPA
1. Omni Oil @ 2%/Vol.	X		50 bc	0	10 b	0
2. Omni Oil @ 2%/Vol.	X	X	70 ab	0	0 b	0
3. Omni Oil @ 2%/Vol.		X	60 abc	0	20 b	0
4. Omni Oil @ 4%/Vol.	X		60 abc	0	10 b	0
5. Omni Oil @ 4%/Vol.	X	X	20 c	0	0 b	0
6. Omni Oil @ 4%/Vol.		X	60 abc	0	0 b	0
7. Untreated Check			100 a	0	60 a	0

*Means, in columns, not followed by a common letter are significantly different from one another at the five percent level of significance by LSD Test.

* * "Significant" is defined as 10 % or more of the tree canopy occupied by aphids.

CONCLUSIONS

Oil applied around the bloom period clearly helped reduce the presence of LCPA. No MPA were present in the trial. There was no "significant" aphid population on the trees where two applications of 2 % oil, 4% oil or the petal fall application of 4 % oil was applied. Other oil treatment, although not statistically significantly different did have some trees with "significant" aphid populations. Of the untreated trees, 60 percent had a "significant" aphid population. Although the data is not entirely clear it appears that oil applied at 4 % by volume gave better control than oil applied at 2 % by volume. It is clear that both the green tip plus the petal fall timing at 4 % oil by volume gave better control than either the green tip or petal fall timing alone. Numerically this was the best treatment. The application method may have not provided the coverage desired. Treatments applied by orchard air blast sprayer may improve results.

The use of oil at these timings, instead of a dormant application with insecticides, would mitigate the concern over dormant applied pesticides running off into waterways. Although the current status is not clear Omni oil was approved for use by organic growers in the past.