Potato Aphid Research in Tomatoes

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Table 2. Percent potato aphid infested leaves per plot, UC Davis, Yolo Co., 2005.

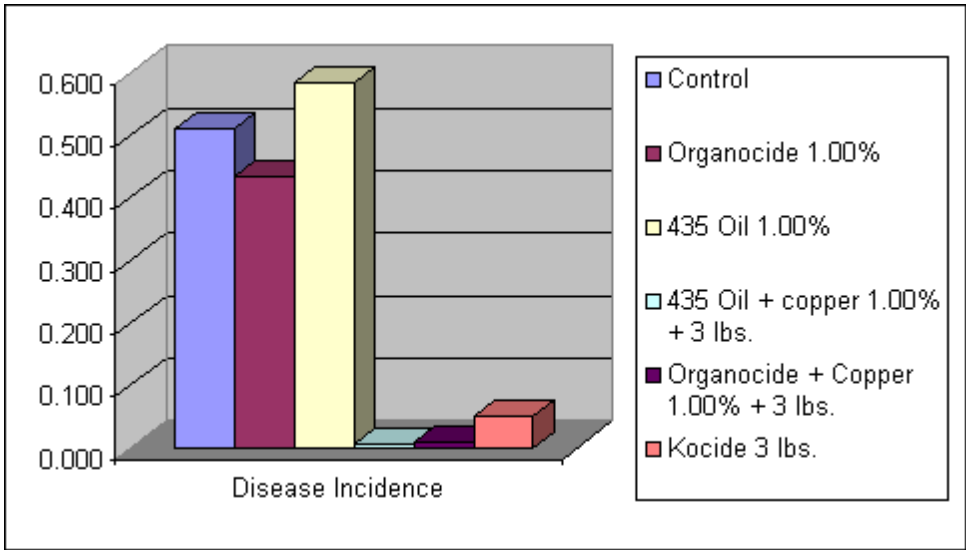
Insecticide	Rate Form. /ac	Adjuvant	% Leaves Infested with Potato Aphids			
			Pre-treatment 7/5	Post Treatment 1 7/11	Post Treatment 2 7/18	Post Treatment 2 7/25
Untreated	na	na	**38.8** ± 3.8	**40.0** ± 5.4	**61.3** ± 4.3	**36.3** ± 5.2
Pyganic 5.0	13.5 fl. oz		**25.0** ± 2.0	**32.5** ± 6.3	**33.8** ± 5.5 *	**26.3** ± 3.2
Pyganic 5.0	13.5 fl. oz	Organocide	**35.0** ± 4.1	**32.5** ± 5.2	**28.8** 2.4 *	**11.3** ± 6.6 *

Table 4. Percent potato aphid mortality evaluated in the field bioassay, UC Davis, Yolo Co., 2005.

Insecticide	Rate Form. /ac	Adjuvant	Rate Form. /ac	% Mortality July 20 Mean ± SE	
Untreated				**23.2** ± 8.4	
		Organocide	0.78% v/v	**54.4** ± 13.6	
Pyganic	13.5 fl. oz	Organocide	0.78% v/v	**92.7** ± 4.3	*

Effect of Organocide on Greasy Spot Control. Dr. Ron Sonoda University of Florida

Treatment	Rate per 100 gallons	Disease Incidence
Control		0.510
Organocide	1.00%	0.435
435 Oil	1.00%	0.585
435 Oil + copper	1.00% + 3 lbs.	0.005
Organocide + Copper	1.00% + 3 lbs.	0.010
Kocide	3 lbs.	0.050



"Evaluation And Development Of Tactics To Reduce or Eliminate Infection of Transplants By *Tomato Yellow Leaf Curl Virus* And Other Whitefly-Transmitted Geminiviruses"

J. E. Polston and D. J. Schuster
University of Florida, Gulf Coast Research and Educ. Ctr.

Table 1. Comparison of various compounds and products for repellency to silverleaf whitefly adults in the laboratory.

Material Intercept Slope RC_{50} [1] RR_{50} [2] P

Material	slope	RC50	RR50		
Organocide® (New)	-0.78	3.83	1.60	10.7	0.07
Organocide® (Old)	-0.29	2.07	1.39	9.3	0.12

Improving Disease Management and Production of Organically - Grown Tomatoes

Report on 2005 Research Project
Toward Sustainability Foundation
Department of Horticulture, Cornell University

Project Leader and Area of Expertise:
Margaret McGrath, Associate Professor, Dept of Plant Pathology Plant Pathology

Experiment 2: Evaluation of Organocide for controlling foliar disease. The objective of this experiment was to compare two fungicide programs with products for their control of foliar diseases of organically-produced tomatoes. The products tested were Champion (77% copper hydroxide) and Organocide (5% sesame oil). Organocide was applied alone and also in combination with Champion to determine whether disease control was improved and whether there were any phytotoxic effects from combining the two fungicides. Organocide combined with a copper fungicide was observed to provide good control of foliar diseases, better than obtained with copper alone, under farm conditions.

On-Farm Observation Study: Organocide + Champion applied for bacterial speck and other foliar diseases in tomato. Just before the first fungicide application on 20 July, symptoms of bacterial speck were observed scattered throughout the first tomato planting at Sang Lee Farms (Figure 17). The section of this planting that

was sprayed with Organocide + Champion by owner Fred Lee appeared to have less severe symptoms than the rest of the planting that was sprayed with just Champion. No signs of phytotoxicity were observed in the tomatoes treated with Organocide + Champion.

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Based on anecdotal evidence, better disease control can be achieved by combining copper with Organocide and additionally the rate of copper can be reduced. Copper is extremely soluble in Organocide. Organocide, being comprised mostly of fish and sesame oils, is mostly lipids, which are absorbed into the cell wall of many foliar pathogens fairly easily. This absorption then carries the copper into the pathogen. It does not move through the waxy cuticle covering plant leaves. Organocide also functions as a spreader / sticker for the copper, reducing wash off.

The objective of the second experiment was to evaluate for foliar disease control applying a copper fungicide (Champion) combined with a botanical oil, Organocide, which is thought to improve control by facilitating movement of copper into the cells of foliar pathogens.

Table 4. Effects of organic fungicides on leaf mold incidence and severity as well as yield for organically-produced tomato evaluated in 2005.

	Leaf Mold Disease Ratings[z]					Yield (lbs/plant)				
Treatment[y]	Disease Incidence (%)			Disease severity (%)	2-3 inch fruit					
	15-Sep	20-Sep	28-Sep			>3 inch fruit		All fruit	28-Sep	3-Oct
Nontreated	70.6	80.0	96.9	19.7	24.1	35.0	8.9	20.6		
Champion	30.8	58.1	69.7	5.6	11.7	36.5	10.8	21.6		
Organocide/Champion	83.7	93.7	89.3	15.8	21.6	36.8	14.2	27.1		
Treatment *P*-value	0.0662	0.1912	0.1184	0.4449	0.3736	0.9501	0.4402	0.4545		

[z] Disease Incidence refers the the percentage of plants in each plot that showed symptoms of leaf mold. A plant was considered infected if any part was showing symptoms (leaves, petioles, stems etc). Disease severity refers to the level of infection of each of these plants in the plot.

[y] Fungicides were applied using a CO_2-pressurized backpack sprayer with a single twin jet nozzle boom and applications were made on 8, 16, 23 and 30 Sep.

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Management of Cycad Aulacaspis Scale (Aulacaspis yasumatsui)

By: Catherine Mannion, Department of Entomology and Nematology, University of Florida - IFAS

Female Scale Mortality (Table 1): The products that achieved excellent control of female scales were the foliar application of Organocide, the foliar application of Organocide in combination with a drench application of Merit, the foliar application of Distance, and the foliar and drench applications of Dimethoate. Most of the mortality of the combination treatment of Organocide and Merit was likely due to the Organocide because the drench application of Merit alone provided poor control.

Table 1. Female Scale Mortality

		Percent Female Mortality (weeks after treatment)					
Treatment	Application	2	4	6	8	10	12
Experimental	Foliar	0.0 d	8.0 c	11.0 b	2.2 c	19.0 b	5.8 c
Organocide	Foliar	50.6 c	94.0 a	87.6 a	95.2 a	95.0 a	97.6 a
Merit	Foliar	0.0 d	25.0 b	4.0 b	13.6 b	2.0 b	8.0 c
Merit	Drench Foliar	0.0 d	0.0 c	1.0 b	0.0 c	2.8 b	39.6 b
Merit + Organocide	Drench	60.4 c	94.0 a	93.0 a	96.0 a	99.0 a	99.0 a
Distance	Foliar	0.0 d	100.0 a	99.0 a	94.4 a	95.2 a	100.0 a
Distance	Drench	1.0 d	0.0 c	4.0 b	0.0 c	5.0 b	19.2 c
Dimethoate	Foliar	97.0 a	100.0 a	100.0 a	100.0 a	100.0 a	99.0 a
Dimethoate	Drench	82.8 b	95.0 a	92.2 a	95.8 a	98.0 a	92.5 a

Control	--	0.0 d	2.0 c	0.0 b	5.2 c	2.0 b	1.6 c

Table 2. Egg Mortality

		Percent Egg Mortality (weeks after treatment)					
Treatment	Application	2	4	6	8	10	12
Experimental	Foliar	0.0 c	0.0 c	4.2 b	0.0 c	0.0 b	0.0 b
Organocide	Foliar	5.0 c	0.0 c	70.6 a	89.0 b	100.0 a	100.0 a
Merit	Foliar	0.0 c	0.0 c	0.0 b	0.0 c	0	0.0 b
Merit	Drench	0.0 c	0.0 c	1.2 b	0.0 c	0.0 b	0.0 b
Merit + Organocide	Drench Foliar	0.0 c	0.0 c	79.3 a	97.2 a	100.0 a	100.0 a
	Foliar						
Distance	Foliar	0.0 c	100.0 a	99.0 a	100.0 a	100.0 a	100.0 a
Distance	Drench	0.0 c	0.0 c	0.0 b	0.0 c	0.0 b	0.0 b
Dimethoate	Foliar	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
Dimethoate	Drench	43.0 b	60.0 b	100.0 a	--	100.0 a	100.0 a
Control	--	0.0 c	0.0 c	0.0 b	0.0 c	0.0 b	0.0 b

Table 3. Infestation Level

		Infestation Rating 1-5 (weeks after treatment)					
Treatment	Application	2	4	6	8	10	12
Experimental	Foliar	3.8 a	4.6 a	4.8 a	4.6 a	3.8 a	4.0 a
Organocide	Foliar	2.6 a	2.6 a	2.6 ab	2.0 b	1.4 b	1.2 b
Merit	Foliar	2.8 a	4.4 a	4.4 ab	4.8 a	4.6 a	4.2 a
Merit	Drench	3.0 a	4.0 a	4.4 ab	4.4 a	5.0 a	4.4 a
Merit + Organocide	Drench Foliar	3.0 a	2.6 a	2.4 ab	1.6 b	1.8 b	1.2 b
Distance	Foliar	2.4 a	3.4 a	2.4 ab	1.8 b	2.0 b	1.2 b
Distance	Drench	2.4 a	4.6 a	4.6 ab	5.0 a	5.0 a	4.8 a
Dimethoate	Foliar	3.0 a	2.4 a	2.2 b	2.0 b	1.6 b	1.8 b
Dimethoate	Drench	3.0 a	2.6 a	2.2 b	2.2 b	1.4 b	1.6 b
Control	--	2.2 a	4.2 a	4.2 ab	4.8 a	4.8 a	5.0 a