 doi: 10.4182/amt.2012.D14

(D14)

ORANGE: *Citrus sinensis* (L.) Osbeck, 'Valencia'

COMPARISON OF SPIROTETRAMAT AT DIFFERENT SPRAY VOLUMES TO SOME STANDARD INSECTICIDES AT LOW VOLUME FOR CONTROL OF ASIAN CITRUS PSYLLID AND CITRUS LEAFMINER ON ORANGES: 2011

Philip A. Stansly
University of Florida/ IFAS
Southwest Florida Res. and Ed. Center
2685 State Road 29 North
Immokalee, FL 34142-9515
Phone: (239) 658-3427
Fax: (239) 658-3469
Email: pstansly@ufl.edu

Jawwad A. Qureshi
Email: jawwadq@ufl.edu

Barry C. Kostyk
Email: bkostyk@ufl.edu

Asian citrus psyllid (ACP): *Diaphorina citri* Kuwayama
Citrus leafminer (CLM): *Phyllocnistis citrella* Stainton

ACP and CLM are two economically important pests of Florida citrus due, in large part, to their role in the spread of greening disease or "huanglongbing" and citrus canker, respectively. Spray method, spray volume and active ingredient all influence the effectiveness of an insecticide application. We compared the efficacy of Movento MPC in total spray volumes of 5, 10, 40 and 120 gpa and three other standard treatments at low volume. The two lower volume rates were applied with a Proptec™ rotary atomizer sprayer by varying speed of the peristaltic pump. The two higher volume rates were applied with a Durand Wayland AF100-32 air blast speed sprayer operating at 1.9 mph and 400 psi with three Albuz ATR 80 nozzles (green brown and white top to bottom) per side delivering 40 gpa and three #5, #4, and #3 John Beane Ceramics nozzles per side delivering 120 gpa. The experimental block at the Southwest Florida Research and Education Center (SWFREC), Immokalee, Florida consisted of 15-yr-old sweet orange 'Valencia' trees planted on double-row raised beds at a density of 132 trees/acre. Trees had been hedged to a height of 7ft, irrigated by micro-sprinklers and subjected to conventional cultural practices. Eight treatment plots of 10 trees were randomly distributed across each of the 4 replicates, one per row, separated by a buffer row. Treatments were applied on 21-22 Feb 2011. Evaluations were made at 3, 10, 17, 24, 31, 38, 44 and 51 days after treatment (DAT) on five central trees in each plot by counting adults falling on a white clipboard placed under randomly chosen branches which were then struck 3 times with the PVC pipe to make a count for one "tap" sample. Four tap samples were conducted per tree. At 17, 24, 31 and 51 DAT, 15 randomly selected shoots per plot were collected and examined under a stereoscopic microscope in the laboratory to count live ACP nymphs. Dead nymphs were also counted at 17 DAT. Five out of the 15 shoots were examined under the microscope to count CLM larvae and empty mines on three fully expanded leaves per shoot. Data were subjected to ANOVA and means separated using LSD (P = 0.05) are presented.

Significantly more dead ACP nymphs compared to the untreated check at 17 DAT were observed in response to the airblast treatments of Movento MPC and Agri-Mek + Admire Pro all applied with 435 oil. Fewer live nymphs than the check were seen with all treatments through 51 DAT except at 31 DAT with Mustang Max 1.5 EC, Movento MPC + 435 oil at applied at 5 gpa, Agri-Mek 0.15 EC + Admire Pro + 435. There were no significant differences in number of live nymphs among Movento 240 SC + 435 Oil treatments from 17 through 51 DAT except at 51 DAT when significantly more nymphs were observed with the 120 gpa application. No significant differences were observed in number of CLM larvae or empty mines at 51 DAT (data not shown). All treatments compared to the untreated check provided significant reduction in ACP adults through 44 DAT with no significant differences among sprayed treatments except for higher numbers in response to the 10 gpa spray of Movento + Oil at 10 DAT and fewer with 5 gpa of the same compared to 120 gpa at 24 DAT. At 51 DAT no differences compared to the check were seen with Mustang Max 1.5 EC Movento MPC + 435 oil at 5 gpa or at 120 gpa.

 doi: 10.4182/amt.2012.D14

Treatment/ formulation	Rate amt product/acre	Sprayer	Total application volume/acre (gallons)	Dead ACP nymphs/shoot/tree 17 DAT	Live ACP nymphs (2-5 instars) /shoot			
					17 DAT	24 DAT	31 DAT	51 DAT
Untreated check				0.00c	6.92a	7.27a	6.93b	47.25a
Mustang Max 1.5 EC	4 oz	Proptec	5	0.12c	1.65b	3.70b	15.28a	17.80c
Baythroid XL 1 EC	3 oz	Proptec	5	0.00c	0.08c	1.50bc	1.92c	7.13c
Movento MPC + 435 Oil	16 oz + 3 gal	Proptec	5	0.55bc	1.95b	1.98bc	3.33bc	17.33c
Movento MPC + 435 Oil	16 oz + 3 gal	Proptec	10	0.62abc	0.67bc	1.57bc	2.82c	15.70c
Movento MPC + 435 Oil	16 oz + 3 gal	Airblast	40	1.32ab	1.98b	1.95bc	1.42c	8.05c
Movento MPC + 435 Oil	16 oz + 3 gal	Airblast	120	1.08ab	1.35bc	2.77bc	2.90c	30.58b
Agrimek 0.15 EC + Admire Pro 4.6 SC + 435 Oil	10 oz + 3.5 oz + 3 gal	Airblast	120	1.63a	0.57bc	1.38c	3.98bc	15.90c

Means in a column followed by the same letter are not significantly different (P > 0.05, LSD).

doi: 10.4182/amt.2012.D14

Treatment/formulation	Rate amt product/ acre	Sprayer	Total application volume/acre (gallons)	ACP Adults /tap sample							
				3 DAT	10 DAT	17 DAT	24 DAT	31 DAT	38 DAT	44 DAT	51 DAT
Untreated check				0.43a	0.53a	0.90a	1.18a	0.76a	0.49a	0.88a	0.60a
Mustang Max 1.5 EC	4 oz	Proptec	5	0.00b	0.01c	0.08b	0.18bc	0.05b	0.13b	0.28b	0.70a
Baythroid XL 1 EC	3 oz	Proptec	5	0.00b	0.01c	0.04b	0.10bc	0.08b	0.05b	0.10b	0.25b
Movento MPC + 435 Oil	16 oz + 3 gal	Proptec	5	0.00b	0.06c	0.26b	0.08c	0.20b	0.13b	0.13b	0.44ab
Movento MPC + 435 Oil	16 oz + 3 gal	Proptec	10	0.09b	0.20b	0.09b	0.24bc	0.29b	0.16b	0.16b	0.23b
Movento MPC + 435 Oil	16 oz + 3 gal	Airblast	40	0.04b	0.09bc	0.09b	0.20bc	0.10b	0.11b	0.09b	0.14b
Movento MPC + 435 Oil	16 oz + 3 gal	Airblast	120	0.10b	0.13bc	0.16b	0.33b	0.20b	0.14b	0.25b	0.44ab
Agrimek 0.15 EC + Admire Pro 4.6 SC + 435 Oil	10 oz + 3.5 oz + 3 gal	Airblast	120	0.01b	0.06c	0.11b	0.19bc	0.05b	0.16b	0.23b	0.19b

Means in a column followed by the same letter are not significantly different (P > 0.05, LSD).