

(D15)**ORANGE:** *Citrus sinensis* (L.) Osbeck, ‘Hamlin’**SOIL APPLIED INSECTICIDAL CONTROL OF ASIAN CITRUS PSYLLID AND CITRUS LEAFMINER, 2010****Philip A. Stansly**

University of Florida/ IFAS
Southwest Florida Res. and Ed. Center
2686 State Road 29 North
Immokalee, FL 34142-9515
Phone: (239) 658-3400
Fax: (239) 658-3469
Email: pstansly@ufl.edu,

Barry Kostyk

Email: bkostyk@ufl.edu

Asian citrus psyllid (ACP): *Diaphorina citri* Kuwayama

Citrus leafminer (CLM): *Phyllocnistis citrella* Stainton

ACP and CLM are economically important pests of Florida citrus due to direct damage of new shoots and especially, their role in spreading of greening disease (“huanglongbing”) or exacerbating citrus canker, respectively. The trial was conducted at the University of Florida Southwest Research and Education Center in Immokalee, Florida, on young ‘Hamlin’ orange trees budded to ‘US-802’ pummalo x trifoliolate rootstock and planted May 2010, 8 ft apart within rows spaced at 18 ft. However, rates per acre were based on an assumed density of 145 trees per acre. Five treatments were assigned to 6-tree plots in an RCB design with 4 replicates. Weeds, debris and leaf litter were removed from beneath each tree prior to application. An 8 oz suspension was applied 19, 20 Jul to bare soil within 8 inches of the trunk of the tree using an EZ-Dose® sprayer operating at a pressure of 45 PSI and a flow rate of 3.7 gpm. Trees were sampled when new growth (flush) was available, but only CLM were found in 2010. Five young shoots were sampled per plot and larvae counted from 3 leaves per shoot using a stereoscopic microscope. On 4 Mar 2011, one branch on two trees per each plot was caged with a Trimaco 1 gallon Elastic Top Paint Strainer (nylon mesh) into which 15 adult ACP obtained from a lab reared colony were released. Cages were removed 17 days later on 21 Mar. Five flushes per plot were sampled at that time and again on 19 Apr when leafminers larvae were also present. Psyllid eggs and nymphs and CLM larvae were counted as above. The procedure was repeated on 27 Apr 2011 with 10 adult ACP obtained from a lab-reared colony that were left in the cages for 14 d. Ten shoots per treatment were again sampled and psyllid egg, nymphs and leafminer larvae counted as before.

All treatments significantly reduced the number of CLM larvae compared to the untreated control through 8 Nov, with all but Admire Pro still showing activity on 11 May (295-296 DAT) (Table 1). All treatments significantly reduced the number of psyllid eggs on 21 Mar as did the high and low rates of HGW 20 SC on 19 Apr (273-274 DAT) (Table 2). All treatments reduced the number of ACP nymphs on 19 Apr. The middle and high rates of HGW 20 SC still showed activity on 11 May, with the high rate reducing infested flush to 40% from 100%. Thus all rates of HGW 20 SC remained active against CLM in these young trees for almost 10 months as did the medium and high rate against ACP. Even at the lowest rate of 10.25 oz/ac suppressed ACP for 9 months. Excessively prolonged residual activity would also prolong selection for resistance. Lower rates sufficient to protect trees of this size for no more than 3 months would allow time within the same season to rotate modes of action as a resistance management strategy.

Table 1

	Rate Product/acre	Leafminer larvae per 3 leaves				
		10-Sep	23-Sep	8-Nov	19 Apr	11 May
Untreated		4.40a	15.70a	5.25a	2.33a	2.10a
Admire Pro 4.6 SC	7.0 fl. oz	0.00b	0.00b	0.40b	1.40ab	1.40ab
Platinum 75 WG	2.67 oz	0.00b	0.10b	0.55b	0.63bc	0.80bc
HGW 20 SC	10.25 fl. oz	0.00b	0.00b	0.40b	0.06c	0.00c
HGW 20 SC	15.38 fl. oz	0.00b	0.00b	0.00b	0.06c	0.00c
HGW 20 SC	24.97 fl. oz	0.00b	0.00b	0.00b	0.00c	0.00c

Means followed by same letter within a column are not statistically different LSD P>0.05)

Table 2

Treatment	Rate/acre	21 Mar		19 Apr		11 May	Infested Shoots (%)
		Eggs	Nymphs	Eggs	Nymphs	Nymphs	
Untreated		21.85a	3.85	13.07ab	42.40a	92.10a	100
Admire Pro	7.0 fl. oz	5.30b	1.35	5.53bc	26.07ab	57.60ab	100
Platinum 75 WG	2.67 fl. oz	1.60b	0.40	16.56a	19.25bc	44.90ab	100
HGW 20 SC	10.25 fl. oz	2.05b	0.65	0.75c	0.31c	61.90ab	100
HGW 20 SC	15.38 fl. oz	0.55b	0.05	6.63bc	9.31bc	11.90b	80
HGW 20 SC	24.97 fl. oz	4.10b	2.55	0.25c	0.25c	13.00b	40

Means followed by same letter within a column are not statistically different LSD P>0.05)