

## Blackheaded Fireworm control 2008 Progress Report

**Title:** Development of effective management strategies for fireworm.

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### Results:

*Evaluate reduced-risk chemicals applied through chemigation for control of fireworm*

Methods: Two trials on first and second generation fireworm were conducted ( 1<sup>st</sup> generation in Grayland WA (7'x6' plots, 4 replications), 2<sup>nd</sup> generation Long Beach (7'x6' plots, 4 replications) to assess the efficacy of new insecticides when applied through simulated chemigation systems. An untreated control and Diazinon treatment were used as comparisons. Efficacy was measured based by assessing larva in 10 sweeps per plot. Dates of application and assessment are provided in the tables.

### Results:

Experiment 1: For first generation fireworm control most chemistries provide excellent control. There was no difference between insecticides for the first application, by the second application fireworm counts were too low to make strong inferences. However, Esteem, Vemon and Rimon appeared to be less effective than the other insecticides. Overall there was a slight difference in efficacy between the 3.25 and 6.5 oz/ac rate of Delegate.

### WSU Long Beach Blackheaded Fireworm insecticide screening # 1 2008

Treatment	First generation blackheaded fireworm assessed 5/19/2008									
	small larva		medium larva		large larva		total		Total alive + dead	
	alive	dead	alive	dead	alive	dead	alive	dead		
CONTROL		6.5	4.5	4.0	3.0	0.5	0.0	7.5	11.0	18.5
Delegate	3.25 oz wt/a	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.5
Assail	8 oz/a	0.5	0.3	0.0	0.0	0.0	0.0	0.3	0.5	0.8
Avaunt	6 oz/a	0.0	1.3	0.0	0.0	0.0	0.0	1.3	0.0	1.3
Diazinon	2 qt/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Altaclor	0.066 lb ai/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rimon	40 fl oz/a	0.3	0.5	0.0	0.0	0.0	0.0	0.5	0.3	0.8
Vemon	3 oz/a	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.5
Tesoro	6.4 oz/a	0.5	0.0	0.3	0.0	0.0	0.0	0.0	0.8	0.8
Calypso	6 oz/a	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.3
Esteem	5 oz/a	0.3	0.3	0.3	0.0	0.0	0.0	0.3	0.5	0.8
Delegate	6.5 oz wt/a	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.3
LSD (P=.05)		2.30	1.16	2.39	1.18	0.42	0.00	1.98	4.98	6.62
Treatment Prob(F)		0.0001	0.0001	0.0723	0.0004	0.4671	1.0000	0.0001	0.0038	0.0001
Treatment	First generation blackheaded fireworm assessed 6/12/2008									
	small larva		medium larva		large larva		total		Total alive + dead	
	alive	dead	alive	dead	alive	dead	alive	dead		

CONTROL		0.3	0.3	0.0	0.3	0.8	0.0	1.0	0.5	1.5
Delegate	3.25 oz wt/a	0.0	0.5	0.3	0.0	0.3	0.0	0.5	0.5	1.0
Assail	8 oz/a	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.5
Avaunt	6 oz/a	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.5
Diazinon	2 qt/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Altaclor	0.066 lb ai/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rimon	40 fl oz/a	0.5	0.3	0.3	0.5	0.8	0.3	1.5	1.0	2.5
Vemon	3 oz/a	0.0	0.0	0.0	0.8	0.5	1.0	0.5	1.8	2.3
Tesoro	6.4 oz/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calypso	6 oz/a	0.0	0.0	0.5	0.5	0.3	0.8	0.8	1.3	2.0
Esteem	5 oz/a	0.0	0.0	0.5	0.3	2.3	1.3	2.8	1.5	4.3
Delegate	6.5 oz wt/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSD (P=.05)		0.47	0.38	0.58	0.72	0.91	1.02	1.41	1.08	1.41
Treatment Prob(F)		0.5458	0.1784	0.4671	0.3356	0.0007	0.1408	0.0092	0.0111	0.0092

4 replications, 7x8' plots, in a heavily infested McFarlin bed in Grayland WA. Treatment applied to first generation 5/19/2008 and 6/4/2008 with 50 gpa spray volume followed by 620 gpa washoff. Data were collected from 10 sweeps per plot.

Experiment 2: For second generation fireworm control both rates of Delegate were as effective as Diazinon. Intrepid was no better than the control.

#### WSU Long Beach Blackheaded Fireworm insecticide screening # 2 2008

Treatment	Second generation blackheaded fireworm assessed 4 days after treatment 7/24/08								
	small larvea		medium larvea		large larvea		total alive	total dead	total larvae
	alive	dead	alive	dead	alive	dead			
CONTROL	0.8	0.0	1.3	1.3	1.8	0.0	3.8	1.3	5.0
Delegate 3.25 oz wt/a	0.0	0.8	0.0	0.3	0.0	0.0	0.0	1.0	1.0
Delegate 6.5 oz wt/a	0.0	0.8	0.0	0.5	0.3	0.0	0.3	1.3	1.5
Diazinon 2 qt/a	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	2.0
Intrepid 16 fl oz/a	0.5	0.5	1.3	1.5	0.3	0.0	2.0	2.0	4.0
LSD (P=.05)	1.29	1.74	0.98	2.46	0.58	0.00	0.58	0.00	3.47
Treatment Prob(F)	0.5980	0.7700	0.0176	0.5388	0.0001	1.0000	0.0188	0.9199	0.1153

4 replications, 7x8' plots, in a heavily infested Stevens bed in Long Beach WA. Treatment applied to second generation fireworm on 7/21/08 with 50 gpa spray volume followed by 620 gpa washoff. Data were collected from 10 sweeps per plot on 7/24/08.

Conclusion: Only two studies were conducted on fireworm and neither site had ideal conditions make strong conclusion. Delegate appears to be an excellent contender for replacing Diazinon for application through chemigation system. Not enough data is available, however, to determine if the 3.5 oz/ac rate of Delegate is adequate for achieving consistent efficacy through chemigation. Altaclor is another chemistry that looks very promising but more data will be required to determine if it is consistent.