

## Control of Cucumber Beetles in Pickling Cucumbers with Seed Treatments and In-Furrow Insecticides – 2008

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The variety ‘Vlaspik’ was planted on June 9 at the University of Delaware’s Research and Education Center located near Georgetown, DE. Plots consisted of four 20 ft-long plots planted on 30 inch centers. Each treatment was replicated four times in a randomized complete block design. All in-furrow treatments were applied to an open furrow on June 9 immediately before planting with a one nozzle sprayer delivering 7.7 gallons per acre at 40 psi. The Cruiser and Sepresto treatments were applied to seeds using a film-coating technique in Dr. Alan Taylor’s laboratory.

On June 19, the excised leaf bioassay was conducted by placing the petioles of three cotyledon leaves in a small block of florist foam that was moistened with water. These leaves were placed in a small, square plastic take out container. Five field collected cucumber beetles were placed in each container and mortality and leaf damage were recorded at 24, 48, 72 and 96 hours. On June 30, a second bioassay was conducted using two fully expanded true leaves from plants that were in the 4 -leaf stage of development. Four field collected cucumber beetles were placed in each container and mortality and leaf damage recorded at 72 hours.

Field data was collected from plant emergence through early fruit formation. Data collected included stand counts and cucumber beetle counts ( number of alive and dead beetle per 10 plants). Overall field populations were extremely light and beetles were not found in the plots until early July.

### I. Laboratory Bioassays

		Laboratory Bioassay – Cotyledon Stage (June 19 -10 DAP) *							
Treatment	Rate	24 Hours		48 Hours		72 Hours		96 Hours	
		% Mortality	Defol.**	% Mortality	Defol.**	% Mortality	Defol.**	% Mortality	Defol.**
Untreated	----	0.00	2.00a	0.00c	3.00a	0.00b	3.00a	0.00b	3.00a
Admire Pro– in furrow	7 oz/A								
Platinum 2SC – in furrow	8 oz								
Sepresto (seed treatment)	1.00 mg ai/seed	10.00	1.00b	45.00b	1.50b	70.00a	1.50b	80.00a	1.50b
Cruiser (seed treatment)	0.75 mg ai/seed	15.00	1.00b	75.00a	1.25b	75.00a	1.25b	85.00a	1.25b
F		0.47	102.60	7.59	126.60	7.59	74.45	7.59	
Pr>F		0.6481	<.0001	<.0001	0.0227	<.0001	0.0227	<.0001	0.0227

\*\* Defoliation Rating – 1= light (<10%); 2 = moderate (10-50%); 3 = heavy (> 50%)

Means within a column followed by the same letter are not significantly different ( P=0.05; Tukey’s Mean Separation Test).

**Laboratory Bioassay – Four True Leaf Stage  
(June 30 -20 DAP)**

Treatment	Rate	72 Hours	
		% Mortality	Defol.*
Untreated	----	0.00b	2.00a
Admire Pro– in furrow	7 oz/A	62.50a	1.00b
Platinum 2SC – in furrow	8 oz	75.00a	1.00b
Sepresto (seed treatment)	1.00 mg ai/seed	68.75a	1.00b
Cruiser (seed treatment)	0.75 mg ai/seed	81.25a	1.00b
F		15.11	
Pr>F		0.0001	<.0001

\* Defoliation Rating – 1= light (<10%); 2 = moderate (10-50%); 3 = heavy (> 50%)

Means within a column followed by the same letter are not significantly different ( P=0.05; Tukey's Mean Separation Test).

## II. Field Evaluations

Treatment	Rate	Stand Count per 2 rows ( 40 ft)	Number of Beetles per 10 Plants			
			July 3		July 7	
		June 15	Alive	Dead	Alive	Dead
Untreated	----	88.75	1.00a	0.00	1.00	0.00
Admire Pro– in furrow	7 oz/A	85.75	0.00b	0.00	0.00	0.25
Platinum 2SC – in furrow	8 oz	74.00	0.00b	0.25	0.00	0.25
Sepresto (seed treatment)	1.00 mg ai/seed	76.75	0.00b	0.75	0.00	0.00
Cruiser (seed treatment)	0.75 mg ai/seed	90.00	0.50ab	0.00	0.00	0.00
F		2.75	4.80	0.81	3.00	0.69
Pr>F		0.0783	0.0152	0.5426	0.0625	0.6114

Means within a column followed by the same letter are not significantly different ( P=0.05; Tukey's Mean Separation Test).