

Insect Management in Watermelons with Chemigation - 2005: 'Jamboree ' melon transplants were planted on May 31 at the University of Delaware Research and Education Center located near Georgetown, DE. Plots consisted of two 50 ft-long rows on 8 ft centers. Each treatment was replicated five times and arranged in a RCB design. Chemigation treatments were applied on three dates: June 13, 30 and July 13. Cucumber beetle, aphid and spider mite populations were evaluated on a weekly basis from June 6 through July 27. Beetle and aphid populations were assessed by looking at 10 plants per plot to determine the percent infested plants, the number of beetles per 10 plants, and the number of aphids per 50 leaves. On the early evaluation dates, 50 leaves were examined per plot to determine the number of spider mites per leaf. On the last 2 evaluation dates, 20 leaves per plot were collected and a mite brushing machine was used to determine the number of mites per leaf. On Aug 2, all crown fruit was collected from each plot. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Insect and mite populations were moderate. The Vydate and Lannate treatments provided significantly better cucumber beetle control on June 17(4 days after first chemigation) and July 27 (14 days after the third chemigation). Both treatments also provided significantly better aphid control on June 17 compared to the untreated check. The Lannate treatment had a significantly higher spider mite count and a significantly higher percentage of spider mite infested plants compared to the untreated check on July 27. No phytotoxicity was observed.

Table 1. Cucumber Beetles Counts

Treatment	Rate/A/ Appl.	Cucumber Beetle per 10 Plants								
		June 6	June 13	June 17	June 22	June 30	July 6	July 13	July 20	July 27
Vydate 2L	64 oz	4.00a	10.00a	0.00b	1.40a	3.00a	0.00a	0.60a	0.40a	0.20b
Lannate LV	48 oz	0.50a	9.40a	0.20b	1.00a	2.00a	1.20a	0.40a	1.80a	0.20b
Untreated	-----	8.00a	6.80a	10.60a	5.40a	3.00a	0.40a	1.00a	1.00a	1.50a

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05).

Table 2. Cucumber Beetle Infested Plants

Treatment	Rate/A/ Appl	Percent Cucumber Beetle Infested Plants								
		June 6	June 13	June 17	June 22	June 30	July 6	July 13	July 20	July 27
Vydate 2L	64 oz	22.50a	54.00a	0.00b	20.00a	14.00a	2.00a	4.00a	4.00a	2.00b
Lannate LV	48 oz	5.00a	62.00a	0.00b	26.00a	12.00a	8.00a	2.00a	12.00a	2.00b
Untreated	-----	42.40a	42.00a	70.00a	36.00a	22.00a	4.00a	4.00a	10.00a	14.00a

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05).

Table 3. Melon Aphid Count

Treatment	Rate/A/ Appl.	Melon Aphids per 50 leaves								
		June 6	June 13	June 17	June 22	June 30	July 6	July 13	July 20	July 27
Vydate 2L	64 oz	0.25a	18.40a	0.00b	0.00a	0.40a	0.40a	0.00a	0.20a	0.20a
Lannate LV	48 oz	2.50a	40.40a	0.00b	0.00a	0.00a	0.00a	0.00a	0.60a	0.60a
Untreated	-----	1.25a	5.80a	17.60a	20.40a	184.60a	117.20a	3.40a	1.20a	1.20a

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05).

Table 4. Melon Aphid Infested Plants

Treatment	Rate/A/ Appl.	Percent Melon Aphid Infested Plants								
		June 6	June 13	June 17	June 22	June 30	July 6	July 13	July 20	July 27
Vydate 2L	64 oz	2.50a	10.00a	0.00a	0.00a	2.00a	2.00a	0.00a	0.00a	2.00a
Lannate LV	48 oz	10.00a	26.00a	0.00a	0.00a	0.00a	0.00a	0.00a	0.00a	2.00a
Untreated	-----	10.00a	14.00a	22.00a	10.00a	14.00a	26.00a	2.00a	2.00a	8.00a

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05).

Table 5. Spider Mite Count

Treatment	Rate/A/Appl.	Spider Mites per 50 Leaves				Spider Mites per 20 leaves	
		Jun 17	June 30	July 6	July 13	July 20	July 27
Vydate 2L	64 oz	0.60a	9.00a	43.20a	65.20a	96.00a	45.00ab
Lannate LV	48 oz	0.40a	3.00a	86.00a	89.80a	131.80a	98.40a
Untreated	-----	0.20a	2.00a	51.40a	47.60a	51.80a	17.80b

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05). Data for spider mites were log transformed [$\log_{10}(n+1)$], non-transformed means are presented.

Table 6. Spider Mite Infested Plants

Treatment	Rate/A/Appl.	Percent Spider Mite Infested Plants					
		Jun 17	June 30	July 6	July 13	July 20	July 27
Vydate 2L	64 oz	0.40a	1.60a	5.60a	9.20a	31.00a	27.00ab
Lannate LV	48 oz	0.80a	3.20a	5.60a	11.60a	35.00a	36.00a
Untreated	-----	0.40a	1.60a	4.40a	6.80a	25.00a	18.00b

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05).

Table 7. Yield Data

Treatment	Rate/A/Appl.	Total Number Melons	Average Wt/Melon (lbs)	Total Wt Crown Fruit(lb)
Vydate 2L	64 oz	22.40a	20.81a	464.80 a
Lannate LV	48 oz	23.40a	21.10a	493.10a
Untreated	-----	19.20a	20.26a	396.10a

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05).