

## Section VII.

### Forage & Seed Insects

#### CONTROL OF INSECTS IN SPRING PEAS

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Field research plots were established on the Ron Johnson farm (near Farmington, WA) to evaluate the efficacy of insecticide treatments for the control of Pea aphid, *Acyrtosiphum pisum* (Harris) and Pea weevil, *Bruchus pisorum* L. on dry green wrinkled peas (variety Junes). A randomized complete block design (RCBD) was utilized with four replicates and 6x20 ft plots. Treatments consisted of 10 insecticides/combinations and an untreated check. Insecticides evaluated were:

1. Capture 2E (fenethrin)
2. Warrior (lambda-cyhalothrin)
3. Baythroid (cyfluthrin)
4. Dimethoate 267 (dimethoate)
5. Dimethoate 267 plus Imidan 75WP (dimethoate plus phosmet)
6. Dimethoate 267 plus Hasten (canola adjuvant)
7. Provado 75WP (imidacloprid)
8. Provado plus Baythroid (imidacloprid plus cyfluthrin)
9. Actara - CGA293343 – rate #1 (thiamethoxam)
10. Actara – CGA293343 – rate #2 (thiamethoxam)

Treatments were applied as a foliar spray on June 23, 1998 at 50% bloom using a CO<sub>2</sub> powered back-pack sprayer at 20 gpa/20 psi. All spray mixes were buffered to pH 5.0 except the two rates of CGA293343 at the request of Novartis. All treatments were rated by counts of PA (pea aphid) per ft<sup>2</sup> sample per replicate at PrCt (Pre-Count), 6, 10, 15 and 21 DAT (Days After Treatment). Yield data was collected by hand pulling meter square samples from each plot and harvesting through a stationary 'Vogel' thrasher. Counts of PW (pea weevil) damaged peas per 100 pea sample per replicate were made following harvest after weevil windows appeared in the seeds and expressed as percent weevil damage. 500 pea weight was collected from the harvested sample of each treatment expressed as grams per 500 peas.

Capture, dimethoate, Baythroid/Provado, Warrior, Provado and Baythroid provided similar control of PA through 21-DAT. A second tier of products, dimethoate/Imidan, dimethoate/Hasten and the high rate of Actara provided control significantly greater than the check but less than the better treatments.



Pea weevil damage was significantly greater than the check for all treatments except the low rate of Actara. Dimethoate and dimethoate/Hasten had higher percentage of weevil damage than the better treatments.

Evaluation of 500 pea gram weights showed the Capture, Dimethoate/Imidan, Warrior and Baythroid/Provado treatments to be significantly greater than other treatments and the check. All treatments provided higher 500 pea weights than the check. 500 seed weight showed a high correlation to percent weevil damage ( $r^2 = 0.7471$ ).

Yields of all treatments were significantly greater than the check and the low rate of Actara.

Discussions with representatives from Novartis suggested that hydrolysis of the spray solution may have reduced the efficacy of the Actara treatments since both the low and high rate of Actara were not buffered in the water solution.

Results are consistent with previous years studies that show newer classes of insecticides with "softer" chemistry have considerable potential for insect control in dry peas. This will become increasingly more important if provisions of the Food Quality Protection Act (FQPA) initiate procedures to reduce/eliminate the use of organophosphate and/or carbamate insecticides. In addition, use of the newer classes is less harmful to beneficial insects and enhances integrated pest management strategies.

#### APHID COUNTS

	(PrCl)	6 DAT	10 DAT	15 DAT	21 DAT
CHECK	5	55	238	570	495
B-CGA343	14	19	44	175	323
C-CGA343	1	2	5	64	159
DIMETHOATE	3	0	1	1	6
DIMETH/IMIDAN	3	1	1	2	33
CAPTURE	4	0	0	0	0
WARRIOR	11	1	4	3	5
BAYTHROID	3	4	6	16	18
BAY/PROVADO	8	1	5	2	11
PROVADO	9	4	3	11	17
DIMETH/HASTEN	10	5	26	30	58