Section VII
Foliage & Seed Insects

CONTROL OF INSECT PESTS IN SPRING CANOLA, 1995

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Plots were seeded 19 May with a small plot drill near Pomeroy WA at a rate of 6 lbs./acre. Four insecticides were applied 26 June at full bloom stage using a CO2 backpack sprayer calibrated to deliver 20GPA at 20PSI. All insecticides were buffered to pH 5.0 except for a methyl parathion standard treatment which was left unbuffered to reflect the industry practice. Plots were 20 x 30 ft., replicated 4 times in a randomized complete block design. Treatments were made 1-hour before sunset at 5 mph wind and 75 F. Treatments were evaluated at 0 (PrCt), 2, 4, 7, and 10-DAT using 2 beats into a white plastic bucket per replicate, except for cabbage aphid and aphid parasitoids which were visually counted as colonies of aphid per square meter, mean aphids per colony, and mean aphid parasitoids per aphid colony. Counts of cabbage seedpod weevil exit holes per 100 pods per replicate were made, and yield data was taken on 2 August. Harvest data were collected by cutting the canola at 2/3 brown seed pod stage, drying the plants, and processing them through a stationary threshing machine. 2.5 in. ppt. was received during the chemical evaluation period.

All treatments reduced CSPW populations compared to the check (Table 1.). Unbuffered methyl parathion and Imidan (TM) were not significantly different from the check at 10-DAT. Comparison of CSPW exit holes/100 pods and yield data show methyl parathion and Capture (TM) buffered to pH 5.0 to be significantly different from other treatments and the check (Table 2.). The enhanced yield in the Capture treatment was in part due to an apparent feeding inhibition (repellent) effect of bifenthrin on the adult CSPW, as CSPW were present but not making oviposition puncture in the pods. Both Imidan and Capture controlled diamond back moth larvae compared to the check and to other treatments (Table 3.). DBM larvae did not appear until 5-DAT in the trial. *Lygus* spp. bugs were present at low levels throughout the trial period, and all treatments provided some control, with Capture providing complete control through 10-DAT compared to the check (Table 4.). Both buffered methyl parathion and Capture provided significantly different control of cabbage aphid through 10-DAT compared to the check and other treatments (Table 5.).

The primary parasitoid of the cabbage aphid, *Diaeretiella rapae* (M'Tosh) (Hymenoptera:Aphidiidae) began to attack aphid in colonies in the check, Capture, and Imidan treatments by 5-DAT through 10-DAT (Table 6.).

Purposes of this experiment were to: 1) determine effect of chemicals under trial on natural enemies of cabbage aphid; 2) determine efficacy of treatments applied on full bloom canola rather than pod formation canola, and 3) compare buffering of methyl parathion vs. non-buffered methyl parathion. Bifenthrin (Capture) has been determined by Dan Mayer to be "bee safe" at the field rate of 0.04 AIA when applied to full bloom canola in trials.

TABLE 1.

Cabbage Seedpod Weevil/2 Beats

TREATMENT/FORM	Rate/A	PreCt	2-DAT	5-DAT	7-DAT	10-DAT
Methyl Parathion 8E	0.50	3.50a	0.25a	0.00a	0.75ab	1.00ab
Capture 2E	0.04	3.75a	0.00a	0.00a	0.00a	0.00a
Imidan 70W	1.0	3.75a	0.00a	0.00a	0.00a	0.00a
Methyl Parathion 8 NB	0.5	3.75a	0.00a	0.50b	0.75ab	1.25ab
Check	--	3.75a	1.75b	0.50b	1.50b	1.25ab

TABLE 2.

Cabbage Seedpod Weevil Damage and Canola Yield

TREATMENT/FORM	Rate/A	CSPW holes/ 100 pods	Canola Yield (lbs/Acre)
Methyl Parathion 8E	0.50	2.75a	2758.48b
Capture 2E	0.04	2.50a	2998.35bc
Imidan 70W	1.0	26.75bc	2158.81ab
Methyl Parathion 8 NB	0.5	10.00b	2038.88ab
Check	--	190.00c	1799.01a

TABLE 3.

Diamond Back Moth Larvae/2 Beats

TREATMENT/FORM	Rate/A	PreCt	2-DAT	5-DAT	7-DAT	10-DAT
Methyl Parathion 8E	0.50	0.00a	0.00a	0.25ab	1.75b	1.50b
Capture 2E	0.04	0.00a	0.00a	0.00a	0.00c	0.00c
Imidan 70W	1.0	0.00a	0.00a	0.50ab	0.00c	0.00c
Methyl Parathion 8 NB	0.5	0.00a	0.00a	1.25a	4.50ab	2.75ab
Check	--	0.00a	0.00a	0.50ab	13.0a	10.75a

TABLE 4.

		Lygus sp./2 Beats				
TREATMENT/FORM	Rate/A	PreCt	2-DAT	5-DAT	7-DAT	10-DAT
Methyl Parathion 8E	0.50	0.75a	0.00a	0.25b	1.50b	1.50b
Capture 2E	0.04	0.75a	0.00a	0.00a	0.00a	0.00a
Imidan 70W	1.0	1.00a	0.00a	0.75b	1.50b	1.50b
Methyl Parathion 8 NB	0.5	1.00a	0.50b	1.25bc	1.50b	2.50bc
Check	--	1.25a	0.25b	1.25bc	3.25c	3.75c

TABLE 5.

		Cabbage Aphid colonies/meter sq. (Mean aphids/colony)				
TREATMENT/FORM	Rate/A	PreCt	2-DAT	5-DAT	7-DAT	10-DAT
Methyl Parathion 8E	0.50	3.50a (96.5)	0.25b (50.0)	0.50a (3.25)	1.00b (4.25)	1.00b (4.50)
Capture 2E	0.04	3.75a (98.0)	0.00a (0.00)	0.25a (1.00)	0.25a (1.00)	0.25a (1.00)
Imidan 70W	1.0	3.75a (95.5)	1.75bc (50.0)	2.25b (21.5)	3.00bc (65.0)	3.00bc (100.0)
Methyl Parathion 8 NB	0.5	3.50a (97.5)	3.00c (55.0)	3.00b (60.0)	3.25bc (77.0)	3.25bc (120.0)
Check	--	3.50a (97.5)	3.75c (200.0)	4.00ac (275.0)	5.50c (182.5)	6.25c (237.5)

TABLE 6.

		D. rapae Parasitoids/Aphid Colony				
TREATMENT/FORM	Rate/A	PreCt	2-DAT	5-DAT	7-DAT	10-DAT
Methyl Parathion 8E	0.50	0.00a	0.00a	0.00a	0.00a	0.00a
Capture 2E	0.04	0.00a	0.00a	0.25b	0.25b	0.25b
Imidan 70W	1.0	0.00a	0.00a	1.00b	0.75b	0.50b
Methyl Parathion 8 NB	0.5	0.00a	0.00a	0.00a	0.00a	0.00a
Check	--	0.00a	0.00a	0.25b	21.25c	27.5c

All products buffered to pH 5.0 except Methyl Parathion 8 NB
Means followed by same letter are not significantly different
(p = 0.05; LSD)