Weed Control in Green Peas.

Tim Miller and Carl Libbey, WSU-Mount Vernon

Green peas (cv. 'Charo') were used for three herbicide studies conducted at WSU-Mt. Vernon in 1998. The first study compared preplant-incorporated (PPI) and preemergence (PRE) herbicides used alone and in combination, the second used postemergence (POST) herbicides used alone and in combination, and the third study was a plant-back study to determine the potential for herbicides used in green peas persisting in the soil to injure rotational crops.

1. PPI/PRE study. PPI and PRE treatments were were applied May 22 and May 23, 1998, respectively; plots were seeded May 22, 1998. Crop injury and general weed control was visually estimated June 12, 1998. A 1-m^2 quadrat was placed within each plot July 29, 1998, and pea plants in the quadrat were counted, and yield components determined from those samples.

2. POST study. Plots were seeded May 22, 1998. POST herbicides were applied on June 12, 1998, when peas were at the 4-leaf stage. Crop injury and general weed control was visulally estimated June 24, 1998. A 1-m^2 quadrat were placed within each plot July 30, 1998, and pea plants in the quadrat were counted, and yield components determined from those samples.

3. Plant-back study. PPI and PRE treatments were were applied May 22 and May 23, 1998, respectively; plots were seeded May 22, 1998. POST herbicides were applied on June 12, 1998, when peas were at the 4-leaf stage. Crop injury and general weed control was visually estimated June 16, 1998. A 1-m^2 quadrat was placed within each plot August 4, 1998, and pea plants in the quadrat were counted, and yield components determined from those samples. Rotational crops grown in these plots will now be monitored for herbicide carryover symptoms. Cabbage (cv. 'Tropicana') was transplanted September 10, winter wheat (cv. 'Cashup') was seeded October 1, and tulips (cv. 'Negrita') were planted October 6, 1998. Crops to be planted in the spring of 1999 are spinach, table beets, potatoes, field corn, and cucumbers. Weed control in the rotational crops will be as typical for commercial production for that crop. Rotational crops will be periodically monitored for herbicide injury as based on symptomology, height, biomass, and yield.

Table 1. Preplant-incorporated and preemergence herbicides and herbicide combinations tested in green peas (1998).

Herbicide	Rate	Timing[1]	Crop Injury[2]	Weed Control[2]	Plant pop.[3]	Pods/ plant	Yield
	(product/a)		(%)	(%)			(ton/a)
Command	0.5 pt	PPI	1	98	3.71	3.1	0.99
Command	1 pt	PPI	13	100	3.61	4.0	1.53
Sencor/Lexone	5.3 oz	PRE	5	95	4.07	3.6	1.96
Sencor/Lexone	8.1 oz	PRE	4	97	4.01	3.0	1.38
Dual Magnum	1.5 pt	PRE	53	100	3.61	3.6	1.26
Dual Magnum	3 pt	PRE	74	100	3.55	3.8	1.73
Prowl	1.2 pt	PRE	3	96	4.02	3.8	1.50
Prowl	2.4 pt	PRE	9	96	3.72	4.5	1.95
Prowl	3.6 pt	PRE	19	95	3.23	4.6	1.80
Treflan	1 pt	PPI	8	88	3.53	3.8	1.45
Treflan	1.5 pt	PPI	26	100	3.34	5.1	2.12
Command +	0.5 pt	PPI	8	100	3.68	4.1	1.98
Sencor/Lexone	5.3 oz	PRE					
Dual Magnum +	1.5 pt	PRE	61	100	3.97	4.1	1.98
Sencor/Lexone	5.3 oz	PRE					
Prowl +	1.2 pt	PRE	5	100	3.80	4.1	2.10
Sencor/Lexone	5.3 oz	PRE					
Treflan +	1 pt	PPI	6	100	3.75	3.7	1.63
Sencor/Lexone	5.3 oz	PRE					
Untreated	---	---	0	0	3.70	3.4	1.32
$LSD_{0.05}$	---	---	6	5	ns	ns	ns

[1]PPI = preplant incorporated, applied 5/21/98; PRE = preemergence, applied 5/23/98.

[2]Crop injury and weed control estimated 6/12/98.

[3]Plants per acre (x 100,000).

Table 2. Postemergence[1] herbicides and herbicide combinations tested in green peas (1998).

Herbicide	Rate	Crop Injury[2]	Weed Control [2]	Plant pop.[3]	Pods/ plant	Yield
	(product/a)	(%)	(%)			(ton/a)
Reflex + X77	1 pt + 0.6 pt	65	78	---	---	---
Reflex + X77	1.25 pt + 0.6 pt	75	85	---	---	---
Reflex + X77	1.5 pt + 0.6 pt	73	85	---	---	---
Sencor/Lexone	2.7 oz	2	91	4.14	4.7	3.34
Sencor/Lexone	5.3 oz	3	98	3.99	4.1	3.24
MCPA	0.75 pt	5	43	3.38	4.4	2.78
MCPB	3 qt	2	48	4.07	5.0	4.18
Basagran	1.5 pt	0	88	4.01	4.4	3.02
Basagran + MCPA	1 pt + 0.5 pt	2	67	4.11	4.4	4.04
Basagran + MCPB	1 pt + 2 pt	2	83	3.72	4.9	3.21
Basagran + Sencor/Lexone	1 pt + 2.7 oz	0	96	4.18	4.2	3.05
Basagran + MCPA	0.5 pt + 0.75 pt	5	72	3.79	4.3	3.08
Basagran + MCPB	0.5 pt + 3 pt	2	62	3.21	4.1	2.49
Basagran + Sencor/Lexone	0.5 pt + 5.3 oz	5	99	3.60	4.0	2.97
Untreated	---	0	0	3.95	4.2	2.80
$LSD_{0.05}$	---	6	18	ns	ns	ns

[1]Postemergence treatments applied 6/12/98.

[2]Crop injury and weed control estimated 6/24/98.

[3]Plants per acre (x 100,000).

Table 3. Plant-back green pea study (1998).

Herbicide	Rate	Timing[1]	Crop Injury	Weed Control	Plant pop.[2]	Pods/ plant	Yield
	(product/a)		(%)	(%)			(ton/a)
Motive	0.26 pt	EPOE	21	83	4.56	3.6	2.67
+ 32-0-0	3 pt	EPOE					
+ X77	0.6 pt	EPOE					
Motive	0.32 pt	EPOE	28	85	3.70	3.9	2.45
+ 32-0-0	3 pt	EPOE					
+ X77	0.6 pt	EPOE					
Prowl	2.4 pt	PRE	13	79	3.66	4.2	2.31
Prowl	2.4 pt	PRE	26	93	3.62	4.0	2.66
+ Motive	0.26 pt	EPOE					
+ X77	0.6 pt	EPOE					
Treflan	1.5 pt	PPI	18	76	3.43	4.8	3.24
Command	1 pt	PPI	19	99	4.07	4.5	3.26
Authority	5.3 oz	PRE	15	81	3.69	5.1	3.42
Reflex	1 pt	EPOE					
+ X77	0.6 pt	EPOE	94	89	1.57	3.1	0.67
Untreated	---	---	0	0	2.90	4.4	2.14
LSD	---	---	6	18	0.53	0.8	0.88

[1]PPI = preplant incorporated, applied 5/22/98; PRE = preemergence, applied 5/23/98; EPOE = early postemergence, applied 6/16/98.

[2]Crop injury and weed control estimated 6/24/98.

[3]Plants per acre (x 100,000).