

SAN LUIS VALLEY POTATO WEED CONTROL RESEARCH

PHILIP WESTRA PH.D
WEED SCIENCE
COLORADO STATE UNIVERSITY
FEB. 1987

The weed control research plots in 1986 were located at the Center Research Station, and we were fortunate to have the cooperation of Mr. Mike Thornton on this research. Both studies were replicated three times, and the data were analyzed with mean separation via Duncan's Multiple Range Test. Yields are reported as hundred weight per acre. All herbicide rates are listed as pounds of active ingredient per acre, NOT COMMERCIAL PRODUCT.

BROADLEAF CONTROL STUDY.

Nightshade control was poor to fair for many of the mixes, except for the DUAL + SENCOR mixes, LOROX + PROWL, and EPTAM + PROWL. Control of redroot pigweed, common lambsquarter, and barnyard grass was good to excellent for most herbicide mixes. EPTAM alone was weak on green foxtail and witchgrass. Some farmers like the EPTAM + TREFLAN mix because of its relative cheap cost, but this was one of the poorer mixes for general weed control. Although LOROX + PROWL was one of the best mixes evaluated, Dupont has indicated that they do not want to encourage the sale and use of LOROX in the valley, due to potential carry-over or leaching problems. The DUAL + SENCOR mixes were some of the best overall performers in this study.

POST-EMERGE GRASS CONTROL STUDY.

Six new grass herbicides were evaluated in this study where green foxtail and barnyard grass were the primary weeds present. All herbicides gave excellent control of both weed species. Weeds should be treated when 2 - 4 inches tall for best results with these herbicides. Only ASSURE caused some slight cosmetic injury, which did not lower yields significantly. All six herbicides must be applied with a crop oil concentrate at the rate of 1 quart per acre. Fusilade is less effective on green foxtail when it is large; some plants may survive and set viable seed. Currently, none of these is registered for use on potatoes, but it is hopeful that one will be registered in the next few years. If one of these were registered for use in potatoes, farmers would have a powerful tool for controlling late emerged grasses in potatoes.

POTATO BROADLEAF CONTROL SLV

Conducted at SAN LUIS VALLEY by COLORADO STATE UNIVERSITY
Project 347 with cooperater MIKE THORNTON

TRT. NUM.	PEST. NAME	RATE FORM	GROW. STAGE	BLACK NIGHTSHA %C 7-8	REDROOT PIGWEED %C 7-8	COMMON LAMBSQUAR %C 7-8	GREEN FOXTAIL %C 7-8	BARNYARD GRASS %C 7-8	WITCH GRASS %C 7-8	INJURY % 7-8
01	CHECK			0.0e	0.0e	0.0d	0.0c	0.0c	0.0d	0.0b
02	COBRA	2.0 E 0.30	TM	75.0c	91.7ab	96.7a	96.7a	96.7ab	90.0ab	0.0b
02	CINCH	7.0 E 1.0	PRE							
03	COBRA	2.0 E 0.30	TM	83.3abc	86.7b	95.0a	93.3ab	93.3ab	86.7abc	0.0b
03	DUAL	8.0 E 2.0	PRE							
04	COBRA	2.0 E 0.30	PRE	81.7abc	93.3ab	95.0a	93.3ab	96.7ab	96.7a	0.0b
04	GENEP	7.0 E 3.0	PPI							
05	COBRA	2.0 E 0.25	PRE	78.3bc	93.3ab	96.7a	96.7a	100.0a	96.7a	0.0b
05	GENEP	7.0 E 3.0	PPI							
05	SENCOR	.75 W 0.25	PRE							
06	EPTAM	7.0 E 3.0	PPI	25.0d	33.3d	41.7c	88.3b	100.0a	75.0c	0.0b
07	EPTAM	7.0 E 3.0	PPI	96.7ab	100.0a	100.0a	100.0a	100.0a	100.0a	56.7a
07	SENCOR	.75 W 0.50	POST							
08	PROWL	4.0 E 0.55	PRE	75.0c	100.0a	100.0a	100.0a	100.0a	100.0a	0.0b
08	SENCOR	.75 W 0.50	PRE							
09	TREFLAN	4.0 E 0.50	PPI	26.7d	73.3c	83.3ab	94.3ab	94.3ab	80.0bc	0.0b
09	EPTAM	7.0 E 2.0	PPI							
10	DUAL	8.0 E 2.5	PRE	80.0abc	75.0c	73.3b	100.0a	100.0a	100.0a	0.0b
11	DUAL	8.0 E 3.03	PRE	98.3ab	100.0a	100.0a	100.0a	100.0a	100.0a	0.0b
11	SENCOR	.75 W 0.67	PRE							
12	DUAL	8.0 E 2.25	PRE	96.7ab	100.0a	100.0a	100.0a	100.0a	100.0a	0.0b
12	SENCOR	.75 W 0.50	PRE							
13	LOROX	.50 W .75	PRE	68.3c	96.7a	100.0a	88.3b	91.7b	91.7ab	3.3b
14	SENCOR	.75 W 0.75	PRE	20.0d	100.0a	100.0a	100.0a	100.0a	95.0a	0.0b
15	LOROX	.50 W .75	PRE	100.0a	100.0a	100.0a	100.0a	100.0a	100.0a	0.0b
15	PROWL	4 E 1.5	PRE							
16	EPTAM	7 E 3.0	PPI	95.0ab	98.3a	100.0a	100.0a	100.0a	100.0a	0.0b
16	PROWL	4 E 1.5	PRE							

POTATO BROADLEAF CONTROL SLV

Conducted at SAN LUIS VALLEY by COLORADO STATE UNIVERSITY
 Project 346 with cooperater MIKE THORNTON

TRT. NUM.	PEST. NAME	RATE FORM	GROW. #ai/A	TOTYILD STAGE	MKTYILD POTATO	POTATO
01	CHECK				270.7a	224.7a
02	COBRA	2.0 E 0.30	TM		252.0a	201.7a
02	CINCH	7.0 E 1.0	PRE			
03	COBRA	2.0 E 0.30	TM		240.3a	195.0a
03	DUAL	8.0 E 2.0	PRE			
04	COBRA	2.0 E 0.30	PRE		300.7a	251.3a
04	GENEP	7.0 E 3.0	PPI			
05	COBRA	2.0 E 0.25	PRE		275.3a	226.3a
05	GENEP	7.0 E 3.0	PPI			
05	SENCOR	.75 W 0.25	PRE			
06	EPTAM	7.0 E 3.0	PPI		244.7a	191.7a
07	EPTAM	7.0 E 3.0	PPI		109.7b	77.3b
07	SENCOR	.75 W 0.50	POST			
08	PROWL	4.0 E 0.55	PRE		278.0a	220.7a
08	SENCOR	.75 W 0.50	PRE			
09	TREFLAN	4.0 E 0.50	PPI		261.7a	207.7a
09	EPTAM	7.0 E 2.0	PPI			
10	DUAL	8.0 E 2.5	PRE		241.7a	195.3a
11	DUAL	8.0 E 3.03	PRE		241.7a	190.0a
11	SENCOR	.75 W 0.67	PRE			
12	DUAL	8.0 E 2.25	PRE		273.7a	219.7a
12	SENCOR	.75 W 0.50	PRE			
13	LOROX	.50 W .75	PRE		266.3a	213.3a
14	SENCOR	.75 W 0.75	PRE		265.7a	217.0a
15	LOROX	.50 W .75	PRE		256.0a	206.0a
15	PROWL	4 E 1.5	PRE			
16	EPTAM	7 E 3.0	PPI		265.7a	214.3a
16	PROWL	4 E 1.5	PRE			

GRASS CONTROL IN POTATOES 1986

Conducted at SAN LUIS VALLEY by COLORADO STATE UNIVERSITY
Project 357 with cooperater MIKE THORNTON

TRT. NUM.	PEST. NAME	RATE FORM	GROW. STAGE	BARNYARD GREEN		POTATO %INJ7-8
				GRASS %C 7-8	FOXTAIL %C 7-8	
01	CHECK			0.0b	0.0b	0.0c
02	FUSILADE	1.0 E .125	POST	100.0a	100.0a	0.0c
03	FUSILADE	1.0 E .156	POST	100.0a	100.0a	0.0c
04	FUSILADE	1.0 E .188	POST	100.0a	100.0a	0.0c
05	FUSILADE	1.0 E .250	POST	100.0a	100.0a	0.0c
06	POAST	1.5 E .20	POST	100.0a	100.0a	0.0c
07	POAST	1.5 E .25	POST	100.0a	100.0a	0.0c
08	POAST	1.5 E .30	POST	100.0a	100.0a	0.0c
09	VERDICT	2 E .125	POST	100.0a	100.0a	0.0c
10	VERDICT	2 E .25	POST	100.0a	100.0a	0.0c
11	ASSURE	.80 E .10	POST	100.0a	100.0a	8.3b
12	ASSURE	.80 E .20	POST	100.0a	100.0a	16.7a
13	WHIP	3 E .10	POST	100.0a	100.0a	0.0c
14	WHIP	3 E .15	POST	100.0a	100.0a	0.0c
15	BASF 517	1.5 E .10	POST	100.0a	100.0a	0.0c
16	BASF 517	1.5 E .20	POST	100.0a	100.0a	0.0c

GRASS CONTROL IN POTATOES 1986

Conducted at SAN LUIS VALLEY by COLORADO STATE UNIVERSITY
Project 357 with cooperators MIKE THORNTON

TRT. NUM.	PEST. NAME	FORM	RATE #ai/A	GROW. STAGE	TOTYILD POT CWT	MKTYILD POT CWT
01	CHECK				303.3a	239.7a
02	FUSILADE	1.0 E	.125	POST	282.7a	223.7a
03	FUSILADE	1.0 E	.156	POST	265.0a	210.3a
04	FUSILADE	1.0 E	.188	POST	257.3a	195.0a
05	FUSILADE	1.0 E	.250	POST	279.0a	207.7a
06	POAST	1.5 E	.20	POST	266.0a	199.3a
07	POAST	1.5 E	.25	POST	247.7a	185.3a
08	POAST	1.5 E	.30	POST	276.7a	209.0a
09	VERDICT	2 E	.125	POST	225.0a	163.7a
10	VERDICT	2 E	.25	POST	272.7a	212.0a
11	ASSURE	.80 E	.10	POST	265.3a	203.3a
12	ASSURE	.80 E	.20	POST	244.3a	180.3a
13	WHIP	3 E	.10	POST	269.0a	205.7a
14	WHIP	3 E	.15	POST	290.0a	229.3a
15	BASF 517	1.5 E	.10	POST	238.7a	187.0a
16	BASF 517	1.5 E	.20	POST	242.0a	193.0a

