

Kansas State University

Field Pansy Control In No-Till Fields Going To Corn

Trial ID: CORN
Location: John Howard

Study Dir.: Jason Miller
Investigator: David L Regehr

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	VIORA	Pansy, field	Viola rafinesquii

SITE AND DESIGN

Plot Width, Unit: 6.7 FT Plot Length, Unit: 25 FT Reps: 4
Site Type: CROPLAND
Tillage Type: STRIP-TILL Study Design: FACTORIAL

	Previous Crops	Previous Pesticides	Year
1.	SOYBEANS	Various	2002

MAINTENANCE

Field Prep./Maintenance: Soybean stubble strip-tilled in fall 2002, to apply anhydrous ammonia. No other tillage prior to corn planting.

SOIL DESCRIPTION

Texture: silt loam, 4-8% slope
Soil Name: Marshall and Sharpsburg
Fert. Level: good

APPLICATION DESCRIPTION

	A	B
Application Date:	22/Nov/2002	5/Apr/2003
Time of Day:	2:15 PM	1:30 PM
Application Method:	SPRAY	SPRAY
Application Timing:	FALL	SPRING
Applic. Placement:	BROADCAST	BROADCAST
Air Temp., Unit:	53 F	48 F
% Relative Humidity:	40	54
Wind Velocity, Unit:	7 SW	7 ENE
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	41 F	50 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	0	60

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	VIORA COT-2 DIA	VIORA COT-3 DIA
Stage Scale:	0-1 IN	0-4 IN

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	BACKPACK	BACKPACK
Operating Pressure:	28	28
Nozzle Type:	TT	TT
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 IN	20 IN
Nozzles/Row:	4	4
Boom Length, Unit:	6.7 FT	6.7 FT
Boom Height, Unit:	15 IN	15 IN
Carrier:	WATER	WATER
Spray Volume, Unit:	15 GPA	15 GPA

Trt No	Treatment Application Comment
7	SPRAY BOOM PLUGGED. PLUGGED 2ND NOZZLE ON 4TH REP.

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Trial Comments

This experiment was designed to evaluate field pansy control in a no-till field ahead of corn. In Brown County, KS, identical treatments were applied either in the fall (11-22-02) or in the spring (4-5-03). The spring application was later than we would have liked, but windy weather pushed back the application date. All treatments contained a base of 0.5 lb/A 2,4-D (1 pt/A LV4) and 2 fl oz/A dicamba (Clarity) in order to control other winter annual broadleaf weeds. This was our first major effort to control field pansy, and herbicide rates were on the high side. The range in cost of treatments was approximately \$7 to \$22/A.

Visual ratings were taken in January and April, 2003. The main interest is in the April 22 rating, at corn planting. There was no precipitation for almost two months following the fall applications. Any herbicide effects noted in early January must therefore be due to foliar uptake only.

All the fall-applied treatments provided good to excellent control of field pansy, but control was generally better where treatments included atrazine. Fall applications containing atrazine gave 98% control, compared to 90% for treatments without atrazine. The average field pansy control for the spring applications was 95%. This was surprising, because other research has shown as low as 50% control of field pansy from 1 lb/A atrazine plus 2,4-D and dicamba applied in the spring. Paraquat (1.67 pt/A Gramoxone Max) applied in spring gave excellent control of field pansy in this experiment, but gave unsatisfactory control in the soybean experiment.

At this time, we still don't know much about the dynamics of field pansy. For example, is a fall control program adequate? How much early-spring germination is there, and do spring plants amount to much? A good bet for consistent and economical control of field pansy and other broadleaf winter annuals, ahead of corn or sorghum, is a fall application of 1.5 to 2 lb/A atrazine with 1 pt/A 2,4-D LV4 and 1 qt/A crop oil concentrate. This treatment should give excellent foliar burndown, plus provide adequate residual activity to control field pansy and other winter annuals that may germinate in early spring. If corn or sorghum producers wish to limit the atrazine rate to 1 lb/A, then we suggest addition of about 1.5 pt/A Gramoxone Max to improve consistency of control.

Atrazine application in fall is permitted in Kansas under a 24-C label. In areas where fall atrazine is not permitted, this experiment suggests non-triazine alternatives for fall or spring application that should give satisfactory control of field pansy.

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Weed Code Rating Data Type Rating Unit Rating Date Assessed By Trt-Eval Interval				VIORA CONTRO 1-100 3/Jan/2003 J.Miller 42 DA-A	VIORA CONTRO 1-100 5/Apr/2003 J. Miller 134 DA-A	VIORA CONTRO 1-100 22/Apr/2003 J.Miller 17 DA-B
Trt No.	Treatment Name	Product Rate	Product Rate Unit	1	2	3
1	Fall AAtrex 2,4-D Ester Clarity Crop Oil Conc	1 1 2 1	qt/a pt/a fl oz/a % v/v	70 b	89 ab	97 a
2	Fall AAtrex 2,4-D Ester Clarity Crop Oil Conc	2 1 2 1	qt/a pt/a fl oz/a % v/v	80 ab	95 ab	100 a
3	Fall AAtrex Python 2,4-D Ester Clarity Crop Oil Conc	1 1 1 2 1	qt/a oz/a pt/a fl oz/a % v/v	83 ab	89 ab	100 a
4	Fall AAtrex Balance Pro 2,4-D Ester Clarity Crop Oil Conc	1 2.25 1 2 1	qt/a fl oz/a pt/a fl oz/a % v/v	68 b	95 ab	100 a
5	Fall AAtrex Callisto 2,4-D Ester Clarity Crop Oil Conc	1 4 1 2 1	qt/a fl oz/a pt/a fl oz/a % v/v	85 ab	99 a	100 a
6	Fall AAtrex Basis 2,4-D Ester Clarity UAN Crop Oil Conc	1 0.5 1 2 2.5 1	qt/a oz/a pt/a fl oz/a % v/v % v/v	75 ab	99 a	100 a
7	Fall AAtrex Princep 80WP Gramoxone Max 2,4-D Ester Clarity Crop Oil Conc	1 1 1.67 1 2 1	qt/a lb ai/a pt/a pt/a fl oz/a % v/v	88 ab	90 ab	90 abc
8	Fall Gramoxone Max 2,4-D Ester Clarity NIS	1.67 1 2 0.25	pt/a pt/a fl oz/a % v/v	95 a	85 b	85 bc
9	Fall Gramoxone Max Aatrex 2,4-D Ester Clarity Crop Oil Conc	1.67 1 1 2 1	pt/a qt/a pt/a fl oz/a % v/v	85 ab	90 ab	90 abc
10	Fall Gramoxone Max Aatrex 2,4-D Ester Clarity Crop Oil Conc	1.67 2 1 2 1	pt/a qt/a pt/a fl oz/a % v/v	95 a	99 a	100 a
11	Fall RoundupUltra Max 2,4-D Ester Clarity AMS	26 1 2 17	fl oz/a pt/a fl oz/a lb/100 gal	50 c	88 ab	90 abc

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Weed Code				VIORA	VIORA	VIORA
Rating Data Type				CONTRO	CONTRO	CONTRO
Rating Unit				1-100	1-100	1-100
Rating Date				3/Jan/2003	5/Apr/2003	22/Apr/2003
Assessed By				J.Miller	J. Miller	J.Miller
Trt-Eval Interval				42 DA-A	134 DA-A	17 DA-B
Trt No.	Treatment Name	Product Rate	Product Rate Unit	1	2	3
12	Fall RoundupUltra Max Aatrex 2,4-D Ester Clarity AMS Crop Oil Conc	26 1 1 2 17 1	fl oz/a qt/a pt/a fl oz/a lb/100 gal % v/v	68 b	88 ab	98 a
13	Fall RoundupUltra Max Resource 2,4-D Ester Clarity AMS	26 3 1 2 17	fl oz/a fl oz/a pt/a fl oz/a lb/100 gal	40 c	88 ab	93 abc
14	Fall RoundupUltra Max Aim 2,4-D Ester Clarity AMS	26 0.5 1 2 17	fl oz/a oz/a pt/a fl oz/a lb/100 gal	48 c	88 ab	90 abc
15	Fall Untreated Check			0 d	0 c	0 d
16	Spring AAtrex 2,4-D Ester Clarity Crop Oil Conc	1 1 2 1	qt/a pt/a fl oz/a % v/v			90 abc
17	Spring AAtrex 2,4-D Ester Clarity Crop Oil Conc	2 1 2 1	qt/a pt/a fl oz/a % v/v			95 ab
18	Spring AAtrex Python 2,4-D Ester Clarity Crop Oil Conc	1 1 1 2 1	qt/a oz/a pt/a fl oz/a % v/v			98 a
19	Spring AAtrex Balance Pro 2,4-D Ester Clarity Crop Oil Conc	1 2.25 1 2 1	qt/a fl oz/a pt/a fl oz/a % v/v			98 a
20	Spring AAtrex Callisto 2,4-D Ester Clarity Crop Oil Conc	1 4 1 2 1	qt/a fl oz/a pt/a fl oz/a % v/v			100 a
21	Spring AAtrex Basis 2,4-D Ester Clarity UAN Crop Oil Conc	1 0.5 1 2 2.5 1	qt/a oz/a pt/a fl oz/a % v/v % v/v			94 ab
22	Spring AAtrex Princep 80WP Gramoxone Max 2,4-D Ester Clarity Crop Oil Conc	1 1 1.67 1 2 1	qt/a lb ai/a pt/a pt/a fl oz/a % v/v			100 a

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Weed Code				VIORA	VIORA	VIORA
Rating Data Type				CONTRO	CONTRO	CONTRO
Rating Unit				1-100	1-100	1-100
Rating Date				3/Jan/2003	5/Apr/2003	22/Apr/2003
Assessed By				J.Miller	J. Miller	J.Miller
Trt-Eval Interval				42 DA-A	134 DA-A	17 DA-B
Trt No.	Treatment Name	Product Rate	Product Rate Unit	1	2	3
23	Spring Gramoxone Max 2,4-D Ester Clarity NIS	1.67 1 2 0.25	pt/a pt/a fl oz/a % v/v			98 a
24	Spring Gramoxone Max Aatrex 2,4-D Ester Clarity Crop Oil Conc	1.67 1 1 2 1	pt/a qt/a pt/a fl oz/a % v/v			100 a
25	Spring Gramoxone Max Aatrex 2,4-D Ester Clarity Crop Oil Conc	1.67 2 1 2 1	pt/a qt/a pt/a fl oz/a % v/v			98 a
26	Spring RoundupUltra Max 2,4-D Ester Clarity AMS	26 1 2 17	fl oz/a pt/a fl oz/a lb/100 gal			83 c
27	Spring RoundupUltra Max Aatrex 2,4-D Ester Clarity AMS Crop Oil Conc	26 1 1 2 17 1	fl oz/a qt/a pt/a fl oz/a lb/100 gal % v/v			89 abc
28	Spring RoundupUltra Max Resource 2,4-D Ester Clarity AMS	26 3 1 2 17	fl oz/a fl oz/a pt/a fl oz/a lb/100 gal			93 abc
29	Spring RoundupUltra Max Aim 2,4-D Ester Clarity AMS	26 0.5 1 2 17	fl oz/a oz/a pt/a fl oz/a lb/100 gal			95 ab
30	Spring Untreated Check					0 d
LSD (P=.05)				13.3	7.6	6.7
CV				13.57	6.28	5.33

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.