

2012

WEED SCIENCE

FIELD RESEARCH REPORT

Department of Entomology, Plant Pathology
and Weed Science



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INTRODUCTION

The Annual Report is a partial summary of field crop research conducted to study the efficacy of traditional herbicides with new chemicals or combination of chemicals used to control weeds in crops grown in the region. The results are provided to assist extension personnel, cooperators and others who have an interest in New Mexico agriculture in choosing the most economical and effective weed control for this area. *It does not contain recommendations for the use of these herbicides or imply that these herbicides are registered for use on commercial crops.*

The information in this report is not a formal release, it is not to be duplicated or published in any form without the written consent of Dr. Jill Schroeder, Professor, or Dr. Jamshid Ashigh, Assistant Professor.

Disk copies of the information in this report are available upon request. Please direct any questions about this report to Dr. Jill Schroeder at (575)-646-2328 or Dr. Jamshid Ashigh (575)-646-2888.

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General Trial Information

Trial Chemicals

Trade Name	Formulation Concentration	Common Name
Aim EC	240 Gai/L	carfentrazone
Alion	200 Gai/L	indaziflam
Chateau WDG	510 Gai/Kg	flumioxazin
Matrix	250 Gai/Kg	rimsulfuron
Prowl H2O	456 Gai/L	Pendimethalin
Rely 280	280 Gai/L	glufosinate
Roundup PowerMax	660 Gai/L	glyphosate
Sandea 75 WG	750 Gai/Kg	halosulfuron
Spartan	480 Gai/L	sulfentrazone
Surflan AS	480 Gai/L	oryzalin
Treevix WG	700 Gai/Kg	saflufenacil
V-10142 WG	750 Gai/Kg	imazosulfuron

Adjuvants

Agri-Dex	crop oil concentrate (COC)
Dyna-Amic	surfactant
Preference	no foam non-ionic spray adjuvant (NIS)

Crops

Code	Common Name	Binomial
CPSAN	chile	<i>Capsicum annum</i>
CYAIL	pecan	<i>Carya illinoensis</i>

Pest Descriptions

Bayer Code	Common name	Binomial
AMAPA	Palmer amaranth	<i>Amaranthus palmeri</i>
ANVCR	spurred anoda	<i>Anoda cristata</i>
CYPES	yellow nutsedge	<i>Cyperus esculentus</i>
DATQF	oakleaf thornapple	<i>Datura quercifolia</i>
EPHMA	spotted spurge	<i>Chamaesyce (Euphorbia) maculata</i>
EPHPT	ground spurge	<i>Chamaesyce prostrata</i>
ERICA	Canada horseweed	<i>Conyza canadensis</i>
IPOSPP	morningglory species	<i>Ipomoea species</i>
GGGGG	Grasses	<i>Poa species</i>
PHBPU	tall morningglory	<i>Ipomoea purpurea</i>
PHYWR	Wright groundcherry	<i>Physalis wrightii</i>
PLAMA	broadleaf plantain	<i>Plantago major</i>
POASPP	grass species	<i>Poa species</i>
RUMCR	curly dock	<i>Rumex crispus</i>
SINSS	mustards	<i>Sinapis species</i>
SONAS	spiny sowthistle	<i>Sonchus asper</i>
SASKR	Russian thistle	<i>Salsola iberica</i>
TAROF	common dandelion	<i>Taraxacum officinale</i>

Report Code Definitions

Code	Definition
%GC	Percent ground covered with weed
BACCAI	Backpack applicator, compressed air operated
BROADC	Broadcast
BROFOL	Broadcast spray application over the top of foliage
BROSOI	Broadcast spray application to soil
COMCO2	Compressed air Carbon Dioxide
COTYL	Cotyledon
MID	Row middle
PESCON	Pest Control
PHYGEN	Phytotoxicity/injury
POEMSE	Post emergence, early spring
POSPOS	After crop and weed emergence
POST	Applied after plant emergence
PREINOC	Pre-emergence incorporated
PREMEA	Pre-emergence, early
PREPRE	Applied before crops and weeds emerge
PREWEED-EMER	Applied before weed emerge
PRN	Sequential applications of treatment as the need
RECOMM	Recommendation
SEEDL	seedlings
SLIDRY	Soil slightly dry
SPRBAC	CO2 Backpack sprayer

Soil Description

Las Cruces Field Trials

Test Parameter	Units	Test Result	Detection Limit
pH of Soil Saturation Paste		7.7	
Elect. Cond. Of Soil Paste Extract	mmhos/cm	1.33	0.01
Sodium Adsorption Ration		4.31	0.01
K(1:5 soil:water)	mg/Kg	42	0.01
NO ₃ -N(1:5 soil:water)	mg/Kg	11.1	0.1
Texture: clay			
Sand: 36% Clay: 44% Silt: 19%			

Weather Conditions

NMSU State Climate Network
 Plant Science Research Center
 Location 15 miles South of Las Cruces, NM
Elevation: 1178 m
Latitude: 32° 12' 3.57" N
Longitude: 106° 44' 33.76" W

Month	Air Temperature			Relative Humidity		Precip Totals (cm)	Soil Temperature		
	Min (C)	Mean (C)	Max (C)	Min (%)	Max (%)		Min (C)	Mean (C)	Max (C)
January	-7.37	6.15	22.98	20.18	97.70	2.03	2.70	6.27	10.42
February	-4.87	8.22	23.49	8.78	72.84	0.10	4.19	8.49	15.30
March	-2.96	12.52	31.83	4.00	91.20	0.00	5.02	11.87	19.61
April	0.34	18.64	33.95	3.76	83.70	0.00	10.23	17.04	24.17
May	5.77	21.42	35.75	4.51	93.80	2.59	14.79	21.21	28.31
June	9.91	26.33	40.65	5.02	84.50	0.10	18.95	26.02	33.73
July	16.24	26.11	36.52	11.67	93.30	5.89	22.82	27.25	33.64
August	13.01	26.63	38.26	12.56	93.30	0.84	23.02	27.27	33.28
September	7.73	21.44	38.26	9.59	94.40	2.84	17.77	24.24	32.84
October	-0.07	16.07	33.26	8.74	92.70	0.03	12.75	18.98	25.16

Trial ID: 12-L-1

Title: Weed Management Programs for Chile

Crop Description

Species Code

CPSAN

Variety: AZ-20

Rate: 3.36 KG/HA

Planting Date:

Binomial

Capsicum annuum

Seed Bed:

4-25-12

Common Name

Chile

COARSE

Planting Method: SEEDED

Pest Description

Species Code

AMAPA

ANVCR

PHYWR

POASPP

Binomial

Amaranthus palmeri

Anoda cristata

Physalis wrightii

POA species

Common Name

Palmer amaranth

spurred anoda

Wright groundcherry

annual grasses

Site Description and Design

Site Type: FIELD **Plot Width:** 2 m **Plot Length:** 7.62 m **Plot Area:** 15.24 m²

Tillage Type: conventional-till

Replications: 12

Study Design: Randomized Complete Block

Field Preparation and Maintenance

Field Preparation

3/11 Schmeiser

3/14 Laser

3/28 List

3/29 Land pre

4/24 Cultivate

4/25 Plant/harrow

5/07 De-cap

6/05 cultivate

6/19 cultivate

Timed Hoeing

6/06 Removed all weed; Hoe time averaged 2.5 min/plot

6/14 Removed all weeds in plots receiving Pre-emergence Application A treatments on June 19. These plots averaged 19 minutes/plot.

7/13 recorded the time to remove all weeds for each plot
7/30 and 7/31 recorded the time to remove all weeds for each plot prior to Application C on 8/1

8/13 and 8/16 recorded the time to remove all weeds for each plot

9/6 recorded the time to removal all weeds at layby

No.	Date	Maintenance Treatment	Description	Rate
1.	05-07-12	CLOMAZONE 3 ME	PRE DE-CAPPING	1.12 Kg ai/Ha
2.	05-07-12	GLYPHOSATE 5.5 SC	PRE DE-CAPPING	1.12 Kg ai/Ha

Comment: SEEDLING GRASSES, MORNINGGLORY, PALMER AMARANTH RUSSIAN THISTLE, AND SPURRED ANODA PRESENT

Fertilizer

3/12	84 KG/HA 11-52-0 and 95 KG/HA 0-0-60
6/06	URAN 0.946 L/min

Furrow Irrigation Dates

3/29	Pre-irrigate	6/19
4/26		7/2
5/08		7/16 w/ 32-0-0 at 187 L/HA
5/23		8/9
6/07		8/23

Application Description

	A	B	C
Application Date:	06-19-12	07-02-12	08-01-12
Time of Day:	9:00 AM	8:05 AM	7:45 AM
Application Method:	DIR SPRAY	DIR SPRAY	DIR SPRAY
Application Timing:	PRE-WEED EMERG	POST THINNING IRRIG	LATE SEQ
Application Placement:	DIRECTED	BROSOIL	BROSOIL
Applied By:	ANDREW	ANDREW	ANDREW
Air Temperature, Unit:	31 C	29 C	26 C
% Relative Humidity:	46	35	36
Wind Velocity/Direction:	6 KPH/101-106	6 KPH/ 101-106	0
Soil Temperature, Unit:	25 C	27 C	23 C
Soil Moisture:	SLIWET	DRY	MOIST
% Cloud Cover:	0	20	0

Crop Stage at Each Application

	A	B	C
Crop Code:	CPSAN	CPSAN	CPSAN
Stage	THINNING	LATE POST	LAYBY
Height, Unit:	COTYL TO 15 CM	2 LEAF TO 20CM	POD SET

Pest Stage Application

	Application Code		
	A	B	C
Weed Code	AMAPA	AMAPA	AMAPA
Growth Stage	Pre-emergence	Vegetative to bloom	Vegetative bloom
Size		2.5 – 61 cm	1.25 to 87 cm
% Groundcover		< 5%	0 to 5%
Weed Code	ANVCR	ANVCR	ANVCR
Growth Stage	Pre-emergence	vegetative	Vegetative
Size		1.25 to 25 cm	1.25 to 15 cm
% Groundcover		< 1%	0 to 2 %
Weed Code	PHYWR	PHYWR	PHYWR
Growth Stage	Pre-emergence	vegetative	Vegetative to bloom
Size		1.25 to 20 cm	1.25 to 30 cm
% Groundcover		< 5%	0 to 5%
Weed Code	POASPP	POASPP	POASPP
Growth Stage	Pre-emergence	Vegetative to bloom	Vegetative to bloom
Size		1.25 to 30 cm	NR
% Groundcover		< 5%	0 to 5%

Application Equipment

	A	B	C
Appl. Equipment:	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK
Equipment Type:	BACCAI	BACCAI	BACCAI
Operation Pressure,	207 KPA	172 KPA	124 KPA
Nozzle Type:	TEEJET	TEEJET	TEEJET
Nozzle Size:	8002 E VS	8002 E VS	8002 E VS
Nozzles/Row:	2	2	2
Nozzle Calibration, Unit:	573 ML/MIN	571 ML/MIN	452 ML/MIN
Band Width, Unit:	46 CM	46 CM	35 CM
Boom Length, Unit:	2 M	2 M	
Ground Speed, Unit:	3.2 KPH	3.2 KPH	3.2 KPH
Carrier:	WATER	WATER	WATER
Spray Volume, Unit:	234 L/HA	234 L/HA	234 L/HA
Mix Size, Unit:	2 LITERS	2 LITERS	2 LITERS
Propellant:	CO2	CO2	CO2

Trial Treatments

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code
1	CONTROL						
2	PENDIMETHALIN	3.8	LBA/GAL	CS	1.57	kg AI/ha	A
	CARFENTRAZONE	2	LBA/GAL	EC	0.028	kg AI/ha	PRN
	COC	99	%	OS	1	% V/V	PRN
3	PENDIMETHALIN	3.8	LBA/GAL	CS	1.57	kg AI/ha	B
	CARFENTRAZONE	2	LBA/GAL	EC	0.028	kg AI/ha	B
	COC	99	%	OS	1	% V/V	B
	CARFENTRAZONE	2	LBA/GAL	EC	0.028	kg AI/ha	PRN
	COC	99	%	OS	1	% V/V	PRN
4	PENDIMETHALIN	3.8	LBA/GAL	CS	1.57	kg AI/ha	B
	HALOSULFURON	75	%	WG	0.04	kg AI/ha	B
	COC	99	%	OS	1	% V/V	B
	CARFENTRAZONE	2	LBA/GAL	EC	0.028	kg AI/ha	PRN
	COC	99	%	OS	1	% V/V	PRN
5	PENDIMETHALIN	3.8	LBA/GAL	CS	1.57	kg AI/ha	A
	SULFENTRAZONE	4	LBA/GAL	F	0.14	kg AI/ha	A
	CARFENTRAZONE	2	LBA/GAL	EC	0.028	kg AI/ha	PRN
	COC	99	%	OS	1	% V/V	PRN
6	PENDIMETHALIN	3.8	LBA/GAL	CS	1.57	kg AI/ha	B
	V10142	75	%	WG	0.28	kg AI/ha	B
	COC	99	%	OS	1	% V/V	B
	CARFENTRAZONE	2	LBA/GAL	EC	0.028	kg AI/ha	PRN
	COC	99	%	OS	1	% V/V	PRN

Command & Glyphosate pre cap removal

Data at application: Weed species; size and density in row and between row

- Application A at thinning treatments were applied pre to weeds and the post-thinning irrigation
- Application B at thinning treatments were applied after the post-thinning irrigation and applied to small, emerging weeds
- Post treatment of carfentrazone was applied post-directed PRN
- July 13 walked four steps into plot, randomly place 0.25² on top of non-stake row bed. Clipped all biomass, sorted by species and dried in drying oven until July 19. Dry weights recorded.

Hoe times: note dates and times for each plot (page 1 under Field Preparation and Maintenance)

AOV Data Summary

Pest Code Description Rating Date Rating Type	AMAPA 07-19-12 DRY WGTS/ .25m ²	ANVCR 07-19-12 DRY WGTS/ .25m ²	PHYWR 07-19-12 DRY WGTS/ .25m ²	POASPP 07-19-12 DRY WGTS/ .25m ²	OTHERSPP 07-19-12 DRY WGTS/ .25m ²	TOTAL BIOMASS 07-19-12 DRY WGTS/ .25m ²
Trt No. Treatment Name						
1 CONTROL	2.73 b	0.35 a	4.61 a	9.10 a	0.40 a	671.28 a
2 PENDIMETHALIN CARFENTRAZONE COC	7.25 a	0.07 b	1.05 b	0.97 b	0.04 a	665.33 ab
3 PENDIMETHALIN CARFENTRAZONE COC CARFENTRAZONE COC	0.18 b	0.00 b	0.08 b	0.38 b	0.01 a	656.82 c
4 PENDIMETHALIN HALOSULFURON COC CARFENTRAZONE COC	0.04 b	0.01 b	0.06 b	0.31 b	0.00 a	658.50 c
5 PENDIMETHALIN SULFENTRAZONE CARFENTRAZONE COC	0.06 b	0.00 b	0.18 b	2.36 b	0.00 a	660.94 bc
6 PENDIMETHALIN V10142 COC CARFENTRAZONE COC	0.03 b	0.03 b	0.20 b	0.43 b	0.00 a	660.27 bc
LSD (P=.05)	4.357	0.202	2.259	3.491	0.472	6.273
Standard Deviation	5.336	0.247	2.767	4.276	0.578	7.683
CV	310.76	317.23	268.93	189.37	763.92	1.16

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

OTHER SPP = IPPSPP, DATQU, CYPES

POASPP = All grass species were rated together

AOV Data Summary

Pest Code	AMAPA	ANVCR	PHYWR	POASPP	BROSPP	TIMED HOE POST APPLICATION 7/13, 7/30, 8/13, 8/16, 9/6 MIN/PLOT	
Description							
Rating Date	07-30-12	07-30-12	07-30-12	07-30-12	07-30-12		
Rating Type	COUNT	COUNT	COUNT	%GC	%GC		
Trt No.	Treatment Name						
1	CONTROL	0.00 b	0.00 c	0.00 e	0.00 b	0.00 c	23.21 a
2	PENDIMETHALIN CARFENTRAZONE COC	0.82 b	0.83 ab	8.80 bc	0.99 a	0.97 b	7.15 b
3	PENDIMETHALIN CARFENTRAZONE COC CARFENTRAZONE COC	1.08 b	0.25 bc	12.58 ab	1.33 a	1.33 b	4.71 b
4	PENDIMETHALIN HALOSULFURON COC CARFENTRAZONE COC	6.50 a	1.33 a	15.50 a	1.08 a	2.50 a	5.97 b
5	PENDIMETHALIN SULFENTRAZONE CARFENTRAZONE COC	0.17 b	0.17 bc	2.92 de	1.00 a	0.92 b	4.44 b
6	PENDIMETHALIN V10142 COC CARFENTRAZONE COC	1.08 b	0.50 bc	6.00 cd	1.00 a	1.00 b	4.58 b
LSD (P=.05)		1.449	0.695	4.848	0.381	0.771	2.902
Standard Deviation		1.775	0.851	5.938	0.467	0.944	3.555
CV		110.28	165.66	77.78	51.76	84.29	42.61

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

BROSPP = Broadleaf species not rated individually, include EPHPT, IPOSPP

POASPP = All grass species were rated together

Trial ID: 12-L-3
Title: Weed Response to Post-emergence Herbicides Applied at Different Stages of Growth

Pest Description

Code	Binomial	Common name
AMAPA	<i>Amaranthus palmeri</i>	Palmer amaranth
ANVCR	<i>Anoda cristata</i>	spurred anoda
DATQU	<i>Datura quercifolia</i>	oakleaf thornapple
PHBPU	<i>Ipomoea purpurea</i>	tall morningglory
PHYWR	<i>Physalis wrightii</i>	Wright groundcherry
POASPP	Poa species	grass seedlings

Site Description and Design

Site Type: Field **Plot Width:** 2 meter **Plot Length:** 7.6 meter **Plot Area:** 15.24 m²
Replications: 4 **Study Design:** Randomized Complete Block

Field Preparation and Maintenance:

3/11 Schmeiser
 3/14 Laser
 3/28 List
 5/08 cultivate
 5/09 list
 5/23 cultivate, shape beds
 5/25 maintenance glyphosate
 5/31 plot area was cultivated and re-bedded to prepare plots for weed growth
 6/06 cultivate
 6/19 cultivate

Moisture and Weather Conditions

Overall Moisture Conditions: Irrigated as needed for chile production
 Irrigate: 3/29 pre-irrigate, 4/26, 5/31, 6/07, 6/20, 7/02

Terminate study: August 7

Trial Treatments

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Unit	Growth Stage	Appl Code
1	CONTROL						
2	SULFENTRAZONE	4 LBA/GAL		F	0.14 kg AI/ha	PRE	A
3	SULFENTRAZONE	4 LBA/GAL		F	0.14 kg AI/ha	COTYL-2"	B
4	SULFENTRAZONE	4 LBA/GAL		F	0.14 kg AI/ha	2-4"	C
5	SULFENTRAZONE	4 LBA/GAL		F	0.14 kg AI/ha	4-6"	D
6	FLUMIOXAZIN	51 %		WG	0.108 kg AI/ha	PRE	A
7	FLUMIOXAZIN	51 %		WG	0.108 kg AI/ha	COTYL-2"	B
	SURFACTANT	100 %		OL	1 % V/V		B
8	FLUMIOXAZIN	51 %		WG	0.108 kg AI/ha	2-4"	C
	SURFACTANT	100 %		OL	1 % V/V		C
9	FLUMIOXAZIN	51 %		WG	0.108 kg AI/ha	4-6"	D
	SURFACTANT	100 %		OL	1 % V/V		D
10	CARFENTRAZONE	2 LBA/GAL		EC	0.028 kg AI/ha	COTYL-2"	B
	COC	100 %		OL	1 % V/V		B
11	CARFENTRAZONE	2 LBA/GAL		EC	0.028 kg AI/ha	2-4"	C
	COC	100 %		OL	1 % V/V		C
12	CARFENTRAZONE	2 LBA/GAL		EC	0.028 kg AI/ha	4-6"	D
	COC	100 %		OL	1 % V/V		D
13	HALOSULFURON	75 %		WG	0.039 kg AI/ha	COTYL-2"	B
	COC	100 %		OL	1 % V/V		B
14	HALOSULFURON	75 %		WG	0.039 kg AI/ha	2-4"	C
	COC	100 %		OL	1 % V/V		C
15	HALOSULFURON	75 %		WG	0.039 kg AI/ha	4-6"	D
	COC	100 %		OL	1 % V/V		D
16	IMAZOSULFURON	75 %		WG	0.28 kg AI/ha	PRE	A
17	IMAZOSULFURON	75 %		WG	0.28 kg AI/ha	COTYL-2"	B
	SURFACTANT	100 %		OL	1 % V/V		B
18	IMAZOSULFURON	75 %		WG	0.28 kg AI/ha	2-4"	C
	SURFACTANT	100 %		OL	1 % V/V		C
19	IMAZOSULFURON	75 %		WG	0.28 kg AI/ha	4-6"	D
	SURFACTANT	100 %		OL	1 % V/V		D

Application Description

APPLICATION CODE:	A	B	C	D
Application Date:	05-31-12	06-12-12	06-20-12	06-28-12
Time of Day:	AM	AM	AM	AM
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PREINC	COTYL-5 CM	5-6 CM	6 -10 CM
Application Placement:	BROSOI	BROSOI	BROSOI	BROSOI
Applied By:	ANDREW	ANDREW	ANDREW	ANDREW
Air Temperature, Unit:	20 C	23 C	27 C	31 C
% Relative Humidity:	33	34	33	33
Wind Velocity, Unit:	0 KPH	1.6 KPH	4.5 KPH	3 KPH
Soil Temperature, Unit:	26 C	26 C	26 C	24 C
Soil Moisture:	DRY	DRY	DRY	DRY
% Cloud Cover:	20	10	1	5

	A	B	C	D
Equipment Type:	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK
Operation Pressure, Unit:	276 kPa	324 kPa	317 kPa	241 kPa
Nozzle Type:	TEEJET	TEEJET	TEEJET	TEEJET
Nozzle Size:	11002 VS	11002 VS	11002 VS	11002 VS
Nozzle Spacing, Unit:	51 CM	51 CM	51 CM	51 CM
Nozzles/Row:	2	2	2	2
Nozzle Calibration, Unit:	636 ML/MIN	649 ML/MIN	649 ML/MIN	638 ML/MIN
Band Width, Unit:	51 CM	51 CM	51 CM	51 CM
Boom Length, Unit:	204 CM	204 CM	204 CM	204 CM
Boom Height, Unit:	51 CM	51 CM	51 CM	51 CM
Ground Speed, Unit:	3.2 KPH	3.2 KPH	3.2 KPH	3.2 KPH
Incorporation Equip.:	IRRIGA			
Carrier:	WATER	WATER	WATER	WATER
Spray Volume, Unit:	233.85 L/HA	233.85 L/HA	233.85 L/HA	233.85 L/HA
Mix Size, Unit:	2 LITERS	2 LITERS	2 LITERS	2 LITERS

Notes

- WEEDS AT APPLICATION WERE ASSESSED ONLY IN PLOTS BEING SPRAYED ON DAY OF APPLICATION.
- WEEDS WERE HARVESTED BY REPLICATION IN 3-ONE QUARTER METER QUADRATES RANDOMLY IN EACH PLOT. FRESH WEIGHTS WERE OBTAINED THE DAY OF HARVEST: REP 1 ON JULY 16, REP 2 ON JULY 17, REP 3 ON JULY 18 AND REP 4 ON JULY 19. DRY PLANT MATERIAL WAS WEIGHED ON AUGUST 6 AND 7.

Pest Stage at Application

Application A -- 5/31/12 - Treatments 2, 6 and 16

Pre-emergence treatments applied to soil, no weeds.

Application B – 6/12/12 – Treatments 3, 7, 10, 13, 17

WEEDS PRESENT	AMAPA	ANVCR	IPOSPP	PHYWR	DATQU	POASPP
STAGE RANGE	COTY – 6 LF	COTY – 2 LF	COTY – 2 LF	COTY – 2 LF	COTY – 1 LF	COTLY – 1 LF
COUNT (0.1 M ²)	0-7	0-4	0-2	0-10	0-1	0-6
TREATMENT 3	0-7	0-4	0-2	0-10	0	0-2
TREATMENT 7	0-5	0-2	0-1	0-6	0	0-6
TREATMENT 10	0-3	0-3	0-2	0-6	0	0-6
TREATMENT 13	0-3	0-2	0-1	0-10	0-1	0-2
TREATMENT 17	0-3	0-2	0-1	0-8	0	0-8

Application C – 6/20/12 – Treatments 4, 8, 11, 14, 18

WEEDS PRESENT	AMAPA	ANVCR	PHYWR
STAGE RANGE (cm)	5 – 10	5 – 10	5 – 10
COUNT (0.1 M ²)	0 – 6	0 – 2	0 – 10

Application D – 6/28/12 – Treatments 5, 9, 12, 15, 19

WEEDS PRESENT	% GC BLSPP*	AMAPA	ANVCR	PHYWR
STAGE RANGE		COTY – 15 cm	COTY – 15 cm	COTY – 15 cm
TREATMENT 5	15-25			
TREATMENT 9	10-30			
TREATMENT 12	15-30			
TREATMENT 15	15-30			
TREATMENT 19	15-35			

*Percent ground cover for all broadleaves by treatment

AOV DATA SUMMARY

Pest Code Part Rated Rating Date Rating Type	AMAPA SHOOT 06-20-12 %CONTROL	ANVCR SHOOT 06-20-12 %CONTROL	PHYWR SHOOT 06-20-12 %CONTROL	AMAPA SHOOT 06-28-12 %CONTROL	ANVCR SHOOT 06-28-12 %CONTROL	PHYWR SHOOT 06-28-12 %CONTROL	AMAPA SHOOT 07-11-12 %CONTROL
Trt Treatment No. Name							
1 CONTROL	0.00 c	0.00 c	0.00 c	0.00 e	0.00 e	0.00 c	0.00 e
2 SULFENTRAZONE	57.50 b	75.00 ab	40.00 b	0.00 e	0.00 e	0.00 c	0.00 e
3 SULFENTRAZONE	87.50 a	66.25 ab	81.25 a	66.25 c	42.25 b-e	85.00 a	25.00 de
4 SULFENTRAZONE				72.50 bc	87.50 ab	91.25 a	31.25 d
5 SULFENTRAZONE							30.00 d
6 FLUMIOXAZIN	10.00 c	2.50 c	0.00 c	0.00 e	0.00 e	0.00 c	0.00 e
7 FLUMIOXAZIN DYNE-AMIC	100.00 a	98.75 a	100.00 a	98.75 a	81.25 ab	95.00 a	98.50 a
8 FLUMIOXAZIN DYNE-AMIC				92.50 ab	77.50 ab	95.75 a	87.50 ab
9 FLUMIOXAZIN DYNE-AMIC							75.00 abc
10 CARFENTRAZONE AGRI-DEX	100.00 a	100.00 a	100.00 a	98.75 a	96.25 a	95.00 a	71.25 abc
11 CARFENTRAZONE AGRI-DEX				71.25 bc	71.25 abc	95.00 a	37.50 d
12 CARFENTRAZONE AGRI-DEX							50.00 cd
13 HALOSULFURON AGRI-DEX	86.25 a	92.50 a	78.75 a	0.00 e	50.00 a-e	18.75 c	0.00 e
14 HALOSULFURON AGRI-DEX				37.50 d	25.00 cde	27.50 bc	0.00 e
15 HALOSULFURON AGRI-DEX							82.50 ab
16 IMAZOSULFURON	90.00 a	42.25 b	71.25 a	95.00 ab	25.00 cde	25.00 bc	85.00 ab
17 IMAZOSULFURON DYNE-AMIC	87.50 a	88.75 a	85.00 a	75.00 abc	20.00 de	52.50 b	67.50 bc
18 IMAZOSULFURON DYNE-AMIC				53.75 cd	55.00 a-d	28.75 bc	51.25 cd
19 IMAZOSULFURON DYNE-AMIC							88.75 ab
LSD (P=.05)	13.876	38.233	29.246	25.086	51.111	29.577	28.021
Standard Deviation	9.508	26.196	20.039	17.554	35.765	20.697	19.814
CV	13.83	41.66	32.42	32.28	79.35	40.84	42.73

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

%CONTROL = % injury of untreated control

AOV DATA SUMMARY

Pest Code Part Rated Rating Date Rating Type	ANVCR SHOOT 07-11-12 %CONTROL	PHYWR SHOOT 07-11-12 %CONTROL	AMAPA SHOOT 07-16-12 FRSHWT	ANVCR SHOOT 07-16-12 FRSHWT	PHYWR SHOOT 07-16-12 FRSHWT	OTHER BL SHOOT 07-16-12 FRSHWT	TOTBL SHOOT 07-16-12 FRESHWT
Trt Treatment No. Name							
1 CONTROL	0.00 e	0.00 f	171.48 a	24.31 a	572.51 bcd	1.06 c	769.35 bcd
2 SULFENTRAZONE	75.00 ab	0.00 f	349.54 a	0.35 a	316.46 bcd	0.12 c	666.47 bcd
3 SULFENTRAZONE	31.25 b-e	55.00 cd	380.58 a	12.58 a	303.91 bcd	1.18 c	698.25 bcd
4 SULFENTRAZONE	62.50 a-d	93.75 ab	459.53 a	2.76 a	38.30 cd	1.27 c	501.86 b-e
5 SULFENTRAZONE	25.00 b-e	47.50 cd	268.72 a	5.67 a	284.20 bcd	1.64 c	560.23 b-e
6 FLUMIOXAZIN	0.00 e	0.00 f	65.86 a	20.77 a	736.49 b	34.98 a	858.09 bc
7 FLUMIOXAZIN DYNE-AMIC	7.50 de	100.00 a	0.00 a	3.42 a	0.11 d	0.00 c	3.53 e
8 FLUMIOXAZIN DYNE-AMIC	12.50 cde	100.00 a	216.96 a	2.13 a	0.08 d	0.00 c	219.16 b-e
9 FLUMIOXAZIN DYNE-AMIC	65.00 abc	100.00 a	190.56 a	28.93 a	0.00 d	17.95 abc	237.44 b-e
10 CARFENTRAZONE AGRI-DEX	23.75 b-e	68.75 bc	56.38 a	6.76 a	141.03 bcd	0.36 c	204.52 cde
11 CARFENTRAZONE AGRI-DEX	75.00 ab	88.75 ab	204.32 a	3.95 a	2.09 d	17.73 abc	228.08 b-e
12 CARFENTRAZONE AGRI-DEX	98.75 a	96.25 a	169.00 a	0.06 a	0.83 d	1.37 c	171.25 de
13 HALOSULFURON AGRI-DEX	75.00 ab	12.50 ef	219.02 a	-1.26 a	649.41 bc	2.43 c	870.94 b
14 HALOSULFURON AGRI-DEX	25.00 b-e	0.00 f	181.38 a	13.97 a	410.46 bcd	1.03 c	606.83 b-e
15 HALOSULFURON AGRI-DEX	42.50 b-e	0.00 f	60.62 a	28.64 a	705.61 b	27.38 ab	822.25 bcd
16 IMAZOSULFURON	38.75 b-e	30.00 de	0.00 a	33.93 a	401.02 bcd	0.00 c	434.95 b-e
17 IMAZOSULFURON DYNE-AMIC	17.50 cde	10.00 ef	52.17 a	1.26 a	568.68 bcd	0.00 c	622.10 b-e
18 IMAZOSULFURON DYNE-AMIC	0.00 e	0.00 f	163.72 a	36.78 a	415.21 bcd	8.69 bc	624.39 b-e
19 IMAZOSULFURON DYNE-AMIC	35.00 b-e	12.50 ef	47.86 a	2.43 a	1600.28 a	2.08 c	1652.65 a
LSD (P=.05)	55.883	25.522	284.159	33.506	619.019	19.122	661.071
Standard Deviation	39.515	18.047	200.931	23.692	437.713	13.521	467.448
CV	105.74	42.07	117.19	197.95	116.37	215.45	82.6

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

%CONTROL = % injury of untreated control

FRSHWT = Fresh weights of weeds harvested from 3- 1/3 meter quadrat

OTHER BL = Broadleaf weeds (other than the 3 primary weeds – AMAPA, ANVCR, PHYWR) including DATQU, PHBPU

TOTBL = average of total broadleaf weeds harvested/plot by treatment

AOV DATA SUMMARY

Pest Code Part Rated Rating Date Rating Type	POASPP SHOOT 07-16-12 FRSHWT	AMAPA SHOOT 08-06-12 DRY WGT	ANVCR SHOOT 08-06-12 DRY WGT	PHYWR SHOOT 08-06-12 DRY WGT	OTHER BL SHOOT 08-06-12 DRY WGT	TOT BL SHOOT 08-06-12 DRY WGT
Trt Treatment No. Name						
1 CONTROL	6.41 a	36.15 ab	4.13 a	77.98 abc	0.35 bc	118.60 a
2 SULFENTRAZONE	0.77 a	75.58 a	0.23 a	38.79 de	0.05 c	114.64 a
3 SULFENTRAZONE	10.61 a	79.81 a	2.19 a	38.49 def	0.31 bc	120.80 a
4 SULFENTRAZONE	47.40 a	80.25 a	0.52 a	5.02 fg	0.13 bc	85.92 a-d
5 SULFENTRAZONE	5.16 a	51.22 ab	1.08 a	38.15 def	0.50 bc	90.94 abc
6 FLUMIOXAZIN	2.42 a	14.46 b	3.96 a	89.97 ab	6.28 a	114.66 a
7 FLUMIOXAZIN DYNE-AMIC	20.51 a	0.00 b	0.63 a	0.23 g	0.00 c	0.86 f
8 FLUMIOXAZIN DYNE-AMIC	79.96 a	29.08 ab	0.21 a	0.02 g	0.00 c	29.31 ef
9 FLUMIOXAZIN DYNE-AMIC	2.54 a	51.89 ab	4.52 a	0.00 g	3.45 ab	59.86 cde
10 CARFENTRAZONE AGRI-DEX	19.44 a	8.03 b	1.01 a	14.58 efg	0.10 c	23.71 ef
11 CARFENTRAZONE AGRI-DEX	22.14 a	35.19 ab	0.54 a	0.23 g	1.62 bc	37.58 def
12 CARFENTRAZONE AGRI-DEX	13.71 a	31.94 ab	0.01 a	0.28 g	0.15 bc	32.38 ef
13 HALOSULFURON AGRI-DEX	14.48 a	49.76 ab	0.16 a	82.94 abc	0.27 bc	133.13 a
14 HALOSULFURON AGRI-DEX	13.58 a	45.25 ab	2.60 a	54.39 cd	0.23 bc	102.47 abc
15 HALOSULFURON AGRI-DEX	1.33 a	12.29 b	5.16 a	88.52 ab	6.58 a	112.55 ab
16 IMAZOSULFURON	0.32 a	0.00 b	6.03 a	54.21 cd	0.00 c	60.25 b-e
17 IMAZOSULFURON DYNE-AMIC	0.06 a	12.68 b	0.24 a	78.86 abc	0.00 c	91.78 abc
18 IMAZOSULFURON DYNE-AMIC	42.69 a	31.52 ab	6.63 a	57.82 bcd	1.67 bc	97.63 abc
19 IMAZOSULFURON DYNE-AMIC	0.22 a	11.26 b	0.27 a	94.69 a	0.29 bc	106.52 abc
LSD (P=.05)	43.686	52.797	5.679	33.718	3.352	52.489
Standard Deviation	30.891	37.333	4.016	23.842	2.371	37.116
CV	193.24	108.08	190.29	55.57	205.17	45.98

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

DRY WGT = weed biomass harvested the week of 7/16 and dried in the drying oven until 7/19

OTHER BL = Broadleaf weeds (other than the 3 primary weeds – AMAPA, ANVCR, PHYWR) including DATQU, PHBPU

TOTBL = average of total broadleaf weeds harvested/plot by treatment

AOV DATA SUMMARY

Pest Code	POASPP	TOTAL PLANT
Part Rated	SHOOT	SHOOT
Rating Date	08-06-12	08-06-12
Rating Type	DRY WGT	DRY WGT
Trt No.	Treatment Name	
1	CONTROL	1.28 cd 119.88 a
2	SULFENTRAZONE	0.21 d 114.85 ab
3	SULFENTRAZONE	2.57 bcd 123.37 a
4	SULFENTRAZONE	9.10 abc 95.01 a-d
5	SULFENTRAZONE	1.07 cd 92.00 a-d
6	FLUMIOXAZIN	0.75 d 115.41 a
7	FLUMIOXAZIN DYNE-AMIC	3.46 bcd 4.32 f
8	FLUMIOXAZIN DYNE-AMIC	14.75 a 44.06 def
9	FLUMIOXAZIN DYNE-AMIC	0.23 d 60.09 cde
10	CARFENTRAZONE AGRI-DEX	3.12 bcd 26.83 ef
11	CARFENTRAZONE AGRI-DEX	4.09 bcd 41.66 def
12	CARFENTRAZONE AGRI-DEX	2.45 bcd 34.83 ef
13	HALOSULFURON AGRI-DEX	2.93 bcd 136.05 a
14	HALOSULFURON AGRI-DEX	3.30 bcd 105.77 abc
15	HALOSULFURON AGRI-DEX	0.45 d 113.00 abc
16	IMAZOSULFURON	0.20 d 60.45 b-e
17	IMAZOSULFURON DYNE-AMIC	0.03 d 91.81 a-d
18	IMAZOSULFURON DYNE-AMIC	10.22 ab 107.85 abc
19	IMAZOSULFURON DYNE-AMIC	0.13 d 106.64 abc
LSD (P=.05)	8.135	54.526
Standard Deviation	5.752	38.556
CV	181.17	45.96

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Trial ID: 12-Pecan Trial

Title: Weed Control with Fall Application of Indaziflam in Pecan Orchard

General Trial Information

Study Director and Investigator: JAMSHID ASHIGH, Assistant Professor

Affiliation: New Mexico State University

Address: DEPARTMENT OF EXTENSION PLANT SCIENCES

Location: LAS CRUCES, NM 88003

Trial Status: one-year/final

Initiation Date: 10-10-11

Planned Completion Date: 06-12-12

Trial Location

City: LAS CRUCES

Latitude of LL Corner °: 32.19893 N 49.376656 - 24.53833

State/Prov.: NM

Longitude of LL Corner °: -106.738958 W -124.715843 --66.968887

Country: United States

Altitude of LL Corner, Unit: 4000.00 FT

Crop Description

Crop Code

CYAIL

Binomial

Carya Illinoensis

Common Name

Pecan

Perennial Age: 20 years

Orchard Floor: compacted

Objectives: To evaluate the efficacy of Alion herbicide treatments at different doses for weed control in orchards

Pest Description

Species Code

GGGGG

SINSS

SONAS

EPHMA

SONOL

PLAMA

TAROF

RUMCR

ERICA

Binomial

Poa species

Sinapisis species

Sonchus asper

Euphorbia maculate

Sonchus oleraceus

Plantago major

Taraxacum officinale

Rumex crispus

Conyza canadensis

Common Name

Grasses

MUSTARD

SPINY SOWTHISTLE

SPOTTED SPURGE

ANNUAL SOWTHISTLE

BROADLEAF PLANTAIN

COMMON DANDELION

CURLY DOCK

CANADA HORSEWEED

Site and Design

Plot Width: 6 FT

Site Type: orchard

Plot Length: 30 FT

Experimental Unit: plot

Plot Area: 180 FT²

Replications: 4

Study Design: Randomized Complete Block (RCB)

Untreated Arrangement: INCLUDED single control randomized in each block

Comment: FIELD WAS WATERED 2 DAYS AFTER HERBICIDE APPLICATIONS (OCT 12, 2011)

Soil Description

Texture: loamy clay sand

Moisture and Weather Conditions

Overall Moisture Conditions: normal

Application Description

A

Application Date: 10-10-11
Time of Day: 7-10 AM
Application Method: SPRAY
Application Timing: PREMEA
Application Placement: BROADC
Applied By: ASHIGH, J.
Air Temperature, Unit: 73 F
% Relative Humidity: 30
Wind Velocity, Unit: 1 MPH
Wind Direction: S
Dew Presence (Y/N): N
% Cloud Cover: 0

Crop Stage at Application

Crop coverage (%): 75

Pest Stage at Application

Weeds: Pre-emergent at application

Application Equipment

A

Appl. Equipment: CO2 SPRAYER
Equipment Type: SPRBAC
Operation Pressure, Unit: 20 PSI
Nozzle Type: TEEJET
Nozzle Size: 8002
Nozzle Spacing, Unit: 20 IN
Nozzles/Row: 4
Nozzle Calibration, Unit: 470 ML/MIN
Band Width, Unit: 20 IN
Boom Length, Unit: 60 IN
Boom Height, Unit: 25 IN
Ground Speed, Unit: 1.8 MPS
Carrier: WATER
Spray Volume, Unit: 20 GAL/AC
Mix Size, Unit: 0.5 GALLONS

Trial Treatments

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Rate Unit	Appl Code
1	UNTREATED CHECK						A
2	ALION	1.67	LBA/GAL	SC	5	OZ/A	A
	RELY 280	2.34	LBA/GAL	SL	64	OZ/A	A
3	ALION	1.67	LBA/GAL	SC	2.5	OZ/A	A
	RELY 280	2.34	LBA/GAL	SL	64	OZ/A	A
4	ALION	1.67	LBA/GAL	SC	5	OZ/A	A
	ROUNDUP POWERMAX	5.5	LBA/GAL	F	1	QT/A	A
5	ALION	1.67	LBA/GAL	SC	2.5	OZ/A	A
	ROUNDUP POWERMAX	5.5	LBA/GAL	F	1	QT/A	A
6	SURFLAN A.S.	4	LBA/GAL	F	4	QT/A	A
	ROUNDUP POWERMAX	5.5	LBA/GAL	F	1	QT/A	A

AOV Data Summary

Pest Code	SINSS	SINSS	GGGGG	SINSS	GGGGG	RUMCR
Rating Date	12-12-11	01-10-12	01-10-12	02-14-12	02-14-12	02-14-12
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%
Trt No.	Treatment Name					
1	UNTREATED CHECK	0.00 b	0.00 b	0.00 b	0.00 b	0.00 b
2	ALION RELY 280	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
3	ALION RELY 280	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
4	ALION ROUNDUP POWERMAX	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
5	ALION ROUNDUP POWERMAX	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
6	SURFLAN A.S. ROUNDUP POWERMAX	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
LSD (P=.05)		0.000	0.000	0.000	0.000	0.000
Standard Deviation		0.000	0.000	0.000	0.000	0.000
CV		0.0	0.0	0.0	0.0	0.0

Pest Code	PLAMA	SINSS	GGGGG	RUMCR	PLAMA	TAROF	SINSS
Rating Date	02-14-12	03-14-12	03-14-12	03-14-12	03-14-12	03-14-12	04-10-12
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%	%
Trt No.	Treatment Name						
1	UNTREATED CHECK	0.00 b	0.00 b	0.00 b	0.00 b	0.00 b	0.00 b
2	ALION RELY 280	97.50 a	100.00 a	100.00 a	97.50 a	100.00 a	100.00 a
3	ALION RELY 280	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
4	ALION ROUNDUP POWERMAX	97.50 a	100.00 a	100.00 a	97.50 a	100.00 a	100.00 a
5	ALION ROUNDUP POWERMAX	97.50 a	100.00 a	100.00 a	97.50 a	98.75 a	100.00 a
6	SURFLAN A.S. ROUNDUP POWERMAX	100.00 a	100.00 a	100.00 a	100.00 a	98.75 a	100.00 a
LSD (P=.05)		4.127	0.000	0.000	4.127	1.538	0.000
Standard Deviation		2.739	0.000	0.000	2.739	1.021	0.000
CV		3.34	0.0	0.0	3.34	1.23	0.0

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

AOV Data Summary

Pest Code	GGGGG	RUMCR	PLAMA	TAROF	SONAS	ERICA
Rating Date	04-10-12	04-10-12	04-10-12	04-10-12	04-10-12	04-10-12
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%
Trt No.	Treatment Name					
1	UNTREATED CHECK	0.00 b	0.00 b	0.00 b	0.00 b	0.00 c
2	ALION RELY 280	100.00 a	97.50 a	100.00 a	100.00 a	100.00 a
3	ALION RELY 280	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
4	ALION ROUNDUP POWERMAX	100.00 a	97.50 a	100.00 a	100.00 a	100.00 a
5	ALION ROUNDUP POWERMAX	100.00 a	97.50 a	98.75 a	100.00 a	100.00 a
6	SURFLAN A.S. ROUNDUP POWERMAX	100.00 a	100.00 a	100.00 a	98.75 a	92.50 b
LSD (P=.05)		0.000	4.127	1.538	1.538	5.890
Standard Deviation		0.000	2.739	1.021	1.021	3.909
CV		0.0	3.34	1.23	1.23	4.76

Pest Code	SINSS	GGGGG	RUMCR	PLAMA	TAROF	SONAS
Rating Date	05-14-12	05-14-12	05-14-12	05-14-12	05-14-12	05-14-12
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%
Trt No.	Treatment Name					
1	UNTREATED CHECK	0.00 b	0.00 c	0.00 b	0.00 b	0.00 c
2	ALION RELY 280	100.00 a	100.00 a	97.50 a	100.00 a	100.00 a
3	ALION RELY 280	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
4	ALION ROUNDUP POWERMAX	100.00 a	100.00 a	97.50 a	100.00 a	100.00 a
5	ALION ROUNDUP POWERMAX	100.00 a	100.00 a	97.50 a	98.75 a	98.75 ab
6	SURFLAN A.S. ROUNDUP POWERMAX	100.00 a	71.25 b	100.00 a	97.50 a	96.25 b
LSD (P=.05)		0.000	10.163	4.127	3.529	3.462
Standard Deviation		0.000	6.744	2.739	2.342	2.297
CV		0.0	8.59	3.34	2.83	2.78

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

AOV Data Summary

Pest Code	ERICA	SONOL	EPHMA	SINSS	GGGGG	RUMCR
Rating Date	05-14-12	05-14-12	05-14-12	06-12-12	06-12-12	06-12-12
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%
Trt No.	Treatment Name					
1	UNTREATED CHECK	0.00 c	0.00 c	0.00 c	0.00 b	0.00 c
2	ALION RELY 280	100.00 a	100.00 a	100.00 a	100.00 a	97.50 a
3	ALION RELY 280	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
4	ALION ROUNDUP POWERMAX	100.00 a	100.00 a	100.00 a	100.00 a	97.50 a
5	ALION ROUNDUP POWERMAX	100.00 a	100.00 a	100.00 a	100.00 a	97.50 a
6	SURFLAN A.S. ROUNDUP POWERMAX	87.50 b	90.00 b	91.25 b	100.00 a	60.00 b
LSD (P=.05)	5.890	5.023	3.870	0.000	5.023	4.127
Standard Deviation	3.909	3.333	2.569	0.000	3.333	2.739
CV	4.81	4.08	3.14	0.0	4.35	3.34

Pest Code	PLAMA	TAROF	SONAS	ERICA	SONOL	EPHMA
Rating Date	06-12-12	06-12-12	06-12-12	06-12-12	06-12-12	06-12-12
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%
Trt No.	Treatment Name					
1	UNTREATED CHECK	0.00 b	0.00 c	0.00 c	0.00 c	0.00 c
2	ALION RELY 280	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
3	ALION RELY 280	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
4	ALION ROUNDUP POWERMAX	100.00 a	100.00 a	100.00 a	100.00 a	100.00 a
5	ALION ROUNDUP POWERMAX	98.75 a	98.75 a	100.00 a	100.00 a	100.00 a
6	SURFLAN A.S. ROUNDUP POWERMAX	97.50 a	85.00 b	92.50 b	87.50 b	85.00 b
LSD (P=.05)	3.529	2.945	5.890	5.890	3.552	2.945
Standard Deviation	2.342	1.954	3.909	3.909	2.357	1.954
CV	2.83	2.42	4.76	4.81	2.92	2.41

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.