

2013

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 weed 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 nor 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, Dr. Jamshid Ashigh, Assistant Professor, or Dr. Brian Schutte, Assistant Professor.

Please direct any questions about this report to Dr. Jill Schroeder at (575)-646-2328, Dr. Jamshid Ashigh at (575)-646-2888, or Dr. Brian Schutte at (575)-646-7082.

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General Trial Information

Trial Chemicals

Trade Name	Formulation Concentration	Common Name
Aim 2EC	240 g AI/L	carfentrazone
Armezon	336 g AI/L	topramazone
Callisto	480 g AI/L	mesotrione
Chateau 51 WDG	0.51 g AI/g	flumioxazin
Clearcast	120 g AI/L	imazamox
Collide	240 g AI/L	oxyfluorfen
Command 3ME	360 g AI/L	clomazone
Devrinol 2 - XT	240 g AI/L	napropamide
Devrinol DF - XT	0.5 g AI/g	napropamide
Dual Magnum	914 g AI/L	S-metolachlor
Galleon	240 g AI/L	penoxsulam
Outlook	720 g AI/L	dimethenamid-P
Prowl H ₂ O	456 g AI/L	pendimethalin
Roundup Pro	460 g AI/L	glyphosate
Sandea 75WG	0.75 g AI/g	halosulfuron
Sharpen	342 g AI/L	saflufenacil
Sonar Genesis	60 g AI/L	fluridone
Spartan 4F	480 g AI/L	sulfentrazone
Surflan	480 g AI/L	oryzalin
V-10142 75WG	0.75 g AI/g	imazosulfuron
Zidua	0.85 g AI/g	pyroxasulfone
-	4.013 Lb AI/GAL	oxyfluorfen + penoxsulam
-	4 Lb AI/GAL	oxyfluorfen
-	1.67 Lb AI/GAL	indaziflam
-	5.5 Lb AI/GAL	glyphosate

Adjuvants

Dyne-Amic	modified vegetable oil surfactant blend
Agri-Dex	crop oil concentrate (COC)

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Crops

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

Pests

Pest Code	Common Name	Binomial
AMAPA	Palmer amaranth	<i>Amaranthus palmeri</i>
ANVCR	spurred anoda	<i>Anoda cristata</i>
DATQU	oakleaf thornapple	<i>Datura quercifolia</i>
ECHCG	common barnyardgrass	<i>Echinochloa crus-galli</i>
ECHCO	junglerice	<i>Echinochloa colonum</i>
EPHMA	spotted spurge	<i>Chamaesyce maculata</i>
EQUHY	scouringrush	<i>Equisetum hyemale</i>
KCHSC	kochia	<i>Kochia scoparia</i>
IPOZZ	morningglory species	<i>Ipomoea species</i>
PHBPU	tall morningglory	<i>Ipomoea purpurea</i>
PHYWR	Wright groundcherry	<i>Physalis acutifolia</i>
POAZZ	annual grasses	<i>Poa species (junglerice and yellow foxtail)</i>
SASKR	Russian thistle	<i>Salsola tragus</i>
SETLU	yellow foxtail	<i>Setaria pumila</i>
SETPU	yellow foxtail	<i>Setaria pumila</i>
SSYIR	London rocket	<i>Sisymbrium irio</i>

Report Code Definitions

Code	Definition
BACCAI	Backpack applicator, compressed air operated
BROFOL	Broadcast spray application over the top of the plant foliage
BROSOI	Broadcast spray application to the soil
COT	Cotyledon stage
DIRSOI	Directed spray application at the soil
POST	Postemergence
PPI	Preplant incorporated
PRE	Preemergence
PREINC	Preemergence incorporated
PREPLANT	Prior to planting the crop
SLIWET	Soil slightly wet
THINNING	Crop stand reduction to prevent self competition

Soil Descriptions

	Field Trials 2013-LC-05 and 2013-LC-06	Greenhouse Trials 2013- GH-08 and 2013-GH-09
Test Parameter	Test Result	Test Result
pH	7.6	8.1
Elect. Cond.	1.96 mmhos/cm	--
Na Adsorption Ratio	2.93	--
K(1:5 soil:water)	50 mg/Kg	--
NO ₃ -N (1:5 soil:water)	36.2 mg/Kg	--
Organic Matter	1.2 %	0.8 %
Texture	Sandy Clay Loam	Fine Sandy Loam
Sand	54 %	79 %
Silt	19 %	12 %
Clay	27 %	9 %

Weather Conditions

Field Trials:

NMSU State Climate Network
Leyendecker 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

2013 Month	Temperature			Humidity		Precipitation	Soil Temp		
	Min C	Max C	Mean C	Min %	Max %	Accumulation cm	Min C	Max C	Mean C
January	-4.35	12.90	3.80	24.41	73.27	0.74	2.76	8.76	5.27
February	-2.82	16.53	6.52	14.20	67.78	0.36	4.80	13.14	8.48
March	3.18	23.47	13.83	11.28	52.81	0.00	10.02	19.42	14.30
April	6.26	26.64	17.46	8.76	58.38	0.00	13.51	22.52	17.70
May	9.66	29.87	20.86	9.99	66.08	0.03	18.11	27.85	22.73
June	16.84	37.11	26.67	10.68	69.21	0.81	25.01	35.22	29.79
July	19.11	33.75	25.82	26.32	84.32	6.05	24.28	31.59	27.51
August	18.20	34.02	25.78	23.02	85.43	2.29	25.05	33.21	28.63
September	15.50	30.09	22.43	28.80	85.78	4.55	21.86	29.13	25.02
October	5.06	25.38	14.66	18.62	86.95	0.00	15.12	22.96	18.62
November	1.02	19.00	9.22	28.38	84.32	0.18	9.81	16.19	12.63

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Greenhouse Trials:

Onsite Weather Station
 Leyendecker Plant Science Research Center - Weed Science Greenhouse

2013 Month	Temperature			Humidity		Soil Temp		
	Min C	Max C	Mean C	Min %	Max %	Min C	Max C	Mean C
March	24.14 ¹	33.93 ¹	19.43 ¹	13.44 ¹	59.84 ¹	18.27	30.24	22.95
April	--	--	--	--	--	17.58 ⁴	28.13 ⁴	22.31 ⁴
May	--	--	--	--	--	19.49 ⁵	35.21 ⁵	26.21 ⁵
June	--	--	--	--	--	26.98 ⁶	33.33 ⁶	26.98 ⁶
July	28.52 ²	38.20 ²	24.06 ²	--	86.55 ²	15.28 ²	21.98 ²	17.82 ²
August	29.43 ³	39.23 ³	24.48 ³	--	75.54 ³	19.17 ⁷	28.92 ⁷	22.94 ⁷

¹ - for March 1, 2013 through March 10, 2013

² - for July 12, 2013 through July 31, 2013

³ - for August 1, 2013 through August 8, 2013

⁴ - for April 1, 2013 and April 16, 2013 through April 23, 2013

⁵ - for May 3, 2013 through May 31, 2013

⁶ - for June 1, 2013 through June 13, 2013

⁷ - for August 1, 2013 through August 25, 2013

Scouringrush Response to Sonar Genesis™ (Fluridone) and Clearcast™ (Imazamox)

Trial ID: 12-GH-EQUHY-GENESIS

Title: Scouringrush Response to Sonar Genesis™ (Fluridone) and Clearcast™ (Imazamox)

Pest Description

Species Code	Binomial	Common Name
EQUHY	<i>Equisetum hyemale</i>	scouringrush

Site Description and Design

Site Type: GREENHOUSE

Plot Width: 10.2 cm

Plot Length: 10.2 cm

Plot Area: 103.2 cm²

Replications: 6

Study Design: Completely Random

Application Description

	A	B
Application Date:	2/15/2012	3/9/2012
Time of Day:	PM	AM
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Application Placement:	SOIL	FOLIAR
Applied By:	ANDREW	ANDREW
Air Temperature:	15.6 C	15.6 C
% Relative Humidity:	45	33
Wind Velocity:	0	2.4 KPH
Dew Presence (Y/N):	N	-
Soil Temperature:	-	22 C
Soil Moisture:	DRY	MOIST
% Cloud Cover:	0	-

Scouringrush Response to Sonar Genesis™ (Fluridone) and Clearcast™ (Imazamox)

Pest Stage At Each Application

	A	B
Stage Majority, Percent:	PRE 100	-

Application Equipment

	A	B
Appl. Equipment:	BACCAI	BACCAI
Operating Pressure, Unit:	24 PSI	21 PSI
Nozzle Type:	TEEJET FLATFAN	TEEJET FLATFAN
Nozzle Size:	8001E VS	8001E VS
Nozzles/Row:	1	1
Nozzle Calibration, Unit:	236 mL/MIN	232 mL/MIN
Band Width, Unit:	15.24 cm	15.24 cm
Ground Speed, Unit:	3.2 KPH	3.2 KPH
Incorporation Equip.:	IRRIGATION	NA
Carrier:	WATER	WATER
Spray Volume, Unit:	281 L/Ha	281 L/Ha
Mix Size, Unit:	50 mL	50 mL

Scouringrush Response to Sonar Genesis™ (Fluridone) and Clearcast™ (Imazamox)

Trial Treatments

Trt. No.	Treatment Name	Form. Conc.	Form. Unit	Form. Type	Rate Rate Unit	Appl. Code
1	UNTREATED PRE					
2	UNTREATED POST					
3	SONAR GENESIS PRE	60 g AI/L		SC	0.56 Kg AI/Ha	A
4	SONAR GENESIS PRE	60 g AI/L		SC	1.12 Kg AI/Ha	A
5	SONAR GENESIS PRE	60 g AI/L		SC	2.24 Kg AI/Ha	A
6	CLEARCAST PRE	120 g AE/L		SC	0.28 Kg AE/Ha	A
7	CLEARCAST PRE	120 g AE/L		SC	0.56 Kg AE/Ha	A
8	SONAR GENESIS PRE	60 g AI/L		SC	0.56 Kg AI/Ha	A
	CLEARCAST PRE	120 g AE/L		SC	0.14 Kg AE/Ha	A
9	SONAR GENESIS PRE	60 g AI/L		SC	1.12 Kg AI/Ha	A
	CLEARCAST PRE	120 g AE/L		SC	0.28 Kg AE/Ha	A
10	SONAR GENESIS PRE	60 g AI/L		SC	2.24 Kg AI/Ha	A
	CLEARCAST PRE	120 g AE/L		SC	0.56 Kg AE/Ha	A
11	SONAR GENESIS POST	60 g AI/L		SC	1.12 Kg AI/Ha	B
12	SONAR GENESIS POST	60 g AI/L		SC	2.24 Kg AI/Ha	B
13	CLEARCAST POST	120 g AE/L		SC	0.28 Kg AE/Ha	B
14	CLEARCAST POST	120 g AE/L		SC	0.56 Kg AE/Ha	B
15	SONAR GENESIS POST	60 g AI/L		SC	1.12 Kg AI/Ha	B
	CLEARCAST POST	120 g AE/L		SC	0.28 Kg AE/Ha	B
16	SONAR GENESIS POST	60 g AI/L		SC	2.24 Kg AI/Ha	B
	CLEARCAST POST	120 g AE/L		SC	0.56 Kg AE/Ha	B

Scouringrush Response to Sonar Genesis™ (Fluridone) and Clearcast™ (Imazamox)

AOV Data Summary

Pest Code Description Rating Date Rating Unit		EQUHY Shoot Count 3/12/2012 # of Shoots	EQUHY Shoot Count 3/29/2012 # of Shoots	EQUHY Phytotoxicity 4/11/2012 % CONTROL	EQUHY Shoot Count 4/11/2012 # of Shoots
Trt No.	Treatment Name				
1	UNTREATED PRE	31.2 a	32.8 ab	0 d	46.3 ab
2	UNTREATED POST	34.7 a	35.8 a	0 d	47.5 ab
3	SONAR GENESIS PRE	21.2 ab	22.7 b-e	70 a	21.3 cd
4	SONAR GENESIS PRE	23.8 ab	14.7 e	76.7 a	25.2 bcd
5	SONAR GENESIS PRE	20.7 ab	16 de	81.7 a	16.2 d
6	CLEARCAST PRE	19 ab	21.2 b-e	22.5 c	32.5 a-d
7	CLEARCAST PRE	17 ab	19 cde	49.2 b	26.8 bcd
8	SONAR GENESIS PRE CLEARCAST PRE	26.8 ab	22.5 b-e	36.7 bc	34.3 a-d
9	SONAR GENESIS PRE CLEARCAST PRE	11 b	13.3 e	74.2 a	22.5 cd
10	SONAR GENESIS PRE CLEARCAST PRE	17 ab	18.7 cde	87.5 a	25.8 bcd
11	SONAR GENESIS POST	36 a	29.2 a-d	73.3 a	50 a
12	SONAR GENESIS POST	30.7 a	22.2 b-e	83.3 a	31.3 a-d
13	CLEARCAST POST	31.7 a	27 a-e	29.2 c	38.3 a-d
14	CLEARCAST POST	31 a	26.3 a-e	75 a	35.5 a-d
15	SONAR GENESIS POST CLEARCAST POST	31.5 a	31 abc	70 a	43.7 abc
16	SONAR GENESIS POST CLEARCAST POST	32.5 a	27 a-e	84.2 a	36.3 a-d
LSD (P=.05)		10.86	8.24	13.83	13.44
Standard Deviation		9.41	7.14	11.98	11.64
CV		36.21	30.1	20.98	34.88

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.

Scouringrush Response to Sonar Genesis™ (Fluridone) and Clearcast™ (Imazamox)

AOV Data Summary

Pest Code		EQUHY Shoot Fresh Weight	EQUHY Phytotoxicity	EQUHY Stem Count
Description				
Rating Date		4/11/2012	6/1/2012	6/1/2012
Rating Unit		grams/pot	% CONTROL	# of Shoots
Trt No.	Treatment Name			
1	UNTREATED PRE	39.84 a	0 f	85.5 a
2	UNTREATED POST	38.87 a	5 ef	75.3 a
3	SONAR GENESIS PRE	6.78 ef	88.3 ab	20 c
4	SONAR GENESIS PRE	5.81 ef	91.7 ab	14.7 c
5	SONAR GENESIS PRE	6.01 ef	89.8 ab	25.2 c
6	CLEARCAST PRE	23.86 bc	9.2 ef	66.3 a
7	CLEARCAST PRE	17.25 cd	14.2 e	71.2 a
8	SONAR GENESIS PRE CLEARCAST PRE	27.57 b	52.5 d	64 a
9	SONAR GENESIS PRE CLEARCAST PRE	8.02 ef	75.8 c	33.7 bc
10	SONAR GENESIS PRE CLEARCAST PRE	3.38 f	80.7 bc	18.3 c
11	SONAR GENESIS POST	17.02 cd	91.5 ab	7.5 c
12	SONAR GENESIS POST	9.07 ef	95 a	6.7 c
13	CLEARCAST POST	23.99 bc	6.7 ef	81.5 a
14	CLEARCAST POST	7.60 ef	71.7 c	57.7 ab
15	SONAR GENESIS POST CLEARCAST POST	14.5 de	80 bc	35.5 bc
16	SONAR GENESIS POST CLEARCAST POST	8.34 ef	96.3 a	16.2 c
LSD (P=.05)		6.135	9.07	21.17
Standard Deviation		5.313	7.86	18.33
CV		32.96	13.25	43.18

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.

Scouringrush Response to Sonar Genesis™ (Fluridone) and Clearcast™ (Imazamox)

AOV Data Summary

Pest Code		EQUHY Stem Fresh Weight	EQUHY Stem Dry Weight	EQUHY Root Dry Weight
Description				
Rating Date		6/1/2012	6/8/2012	6/8/2012
Rating Unit		grams/pot	grams/pot	grams/pot
Trt No.	Treatment Name			
1	UNTREATED PRE	31.54 a	6.37 a	49.03 a
2	UNTREATED POST	25.76 ab	5.52 ab	36.59 ab
3	SONAR GENESIS PRE	4.31 d	0.75 d	18.33 b
4	SONAR GENESIS PRE	2.53 d	0.42 d	20.26 b
5	SONAR GENESIS PRE	3.76 d	0.65 d	22.42 b
6	CLEARCAST PRE	28.75 ab	6.03 a	33.26 ab
7	CLEARCAST PRE	25.67 ab	5.44 ab	35.11 ab
8	SONAR GENESIS PRE CLEARCAST PRE	22.95 bc	4.55 bc	19.38 b
9	SONAR GENESIS PRE CLEARCAST PRE	8.73 d	1.71 d	22.17 b
10	SONAR GENESIS PRE CLEARCAST PRE	3.61 d	0.59 d	18.03 b
11	SONAR GENESIS POST	3.74 d	0.21 d	19.41 b
12	SONAR GENESIS POST	0.46 d	0.07 d	14.66 b
13	CLEARCAST POST	31.17 a	6.43 a	25.57 b
14	CLEARCAST POST	18.01 c	3.71 c	35.43 ab
15	SONAR GENESIS POST CLEARCAST POST	8.22 d	1.52 d	24.94 b
16	SONAR GENESIS POST CLEARCAST POST	1.63 d	0.26 d	19.17 b
LSD (P=.05)		5.764	1.084	15.431
Standard Deviation		4.991	0.9387	13.364
CV		36.17	33.97	51.68

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.

Scouringrush Response to Sonar Genesis™ (Fluridone), Clearcast™ (Imazamox) and Galleon™ (Penoxsulam)
Applied Preemergence

Trial ID: 2013-GH-02

**Title: Scouringrush Response to Sonar Genesis™ (Fluridone), Clearcast™ (Imazamox) and
Galleon™ (Penoxsulam) Applied Preemergence**

Pest Description

Species Code	Binomial	Common Name
EQUHY	<i>Equisetum hyemale</i>	scouringrush

Site Description and Design

Site Type: Greenhouse

Plot Width: 10.2 cm

Plot Length: 10.2 cm

Plot Area: 103.2 cm²

Replications: 6

Study Design: Randomized Complete Block

Application Description

	A
Application Date:	3/15/2013
Time of Day:	1:46 PM
Application Method:	SPRAY
Application Timing:	PRE
Application Placement:	BROSOI
Applied By:	ANDREW
Air Temperature:	29.8 C
% Relative Humidity:	34
Wind Velocity:	1.6 KPH
Dew Presence (Y/N):	N
Soil Temperature:	17 C
Soil Moisture:	MOIST
% Cloud Cover:	0

**Scouringrush Response to Sonar Genesis™ (Fluridone), Clearcast™ (Imazamox) and Galleon™ (Penoxsulam)
Applied Preemergence**

Pest Stage At Each Application

	A
Weed Code	EQUHY
Growth Stage	PRE
Size	0 cm

Application Equipment

	A
Appl. Equipment:	CO ₂ BACKPACK
Equipment Type:	BACCAI
Operating Pressure:	186 kPa
Nozzle Type:	Teejet Flatfan
Nozzle Size:	8003 E
Nozzles/Row:	1
Nozzle Calibration:	760 mL/MIN
Band Width:	50.8 cm
Boom ID:	1-NOZZLE
Ground Speed:	3.2 KPH
Incorporation Equip.:	IRRIGATION
Hours to Incorp.:	1.5
Carrier:	WATER
Spray Volume:	281 L/Ha
Mix Size:	0.5 Liter
Propellant:	CO ₂
Tank Mix (Y/N):	N

Scouringrush Response to Sonar Genesis™ (Fluridone), Clearcast™ (Imazamox) and Galleon™ (Penoxsulam)
Applied Preemergence

Trial Treatments

Trt. No.	Treatment Name	Form. Conc.	Form. Unit	Form. Type	Rate Unit	Rate	Appl. Code
1	SONAR GENESIS	60 g AI/L		SC	L/Ha	9.35	A
2	SONAR GENESIS	60 g AI/L		SC	L/Ha	18.7	A
3	SONAR GENESIS	60 g AI/L		SC	L/Ha	37.4	A
4	CLEARCAST	120 g AI/L		SC	L/Ha	1.17	A
5	CLEARCAST	120 g AI/L		SC	L/Ha	2.34	A
6	CLEARCAST	120 g AI/L		SC	L/Ha	4.68	A
7	GALLEON	240 g AI/L		SC	L/Ha	0.42	A
8	GALLEON	240 g AI/L		SC	L/Ha	0.84	A
9	SONAR GENESIS	60 g AI/L		SC	L/Ha	32.5	A
	CLEARCAST	120 g AI/L		SC	L/Ha	4.68	A
10	SONAR GENESIS	60 g AI/L		SC	L/Ha	37.4	A
	CLEARCAST	120 g AI/L		SC	L/Ha	4.68	A
11	SONAR GENESIS	60 g AI/L		SC	L/Ha	32.5	A
	GALLEON	240 g AI/L		SC	L/Ha	0.84	A
12	SONAR GENESIS	60 g AI/L		SC	L/Ha	37.4	A
	GALLEON	240 g AI/L		SC	L/Ha	0.84	A
13	CLEARCAST	120 g AI/L		SC	L/Ha	2.34	A
	GALLEON	240 g AI/L		SC	L/Ha	0.84	A
14	CLEARCAST	120 g AI/L		SC	L/Ha	4.68	A
	GALLEON	240 g AI/L		SC	L/Ha	0.84	A
15	CONTROL						

Scouringrush Response to Sonar Genesis™ (Fluridone), Clearcast™ (Imazamox) and Galleon™ (Penoxsulam)
Applied Preemergence

AOV Data Summary

Pest Code Description Rating Date Rating Unit		EQUHY Phytotoxicity 4/5/2013 % Control	EQUHY Shoot Count 4/5/2013 # of Shoots	EQUHY Phytotoxicity 4/30/2013 % Control
Trt No.	Treatment Name			
1	SONAR GENESIS	60 c	13.7 a-d	92.3 a
2	SONAR GENESIS	65 bc	13.2 a-d	89.2 a
3	SONAR GENESIS	90 a	9.3 bcd	89.8 a
4	CLEARCAST	3.3 e	19.7 ab	3.3 b
5	CLEARCAST	9.2 e	18 abc	12.5 b
6	CLEARCAST	24.2 d	24.2 a	5 b
7	GALLEON	77.5 ab	7.7 cd	8.3 b
8	GALLEON	81.7 a	6.8 cd	17.5 b
9	SONAR GENESIS CLEARCAST	92.5 a	5.3 cd	90.8 a
10	SONAR GENESIS CLEARCAST	91.7 a	7.2 cd	90.8 a
11	SONAR GENESIS GALLEON	90 a	4.7 d	80.8 a
12	SONAR GENESIS GALLEON	84.2 a	6 cd	84.2 a
13	CLEARCAST GALLEON	88.3 a	4 d	4.2 b
14	CLEARCAST GALLEON	89.2 a	6.2 cd	2.5 b
15	CONTROL	0 e	19.7 ab	0 b
LSD (P=.05)		13.16	7.77	16.86
Standard Deviation		11.39	6.73	14.6
CV		18.05	61	32.62

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.

Scouringrush Response to Sonar Genesis™ (Fluridone), Clearcast™ (Imazamox) and Galleon™ (Penoxsulam)
Applied Preemergence

AOV Data Summary

Pest Code		EQUHY	EQUHY	EQUHY
Description		Shoot Count	Shoot Dry	Phytotoxicity
Rating Date		4/30/2013	5/3/2013	6/5/2013
Rating Unit		# of Shoots	grams	% Control
Trt No.	Treatment Name			
1	SONAR GENESIS	9.3 c	0.502 d	100 a
2	SONAR GENESIS	29.7 abc	0.645 d	99 a
3	SONAR GENESIS	27 abc	0.403 d	99.7 a
4	CLEARCAST	30.8 abc	2.527 ab	15.8 b
5	CLEARCAST	31.7 ab	2.152 abc	10 b
6	CLEARCAST	48.7 a	2.883 a	0 b
7	GALLEON	34.2 ab	1.302 cd	3.3 b
8	GALLEON	26.2 abc	1.32 cd	17.5 b
9	SONAR GENESIS CLEARCAST	23.7 bc	0.408 d	100 a
10	SONAR GENESIS CLEARCAST	26.7 abc	0.598 d	99.5 a
11	SONAR GENESIS GALLEON	27.8 abc	0.707 d	99.7 a
12	SONAR GENESIS GALLEON	30.3 abc	0.725 d	99 a
13	CLEARCAST GALLEON	35.3 ab	1.597 bcd	1.7 b
14	CLEARCAST GALLEON	27.5 abc	1.32 cd	3.3 b
15	CONTROL	37.7 ab	3.152 a	0 b
LSD (P=.05)		13.38	0.8283	17.53
Standard Deviation		11.59	0.7173	15.18
CV		38.93	53.16	30.42

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.

Scouringrush Response to Sonar Genesis™ (Fluridone), Clearcast™ (Imazamox) and Galleon™ (Penoxsulam)
Applied Preemergence

AOV Data Summary

Pest Code Description Rating Date Rating Unit		EQUHY Shoot Count 6/5/2013 # of Shoots	EQUHY Shoot Dry 6/10/2013 grams	EQUHY Root Dry Weight 6/12/2013 grams
Trt No.	Treatment Name			
1	SONAR GENESIS	0 c	0 b	0.632 b
2	SONAR GENESIS	2.3 c	0.012 b	1.93 ab
3	SONAR GENESIS	1.3 c	0.01 b	1.463 ab
4	CLEARCAST	47.5 ab	2.653 a	3.738 ab
5	CLEARCAST	48.7 ab	2.298 a	3.115 ab
6	CLEARCAST	67.3 a	2.892 a	4.172 a
7	GALLEON	51.7 ab	1.897 a	2.633 ab
8	GALLEON	37.3 b	1.9 a	2.14 ab
9	SONAR GENESIS CLEARCAST	0.3 c	0.002 b	1.102 ab
10	SONAR GENESIS CLEARCAST	1.2 c	0.027 b	1.663 ab
11	SONAR GENESIS GALLEON	1.5 c	0.022 b	1.465 ab
12	SONAR GENESIS GALLEON	1 c	0.018 b	1.625 ab
13	CLEARCAST GALLEON	59.7 ab	2.33 a	4.263 a
14	CLEARCAST GALLEON	49.3 ab	1.927 a	2.678 ab
15	CONTROL	56.5 ab	2.825 a	3.98 ab
LSD (P=.05)		16.41	0.9932	1.9694
Standard Deviation		14.21	0.8601	1.7056
CV		50.08	68.58	69.9

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.

Trial ID: 2013-LC-05

Title: Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

Crop Description

Species Code	Binomial	Common Name
CPSAN	<i>Capsicum annuum</i>	Chile
Variety: Big Jim	Seed Bed: Coarse	
Planting Date: 4/26/2013	Planting Rate: 4 Kg/Ha	Planting Method: Seeded
Emergence Date: 5/7/2013		
Harvest Date: 8/21/2013		

Pest Description

Species Code	Binomial	Common Name
AMAPA	<i>Amaranthus palmeri</i>	Palmer amaranth
DATQU	<i>Datura quercifolia</i>	oakleaf thornapple
PHYWR	<i>Physalis acutifolia</i>	Wright groundcherry
ANVCR	<i>Anoda cristata</i>	spurred anoda
ECHCO	<i>Echinochloa colonum</i>	junglerice
POAZZ	<i>Poa species</i>	junglerice and yellow foxtail

Site Description and Design

Site Type: Field		
Plot Width: 2 m	Plot Length: 9 m	Plot Area: 18 m ²
Replications: 4	Tillage Type: Conventional-till	
Study Design: Randomized Complete Block		

Field Preparation and Maintenance

3/21/2013 - Laser leveled the field.
3/26/2013 - Listed up rows.
4/16/2013 - Cultivated rows for bed preparation.
4/19/2013 - Harrow down tops of rows to create beds.
4/26/2013 - Incorporated treatments with a ring roller.
4/26/2013 - Planted chile.
5/31/2013 - Cultivated with a rolling cultivator.
6/13/2013 - Timed hoeing - measured and recorded the time taken to hoe all weeds in each plot.
6/19/2013 - Cultivated with a rolling cultivator.
6/20/2013 - Thinned chile stand down to one to two plants per eight inches.
7/11/2013 - Timed hoeing - measured and recorded the time taken to hoe all weeds in each plot.
8/14/2013 - Timed hoeing - measured and recorded the time taken to hoe all weeds in each plot.
8/21/2013 - Harvest - hand picked mature green marketable peppers from 20 feet of row per plot.

Fertilizer

3/26/2013	11-52-0	89 Kg 11-52-0/Ha
3/26/2013	0-0-60	132 Kg 0-0-60/Ha
6/21/2013	Urea Ammonium Nitrate	132 Kg N/Ha
8/5/2013	Urea Ammonium Nitrate	59 Kg N/Ha

Furrow Irrigation Dates

3/27/2013 - Pre Irrigation	6/7/2013
4/26/2013	6/21/2013
5/6/2013	7/5/2013
5/23/2013	8/5/2013

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

Application Description

	A	B	C
Application Date:	4/23/2013	4/24/2013	4/25/2013
Time of Day:	09:15 AM	08:40 AM	07:25 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	72 Hour PPI	48 Hour PPI	24 Hour PPI
Application Placement:	BROSOI	BROSOI	BROSOI
Applied By:	ANDREW	ANDREW	ANDREW
Air Temperature:	18.9 C	9.7 C	15.4 C
% Relative Humidity:	5	35	31
Wind Velocity	3.2 KPH	9.6 KPH	12.8 KPH
Wind Direction:	Plot 202 - 101	Plot 102 - 101	Plot 102 - 101
Dew Presence (Y/N):	N	N	N
Soil Temperature:	17.2 C	17.2 C	18.3 C
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	0	0	80

Application Description

	D	E	F
Application Date:	4/26/2013	5/6/2013	6/21/2013
Time of Day:	07:55 AM	9:05 AM	8:30 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	0 Hour PPI	PRE	THINNING
Application Placement:	BROSOI	BROSOI	DIRSOI
Applied By:	ANDREW	ANDREW	ANDREW
Air Temperature:	14.7 C	21.8 C	26.7 C
% Relative Humidity:	24	26	58
Wind Velocity	4.8 KPH	8 KPH	0 KPH
Wind Direction:	Plot 201 - 106	Plot 101 - 102	-
Dew Presence (Y/N):	N	N	N
Soil Temperature:	17.8 C	20 C	26.1 C
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	0	5	10

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

Crop Stage At Each Application

	A	B	C
Crop Code:	CPSAN	CPSAN	CPSAN
Stage/Height:	PREPLANT	PREPLANT	PREPLANT

Crop Stage At Each Application

	D	E	F
Crop Code:	CPSAN	CPSAN	CPSAN
Stage/Height:	PREPLANT	PRE	5-10 cm

Pest Stage At Each Application

	A	B	C
Weed Code	AMAPA	AMAPA	AMAPA
Growth Stage	PRE	PRE	PRE
Weed Code	DATQU	DATQU	DATQU
Growth Stage	PRE	PRE	PRE
Weed Code	PHYWR	PHYWR	PHYWR
Growth Stage	PRE	PRE	PRE
Weed Code	POAZZ	POAZZ	POAZZ
Growth Stage	PRE	PRE	PRE
Weed Code	ECHCO	ECHCO	ECHCO
Growth Stage	PRE	PRE	PRE

Pest Stage At Each Application

	D	E	F
Weed Code	AMAPA	AMAPA	AMAPA
Growth Stage	PRE	Cotyledon	PRE
Weed Code	DATQU	DATQU	DATQU
Growth Stage	PRE	Cotyledon	PRE
Weed Code	PHYWR	PHYWR	PHYWR
Growth Stage	PRE	Cotyledon	PRE
Weed Code	POAZZ	POAZZ	POAZZ
Growth Stage	PRE	Cotyledon	PRE
Weed Code	ECHCO	ECHCO	ECHCO
Growth Stage	PRE	Cotyledon	PRE

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

Application Equipment

	A	B	C
Appl. Equipment:	CO ₂ Backpack	CO ₂ Backpack	CO ₂ Backpack
Equipment Type:	BACCAI	BACCAI	BACCAI
Operating Pressure:	303 KPA	145 KPA	145 KPA
Nozzle Type:	Teejet Flatfan	Teejet Flatfan	Teejet Flatfan
Nozzle Size:	11001 VS	11002 VS	11002 VS
Nozzle Spacing:	50.8 cm	50.8 cm	50.8 cm
Nozzles/Row:	2	2	2
Nozzle Calibration:	388 mL/MIN	388 mL/MIN	413 mL/MIN
Boom ID:	4-NOZZLE	4-NOZZLE	4-NOZZLE
Ground Speed:	3.2 KPH	3.2 KPH	3.2 KPH
Incorporation Equip.:	Ringroller	Ringroller	Ringroller
Hours to Incorp.:	71.08	47.67	24.92
Carrier:	WATER	WATER	WATER
Spray Volume:	143 L/Ha	143 L/Ha	152 L/Ha
Mix Size:	1.5 Liters	1.5 Liters	1.5 Liters
Propellant:	CO ₂	CO ₂	CO ₂
Tank Mix (Y/N):	Y	Y	Y

Application Equipment

	D	E	F
Appl. Equipment:	CO ₂ Backpack	CO ₂ Backpack	CO ₂ Backpack
Equipment Type:	BACCAI	BACCAI	BACCAI
Operating Pressure:	138 KPA	117 KPA	193 KPA
Nozzle Type:	Teejet Flatfan	Teejet Flatfan	Teejet Flatfan
Nozzle Size:	11002 VS	11002 VS	8002E VS
Nozzle Spacing:	50.8 cm	50.8 cm	50.8 cm
Nozzles/Row:	2	2	2
Nozzle Calibration:	412 mL/MIN	385 mL/MIN	594 mL/MIN
Boom ID:	4-NOZZLE	4-NOZZLE	1-NOZZLE
Ground Speed:	3.2 KPH	3.2 KPH	4.8 KPH
Incorporation Equip.:	Ringroller	-	-
Hours to Incorp.:	0.42	-	-
Carrier:	WATER	WATER	WATER
Spray Volume:	152 L/Ha	142 L/Ha	146 L/Ha
Mix Size:	1.5 Liters	1.5 Liters	1.5 Liters
Propellant:	CO ₂	CO ₂	CO ₂
Tank Mix (Y/N):	N	Y	N

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

Trial Treatments

Trt No.	Treatment Name	Form. Conc.	Form. Unit	Form Type	Rate Rate Unit	Appl. Code
1	UNTREATED CHECK					
2	COMMAND 3ME	360 g AI/L		ME	1.95 L/Ha	D
3	DEVRIKOL 2-XT	240 g AI/L		L	7 L/Ha	A
	COMMAND 3ME	360 g AI/L		ME	1.95 L/Ha	A
4	DEVRIKOL 2-XT	240 g AI/L		L	7 L/Ha	B
	COMMAND 3ME	360 g AI/L		ME	1.95 L/Ha	B
5	DEVRIKOL 2-XT	240 g AI/L		L	7 L/Ha	C
	COMMAND 3ME	360 g AI/L		ME	1.95 L/Ha	C
6	DEVRIKOL DF-XT	50 % AI		DF	3.4 Kg/Ha	A
	COMMAND 3ME	360 g AI/L		ME	1.95 L/Ha	A
7	DEVRIKOL DF-XT	50 % AI		DF	3.4 Kg/Ha	B
	COMMAND 3ME	360 g AI/L		ME	1.95 L/Ha	B
8	DEVRIKOL DF-XT	50 % AI		DF	3.4 Kg/Ha	C
	COMMAND 3ME	360 g AI/L		ME	1.95 L/Ha	C
9	DUAL MAGNUM	914 g AI/L		EC	1.55 L/Ha	F
10	DEVRIKOL 2-XT	240 g AI/L		L	7 L/Ha	E
	COMMAND 3ME	360 g AI/L		ME	1.95 L/Ha	E
	ROUNDUP PRO	480 g AI/L		SC	2.34 L/Ha	E
11	DEVRIKOL DF-XT	50 % AI		DF	3.4 Kg/Ha	E
	COMMAND 3ME	360 g AI/L		ME	1.95 L/Ha	E
	ROUNDUP PRO	480 g AI/L		SC	2.34 L/Ha	E

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

AOV Data Summary

Pest Code	CPSAN	AMAPA	POAZZ	DATQU
Crop Code	Phytotoxicity	Phytotoxicity	Phytotoxicity	Phytotoxicity
Description	5/16/2013	5/16/2013	5/16/2013	5/16/2013
Rating Date	% Injury	% Control	% Control	% Control
Rating Unit				
Trt No.	Treatment Name			
1	UNTREATED CHECK	0 a	0 b	0 b
2	COMMAND 3ME	0 a	58.8 a	92.5 a
3	DEVINOL 2-XT COMMAND 3ME	0 a	70.8 a	89.8 a
4	DEVINOL 2-XT COMMAND 3ME	0 a	98.5 a	93.8 a
5	DEVINOL 2-XT COMMAND 3ME	0 a	97.5 a	92.5 a
6	DEVINOL DF-XT COMMAND 3ME	0 a	87 a	89.5 a
7	DEVINOL DF-XT COMMAND 3ME	0 a	88.8 a	87.5 a
8	DEVINOL DF-XT COMMAND 3ME	0 a	90.8 a	93.5 a
9	DUAL MAGNUM	-	-	-
10	DEVINOL 2-XT COMMAND 3ME ROUNDUP PRO	0 a	98.3 a	91.3 a
11	DEVINOL DF-XT COMMAND 3ME ROUNDUP PRO	0 a	99.8 a	95.8 a
LSD (P=.05)		0	29.13	10.98
Standard Deviation		0	20.17	7.61
CV		0	28.09	10.13

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.

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

AOV Data Summary

Pest Code	CPSAN	AMAPA	DATQU	PHYWR
Crop Code	Phytotoxicity	Phytotoxicity	Phytotoxicity	Phytotoxicity
Description	5/29/2013	5/29/2013	5/29/2013	5/29/2013
Rating Date	% Injury	% Control	% Control	% Control
Rating Unit				
Trt No.	Treatment Name			
1	UNTREATED CHECK	0 a	0 c	0 b
2	COMMAND 3ME	0 a	38.8 b	93.8 a
3	DEVINOL 2-XT COMMAND 3ME	0 a	57.5 ab	82.5 a
4	DEVINOL 2-XT COMMAND 3ME	0 a	93.3 a	91.3 a
5	DEVINOL 2-XT COMMAND 3ME	0 a	92 a	92.5 a
6	DEVINOL DF-XT COMMAND 3ME	0 a	73.8 ab	72.5 a
7	DEVINOL DF-XT COMMAND 3ME	0 a	72.5 ab	80 a
8	DEVINOL DF-XT COMMAND 3ME	0 a	92.3 a	91.3 a
9	DUAL MAGNUM	-	-	-
10	DEVINOL 2-XT COMMAND 3ME ROUNDUP PRO	0 a	93.3 a	93.8 a
11	DEVINOL DF-XT COMMAND 3ME ROUNDUP PRO	0 a	92.5 a	95 a
LSD (P=.05)		0	28.67	14.55
Standard Deviation		0	19.86	10.08
CV		0	30.95	13.99

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.

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

AOV Data Summary

Pest Code		POAZZ	CPSAN	CPSAN	CPSAN
Crop Code		Phytotoxicity	Timed Hoeing	Ave Heights	Ave Heights
Description		5/29/2013	6/13/2013	6/14/2013	7/9/2013
Rating Date		% Control	seconds/plot	cm	cm
Rating Unit					
Trt No.	Treatment Name				
1	UNTREATED CHECK	0 b	1313.5 a	7.08 b	19.48 c
2	COMMAND 3ME	88.8 a	685.3 b	8.1 b	24.63 b
3	DEVRIKOL 2-XT COMMAND 3ME	80 a	636.3 b	10.33 a	29.85 a
4	DEVRIKOL 2-XT COMMAND 3ME	89.5 a	320 b	11.18 a	34.53 a
5	DEVRIKOL 2-XT COMMAND 3ME	88.8 a	400.5 b	10.95 a	33.28 a
6	DEVRIKOL DF-XT COMMAND 3ME	80 a	582 b	10.15 a	29.75 a
7	DEVRIKOL DF-XT COMMAND 3ME	80.8 a	618 b	11.05 a	31.15 a
8	DEVRIKOL DF-XT COMMAND 3ME	93.8 a	340.5 b	12.13 a	35.03 a
9	DUAL MAGNUM	-	1421.8 a	7.25 b	19.25 c
10	DEVRIKOL 2-XT COMMAND 3ME ROUNDUP PRO	86.3 a	343.8 b	12.35 a	35.73 a
11	DEVRIKOL DF-XT COMMAND 3ME ROUNDUP PRO	92 a	448.3 b	11.45 a	32.7 a
LSD (P=.05)		14.37	302.36	1.581	4.297
Standard Deviation		9.95	209.4	1.095	2.976
CV		14.04	32.4	10.75	10.06

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.

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

AOV Data Summary

Pest Code		AMAPA	ANVCR	PHYWR	ECHCO
Crop Code					
Description		Phytotoxicity	Phytotoxicity	Phytotoxicity	Phytotoxicity
Rating Date		7/10/2013	7/10/2013	7/10/2013	7/10/2013
Rating Unit		% Control	% Control	% Control	% Control
Trt No.	Treatment Name				
1	UNTREATED CHECK	0 d	0 b	0 b	0 b
2	COMMAND 3ME	18.8 cd	57.5 ab	12.5 b	61.3 a
3	DEVINOL 2-XT COMMAND 3ME	74.8 ab	80 a	20 b	68.8 a
4	DEVINOL 2-XT COMMAND 3ME	91 a	91 a	40 b	83.8 a
5	DEVINOL 2-XT COMMAND 3ME	88.8 a	76.3 a	30 b	81.3 a
6	DEVINOL DF-XT COMMAND 3ME	71.3 ab	52.5 ab	30 b	76.3 a
7	DEVINOL DF-XT COMMAND 3ME	85.8 a	42.5 ab	18.8 b	76.3 a
8	DEVINOL DF-XT COMMAND 3ME	83.8 a	80 a	35 b	93.8 a
9	DUAL MAGNUM	38.8 bc	21.3 ab	90 a	82.5 a
10	DEVINOL 2-XT COMMAND 3ME ROUNDUP PRO	92.3 a	87.5 a	12.5 b	94.5 a
11	DEVINOL DF-XT COMMAND 3ME ROUNDUP PRO	83.8 a	68.8 a	0 b	92.5 a
LSD (P=.05)		30.58	43	35.81	28.59
Standard Deviation		21.18	29.78	24.8	19.8
CV		31.97	49.84	94.47	26.86

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.

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

AOV Data Summary

Pest Code		CPSAN	AMAPA	ECHCO	PHYWR
Crop Code		Timed Hoeing	Phytotoxicity	Phytotoxicity	Phytotoxicity
Description		7/11/2013	7/30/2013	7/30/2013	7/30/2013
Rating Date		seconds/plot	% Control	% Control	% Control
Rating Unit					
Trt No.	Treatment Name				
1	UNTREATED CHECK	753 a	0 d	0 c	0 a
2	COMMAND 3ME	491.8 b	2.5 d	48.8 ab	5 a
3	DEVRIKOL 2-XT COMMAND 3ME	348.3 b	22.5 cd	33.8 b	5 a
4	DEVRIKOL 2-XT COMMAND 3ME	291 b	84.8 ab	73.8 a	32.5 a
5	DEVRIKOL 2-XT COMMAND 3ME	333 b	54.8 abc	77.5 a	6.3 a
6	DEVRIKOL DF-XT COMMAND 3ME	449.8 b	40 bcd	57.5 ab	11.3 a
7	DEVRIKOL DF-XT COMMAND 3ME	362 b	55 abc	63.8 ab	7.5 a
8	DEVRIKOL DF-XT COMMAND 3ME	341 b	77.5 ab	83.8 a	20 a
9	DUAL MAGNUM	370.8 b	94.8 a	88.8 a	26.3 a
10	DEVRIKOL 2-XT COMMAND 3ME ROUNDUP PRO	275 b	73.8 ab	88.8 a	17.5 a
11	DEVRIKOL DF-XT COMMAND 3ME ROUNDUP PRO	354 b	88.8 ab	91.3 a	5 a
LSD (P=.05)		144.27	32.98	27.8	21.23
Standard Deviation		99.92	22.84	19.25	14.7
CV		25.15	42.27	29.93	118.69

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.

Grass and Broadleaf Weed Control Using Devrinol Formulations with UV Protector in Chile Peppers

AOV Data Summary

Pest Code		ANVCR	CPSAN	CPSAN	CPSAN
Crop Code		Phytotoxicity	Timed Hoeing	YIELD	Timed Hoeing
Description					Sum
Rating Date		7/30/2013	8/14/2013	8/21/2013	Total
Rating Unit		% Control	seconds/plot	Kg/Ha	seconds/plot
Trt No.	Treatment Name				
1	UNTREATED CHECK	0 b	857.3 a	3318 d	2923.8 a
2	COMMAND 3ME	88.8 a	473.3 b	7580.5 bcd	1650.3 bc
3	DEVINOL 2-XT COMMAND 3ME	87.5 a	550 b	12783.5 abc	1534.5 bc
4	DEVINOL 2-XT COMMAND 3ME	90 a	374 b	17505.8 a	985 c
5	DEVINOL 2-XT COMMAND 3ME	92.5 a	461.8 b	15673.3 ab	1195.3 c
6	DEVINOL DF-XT COMMAND 3ME	71.3 a	494 b	14547.3 ab	1525.8 bc
7	DEVINOL DF-XT COMMAND 3ME	76.3 a	483.5 b	12751 abc	1463.5 bc
8	DEVINOL DF-XT COMMAND 3ME	91.3 a	416.3 b	15439.3 ab	1097.8 c
9	DUAL MAGNUM	45 a	290.3 b	6333.3 cd	2082.8 b
10	DEVINOL 2-XT COMMAND 3ME ROUNDUP PRO	95 a	323.3 b	18058.8 a	942 c
11	DEVINOL DF-XT COMMAND 3ME ROUNDUP PRO	90 a	329 b	15713.8 ab	1131.3 c
LSD (P=.05)		30.37	207.59	5570.7	477.3
Standard Deviation		21.03	143.77	3858.06	330.56
CV		27.96	31.3	30.38	22

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.

Weed Response to Post-Emergence Herbicides Applied at Different Stages of Growth

Trial ID: 2013-LC-06

Title: Weed Response to Post-Emergence Herbicides Applied at Different Stages of Growth

Pest Description

Species Code

AMAPA

DATQU

IPOZZ

PHYWR

ANVCR

POAZZ

Binomial

Amaranthus palmeri

Datura quercifolia

Ipomoea species

Physalis acutifolia

Anoda cristata

Poa species

Common Name

Palmer amaranth

oakleaf thornapple

morningglory species

Wright groundcherry

spurred anoda

junglerice and yellow foxtail

Site Description and Design

Site Type: Field

Plot Width: 2 m

Replications: 4

Study Design: Randomized Complete Block

Plot Width: 7.6 m

Tillage Type: Conventional-till

Plot Area: 15.2 m²

Field Preparation and Maintenance

3/21/2013 - Laser leveled field.

3/26/2013 - Fertilized with 11-52-0 at 79 lb/A + 0-0-60 at 118 lb/A.

3/26/2013 - Listed up rows.

Irrigation Dates

5/15/2013

5/16/2013

6/5/2013

Weed Response to Post-Emergence Herbicides Applied at Different Stages of Growth

Application Description

	A	B	C	D
Application Date:	5/15/2013	5/24/2013	6/4/2013	6/12/2013
Time of Day:	9:00 AM	8:37 AM	8:30 AM	8:25 AM
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PREINC	COT - 2"	2" - 4"	4" - 6"
Application Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Applied By:	ANDREW	ANDREW	ANDREW	ANDREW
Air Temperature	19.5 C	24.3 C	22.7 C	29.3 C
% Relative Humidity:	40	44	18	39
Wind Velocity	0 KPH	3.2 KPH	1.6 KPH	0 KPH
Wind Direction:	-	101 to 201	101 to 102	-
Dew Presence (Y/N):	N	N	N	N
Soil Temperature	17.8 C	18.3 C	21.1 C	22.2 C
Soil Moisture:	Dry	Dry	Dry	Dry
% Cloud Cover:	50	0	0	0

Weed Response to Post-Emergence Herbicides Applied at Different Stages of Growth

Pest Stage At Each Application

	A	B	C	D
Weed Code	AMAPA	AMAPA	AMAPA	AMAPA
Density	-	0 to 3/Ft ²	3 to 10/Ft ²	1 to 6/Ft ²
Stage	PRE	Cot. to 1 leaf	-	Early flower
Size	-	0.5 in	2 to 3 in	5 to 8 in
Weed Code	DATQU	DATQU	DATQU	DATQU
Density	-	0 to 1/Ft ²	0 to 2/Ft ²	0 to 3/Ft ²
Stage	PRE	Cot.	-	Vegetative
Size	-	0.5 in	2 to 3 in	3 to 4 in
Weed Code	IPOZZ	IPOZZ	IPOZZ	IPOZZ
Density	-	0 to 1/Ft ²	0 to 1/Ft ²	0 to 1/Ft ²
Stage	PRE	Cot.	-	Vining
Size	-	1 in	2 to 3 in	3 to 5 in
Weed Code	PHYWR	PHYWR	PHYWR	PHYWR
Density	-	-	0 to 2/Ft ²	-
Stage	PRE	-	-	-
Size	-	-	1 to 2 in	-
Weed Code	ANVCR	ANVCR	ANVCR	ANVCR
Density	-	0 to 10/Ft ²	2 to 10/Ft ²	0 to 2/Ft ²
Stage	PRE	Cot.	-	Vegetative
Size	-	1 in	2 to 3 in	3 to 4 in
Weed Code	POAZZ	POAZZ	POAZZ	POAZZ
Density	-	0 to 2/Ft ²	-	-
Stage	PRE	Cot. to 1 leaf	-	-
Size	-	1 in	-	-

Weed Response to Post-Emergence Herbicides Applied at Different Stages of Growth

Application Equipment

	A	B	C	D
Appl. Equipment:	CO ₂ Backpack	CO ₂ Backpack	CO ₂ Backpack	CO ₂ Backpack
Equipment Type:	BACCAI	BACCAI	BACCAI	BACCAI
Operating Pressure	276 kPa	245 kPa	262 kPa	241 kPa
Nozzle Type:	Teejet Flatfan	Teejet Flatfan	Teejet Flatfan	Teejet Flatfan
Nozzle Size:	11002 VS	11002 VS	11002 VS	11002 VS
Nozzle Spacing	50.8 cm	50.8 cm	50.8 cm	50.8 cm
Nozzles/Row:	2	2	2	2
Nozzle Calibration	646.5 mL/MIN	630.5 mL/MIN	638 mL/MIN	630 mL/MIN
Boom ID:	4-NOZZLE	4-NOZZLE	4-NOZZLE	4-NOZZLE
Boom Length	2 m	2 m	2 m	2 m
Ground Speed	3.2 KPH	3.2 KPH	3.2 KPH	3.2 KPH
Incorporation Equip.:	IRRIGATION	-	-	-
Hours to Incorp.:	6.5	-	-	-
Carrier:	WATER	WATER	WATER	WATER
Spray Volume	238 L/Ha	233 L/Ha	235 L/Ha	233 L/Ha
Mix Size, Unit:	2 Liters	2 Liters	2 Liters	2 Liters
Propellant:	CO ₂	CO ₂	CO ₂	CO ₂
Tank Mix (Y/N):	N	N	N	N

Weed Response to Post-Emergence Herbicides Applied at Different Stages of Growth

Trial Treatments

Trt No.	Treatment Name	Form. Conc.	Form. Type	Rate	Growth Stage	Appl. Code
1	UNTREATED CHECK					
2	SULFENTRAZONE	480 g AI/L	F	0.14 Kg AI/Ha	COTYL-2"	B
3	SULFENTRAZONE	480 g AI/L	F	0.14 Kg AI/Ha	2"-4"	C
4	FLUMIOXAZIN	51 % AI	WG	0.108 Kg AI/Ha	PRE	A
5	FLUMIOXAZIN	51 % AI	WG	0.108 Kg AI/Ha	COTYL-2"	B
	SURFACTANT	100 %	OL	1% v/v	COTYL-2"	B
6	FLUMIOXAZIN	51 % AI	WG	0.108 Kg AI/Ha	2"-4"	C
	SURFACTANT	100 %	OL	1% v/v	2"-4"	C
7	FLUMIOXAZIN	51 % AI	WG	0.108 Kg AI/Ha	4"-6"	D
	SURFACTANT	100 %	OL	1% v/v	4"-6"	D
8	CARFENTRAZONE	240 g AI/L	EC	0.028 Kg AI/Ha	COTYL-2"	B
	COC	100 %	OL	1% v/v	COTYL-2"	B
9	CARFENTRAZONE	240 g AI/L	EC	0.028 Kg AI/Ha	2"-4"	C
	COC	100 %	OL	1% v/v	2"-4"	C
10	CARFENTRAZONE	240 g AI/L	EC	0.028 Kg AI/Ha	4"-6"	D
	COC	100 %	OL	1% v/v	4"-6"	D
11	HALOSULFURON	75 % AI	WG	0.039 Kg AI/Ha	PRE	A
12	HALOSULFURON	75 % AI	WG	0.039 Kg AI/Ha	COTYL-2"	B
	COC	100 %	OL	1% v/v	COTYL-2"	B
13	HALOSULFURON	75 % AI	WG	0.039 Kg AI/Ha	2"-4"	C
	COC	100 %	OL	1% v/v	2"-4"	C
14	IMAZOSULFURON	75 % AI	WG	0.28 Kg AI/Ha	PRE	A
15	IMAZOSULFURON	75 % AI	WG	0.28 Kg AI/Ha	COTYL-2"	B
	SURFACTANT	100 %	OL	1% v/v	COTYL-2"	B
16	IMAZOSULFURON	75 % AI	WG	0.28 Kg AI/Ha	2"-4"	C
	SURFACTANT	100 %	OL	1% v/v	2"-4"	C
17	PENDIMETHALIN	456 g AI/L	CS	1.57 Kg AI/Ha	PRE	A
18	METOLACHLOR	914 g AI/L	EC	1.42 Kg AI/Ha	PRE	A
19	NAPROPAMIDE	240 g AI/L	EC	1.68 Kg AI/Ha	PRE	A
20	CLOMAZONE	360 g AI/L	ME	0.7 Kg AI/Ha	PRE	A

Weed Response to Post-Emergence Herbicides Applied at Different Stages of Growth

AOV Data Summary

Pest Code		AMAPA	DATQU	ANVCR	IPOZZ
Description		Dry Weight	Dry Weight	Dry Weight	Dry Weight
Rating Date		7/3/2013	7/3/2013	7/3/2013	7/3/2013
Rating Unit		g/0.5 m ²	g/0.5 m ²	g/0.5 m ²	g/0.5 m ²
Trt No.	Treatment Name				
1	UNTREATED CHECK	22.29 a	7.845 b	25.56 ab	1.64 a
2	SULFENTRAZONE	3.71 a	7.33 b	1.775 c	7.16 a
3	SULFENTRAZONE	21.08 a	3.213 b	1.005 c	0.218 a
4	FLUMIOXAZIN	22.92 a	3.248 b	17.728 abc	2.128 a
5	FLUMIOXAZIN SURFACTANT	0 a	6.808 b	2.938 c	23.825 a
6	FLUMIOXAZIN SURFACTANT	0.04 a	0 b	1.06 c	1.59 a
7	FLUMIOXAZIN SURFACTANT	0 a	0 b	2.485 c	0 a
8	CARFENTRAZONE COC	4.87 a	8.42 b	0.995 c	16.232 a
9	CARFENTRAZONE COC	6.56 a	0 b	0.748 c	0.035 a
10	CARFENTRAZONE COC	9.61 a	0 b	0 c	0 a
11	HALOSULFURON	5.81 a	1.87 b	9.193 bc	1.965 a
12	HALOSULFURON COC	37.05 a	4.83 b	2.935 c	0 a
13	HALOSULFURON COC	35.57 a	0 b	11.605 bc	1.7 a
14	IMAZOSULFURON	38.18 a	0.515 b	1.718 c	0 a
15	IMAZOSULFURON SURFACTANT	16.88 a	13.333 b	2.498 c	0.55 a
16	IMAZOSULFURON SURFACTANT	8.25 a	6.8 b	8.005 bc	0 a
17	PENDIMETHALIN	19.25 a	15.563 b	2.075 c	23.985 a
18	METOLACHLOR	20.85 a	5.193 b	17.85 abc	14.77 a
19	NAPROPAMIDE	2.17	35.87 a	31.203 a	0.12 a
20	CLOMAZONE	43.43	2.473 b	24.445 ab	0.998 a
LSD (P=.05)		29.54	9.222	11.9652	17.9776
Standard Deviation		20.89	6.5209	8.4607	12.7121
CV		131.16	105.77	102.05	262.33

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.

Weed Response to Post-Emergence Herbicides Applied at Different Stages of Growth

AOV Data Summary

Pest Code		PHYWR	POAZZ	Other Weeds	All Weeds
Description		Dry Weight	Dry Weight	Dry Weight	Total Dry Weight
Rating Date		7/3/2013	7/3/2013	7/3/2013	7/3/2013
Rating Unit		g/0.5 m ²	g/0.5 m ²	g/0.5 m ²	g/0.5 m ²
Trt No.	Treatment Name				
1	UNTREATED CHECK	0.74 a	6.37 a	3.28 a	67.72 ab
2	SULFENTRAZONE	1.028 a	25.95 a	0.01 a	46.96 ab
3	SULFENTRAZONE	0 a	27.71 a	0.165 a	53.39 ab
4	FLUMIOXAZIN	2.01 a	21.32 a	0.023 a	69.37 ab
5	FLUMIOXAZIN SURFACTANT	0 a	22.16 a	0.803 a	56.53 ab
6	FLUMIOXAZIN SURFACTANT	0.023 a	37.26 a	0 a	39.97 ab
7	FLUMIOXAZIN SURFACTANT	0 a	15.29 a	0.018 a	17.79 b
8	CARFENTRAZONE COC	1.06 a	20.89 a	0.81 a	53.28 ab
9	CARFENTRAZONE COC	0.045 a	31.97 a	0 a	39.35 ab
10	CARFENTRAZONE COC	0 a	20.03 a	0.543 a	30.18 ab
11	HALOSULFURON	0.505 a	27.08 a	0.29 a	46.72 ab
12	HALOSULFURON COC	0 a	18.00 a	0.01 a	62.83 ab
13	HALOSULFURON COC	0 a	22.81 a	0.008 a	71.69 ab
14	IMAZOSULFURON	0.858 a	2.78 a	0 a	44.04 ab
15	IMAZOSULFURON SURFACTANT	0.943 a	17.86 a	0 a	52.06 ab
16	IMAZOSULFURON SURFACTANT	0.205 a	17.2 a	0 a	40.46 ab
17	PENDIMETHALIN	0.775 a	6.64 a	1.78 a	70.07 ab
18	METOLACHLOR	1.753 a	5.33 a	1.083 a	66.82 ab
19	NAPROPAMIDE	0.263 a	3.97 a	0.208 a	73.79 ab
20	CLOMAZONE	0.15 a	4.03 a	0 a	75.52 a
LSD (P=.05)		2.0938	19.665	2.5124	30.3658
Standard Deviation		1.4806	13.905	1.7765	21.4719
CV		285.96	78.43	393.58	39.82

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.

Trial ID: 2013-GH-08

Title: Chile Tolerance to Soil Applied Herbicides - Part 1

Crop Description

Crop Code

CPSAN

Binomial

Capsicum annuum

Common Name

chile

Variety: Big Jim

Planting Date: 7/22/2013

Planting Rate: 20 seeds/cup

Planting Method: hand seeded

Emergence Date: 7/30/2013

Harvest Date: 8/20/2013

Harvest Equipment: scissors

Harvest Method: Plants with living tissue were cut at the soil level, placed into small paper bags and weighed to obtain a fresh weight per cup.

Site Description and Design

Site Type: Greenhouse

Replications: 4

Study Design: Randomized Complete Block

Study Setup: 7/22/2013

Study Setup Method

Pots used were 16 ounce styrofoam cups.

Each cup was labeled with the Study number and Plot number and had five small holes poked into the bottom to allow for subirrigation and drainage.

A fine sandy loam soil was sieved to obtain a uniform soil particle size.

Each cup was filled with 500 grams of the sieved soil.

Twenty chile seeds were added to each cup.

The seeds were then covered with 50 mL of soil to obtain a planting depth of 0.5 inches.

The soil was packed down to obtain good seed to soil contact.

The cups were subirrigated with water until the soil was wet.

Once the soil surface in each cup was wet, the cups were removed from the subirrigation trays and allowed to drain.

Chile Tolerance to Soil Applied Herbicides - Part 1

Study Maintenance

No maintenance pesticides were used. All weeds were hand pulled to prevent competition. The cups were watered daily as needed to ensure good emergence and plant growth.

Air Temperatures averaged 29.30 C with a range of 23.25 C to 43.38 C. (data from 7/22 to 8/8/13)

Soil Temperatures averaged 20.97 C with a range of 14.29 C to 32.82 C. (data from 7/22 to 8/20/13)

Application Description

	A
Application Date:	7/23/2013
Time of Day:	2:15 PM
Application Method:	SPRAY
Application Timing:	PREINC
Application Placement:	BROSOI
Applied By:	ANDREW
Air Temperature	35.7 C
% Relative Humidity:	35
Wind Velocity	0
Dew Presence (Y/N):	N
Soil Temperature	31.1 C
Soil Moisture:	WET
% Cloud Cover:	10

Crop Stage At Each Application

	A
Crop Code:	CPSAN
Stage:	PRE

Application Equipment

	A
Appl. Equipment:	CO ₂ BACKPACK
Equipment Type:	BACCAI
Operating Pressure:	214 kPa
Nozzle Type:	Teejet Flatfan
Nozzle Size:	8002E VS
Nozzle Calibration:	648 mL/MIN
Band Width:	50.8 cm
% Coverage:	100
Boom ID:	1-NOZZLE
Ground Speed	3.2 KPH
Incorporation Equip.:	IRRIGATION / 90 mL of water sprinkled from above into each cup.
Hours to Incorp.:	0.25
Carrier:	WATER
Spray Volume	233.8 L/Ha
Mix Size:	0.5 Liter
Propellant:	CO ₂
Tank Mix (Y/N):	N

Trial Treatments

Trt No.	Treatment Name	Form. Conc.	Form. Type	Rate	Appl. Code
1	UNTREATED CHECK				
2	NAPROPAMIDE	240 g AI/L	EC	1.68 kg AI/Ha	A
3	ORYZALIN	480 g AI/L	EC	0.56 kg AI/Ha	A
4	ORYZALIN	480 g AI/L	EC	1.12 kg AI/Ha	A
5	OXYFLUORFEN	240 g AI/L	EC	0.14 kg AI/Ha	A
6	OXYFLUORFEN	240 g AI/L	EC	0.28 kg AI/Ha	A
7	SAFLUFENACIL	342 g AI/L	SC	0.025 kg AI/Ha	A
8	SAFLUFENACIL	342 g AI/L	SC	0.05 kg AI/Ha	A
9	PYROXASULFONE	85 % AI	WDG	0.03 kg AI/Ha	A
10	PYROXASULFONE	85 % AI	WDG	0.06 kg AI/Ha	A

AOV Data Summary

Crop Code Description Rating Date Rating Unit		CPSAN Stand Count 8/5/2013 NUMBER	CPSAN Phytotoxicity 8/5/2013 % INJURY	CPSAN Stand Count 8/12/2013 NUMBER
Trt No.	Treatment Name			
1	UNTREATED CHECK	8.3 ab	0 c	12.3 abc
2	NAPROPAMIDE	11 a	2.5 c	14.5 a
3	ORYZALIN	9.8 a	7.5 c	13.3 ab
4	ORYZALIN	5.3 abc	48.8 b	8.8 bc
5	OXYFLUORFEN	9 a	57.5 b	11.8 abc
6	OXYFLUORFEN	11 a	72.5 ab	12.5 abc
7	SAFLUFENACIL	0.8 bc	92.5 a	1 e
8	SAFLUFENACIL	0 c	100 a	0 e
9	PYROXASULFONE	7 abc	55 b	7.5 cd
10	PYROXASULFONE	7 abc	71.3 ab	4 de
LSD (P=.05)		5.31	26.11	3.76
Standard Deviation		3.66	17.99	2.59
CV		53.04	35.45	30.32

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.

Stand Count - only plants with living green tissue and whose cotyledons cleared the soil surface were counted.

AOV Data Summary

Crop Code Description Rating Date Rating Unit		CPSAN Phytotoxicity 8/12/2013 % INJURY	CPSAN Phytotoxicity 8/20/2013 % INJURY	CPSAN Fresh Weights 8/20/2013 grams
Trt No.	Treatment Name			
1	UNTREATED CHECK	5 d	0 d	3.373 b
2	NAPROPAMIDE	1.3 d	0 d	4.298 a
3	ORYZALIN	7.5 d	15 d	2.903 bc
4	ORYZALIN	72.5 b	71.3 b	0.838 e
5	OXYFLUORFEN	50 c	45 c	2.238 cd
6	OXYFLUORFEN	82.5 ab	62.5 b	1.77 d
7	SAFLUFENACIL	96 a	95.8 a	0.078 e
8	SAFLUFENACIL	100 a	100 a	0 e
9	PYROXASULFONE	76.3 b	87.5 a	0.558 e
10	PYROXASULFONE	86 ab	92.3 a	0.203 e
LSD (P=.05)		14.26	13.91	0.8835
Standard Deviation		9.83	9.59	0.6089
CV		17.04	16.84	37.46

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.

Photos taken on: 8/5/2013, 8/12/2013, 8/15/2013, and 8/20/2013.

Trial ID: 2013-GH-09

Title: Chile Tolerance to Soil Applied Herbicides - Part 2

Crop Description

Species Code	Binomial	Common Name
CPSAN	<i>Capsicum annuum</i>	chile
Variety: Big Jim		
Planting Date: 7/29/2013	Planting Rate: 20 seeds/pot	
Planting Method: hand seeded	Emergence Date: 8/5/2013	

Harvest Date: 8/26/2013

Harvest Equipment: scissors

Harvest Method: Plants with living tissue were cut at the soil level, placed into small paper bags and weighed to obtain a fresh weight per cup.

Site Description and Design

Site Type: Greenhouse

Replications: 4

Study Design: Randomized Complete Block

Study Setup Date: 7/29/2013

Study Setup Method:

Pots used were 16 ounce styrofoam cups.

Each cup was labeled with the Study number and Plot number and had five small holes poked into the bottom to allow for subirrigation and drainage.

A fine sandy loam soil was sieved to obtain a uniform soil particle size.

Each cup was filled with 500 grams of the sieved soil.

Twenty chile seeds were added to each cup.

The seeds were then covered with 50 mL of soil to obtain a planting depth of 0.5 inches.

The soil was packed down to obtain good seed to soil contact.

The cups were subirrigated with water until the soil was wet.

Once the soil surface in each cup was wet, the cups were removed from the subirrigation trays and allowed to drain.

Chile Tolerance to Soil Applied Herbicides - Part 2

Study Maintenance:

No maintenance pesticides were used. All weeds were hand pulled to prevent competition.

The cups were watered daily as needed to ensure good emergence and plant growth.

Air Temperatures averaged 29.42 C with a range of 23.86 C to 43.38 C. (data from 7/29 to 8/8/13)

Soil Temperatures averaged 22.36 C with a range of 14.29 C to 32.82 C. (data from 7/29 to 8/25/13)

Application Description

	A
Application Date:	7/30/2013
Time of Day:	1:30 PM
Application Method:	SPRAY
Application Timing:	PREINC
Application Placement:	BROSOI
Applied By:	ANDREW
Air Temperature	35.1 C
% Relative Humidity:	30
Wind Velocity	2.1 KPH / The cups were set up and sprayed so that the wind direction was inline with the cups.
Dew Presence (Y/N):	N
Soil Temperature	32.2 C
Soil Moisture:	WET
% Cloud Cover:	0

Crop Stage At Each Application

	A
Crop Code:	CPSAN
Stage:	PRE

Application Equipment

	A
Appl. Equipment:	CO ₂ Backpack Sprayer
Equipment Type:	BACCAI
Operating Pressure	241 kPa
Nozzle Type:	Teejet Flatfan
Nozzle Size:	8002E VS
Nozzle Calibration	646 mL/MIN
Band Width	50.8 cm
% Coverage:	100
Boom ID:	1-NOZZLE
Ground Speed	3.2 KPH
Incorporation Equip.:	IRRIGATION / 90 mL of water was sprinkled into each cup.
Hours to Incorp.:	0.17
Carrier:	WATER
Spray Volume	233.8 L/Ha
Mix Size	0.5 Liter
Propellant:	CO ₂
Tank Mix (Y/N):	N

Trial Treatments

Trt No.	Treatment Name	Form. Conc.	Form Type	Rate	Appl. Code
1	UNTREATED CHECK				
2	CLOMAZONE	360 g AI/L	EC	0.7 kg AI/Ha	A
3	MESOTRIONE	480 g AI/L	EC	0.088 kg AI/Ha	A
4	MESOTRIONE	480 g AI/L	EC	0.175 kg AI/Ha	A
5	TOPRAMAZONE	336 g AE/L	EC	12.4 g AE/Ha	A
6	TOPRAMAZONE	336 g AE/L	EC	24.7 g AE/Ha	A
7	DIMETHENAMID-P	720 g AI/L	EC	0.56 kg AI/Ha	A
8	DIMETHENAMID-P	720 g AI/L	EC	1.12 kg AI/Ha	A

AOV Data Summary

Crop Code		CPSAN	CPSAN	CPSAN
Description		Stand Count	Phytotoxicity	Stand Count
Rating Date		8/8/2013	8/8/2013	8/20/2013
Rating Unit		NUMBER	% INJURY	NUMBER
Trt No.	Treatment Name			
1	UNTREATED CHECK	14.5 ab	0 d	16.8 a
2	CLOMAZONE	14.3 ab	2.5 d	16 a
3	MESOTRIONE	15.3 a	37.5 b	16.5 a
4	MESOTRIONE	15.8 a	52.5 a	15 a
5	TOPRAMAZONE	12.5 ab	25 c	6.8 b
6	TOPRAMAZONE	14.8 ab	42.5 b	2 c
7	DIMETHENAMID-P	13.5 ab	17.5 c	15.3 a
8	DIMETHENAMID-P	9 b	22.5 c	13.3 a
LSD (P=.05)		3.97	9.22	4.11
Standard Deviation		2.7	6.27	2.79
CV		19.7	25.07	22.02

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.

Stand Count - only plants with living green tissue and whose cotyledons cleared the soil surface were counted

AOV Data Summary

Crop Code		CPSAN	CPSAN	CPSAN
Description		Phytotoxicity	Phytotoxicity	Fresh Weights
Rating Date		8/20/2013	8/26/2013	8/26/2013
Rating Unit		% INJURY	% INJURY	grams
Trt No.	Treatment Name			
1	UNTREATED CHECK	0 d	0 f	5.348 a
2	CLOMAZONE	13.8 d	7.5 ef	5.058 ab
3	MESOTRIONE	12.5 d	12.5 e	4.295 b
4	MESOTRIONE	53.8 c	35 d	2.673 c
5	TOPRAMAZONE	94.5 a	93.8 a	0.29 e
6	TOPRAMAZONE	99.8 a	100 a	0 e
7	DIMETHENAMID-P	62.5 c	47.5 c	2.185 c
8	DIMETHENAMID-P	76.3 b	71.3 b	1.365 d
LSD (P=.05)		12.48	8.81	0.7809
Standard Deviation		8.48	5.99	0.5309
CV		16.43	13.04	20.02

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.

Photos were taken on: 8/8/2013, 8/15/2013, 8/20/2013, and 8/26/2013.

TITLE: Tall morningglory (*Ipomoea purpurea*) and yellow foxtail (*Setaria pumila*) seedbank density effects on pendimethalin control outcomes

INVESTIGATORS: Brian Schutte, Ashley Cunningham, Jamshid Ashigh

OBJECTIVE: Determine the response of pendimethalin efficacy to increasing population density in germinable seedbanks of tall morningglory and yellow foxtail.

MATERIALS AND METHODS

- Study Sites:**

Site	Location	Soil organic matter (%)	Soil sand (%)	Soil silt (%)	Soil clay (%)	Soil texture class
Leyendecker Plant Science Center, Las Cruces, NM	N 32°12.131' W 106°44.771'	0.9	6	48	46	Silty clay
Los Lunas Agricultural Science Center, Los Lunas, NM	N 34°46.287' W 106°45.578'	0.6	66	10	24	Sandy clay loam

- Species nomenclature and abbreviations:**

Botanical name	Common name	Bayer code
<i>Ipomoea purpurea</i>	tall morningglory	PHBPU
<i>Setaria pumila</i>	yellow foxtail	SETLU

- Seedbank Augmentation:** Soil seedbanks were augmented with 500 (L), 1500 (ML), 2500 (M), 3500 (MH), or 4500 (H) yellow foxtail seeds m⁻² or 12 (L), 25 (ML), 50 (M), 100 (MH), or 200 (H) tall morningglory seeds m⁻². Prior to augmentation, seeds were treated to remove dormancy. To account for spatial variability in ambient seedbanks, each seedbank augmentation treatment was adjacent to non-augmented control plots. Augmentation and non-augmented control plots each measured 0.5 m by 2 m. Experimental units (0.5 m by 4 m) were augmentation plots with non-augmentation controls.
- Experimental design:** Split-plot design with four replications. Main plot factor at Leyendecker: weed species (PHBPU, SETLU). Subplot factor at Leyendecker: factorial combinations of seedbank augmentation level (L, ML, M, MH, H) and herbicide application (SPRAYED, UNSPRAYED). Main plot factor at Los Lunas: herbicide application (SPRAYED, UNSPRAYED). Subplot factor at Los Lunas: factorial combinations of weed species (PHBPU, SETLU) and seedbank augmentation level (L, ML, M, MH).

- **Herbicide Application:**

	Leyendecker	Los Lunas
Application Date:	5/21/2013	6/25/2013
Time of Day:	Early Morning (6AM)	Early Morning (6AM)
Herbicide Rate	1.6 KG AI/ HA	0.8 KG AI/HA
Application Method:	DIR SPRAY	DIR SPRAY
Application Timing:	PRE-WEED EMERG	PRE-WEED EMERG
Application Placement:	BROSOIL	BROSOIL
Incorporation Method:	Mechanical (Ring Roller)	Furrow Irrigation
Applied By:	Jamshid Ashigh	Jamshid Ashigh
Air Temperature, Unit:	19 C	23 C
% Relative Humidity:	22	13
Soil Moisture:	DRY	DRY
% Cloud Cover:	0	0

- **Application Equipment:**

Application Equipment:	CO2 Backpack
Application Type:	BACCAI
Operation Pressure:	137 KPA
Nozzle Type:	Teejet
Nozzle Size:	8002 VS
Nozzle / Row:	1
Nozzle Calibration, Unit:	509 mL /MIN
Band Width, Unit:	51 cm
Ground Speed, Unit:	3.22 KPH
Carrier:	Water
Spray Volume:	187.08 L / HA
Mix Size, Unit:	1.5L
Propellant:	CO2

- **Field Preparation:**

- Laser levelled
- Listed
- Cultivated
- Bedded

- **Irrigation:**

- **Leyendecker:** 5/24, 6/14
- **Los Lunas:** 6/25, 6/28, 7/5, 7/12, 7/20

- **Termination:**

- **Leyendecker:** 7/2
- **Los Lunas:** 7/26

- **Data analyses:**

- For each experimental unit, *Augmentation effect* was determined as:

Augmentation effect

= # of individuals (PHBPU or SETLU) in augmented plot

– # of individuals (PHBPU or SETLU) in non – augmented control

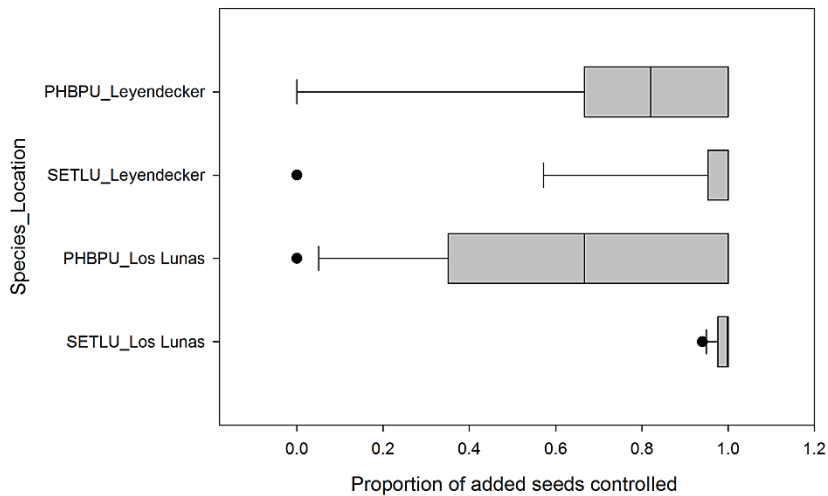
- For each augmentation level within a replicate, *Proportion of Added Seeds Controlled* was determined as:

$$\text{Proportion of Added Seeds Controlled} = 1 - \frac{\text{Augmentation effect for SPRAYED plot}}{\text{Augmentation effect for UNSPRAYED plot}}$$

- Statistical modelling: Augmentation effects for SPRAYED plots indicated the number of weeds that escaped pendimethalin control. Escape data were analysed with generalised linear models using quasi-Poisson distributions and logarithms as link functions. Augmentation level was treated as a continuous variable. Analyses were performed using the *glm* function of R (v.3.0.1, The R Foundation for Statistical Computing, <http://www.r-project.org>).

RESULTS

Weed control at 28 Days After Application



Study Site: Leyendecker				
Weed species: PHBPU				
Sample time: 28 days after application				
Response variable: Escapes in SPRAYED plots				
Coefficient	Estimate	Std. Error	t value	P-value
(Intercept)	0.779731	0.588660	1.325	0.202840
Augmentation level	0.010318	0.002491	4.143	0.000681
Replicate	0.145547	0.166990	0.872	0.395573

Study Site: Leyendecker				
Weed species: SETLU				
Sample time: 28 days after application				
Response variable: Escapes in SPRAYED plots				
Coefficient	Estimate	Std. Error	t value	P-value
(Intercept)	-1.9295950	1.8875443	-1.022	0.321
Augmentation level	0.0004632	0.0003373	1.373	0.188
Replicate	0.6739964	0.4469707	1.508	0.150

Study Site: Los Lunas				
Weed species: PHBPU				
Sample time: 28 days after application				
Response variable: Escapes in SPRAYED plots				
Coefficient	Estimate	Std. Error	t value	P-value
(Intercept)	1.668647	0.539412	3.093	0.00855
Augmentation level	0.017514	0.004533	3.864	0.00196
Replicate	0.260029	0.145991	1.781	0.09826

Study Site: Los Lunas				
Weed species: SETLU				
Sample time: 28 days after application				
Response variable: Escapes in SPRAYED plots				
Coefficient	Estimate	Std. Error	t value	P-value
(Intercept)	0.9828673	1.369189	0.718	0.486
Augmentation level	0.0005881	0.0003874	1.518	0.153
Replicate	-0.0801455	0.3387194	-0.237	0.817

SUMMARY:

- Pendimethalin suppressed emergence of PHBPU and SETLU, with the degree of suppression influenced by local conditions.
- The number of PHBPU escapes increased with increasing numbers of germinable PHBPU seeds in soil at both Leyendecker and Los Lunas. Thus, germinable seedbank densities impacted pendimethalin control outcomes with respect to PHBPU.
- The number of SETLU escapes was not associated with the number of germinable SETLU seeds in soil.

Title: Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Loam Soil)

General Trial Information

Study Director: Jamshid Ashigh

Trial Location

City: Mesquite, NM

Country: United States

Latitude of LL Corner °: 32.157312 N

Longitude of LL Corner °: 106.69806 W

Objective:

To determine the efficacy of Pindar GT in pecan orchards with Sandy Loam soil type

Crop Description

Species Code	Binomial	Common Name
CYAIL	<i>Carya illinoensis</i>	Pecan
	Perennial Age, Unit: 12 YR	

Pest Description

Species Code	Binomial	Common Name
AMAPA	<i>Amaranthus palmeri</i>	Palmer amaranth
KCHSC	<i>Kochia scoparia</i>	Kochia
SASKR	<i>Salsola kali ruthenica</i>	Russian thistle
EPHMA	<i>Euphorbia maculata</i>	Spotted spurge
SSYIR	<i>Sisymbrium irio</i>	London rocket
ECHCO	<i>Echinochloa colonum</i>	Junglerice
ECHCG	<i>Echinochloa crus-galli</i>	Common barnyardgrass
SETPU	<i>Setaria pumila</i>	yellow foxtail

Site Description and Design

Site Type: ORCHARD

Plot Width: 6.7 FT

Plot Length: 30 FT

Plot Area: 201 FT²

Replications: 4

Study Design: Randomized Complete Block (RCB)

Untreated Arrangement: INCLUDED (single control randomized in each block)

Field Maintenance

Orchard was maintained by grower.

Soil Description

Description Name: Sandy Loam

% Sand: 73.4

% Silt: 12.6

% Clay: 14

Application Description

A

Application Date: 4/15/2013

Application Method: SPRAY

Application Timing: PREMEA

Application Placement: BROADC

Applied By: Ashigh J.

Air Temperature, Unit: 12 C

% Relative Humidity: 31

Wind Velocity, Unit: 0 MPH

Crop Stage At Each Application

A

Crop 1 Code, BBCH Scale: CYAIL BPER

Stage Scale Used: BBCH

Pest Stage At Each Application

A

Pest 1 Code, Type, Scale: AMAPA W

Pest 2 Code, Type, Scale: KCHSC W

Pest 3 Code, Type, Scale: SASKR W

Pest 4 Code, Type, Scale: EPHMA W

Pest 5 Code, Type, Scale: SSYIR W

Pest 6 Code, Type, Scale: ECHCO W

Pest 7 Code, Type, Scale: ECHCG W

Pest 8 Code, Type, Scale: SETPU W

Application Equipment

A

Appl. Equipment:	SPRBAC
Operating Pressure, Unit:	20 PSI
Nozzle Type:	Teejet
Nozzle Size:	8002
Nozzle Spacing, Unit:	20 IN
Nozzles/Row:	4
Band Width, Unit:	20 IN
Boom Height, Unit:	30 IN
Ground Speed, Unit:	1.8 MPH
Incorporation Equip.:	IRRIGA
Hours to Incorp.:	24
Incorp. Depth, Unit:	2 IN
Carrier:	WATER
Spray Volume, Unit:	20 GAL/AC
Mix Size, Unit:	1 Gallon

Trial Treatments

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Rate Unit	Growth Stage
1	Oxyfluorfen+Penoxsulam	4.013	LBA/GAL	GT	2.5	pt/a	PREMEA
2	Oxyfluorfen+Penoxsulam	4.013	LBA/GAL	GT	2.5	pt/a	PREMEA
	Oryzalin	4	LBA/GAL	AS	4	qt/a	PREMEA
3	Oxyfluorfen	4	LBA/GAL	SL	2.5	pt/a	PREMEA
4	Oxyfluorfen	4	LBA/GAL	SL	2.5	pt/a	PREMEA
	Oryzalin	4	LBA/GAL	AS	4	qt/a	PREMEA
5	Control						
6	Indaziflam	1.67	LBA/GAL	SC	2.5	oz/a	PREMEA
	Glyphosate	5.5	LBA/GAL	SL	1	qt/a	POEMSE

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Loam Soil)

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMAPA	KCHSC	SASKR	EPHMA	ECHCO
Pest Scientific Name	Amaranthus pal>	Kochia scoparia	Salsola kali r>	Euphorbia macu>	Echinochloa co>
Pest Name	Palmer amaranth	Kochia	Russian thistle	Spotted spurge	Junglerice
Crop Code	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL
BBCH Scale	BPER	BPER	BPER	BPER	BPER
Crop Scientific Name	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>
Crop Name	Pecan	Pecan	Pecan	Pecan	Pecan
Rating Date	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	15 15	15 15	15 15	15 15	15 15
Trt-Eval Interval	15 DA-A	15 DA-A	15 DA-A	15 DA-A	15 DA-A
Trt Treatment	Rate				
No. Name	Rate Unit	1	2	3	4
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	96.3 a	100.0 a	100.0 a	100.0 a
2 Oxyfluorfen+Penoxsulam	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a
Oryzalin	4 qt/a				
3 Oxyfluorfen	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a
4 Oxyfluorfen	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a
Oryzalin	4 qt/a				
6 Indaziflam	2.5 oz/a	100.0 a	100.0 a	100.0 a	100.0 a
Glyphosate	1 qt/a				
LSD (P=.05)		3.30	0.00	0.00	0.00
Standard Deviation		2.14	0.00	0.00	0.00
CV		2.16	0.0	0.0	0.0
Bartlett's X2		0.0	0.0	0.0	0.0
P(Bartlett's X2)		.	.	.	.
Replicate F		1.000	0.000	0.000	0.000
Replicate Prob(F)		0.4262	1.0000	1.0000	1.0000
Treatment F		2.455	0.000	0.000	0.000
Treatment Prob(F)		0.1024	1.0000	1.0000	1.0000
					8.45
					5.48
					5.71
					12.391
					0.002*
					0.445
					0.7250
					3.928
					0.0290

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.

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Loam Soil)

Pest Type		W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code		ECHCG	SETPU	AMAPA	KCHSC	SASKR	EPHMA
Pest Scientific Name		Echinochloa cr>	Setaria pumila	Amaranthus pal>	Kochia scoparia	Salsola kali r>	Euphorbia macu>
Pest Name		Common barnyar>	yellow foxtail	Palmer amaranth	Kochia	Russian thistle	Spotted spurge
Crop Code		CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL
BBCH Scale		BPER	BPER	BPER	BPER	BPER	BPER
Crop Scientific Name		Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>
Crop Name		Pecan	Pecan	Pecan	Pecan	Pecan	Pecan
Rating Date		4/30/2013	4/30/2013	5/31/2013	5/31/2013	5/31/2013	5/31/2013
Rating Type		CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit		%	%	%	%	%	%
Number of Subsamples		1	1	1	1	1	1
Days After First/Last Applic.		15 15	15 15	46 46	46 46	46 46	46 46
Trt-Eval Interval		15 DA-A	15 DA-A	15 DA-A	46 DA-A	46 DA-A	46 DA-A
Trt Treatment	Rate						
No. Name	Rate Unit	6	7	8	9	10	11
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	97.5 a	100.0 a	96.0 a	100.0 a	100.0 a	98.8 a
2 Oxyfluorfen+Penoxsulam Oryzalin	2.5 pt/a 4 qt/a	100.0 a	100.0 a	99.8 a	100.0 a	100.0 a	99.8 a
3 Oxyfluorfen	2.5 pt/a	97.5 a	100.0 a	93.8 a	100.0 a	100.0 a	96.3 a
4 Oxyfluorfen Oryzalin	2.5 pt/a 4 qt/a	100.0 a	100.0 a	98.8 a	100.0 a	100.0 a	100.0 a
6 Indaziflam Glyphosate	2.5 oz/a 1 qt/a	99.8 a	100.0 a	99.8 a	100.0 a	100.0 a	99.8 a
LSD (P=.05)		4.28	0.00	4.36	0.00	0.00	4.00
Standard Deviation		2.78	0.00	2.83	0.00	0.00	2.59
CV		2.81	0.0	2.9	0.0	0.0	2.62
Bartlett's X2		9.64	0.0	17.148	0.0	0.0	16.125
P(Bartlett's X2)		0.008*	.	0.002*	.	.	0.001*
Replicate F		2.512	0.000	2.279	0.000	0.000	0.406
Replicate Prob(F)		0.1081	1.0000	0.1317	1.0000	1.0000	0.7515
Treatment F		0.914	0.000	3.486	0.000	0.000	1.441
Treatment Prob(F)		0.4871	1.0000	0.0414	1.0000	1.0000	0.2801

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Loam Soil)

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code	ECHCO	ECHCG	SETPU	AMAPA	KCHSC	SASKR	
Pest Scientific Name	Echinochloa co>	Echinochloa cr>	Setaria pumila	Amaranthus pal>	Kochia scoparia	Salsola kali r>	
Pest Name	Junglerice	Common barnyar>	yellow foxtail	Palmer amaranth	Kochia	Russian thistle	
Crop Code	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	
BBCH Scale	BPER	BPER	BPER	BPER	BPER	BPER	
Crop Scientific Name	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	
Crop Name	Pecan	Pecan	Pecan	Pecan	Pecan	Pecan	
Rating Date	5/31/2013	5/31/2013	5/31/2013	6/25/2013	6/25/2013	6/25/2013	
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit	%	%	%	%	%	%	
Number of Subsamples	1	1	1	1	1	1	
Days After First/Last Applic.	46 46	46 46	46 46	71 71	71 71	71 71	
Trt-Eval Interval	46 DA-A	46 DA-A	46 DA-A	46 DA-A	46 DA-A	71 DA-A	
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate	
No. Name	Unit	Unit	Unit	Unit	Unit	Unit	
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	60.0 b	82.5 ab	93.8 ab	17.5 b	82.5 a	40.0 b
2 Oxyfluorfen+Penoxsulam Oryzalin	2.5 pt/a 4 qt/a	100.0 a	100.0 a	100.0 a	92.5 a	91.3 a	96.3 a
3 Oxyfluorfen	2.5 pt/a	52.5 c	70.0 b	89.8 b	2.5 c	75.0 a	37.5 b
4 Oxyfluorfen Oryzalin	2.5 pt/a 4 qt/a	98.8 a	100.0 a	100.0 a	85.0 a	92.5 a	95.0 a
6 Indaziflam Glyphosate	2.5 oz/a 1 qt/a	98.5 a	99.8 a	100.0 a	99.8 a	100.0 a	100.0 a
LSD (P=.05)		7.40	15.91	6.29	13.13	19.00	16.04
Standard Deviation		4.80	10.33	4.08	8.52	12.33	10.41
CV		5.86	11.42	4.22	14.34	13.97	14.11
Bartlett's X2		5.623	17.544	1.005	13.93	4.213	4.472
P(Bartlett's X2)		0.131	0.001*	0.316	0.008*	0.239	0.215
Replicate F		0.494	1.864	1.987	0.249	1.630	1.058
Replicate Prob(F)		0.6932	0.1896	0.1698	0.8608	0.2345	0.4031
Treatment F		96.792	7.036	5.378	115.268	2.458	37.846
Treatment Prob(F)		0.0001	0.0037	0.0102	0.0001	0.1021	0.0001

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Loam Soil)

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	EPHMA	ECHCO	ECHCG	SETPU	AMAPA
Pest Scientific Name	Euphorbia macu>	Echinochloa co>	Echinochloa cr>	Setaria pumila	Amaranthus pal>
Pest Name	Spotted spurge	Junglerice	Common barnyar>	yellow foxtail	Palmer amaranth
Crop Code	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL
BBCH Scale	BPER	BPER	BPER	BPER	BPER
Crop Scientific Name	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>
Crop Name	Pecan	Pecan	Pecan	Pecan	Pecan
Rating Date	6/25/2013	6/25/2013	6/25/2013	6/25/2013	7/31/2013
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	71 71	71 71	71 71	71 71	107 107
Trt-Eval Interval	71 DA-A	71 DA-A	71 DA-A	71 DA-A	71 DA-A
Trt Treatment					
No. Name	Rate Unit				
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	18	19	20	21
2 Oxyfluorfen+Penoxsulam	2.5 pt/a	42.5 b	11.3 b	20.0 b	21.3 b
Oryzalin	4 qt/a	99.8 a	65.0 a	65.0 a	70.0 a
3 Oxyfluorfen	2.5 pt/a	96.3 a	3.8 b	3.8 b	12.5 b
4 Oxyfluorfen	2.5 pt/a	95.0 a	70.0 a	77.5 a	72.5 a
Oryzalin	4 qt/a				
6 Indaziflam	2.5 oz/a	99.8 a	72.5 a	80.0 a	90.0 a
Glyphosate	1 qt/a				
LSD (P=.05)		15.20	9.62	20.04	17.08
Standard Deviation		9.87	6.24	13.01	11.09
CV		11.39	14.03	26.41	20.82
Bartlett's X2		36.391	1.648	3.631	4.178
P(Bartlett's X2)		0.001*	0.80	0.458	0.382
Replicate F		1.633	2.524	1.209	1.339
Replicate Prob(F)		0.2339	0.1070	0.3484	0.3079
Treatment F		25.209	118.604	29.069	38.125
Treatment Prob(F)		0.0001	0.0001	0.0001	0.0001

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Loam Soil)

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code	KCHSC	SASKR	EPHMA	ECHCO	ECHCG	SETPU	
Pest Scientific Name	Kochia scoparia	Salsola kali r>	Euphorbia macu>	Echinochloa co>	Echinochloa cr>	Setaria pumila	
Pest Name	Kochia	Russian thistle	Spotted spurge	Junglerice	Common barnyar>	yellow foxtail	
Crop Code	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	
BBCH Scale	BPER	BPER	BPER	BPER	BPER	BPER	
Crop Scientific Name	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	
Crop Name	Pecan	Pecan	Pecan	Pecan	Pecan	Pecan	
Rating Date	7/31/2013	7/31/2013	7/31/2013	7/31/2013	7/31/2013	7/31/2013	
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit	%	%	%	%	%	%	
Number of Subsamples	1	1	1	1	1	1	
Days After First/Last Applic.	107 107	107 107	107 107	107 107	107 107	107 107	
Trt-Eval Interval	71 DA-A	71 DA-A	107 DA-A	107 DA-A	107 DA-A	107 DA-A	
Trt Treatment	Rate						
No. Name	Rate Unit	23	24	25	26	27	28
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	40.0 b	10.0 c	5.0 c	0.0 c	0.0 c	0.0 b
2 Oxyfluorfen+Penoxsulam Oryzalin	2.5 pt/a 4 qt/a	65.0 a	62.5 a	57.5 a	45.0 a	47.5 a	55.0 a
3 Oxyfluorfen	2.5 pt/a	12.5 c	12.5 c	12.5 c	3.8 c	3.8 c	8.8 b
4 Oxyfluorfen Oryzalin	2.5 pt/a 4 qt/a	52.5 ab	60.0 a	45.0 ab	20.0 b	25.0 b	32.5 a
6 Indaziflam Glyphosate	2.5 oz/a 1 qt/a	62.5 a	35.0 b	35.0 b	25.0 b	30.0 b	40.0 a
LSD (P=.05)		15.60	19.34	14.55	14.03	17.05	20.96
Standard Deviation		10.12	12.55	9.44	9.11	11.07	13.60
CV		21.77	34.86	30.46	48.56	52.08	49.91
Bartlett's X2		4.839	4.191	7.72	5.813	4.116	3.083
P(Bartlett's X2)		0.304	0.381	0.102	0.121	0.249	0.379
Replicate F		6.813	0.762	2.168	2.709	1.017	0.673
Replicate Prob(F)		0.0062	0.5368	0.1448	0.0919	0.4193	0.5847
Treatment F		17.878	15.921	21.673	15.754	12.551	11.054
Treatment Prob(F)		0.0001	0.0001	0.0001	0.0001	0.0003	0.0005

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Loam Soil)

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

AMAPA, Amaranthus palmeri, = US

KCHSC, Kochia scoparia, = US

SASKR, Salsola kali ruthenica, = US

EPHMA, Euphorbia maculata, = US

ECHCO, Echinochloa colonum, = US

ECHCG, Echinochloa crus-galli, = US

SETPU, Setaria pumila, = US

Crop Code

CYAIL, BPER, Carya illinoensis, = US

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

Title: Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Clay Loam Soil)

General Trial Information

Study Director: Jamshid Ashigh

Trial Location

City: Mesquite, NM

Latitude of LL Corner °: 32.157312 N

Country: United States

Longitude of LL Corner °: 106.69806 W

Objective:

To determine the efficacy of Pindar GT in pecan orchards with Sandy Clay Loam soil type

Crop Description

Species Code	Binomial	Common Name
CYAIL	<i>Carya illinoensis</i>	Pecan
Perennial Age, Unit: 12 YR		

Pest Description

Species Code	Binomial	Common Name
AMAPA	<i>Amaranthus palmeri</i>	Palmer amaranth
KCHSC	<i>Kochia scoparia</i>	Kochia
SASKR	<i>Salsola kali ruthenica</i>	Russian thistle
EPHMA	<i>Euphorbia maculata</i>	Spotted spurge
SSYIR	<i>Sisymbrium irio</i>	London rocket
ECHCO	<i>Echinochloa colonum</i>	Junglerice
ECHCG	<i>Echinochloa crus-galli</i>	Common barnyardgrass
SETPU	<i>Setaria pumila</i>	yellow foxtail

Site Description and Design

Site Type: ORCHARD

Plot Width: 6.7 FT

Plot Length: 30 FT

Plot Area: 201 FT²

Replications: 4

Study Design: Randomized Complete Block (RCB)

Untreated Arrangement: INCLUDED (single control randomized in each block)

Field Maintenance

Orchard was maintained by grower.

Soil Description

Description Name: Sandy Clay Loam

% Sand: 48.3

% Silt: 20.2

% Clay: 31.5

Application Description

A

Application Date: 4/15/2013

Application Method: SPRAY

Application Timing: PREMEA

Application Placement: BROADC

Applied By: Ashigh J.

Air Temperature, Unit: 12 C

% Relative Humidity: 31

Wind Velocity, Unit: 0 MPH

Crop Stage At Each Application

A

Crop 1 Code, BBCH Scale: CYAIL BPER

Stage Scale Used: BBCH

Pest Stage At Each Application

A

Pest 1 Code, Type, Scale: AMAPA W

Pest 2 Code, Type, Scale: KCHSC W

Pest 3 Code, Type, Scale: SASKR W

Pest 4 Code, Type, Scale: EPHMA W

Pest 5 Code, Type, Scale: SSYIR W

Pest 6 Code, Type, Scale: ECHCO W

Pest 7 Code, Type, Scale: ECHCG W

Pest 8 Code, Type, Scale: SETPU W

Application Equipment

Appl. Equipment: A
 Operating Pressure, Unit: SPRBAC
 20 PSI
 Nozzle Type: Teejet
 Nozzle Size: 8002
 Nozzle Spacing, Unit: 20 IN
 Nozzles/Row: 4
 Band Width, Unit: 20 IN
 Boom Height, Unit: 30 IN
 Ground Speed, Unit: 1.8 MPH
 Incorporation Equip.: IRRIGA
 Hours to Incorp.: 24
 Incorp. Depth, Unit: 2 IN
 Carrier: WATER
 Spray Volume, Unit: 20 GAL/AC
 Mix Size, Unit: 1 Gallon

Trial Treatments

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate Unit	Growth Stage
1	Oxyfluorfen+Penoxsulam	4.013	LBA/GAL	GT	2.5 pt/a	PREMEA
2	Oxyfluorfen+Penoxsulam	4.013	LBA/GAL	GT	2.5 pt/a	PREMEA
	Oryzalin	4	LBA/GAL	AS	4 qt/a	PREMEA
3	Oxyfluorfen	4	LBA/GAL	SL	2.5 pt/a	PREMEA
4	Oxyfluorfen	4	LBA/GAL	SL	2.5 pt/a	PREMEA
	Oryzalin	4	LBA/GAL	AS	4 qt/a	PREMEA
5	Control					
6	Indaziflam	1.67	LBA/GAL	SC	2.5 oz/a	PREMEA
	Glyphosate	5.5	LBA/GAL	SL	1 qt/a	POEMSE

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Clay Loam Soil)

Pest Type		W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code		AMAPA	KCHSC	SASKR	EPHMA	ECHCO
Pest Scientific Name		Amaranthus pal>	Kochia scoparia	Salsola kali r>	Euphorbia macu>	Echinochloa co>
Pest Name		Palmer amaranth	Kochia	Russian thistle	Spotted spurge	Junglerice
Crop Code		CYAIL	CYAIL	CYAIL	CYAIL	CYAIL
BBCH Scale		BPER	BPER	BPER	BPER	BPER
Crop Scientific Name		Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>
Crop Name		Pecan	Pecan	Pecan	Pecan	Pecan
Rating Date		4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013
Rating Type		CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit		%	%	%	%	%
Number of Subsamples		1	1	1	1	1
Days After First/Last Applic.		15 15	15 15	15 15	15 15	15 15
Trt-Eval Interval		15 DA-A	15 DA-A	15 DA-A	15 DA-A	15 DA-A
Trt Treatment	Rate					
No. Name	Rate Unit	1	2	3	4	5
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
2 Oxyfluorfen+Penoxsulam	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
Oryzalin	4 qt/a					
3 Oxyfluorfen	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
4 Oxyfluorfen	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
Oryzalin	4 qt/a					
6 Indaziflam	2.5 oz/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
Glyphosate	1 qt/a					
LSD (P=.05)		0.00	0.00	0.00	0.00	0.00
Standard Deviation		0.00	0.00	0.00	0.00	0.00
CV		0.0	0.0	0.0	0.0	0.0
Bartlett's X2		0.0	0.0	0.0	0.0	0.0
P(Bartlett's X2)		.	.	.	.	.
Replicate F		0.000	0.000	0.000	0.000	0.000
Replicate Prob(F)		1.0000	1.0000	1.0000	1.0000	1.0000
Treatment F		0.000	0.000	0.000	0.000	0.000
Treatment Prob(F)		1.0000	1.0000	1.0000	1.0000	1.0000

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.

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Clay Loam Soil)

Pest Type		W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code		ECHCG	SETPU	AMAPA	KCHSC	SASKR	EPHMA
Pest Scientific Name		Echinochloa cr>	Setaria pumila	Amaranthus pal>	Kochia scoparia	Salsola kali r>	Euphorbia macu>
Pest Name		Common barnyar>	yellow foxtail	Palmer amaranth	Kochia	Russian thistle	Spotted spurge
Crop Code		CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL
BBCH Scale		BPER	BPER	BPER	BPER	BPER	BPER
Crop Name		Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>
Crop Name		Pecan	Pecan	Pecan	Pecan	Pecan	Pecan
Rating Date		4/30/2013	4/30/2013	5/31/2013	5/31/2013	5/31/2013	5/31/2013
Rating Type		CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit		%	%	%	%	%	%
Number of Subsamples		1	1	1	1	1	1
Days After First/Last Applic.		15 15	15 15	46 46	46 46	46 46	46 46
Trt-Eval Interval		15 DA-A	15 DA-A	15 DA-A	46 DA-A	46 DA-A	46 DA-A
Trt Treatment	Rate						
No. Name	Rate Unit	6	7	8	9	10	11
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
2 Oxyfluorfen+Penoxsulam	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
Oryzalin	4 qt/a						
3 Oxyfluorfen	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
4 Oxyfluorfen	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
Oryzalin	4 qt/a						
6 Indaziflam	2.5 oz/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
Glyphosate	1 qt/a						
LSD (P=.05)		0.00	0.00	0.00	0.00	0.00	0.00
Standard Deviation		0.00	0.00	0.00	0.00	0.00	0.00
CV		0.0	0.0	0.0	0.0	0.0	0.0
Bartlett's X2		0.0	0.0	0.0	0.0	0.0	0.0
P(Bartlett's X2)		.	.	.	.	.	.
Replicate F		0.000	0.000	0.000	0.000	0.000	0.000
Replicate Prob(F)		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Treatment F		0.000	0.000	0.000	0.000	0.000	0.000
Treatment Prob(F)		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Clay Loam Soil)

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code	ECHCO	ECHCG	SETPU	AMAPA	KCHSC	SASKR	
Pest Scientific Name	Echinochloa co>	Echinochloa cr>	Setaria pumila	Amaranthus pal>	Kochia scoparia	Salsola kali r>	
Pest Name	Junglerice	Common barnyar>	yellow foxtail	Palmer amaranth	Kochia	Russian thistle	
Crop Code	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	
BBCH Scale	BPER	BPER	BPER	BPER	BPER	BPER	
Crop Scientific Name	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	
Crop Name	Pecan	Pecan	Pecan	Pecan	Pecan	Pecan	
Rating Date	5/31/2013	5/31/2013	5/31/2013	6/25/2013	6/25/2013	6/25/2013	
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit	%	%	%	%	%	%	
Number of Subsamples	1	1	1	1	1	1	
Days After First/Last Applic.	46 46	46 46	46 46	71 71	71 71	71 71	
Trt-Eval Interval	46 DA-A	46 DA-A	46 DA-A	46 DA-A	46 DA-A	71 DA-A	
Trt Treatment	Rate						
No. Name	Rate Unit	12	13	14	15	16	17
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
2 Oxyfluorfen+Penoxsulam	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
Oryzalin	4 qt/a						
3 Oxyfluorfen	2.5 pt/a	100.0 a	100.0 a	100.0 a	98.8 a	100.0 a	98.8 a
4 Oxyfluorfen	2.5 pt/a	100.0 a	100.0 a	100.0 a	98.8 a	100.0 a	100.0 a
Oryzalin	4 qt/a						
6 Indaziflam	2.5 oz/a	100.0 a	100.0 a	100.0 a	98.8 a	100.0 a	100.0 a
Glyphosate	1 qt/a						
LSD (P=.05)		0.00	0.00	0.00	2.90	0.00	1.72
Standard Deviation		0.00	0.00	0.00	1.88	0.00	1.12
CV		0.0	0.0	0.0	1.9	0.0	1.12
Bartlett's X2		0.0	0.0	0.0	0.0	0.0	0.0
P(Bartlett's X2)		.	.	.	.	.	.
Replicate F		0.000	0.000	0.000	1.294	0.000	1.000
Replicate Prob(F)		1.0000	1.0000	1.0000	0.3213	1.0000	0.4262
Treatment F		0.000	0.000	0.000	0.529	0.000	1.000
Treatment Prob(F)		1.0000	1.0000	1.0000	0.7166	1.0000	0.4449

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Clay Loam Soil)

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code	EPHMA	ECHCO	ECHCG	SETPU	AMAPA	
Pest Scientific Name	Euphorbia macu>	Echinochloa co>	Echinochloa cr>	Setaria pumila	Amaranthus pal>	
Pest Name	Spotted spurge	Junglerice	Common barnyar>	yellow foxtail	Palmer amaranth	
Crop Code	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	
BBCH Scale	BPER	BPER	BPER	BPER	BPER	
Crop Scientific Name	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	
Crop Name	Pecan	Pecan	Pecan	Pecan	Pecan	
Rating Date	6/25/2013	6/25/2013	6/25/2013	6/25/2013	7/31/2013	
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit	%	%	%	%	%	
Number of Subsamples	1	1	1	1	1	
Days After First/Last Applic.	71 71	71 71	71 71	71 71	107 107	
Trt-Eval Interval	71 DA-A	71 DA-A	71 DA-A	71 DA-A	71 DA-A	
Trt Treatment	Rate					
No. Name	Rate Unit	18	19	20	21	22
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	100.0 a	96.3 a	100.0 a	98.8 a	100.0 a
2 Oxyfluorfen+Penoxsulam	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
Oryzalin	4 qt/a					
3 Oxyfluorfen	2.5 pt/a	100.0 a	87.5 a	87.5 a	92.5 a	97.5 a
4 Oxyfluorfen	2.5 pt/a	100.0 a	100.0 a	100.0 a	100.0 a	98.8 a
Oryzalin	4 qt/a					
6 Indaziflam	2.5 oz/a	100.0 a	100.0 a	100.0 a	100.0 a	98.8 a
Glyphosate	1 qt/a					
LSD (P=.05)		0.00	11.16	13.04	7.03	3.22
Standard Deviation		0.00	7.25	8.47	4.56	2.09
CV		0.0	7.49	8.68	4.65	2.11
Bartlett's X2		0.0	3.17	0.0	4.155	0.08
P(Bartlett's X2)		.	0.075	.	0.042*	0.961
Replicate F		0.000	0.722	1.000	0.700	0.762
Replicate Prob(F)		1.0000	0.5578	0.4262	0.5699	0.5368
Treatment F		0.000	2.238	1.744	2.040	1.000
Treatment Prob(F)		1.0000	0.1258	0.2050	0.1525	0.4449

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Clay Loam Soil)

Pest Type		W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code		KCHSC	SASKR	EPHMA	ECHCO	ECHCG	SETPU
Pest Scientific Name		Kochia scoparia	Salsola kali r>	Euphorbia macu>	Echinochloa co>	Echinochloa cr>	Setaria pumila
Pest Name		Kochia	Russian thistle	Spotted spurge	Junglerice	Common barnyar>	yellow foxtail
Crop Code		CYAIL	CYAIL	CYAIL	CYAIL	CYAIL	CYAIL
BBCH Scale		BPER	BPER	BPER	BPER	BPER	BPER
Crop Scientific Name		Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>
Crop Name		Pecan	Pecan	Pecan	Pecan	Pecan	Pecan
Rating Date		7/31/2013	7/31/2013	7/31/2013	7/31/2013	7/31/2013	7/31/2013
Rating Type		CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit		%	%	%	%	%	%
Number of Subsamples		1	1	1	1	1	1
Days After First/Last Applic.		107 107	107 107	107 107	107 107	107 107	107 107
Trt-Eval Interval		71 DA-A	71 DA-A	107 DA-A	107 DA-A	107 DA-A	107 DA-A
Trt Treatment	Rate						
No. Name	Rate Unit	23	24	25	26	27	28
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	98.8 a	100.0 a	100.0 a	88.8 a	80.0 b	90.0 a
2 Oxyfluorfen+Penoxsulam Oryzalin	2.5 pt/a 4 qt/a	100.0 a	100.0 a	100.0 a	96.3 a	96.3 a	97.5 a
3 Oxyfluorfen	2.5 pt/a	100.0 a	98.8 a	100.0 a	62.5 b	70.0 c	70.0 b
4 Oxyfluorfen Oryzalin	2.5 pt/a 4 qt/a	100.0 a	100.0 a	100.0 a	90.0 a	93.8 a	90.0 a
6 Indaziflam Glyphosate	2.5 oz/a 1 qt/a	100.0 a	100.0 a	100.0 a	90.0 a	95.0 a	95.0 a
LSD (P=.05)		1.72	1.72	0.00	8.17	8.98	10.71
Standard Deviation		1.12	1.12	0.00	5.30	5.83	6.95
CV		1.12	1.12	0.0	6.2	6.7	7.86
Bartlett's X2		0.0	0.0	0.0	0.728	5.189	0.959
P(Bartlett's X2)		.	.	.	0.948	0.268	0.916
Replicate F		1.000	1.000	0.000	2.667	6.184	1.000
Replicate Prob(F)		0.4262	0.4262	1.0000	0.0951	0.0088	0.4262
Treatment F		1.000	1.000	0.000	24.733	15.699	9.724
Treatment Prob(F)		0.4449	0.4449	1.0000	0.0001	0.0001	0.0010

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Clay Loam Soil)

Pest Type		W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code		AMAPA	KCHSC	SASKR	EPHMA	ECHCO
Pest Scientific Name		Amaranthus pal>	Kochia scoparia	Salsola kali r>	Euphorbia macu>	Echinochloa co>
Pest Name		Palmer amaranth	Kochia	Russian thistle	Spotted spurge	Junglerice
Crop Code		CYAIL	CYAIL	CYAIL	CYAIL	CYAIL
BBCH Scale		BPER	BPER	BPER	BPER	BPER
Crop Scientific Name		Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>	Carya illinoen>
Crop Name		Pecan	Pecan	Pecan	Pecan	Pecan
Rating Date		9/6/2013	9/6/2013	9/6/2013	9/6/2013	9/6/2013
Rating Type		CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit		%	%	%	%	%
Number of Subsamples		1	1	1	1	1
Days After First/Last Applic.		144 144	144 144	144 144	144 144	144 144
Trt-Eval Interval		144 DA-A	144 DA-A	144 DA-A	144 DA-A	144 DA-A
Trt Treatment	Rate					
No. Name	Rate Unit	29	30	31	32	33
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	92.5 a	95.0 a	100.0 a	97.5 a	77.5 b
2 Oxyfluorfen+Penoxsulam Oryzalin	2.5 pt/a 4 qt/a	100.0 a	100.0 a	100.0 a	100.0 a	92.5 a
3 Oxyfluorfen	2.5 pt/a	90.0 a	97.5 a	98.8 a	92.5 a	45.0 c
4 Oxyfluorfen Oryzalin	2.5 pt/a 4 qt/a	98.8 a	100.0 a	100.0 a	100.0 a	87.5 ab
6 Indaziflam Glyphosate	2.5 oz/a 1 qt/a	95.0 a	95.0 a	100.0 a	95.0 a	87.5 ab
LSD (P=.05)		10.71	8.67	1.72	10.43	10.53
Standard Deviation		6.95	5.63	1.12	6.77	6.83
CV		7.3	5.77	1.12	6.98	8.76
Bartlett's X2		4.29	1.608	0.0	1.408	1.948
P(Bartlett's X2)		0.232	0.448	.	0.495	0.745
Replicate F		0.095	1.000	1.000	0.727	3.143
Replicate Prob(F)		0.9614	0.4262	0.4262	0.5551	0.0651
Treatment F		1.448	0.789	1.000	0.927	31.714
Treatment Prob(F)		0.2779	0.5539	0.4449	0.4802	0.0001

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Clay Loam Soil)

Pest Type		W Weed	W Weed
Pest Code		ECHCG	SETPU
Pest Scientific Name		Echinochloa cr>	Setaria pumila
Pest Name		Common barnyar>	yellow foxtail
Crop Code		CYAIL	CYAIL
BBCH Scale		BPER	BPER
Crop Scientific Name		Carya illinoen>	Carya illinoen>
Crop Name		Pecan	Pecan
Rating Date		9/6/2013	9/6/2013
Rating Type		CONTRO	CONTRO
Rating Unit		%	%
Number of Subsamples		1	1
Days After First/Last Applic.		144 144	144 144
Trt-Eval Interval		144 DA-A	144 DA-A
Trt Treatment	Rate		
No. Name	Rate Unit	34	35
1 Oxyfluorfen+Penoxsulam	2.5 pt/a	65.0 b	87.5 a
2 Oxyfluorfen+Penoxsulam	2.5 pt/a	92.5 a	97.5 a
Oryzalin	4 qt/a		
3 Oxyfluorfen	2.5 pt/a	55.0 b	65.0 b
4 Oxyfluorfen	2.5 pt/a	92.5 a	85.0 a
Oryzalin	4 qt/a		
6 Indaziflam	2.5 oz/a	90.0 a	92.5 a
Glyphosate	1 qt/a		
LSD (P=.05)		12.02	13.56
Standard Deviation		7.80	8.80
CV		9.87	10.3
Bartlett's X2		4.018	4.184
P(Bartlett's X2)		0.404	0.382
Replicate F		1.205	0.409
Replicate Prob(F)		0.3497	0.7497
Treatment F		20.671	7.968
Treatment Prob(F)		0.0001	0.0022

Evaluation of Oxyfluorfen + Penoxsulam (Pindar GT) for Weed Control in Pecan Orchard (Sandy Clay Loam Soil)

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

AMAPA, Amaranthus palmeri, = US

KCHSC, Kochia scoparia, = US

SASKR, Salsola kali ruthenica, = US

EPHMA, Euphorbia maculata, = US

ECHCO, Echinochloa colonum, = US

ECHCG, Echinochloa crus-galli, = US

SETPU, Setaria pumila, = US

Crop Code

CYAIL, BPER, Carya illinoensis, = US

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit

% = percent