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Efficacy and injury potential of MANA-mesotrione vs Callisto

Trial ID: 10S-THP-CTC-84 Protocol ID: 10S-THP-CTC-84
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Makhteshim - James Whitehead

General Trial Information

Study Director: White/Marquardt **Title:** Research Associate
Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: E established
Initiation Date: 4-13-2010

Trial Location

City: Lafayette
State/Prov.: IN
Postal Code: 47909
Country: USA

Objectives:

Efficacy and injury potential of MANA-mesotrione vs Callisto

Personnel

Study Director: White/Marquardt **Title:** Research Associate
Affiliation: Purdue University
Address: 915 W State Street
Location: West Lafayette, IN, USA
Postal Code: 47907 **E-mail:** mdwhite@purdue.edu
Phone No.: 765-494-0891

Investigator: Dr. Bill Johnson **Title:** Professor
Affiliation: Purdue University
Address: 915 W State Street
Location: West Lafayette, IN, USA
Postal Code: 47907 **E-mail:** wgj@purdue.edu
Phone No.: 765-494-4656 **Mobile No.:** 765-404-9801

Cooperator/Landowner

Cooperator: Throckmorton Purdue Ag Center **Role:** Purdue Ag Center
Organization: Purdue University
Address 1: 8343 US 231 S
Phone No.: 765-538-3422
Fax No.: 765-538-3423
City: Lafayette
State/Prov: IN
Postal Code: 47909 **E-mail:** jayyoung@purdue.edu
Country: USA United States

Crop Description

Crop 1: ZEAMD Zea mays indentata Dent corn
Variety: Dekalb DKC 61-19 **Description:** RR/VT3
BBCH Scale: BCOR **Planting Date:** 4-19-2010
Rate, Unit: 32000 S/A
Depth, Unit: 1.5 IN
Row Spacing, Unit: 30 IN
Seed Bed: MEDIUM medium **Soil Temperature, Unit:** 60 F
Soil Moisture: DRY dry **Emergence Date:** 5-2-2010

Pest Description

Pest 1 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed

Pest 2 Type: W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

Pest 3 Type: W **Code:** ABUTH Abutilon theophrasti
Common Name: Velvetleaf

Pest 4 Type: W **Code:** TAROF Taraxacum officinale
Common Name: Common dandelion

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Site and Design

Plot Width, Unit: 10 FT
Plot Length, Unit: 30 FT
Plot Area, Unit: 300 FT²
Replications: 4

Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: CONTIL conventional-till
Study Design: RACOB� Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

Soil Description

Description Name: TPAC -Field 4A
% OM: 3.1 **Texture:** SIL silt loam
pH: 6 **Soil Name:** Toronto-Millbrook
CEC: 11.1

Application Description

	A	B
Application Date:	4-20-2010	5-20-2010
Time of Day:		8:20 AM
Application Method:	SPRAY	SPRAY
Application Timing:	ATPLAN-A	EAPOWE
Application Placement:	FOLIAR	FOLIAR
Applied By:		MH
Air Temperature, Unit:	55 F	57 F
% Relative Humidity:	57	78.7
Wind Velocity, Unit:	2 MPH	0 MPH
Wind Direction:	SE	
Dew Presence (Y/N):	N no	Y yes
Soil Temperature, Unit:	60 F	57 F
Soil Moisture:	DRY	WET
% Cloud Cover:	80	5

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	ZEAMD BCOR	ZEAMD BCOR
Stage Scale Used:		BBCH
Stage Majority, Percent:		V3
Stage Maximum, Percent:		V4 90
Height, Unit:		6 IN
Height Minimum, Maximum:		5 7

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Pest Stage At Each Application		
	A	B
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:		45 100
Height, Unit:		2 IN
Height Minimum, Maximum:		1 3
Density, Unit:		15.5 YD2
Pest 2 Code, Type, Scale:	SETFA W	SETFA W
Stage Majority, Percent:		45 100
Height, Unit:		1.5 IN
Height Minimum, Maximum:		1 3
Density, Unit:		17.5 YD2
Pest 3 Code, Type, Scale:	ABUTH W	ABUTH W
Stage Majority, Percent:		45 100
Height, Unit:		1.5 IN
Height Minimum, Maximum:		1 2
Density, Unit:		3 YD2
Pest 4 Code, Type, Scale:	TAROF W	TAROF W
Stage Majority, Percent:		ROSSET 100
Height, Unit:		7.5 IN
Height Minimum, Maximum:		3 12
Density, Unit:		2 YD2

Application Equipment		
	A	B
Appl. Equipment:	CO2 Backpack	CO2 Backpack
Operating Pressure, Unit:	17 PSI	17 PSI
Nozzle Type:	Flat Fan	Flat Fan
Nozzle Size:	XR11002	XR11002
Nozzle Spacing, Unit:	15 IN	15 IN
Nozzles/Row:	6	6
Boom Length, Unit:	7.5 FT	7.5 FT
Boom Height, Unit:	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	MEIGS	MEIGS
Water Hardness (ppm CaCO3):	150	150
Spray Volume, Unit:	15 GAL/AC	15 GAL/AC
Mix Size, Unit:	1.8 Liters	1.8 Liters
Propellant:	CO2	CO2
Tank Mix (Y/N):	N no	N no

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Efficacy and injury potential of MANA-mesotrione vs Callisto

Trial ID: 10S-THP-CTC-84 Protocol ID: 10S-THP-CTC-84
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Makhteshim - James Whitehead

Pest Type	W Weed	W Weed	W Weed	W Weed			W Weed		
Pest Code	SETFA	AMBTR	ABUTH	IPOHE			SETFA		
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Abutilon theophrasti	Ipomoea hederacea			Setaria faberi		
Pest Name	Giant foxtail	Giant ragweed	Velvetleaf	ivyleaf mornin			Giant foxtail		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR		
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays		
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn		
Crop Variety									
Description									
Rating Date	5-5-2010	5-5-2010	5-5-2010	5-5-2010	5-5-2010	5-5-2010	5-18-2010		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	EMEDEL	PHYCHL	CONTRO		
Rating Unit	%	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority	V1-3"								
Pest Stage Majority	0.5"	1-2"	0.5"	0.5"			0.5-2"		
Pest Density, Unit	180 YD2	6 YD2	3 YD2	3 YD2			200 YD2		
Assessed By	MW	MW	MW	MW			MW		
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	1	2	3	4	5	6	7
1 Untreated Check			0.0 c	0.0 b	0.0 b	0.0 b	0.0 a	0.0 a	0.0 b
2 Parallel (7.8 EC)	1.68 lb ai/a	A	98.5 a	73.8 a	99.3 a	57.5 ab	0.5 a	0.0 a	99.0 a
Mesotrione - MANA (4.0 SC)	0.168 lb ai/a	A							
Atrazine	0.625 lb ai/a	A							
3 Lumax (3.95 SC)	2.47 lb ai/a	A	99.0 a	78.5 a	99.0 a	89.5 a	0.0 a	0.0 a	99.0 a
4 Parallel (7.8 EC)	1.30 lb ai/a	A	99.0 a	75.0 a	99.0 a	77.3 a	0.0 a	0.3 a	98.0 a
Mesotrione - MANA (4.0 SC)	0.168 lb ai/a	A							
Atrazine	1.3 lb ai/a	A							
5 Lexar (3.7 SC)	2.78 lb ai/a	A	99.0 a	81.3 a	98.0 a	88.3 a	0.0 a	1.3 a	99.0 a
6 Parallel (7.8 EC)	1.30 lb ai/a	A	92.3 ab	35.0 ab	1.9 b	54.8 ab	0.0 a	0.0 a	98.0 a
Mesotrione - MANA (4.0 SC)	0.047 lb ai/a	B							
COC	1 % v/v	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
7 Parallel (7.8 EC)	1.30 lb ai/a	A	97.0 a	10.0 ab	68.3 ab	59.8 ab	0.0 a	1.3 a	96.8 a
Callisto (4.0 SC)	0.047 lb ai/a	B							
COC	1 % v/v	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
8 Parallel (7.8 EC)	1.30 lb ai/a	A	97.0 a	51.3 ab	74.3 ab	59.5 ab	0.0 a	0.8 a	99.0 a
Mesotrione - MANA (4.0 SC)	0.094 lb ai/a	B							
COC	1 % v/v	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
9 Parallel (7.8 EC)	1.30 lb ai/a	A	98.0 a	32.5 ab	42.3 ab	91.8 a	0.0 a	0.0 a	98.0 a
Callisto (4.0 SC)	0.094 lb ai/a	B							
COC	1 % v/v	B							
AMS - Liquid	8.5 lb ai/100 gal	B							

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Pest Type	W Weed	W Weed	W Weed	W Weed			W Weed			
Pest Code	SETFA	AMBTR	ABUTH	IPHOE			SETFA			
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Abutilon theophrasti	Ipomoea hederacea			Setaria faberi			
Pest Name	Giant foxtail	Giant ragweed	Velvetleaf	ivyleaf morning glory			Giant foxtail			
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX			
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR			
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays			
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn			
Crop Variety										
Description										
Rating Date	5-5-2010	5-5-2010	5-5-2010	5-5-2010	5-5-2010	5-5-2010	5-18-2010			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	EMEDEL	PHYCHL	CONTRO			
Rating Unit	%	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1	1			
Crop Stage Majority	V1-3"									
Pest Stage Majority	0.5"	1-2"	0.5"	0.5"			0.5-2"			
Pest Density, Unit	180 YD2	6 YD2	3 YD2	3 YD2			200 YD2			
Assessed By	MW	MW	MW	MW			MW			
Trt No.	Treatment Name	Rate	Appl	1	2	3	4	5	6	7
		Rate Unit	Code							
10	Parallel (7.8 EC)	1.30 lb ai/a	A	97.5 a	71.3 a	57.3 ab	98.0 a	0.0 a	0.0 a	99.0 a
	Mesotrione - MANA (4.0 SC)	0.188 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
11	Parallel (7.8 EC)	1.30 lb ai/a	A	97.0 a	42.5 ab	34.8 ab	62.0 ab	0.0 a	0.3 a	98.0 a
	Callisto (4.0 SC)	0.188 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
12	Parallel (7.8 EC)	1.30 lb ai/a	A	84.5 b	42.5 ab	49.5 ab	38.8 ab	0.0 a	0.0 a	90.8 a
	Mesotrione - MANA (4.0 SC)	0.094 lb ai/a	B							
	Atrazine	0.25 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
13	Parallel (7.8 EC)	1.30 lb ai/a	A	94.5 ab	41.3 ab	94.3 a	44.8 ab	0.0 a	0.5 a	99.0 a
	Callisto (4.0 SC)	0.094 lb ai/a	B							
	Atrazine	0.25 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
LSD (P=.05)				8.27	41.76	47.70	41.67	0.40	1.64	6.10
Standard Deviation				5.78	29.22	33.03	29.16	0.28	1.15	4.27
CV				6.52	59.84	52.52	46.12	721.11	351.78	4.73
Bartlett's X2				40.3	21.116	21.17	27.712	0.0	12.215	23.096
P(Bartlett's X2)				0.001*	0.032*	0.004*	0.004*	.	0.032*	0.001*
Replicate F				1.017	2.268	2.046	3.368	1.000	0.286	0.688
Replicate Prob(F)				0.3967	0.0972	0.1258	0.0289	0.4040	0.8352	0.5652
Treatment F				86.825	3.214	4.705	3.375	1.000	0.674	162.599
Treatment Prob(F)				0.0001	0.0033	0.0002	0.0023	0.4685	0.7645	0.0001

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.

Column 1: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V1-3"; 0.5"; per square yard; MW
Column 2: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 1-2"; per square yard; MW
Column 3: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 0.5"; per square yard; MW
Column 4: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 0.5"; per square yard; MW
Column 5: US; emergence delay
Column 6: US; phytotoxicity - chlorosis
Column 7: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 0.5-2"; per square yard; MW
Column 8: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 0.5"; per square yard; MW
Column 9: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 0.5-1"; per square yard; MW
Column 10: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 0.5-5"; per square yard; MW
Column 11: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 0.5"; per square yard; MW
Column 12: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 0.5-1"; per square yard; MW
Column 13: US; phytotoxicity - necrosis, leaf tip
Column 14: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 22"; per square yard; MW
Column 15: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 26"; per square yard; MW

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Trt	Treatment	Rate	Appl							
No.	Name	Rate	Unit	Code	8	9	10	11	12	13
1	Untreated Check				0.0 b	0.0 d	0.0 c	0.0 d	0.0 b	0.0 b
2	Parallel (7.8 EC)	1.68 lb ai/a	A		99.0 a	99.0 a	90.0 a	99.0 a	99.0 a	6.3 a
	Mesotrione - MANA (4.0 SC)	0.168 lb ai/a	A							
	Atrazine	0.625 lb ai/a	A							
3	Lumax (3.95 SC)	2.47 lb ai/a	A		99.0 a	99.0 a	88.0 a	99.0 a	99.0 a	5.5 ab
4	Parallel (7.8 EC)	1.30 lb ai/a	A		99.0 a	99.0 a	83.8 a	99.0 a	99.0 a	2.0 ab
	Mesotrione - MANA (4.0 SC)	0.168 lb ai/a	A							
	Atrazine	1.3 lb ai/a	A							
5	Lexar (3.7 SC)	2.78 lb ai/a	A		99.0 a	99.0 a	87.5 a	99.0 a	99.0 a	6.3 a
6	Parallel (7.8 EC)	1.30 lb ai/a	A		82.0 a	25.0 cd	10.0 bc	82.5 abc	99.0 a	1.3 ab
	Mesotrione - MANA (4.0 SC)	0.047 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
7	Parallel (7.8 EC)	1.30 lb ai/a	A		64.8 a	67.5 ab	10.0 bc	78.5 abc	99.0 a	2.3 ab
	Callisto (4.0 SC)	0.047 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
8	Parallel (7.8 EC)	1.30 lb ai/a	A		54.8 a	91.8 ab	25.0 bc	65.0 bc	99.0 a	1.5 ab
	Mesotrione - MANA (4.0 SC)	0.094 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
9	Parallel (7.8 EC)	1.30 lb ai/a	A		85.8 a	89.5 ab	22.5 bc	82.5 abc	99.0 a	1.8 ab
	Callisto (4.0 SC)	0.094 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	IPOHE	ABUTH	AMBTR	CHEAL	AMARE					
Pest Scientific Name	Ipomoea hederata	Abutilon theophrasti	Ambrosia trifida	Chenopodium album	Amaranthus retrofractus					
Pest Name	Ivyleaf mornin	Velvetleaf	Giant ragweed	Common lambsqu	Redroot pigweed					
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX				
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR				
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays				
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn				
Crop Variety										
Description										
Rating Date	5-18-2010	5-18-2010	5-18-2010	5-18-2010	5-18-2010	5-18-2010				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYNLT				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Crop Stage Majority										
Pest Stage Majority	0.5"	0.5-1"	0.5-5"	0.5"	0.5-1"					
Pest Density, Unit	7 YD2	9 YD2	27 YD2	20 YD2	15 YD2					
Assessed By	MW	MW	MW	MW	MW					
Trt No.	Treatment Name	Rate	Unit	Appl Code	8	9	10	11	12	13
10	Parallel (7.8 EC)	1.30 lb ai/a		A	71.3 a	77.0 ab	57.5 ab	87.0 ab	99.0 a	1.3 ab
	Mesotrione - MANA (4.0 SC)	0.188 lb ai/a		B						
	COC	1 % v/v		B						
	AMS - Liquid	8.5 lb ai/100 gal		B						
11	Parallel (7.8 EC)	1.30 lb ai/a		A	62.3 a	55.0 abc	36.3 bc	78.5 abc	99.0 a	2.8 ab
	Callisto (4.0 SC)	0.188 lb ai/a		B						
	COC	1 % v/v		B						
	AMS - Liquid	8.5 lb ai/100 gal		B						
12	Parallel (7.8 EC)	1.30 lb ai/a		A	77.0 a	46.0 bc	57.5 ab	53.8 c	99.0 a	2.5 ab
	Mesotrione - MANA (4.0 SC)	0.094 lb ai/a		B						
	Atrazine	0.25 lb ai/a		B						
	COC	1 % v/v		B						
	AMS - Liquid	8.5 lb ai/100 gal		B						
13	Parallel (7.8 EC)	1.30 lb ai/a		A	59.8 a	90.8 ab	33.8 bc	68.8 abc	99.0 a	2.0 ab
	Callisto (4.0 SC)	0.094 lb ai/a		B						
	Atrazine	0.25 lb ai/a		B						
	COC	1 % v/v		B						
	AMS - Liquid	8.5 lb ai/100 gal		B						
LSD (P=.05)		29.40			29.40	30.80	31.60	19.37	0.00	3.50
Standard Deviation		20.57			20.57	21.55	22.11	13.56	0.00	2.45
CV		28.05			28.05	29.86	47.77	17.76	0.0	90.34
Bartlett's X2		6.262			6.262	12.005	24.227	8.599	0.0	6.204
P(Bartlett's X2)		0.509			0.509	0.10	0.012*	0.283	.	0.859
Replicate F		1.379			1.379	2.062	3.382	3.179	0.000	0.678
Replicate Prob(F)		0.2647			0.2647	0.1226	0.0285	0.0355	1.0000	0.5711
Treatment F		7.077			7.077	8.872	8.901	15.921	0.000	2.672
Treatment Prob(F)		0.0001			0.0001	0.0001	0.0001	0.0001	1.0000	0.0113

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Trt	Treatment	Rate	Appl							
No.	Name	Rate	Unit	Code	21	22	23	24	25	26
1	Untreated Check				0.0 b	0.0 b	0.0 b	0.0 b	0.0 d	0.0 c
2	Parallel (7.8 EC) Mesotrione - MANA (4.0 SC) Atrazine	1.68 lb ai/a 0.168 lb ai/a 0.625 lb ai/a	A A A		99.0 a	77.0 a	99.0 a	95.0 a	90.0 ab	99.0 a
3	Lumax (3.95 SC)	2.47 lb ai/a	A		98.0 a	90.8 a	98.0 a	97.5 a	90.3 ab	99.0 a
4	Parallel (7.8 EC) Mesotrione - MANA (4.0 SC) Atrazine	1.30 lb ai/a 0.168 lb ai/a 1.3 lb ai/a	A A A		99.0 a	81.3 a	99.0 a	94.3 a	81.3 bc	99.0 a
5	Lexar (3.7 SC)	2.78 lb ai/a	A		99.0 a	80.0 a	99.0 a	97.0 a	91.3 ab	99.0 a
6	Parallel (7.8 EC) Mesotrione - MANA (4.0 SC) COC AMS - Liquid	1.30 lb ai/a 0.047 lb ai/a 1 % v/v 8.5 lb ai/100 gal	A B B B		99.0 a	54.8 a	95.8 a	91.3 a	86.3 ab	99.0 a
7	Parallel (7.8 EC) Callisto (4.0 SC) COC AMS - Liquid	1.30 lb ai/a 0.047 lb ai/a 1 % v/v 8.5 lb ai/100 gal	A B B B		94.5 a	64.5 a	99.0 a	93.0 a	72.5 c	89.5 b
8	Parallel (7.8 EC) Mesotrione - MANA (4.0 SC) COC AMS - Liquid	1.30 lb ai/a 0.094 lb ai/a 1 % v/v 8.5 lb ai/100 gal	A B B B		99.0 a	84.8 a	99.0 a	94.8 a	93.5 ab	99.0 a
9	Parallel (7.8 EC) Callisto (4.0 SC) COC AMS - Liquid	1.30 lb ai/a 0.094 lb ai/a 1 % v/v 8.5 lb ai/100 gal	A B B B		96.8 a	82.0 a	99.0 a	94.0 a	84.8 ab	99.0 a

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	CHEAL	IPHOE	AMARE	SETFA	AMBTR	CHEAL		
Pest Scientific Name	Chenopodium al>	Ipomoea heder>	Amaranthus ret>	Setaria faberi	Ambrosia trifi>	Chenopodium al>		
Pest Name	Common lambsqu>	Ivyleaf mornin>	Redroot pigweed	Giant foxtail	Giant ragweed	Common lambsqu>		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR		
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays		
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn		
Crop Variety								
Description								
Rating Date	6-18-2010	6-18-2010	6-18-2010	6-30-2010	6-30-2010	6-30-2010		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Crop Stage Majority								
Pest Stage Majority	30"			40"	96"	36"		
Pest Density, Unit	5 YD2			150 YD2	5 YD2	5 YD2		
Assessed By	MW	MW	MW	MW	MW	MW		
Trt Treatment	Rate	Appl	21	22	23	24	25	26
No. Name	Rate Unit	Code						
10 Parallel (7.8 EC)	1.30 lb ai/a	A	99.0 a	88.0 a	99.0 a	97.0 a	99.0 a	99.0 a
Mesotrione - MANA (4.0 SC)	0.188 lb ai/a	B						
COC	1 % v/v	B						
AMS - Liquid	8.5 lb ai/100 gal	B						
11 Parallel (7.8 EC)	1.30 lb ai/a	A	99.0 a	90.3 a	99.0 a	94.3 a	99.0 a	99.0 a
Callisto (4.0 SC)	0.188 lb ai/a	B						
COC	1 % v/v	B						
AMS - Liquid	8.5 lb ai/100 gal	B						
12 Parallel (7.8 EC)	1.30 lb ai/a	A	99.0 a	96.8 a	99.0 a	91.0 a	98.0 a	99.0 a
Mesotrione - MANA (4.0 SC)	0.094 lb ai/a	B						
Atrazine	0.25 lb ai/a	B						
COC	1 % v/v	B						
AMS - Liquid	8.5 lb ai/100 gal	B						
13 Parallel (7.8 EC)	1.30 lb ai/a	A	99.0 a	87.3 a	99.0 a	95.0 a	97.5 a	99.0 a
Callisto (4.0 SC)	0.094 lb ai/a	B						
Atrazine	0.25 lb ai/a	B						
COC	1 % v/v	B						
AMS - Liquid	8.5 lb ai/100 gal	B						
LSD (P=.05)	2.94		28.31	1.91	5.09	9.93	4.35	
Standard Deviation	2.06		19.81	1.32	3.56	6.95	3.04	
CV	2.27		26.35	1.45	4.08	8.34	3.36	
Bartlett's X2	2.417		29.436	1.564	10.422	21.71	0.0	
P(Bartlett's X2)	0.299		0.002*	0.211	0.317	0.005*	.	
Replicate F	0.114		0.835	1.068	1.442	2.070	1.000	
Replicate Prob(F)	0.9516		0.4837	0.3753	0.2467	0.1215	0.4040	
Treatment F	705.209		6.480	1715.554	217.665	56.932	323.585	
Treatment Prob(F)	0.0001		0.0001	0.0001	0.0001	0.0001	0.0001	

Purdue University

Pest Type	W Weed		W Weed	W Weed	W Weed	W Weed		
Pest Code	IPOHE		SETFA	AMBTR	ABUTH	CHEAL		
Pest Scientific Name	Ipomoea hederata>		Setaria faberi	Ambrosia trifida>	Abutilon theophrasti>	Chenopodium album>		
Pest Name	ivyleaf mornin>		Giant foxtail	Giant ragweed	Velvetleaf	Common lambsquart>		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR		
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays		
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn		
Crop Variety								
Description								
Rating Date	6-30-2010	6-30-2010	7-13-2010	7-13-2010	7-13-2010	7-13-2010		
Rating Type	CONTRO	STUNT	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Crop Stage Majority			R1					
Pest Stage Majority			39"	98"	30"	34"		
Pest Density, Unit			150 YD2	10 YD2	4 YD2	6 YD2		
Assessed By	MW	MW	MW	MW	MW	MW		
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	27	28	29	30	31	32
1 Untreated Check			0.0 c	16.3 a	0.0 d	0.0 d	0.0 b	0.0 c
2 Parallel (7.8 EC)	1.68 lb ai/a	A	87.0 a	0.0 b	96.5 abc	91.8 abc	99.0 a	99.0 a
Mesotrione - MANA (4.0 SC)	0.168 lb ai/a	A						
Atrazine	0.625 lb ai/a	A						
3 Lumax (3.95 SC)	2.47 lb ai/a	A	92.0 a	0.0 b	97.5 ab	94.5 ab	99.0 a	99.0 a
4 Parallel (7.8 EC)	1.30 lb ai/a	A	85.0 a	0.0 b	95.0 bc	82.5 bc	98.0 a	99.0 a
Mesotrione - MANA (4.0 SC)	0.168 lb ai/a	A						
Atrazine	1.3 lb ai/a	A						
5 Lexar (3.7 SC)	2.78 lb ai/a	A	87.3 a	0.0 b	98.5 a	95.3 ab	99.0 a	99.0 a
6 Parallel (7.8 EC)	1.30 lb ai/a	A	83.5 a	0.0 b	94.3 bc	91.3 abc	99.0 a	99.0 a
Mesotrione - MANA (4.0 SC)	0.047 lb ai/a	B						
COC	1 % v/v	B						
AMS - Liquid	8.5 lb ai/100 gal	B						
7 Parallel (7.8 EC)	1.30 lb ai/a	A	49.8 b	0.0 b	95.0 bc	81.3 c	99.0 a	89.5 b
Callisto (4.0 SC)	0.047 lb ai/a	B						
COC	1 % v/v	B						
AMS - Liquid	8.5 lb ai/100 gal	B						
8 Parallel (7.8 EC)	1.30 lb ai/a	A	92.0 a	0.0 b	96.0 abc	94.0 ab	99.0 a	99.0 a
Mesotrione - MANA (4.0 SC)	0.094 lb ai/a	B						
COC	1 % v/v	B						
AMS - Liquid	8.5 lb ai/100 gal	B						
9 Parallel (7.8 EC)	1.30 lb ai/a	A	82.3 a	0.0 b	93.8 c	84.8 bc	99.0 a	99.0 a
Callisto (4.0 SC)	0.094 lb ai/a	B						
COC	1 % v/v	B						
AMS - Liquid	8.5 lb ai/100 gal	B						

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Pest Type	W Weed		W Weed	W Weed	W Weed	W Weed				
Pest Code	IPOHE		SETFA	AMBTR	ABUTH	CHEAL				
Pest Scientific Name	Ipomoea hederata>		Setaria faberi	Ambrosia trifida>	Abutilon theophrasti>	Chenopodium album>				
Pest Name	lvyleaf mornin>		Giant foxtail	Giant ragweed	Velvetleaf	Common lambsquart>				
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX				
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR				
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays				
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn				
Crop Variety										
Description										
Rating Date	6-30-2010	6-30-2010	7-13-2010	7-13-2010	7-13-2010	7-13-2010				
Rating Type	CONTRO	STUNT	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Crop Stage Majority			R1							
Pest Stage Majority			39"	98"	30"	34"				
Pest Density, Unit			150 YD2	10 YD2	4 YD2	6 YD2				
Assessed By	MW	MW	MW	MW	MW	MW				
Trt No.	Treatment Name	Rate	Appl Unit	Code	27	28	29	30	31	32
10	Parallel (7.8 EC)	1.30 lb ai/a	A		96.3 a	0.0 b	97.5 ab	99.0 a	99.0 a	99.0 a
	Mesotrione - MANA (4.0 SC)	0.188 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
11	Parallel (7.8 EC)	1.30 lb ai/a	A		89.8 a	0.0 b	95.5 abc	99.0 a	99.0 a	99.0 a
	Callisto (4.0 SC)	0.188 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
12	Parallel (7.8 EC)	1.30 lb ai/a	A		96.8 a	1.3 b	96.4 abc	98.0 a	99.0 a	99.0 a
	Mesotrione - MANA (4.0 SC)	0.094 lb ai/a	B							
	Atrazine	0.25 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
13	Parallel (7.8 EC)	1.30 lb ai/a	A		96.3 a	0.0 b	96.5 abc	99.0 a	99.0 a	99.0 a
	Callisto (4.0 SC)	0.094 lb ai/a	B							
	Atrazine	0.25 lb ai/a	B							
	COC	1 % v/v	B							
	AMS - Liquid	8.5 lb ai/100 gal	B							
LSD (P=.05)		17.98			3.07	2.10	8.38	0.79	4.35	
Standard Deviation		12.58			2.15	1.45	5.87	0.55	3.04	
CV		15.76			159.68	1.64	6.87	0.61	3.36	
Bartlett's X2		30.367			3.026	9.817	18.224	0.0	0.0	
P(Bartlett's X2)		0.001*			0.082	0.366	0.02*	.	.	
Replicate F		2.744			1.526	3.191	3.731	1.000	1.000	
Replicate Prob(F)		0.0572			0.2244	0.0355	0.0196	0.4040	0.4040	
Treatment F		18.225			17.462	1345.429	81.005	9785.501	323.585	
Treatment Prob(F)		0.0001			0.0001	0.0001	0.0001	0.0001	0.0001	

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Pest Type				W Weed
Pest Code				IPOHE
Pest Scientific Name				Ipomoea hederata
Pest Name				ivy leaf morning glory
Crop Code				ZEAMX
BBCH Scale				BCOR
Crop Scientific Name				Zea mays
Crop Name				Corn
Crop Variety				
Description				
Rating Date				7-13-2010
Rating Type				CONTRO
Rating Unit				%
Number of Subsamples				1
Crop Stage Majority				
Pest Stage Majority				14"
Pest Density, Unit				4 YD2
Assessed By				MW
Trt No.	Treatment Name	Rate	Appl	
		Rate Unit	Code	33
1	Untreated Check			0.0 b
2	Parallel (7.8 EC)	1.68 lb ai/a	A	88.3 a
	Mesotrione - MANA (4.0 SC)	0.168 lb ai/a	A	
	Atrazine	0.625 lb ai/a	A	
3	Lumax (3.95 SC)	2.47 lb ai/a	A	93.3 a
4	Parallel (7.8 EC)	1.30 lb ai/a	A	89.8 a
	Mesotrione - MANA (4.0 SC)	0.168 lb ai/a	A	
	Atrazine	1.3 lb ai/a	A	
5	Lexar (3.7 SC)	2.78 lb ai/a	A	89.8 a
6	Parallel (7.8 EC)	1.30 lb ai/a	A	88.3 a
	Mesotrione - MANA (4.0 SC)	0.047 lb ai/a	B	
	COC	1 % v/v	B	
	AMS - Liquid	8.5 lb ai/100 gal	B	
7	Parallel (7.8 EC)	1.30 lb ai/a	A	95.5 a
	Callisto (4.0 SC)	0.047 lb ai/a	B	
	COC	1 % v/v	B	
	AMS - Liquid	8.5 lb ai/100 gal	B	
8	Parallel (7.8 EC)	1.30 lb ai/a	A	95.5 a
	Mesotrione - MANA (4.0 SC)	0.094 lb ai/a	B	
	COC	1 % v/v	B	
	AMS - Liquid	8.5 lb ai/100 gal	B	
9	Parallel (7.8 EC)	1.30 lb ai/a	A	84.8 a
	Callisto (4.0 SC)	0.094 lb ai/a	B	
	COC	1 % v/v	B	
	AMS - Liquid	8.5 lb ai/100 gal	B	

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Pest Type				W Weed
Pest Code				IPOHE
Pest Scientific Name	Ipomoea hederata			
Pest Name	Ivyleaf mornin			
Crop Code				ZEAMX
BBCH Scale				BCOR
Crop Scientific Name	Zea mays			
Crop Name	Corn			
Crop Variety				
Description				
Rating Date				7-13-2010
Rating Type				CONTRO
Rating Unit				%
Number of Subsamples				1
Crop Stage Majority				
Pest Stage Majority				14"
Pest Density, Unit				4 YD2
Assessed By				MW
Trt No.	Treatment Name	Rate	Unit	Appl Code
				33
10	Parallel (7.8 EC)	1.30 lb ai/a		A
	Mesotrione - MANA (4.0 SC)	0.188 lb ai/a		B
	COC	1 % v/v		B
	AMS - Liquid	8.5 lb ai/100 gal		B
11	Parallel (7.8 EC)	1.30 lb ai/a		A
	Callisto (4.0 SC)	0.188 lb ai/a		B
	COC	1 % v/v		B
	AMS - Liquid	8.5 lb ai/100 gal		B
12	Parallel (7.8 EC)	1.30 lb ai/a		A
	Mesotrione - MANA (4.0 SC)	0.094 lb ai/a		B
	Atrazine	0.25 lb ai/a		B
	COC	1 % v/v		B
	AMS - Liquid	8.5 lb ai/100 gal		B
13	Parallel (7.8 EC)	1.30 lb ai/a		A
	Callisto (4.0 SC)	0.094 lb ai/a		B
	Atrazine	0.25 lb ai/a		B
	COC	1 % v/v		B
	AMS - Liquid	8.5 lb ai/100 gal		B
	LSD (P=.05)			11.10
	Standard Deviation			7.77
	CV			9.04
	Bartlett's X2			11.841
	P(Bartlett's X2)			0.222
	Replicate F			0.367
	Replicate Prob(F)			0.7773
	Treatment F			45.580
	Treatment Prob(F)			0.0001

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Column 16: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 18"; per square yard; MW
Column 17: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; MW
Column 18: US; phytotoxicity - bleaching; MW
Column 19: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V7; 24"; per square yard; MW
Column 20: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 60"; per square yard; MW
Column 21: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 30"; per square yard; MW
Column 22: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; MW
Column 23: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; MW
Column 24: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 40"; per square yard; MW
Column 25: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 96"; per square yard; MW
Column 26: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 36"; per square yard; MW
Column 27: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; MW
Column 28: US; STUNT; percent; MW
Column 29: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; R1; 39"; per square yard; MW
Column 30: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 98"; per square yard; MW
Column 31: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 30"; per square yard; MW
Column 32: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 34"; per square yard; MW
Column 33: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 14"; per square yard; MW