Ohio State University
Horticulture and Crop Science

AMS Alternatives with Touchdown Hi-Tech

Title No. 2:
Trial ID: 10POCAMS Protocol ID: 10POCAMS
Location: WESTERN BRANCH F-7 Study Director: Anthony F. Dobbels
Project ID: Investigator: Dr. Mark M. Loux
Sponsor Contact: John Smith, WinField Solutions

General Trial Information

Study Director: Anthony F. Dobbels **Title:** Research Specialist
Investigator: Dr. Mark M. Loux **Title:** Professor

Trial Location

City: South Charleston **Latitude of LL Corner °:** 39.86028 N
State/Prov.: Ohio **Longitude of LL Corner °:** 83.67226 W
Postal Code: 45368 **Altitude of LL Corner, Unit:** 1104.00 FT
Country: USA

Personnel

Study Director: Anthony F. Dobbels **Title:** Research Specialist
Affiliation: The Ohio State University
Address: 7721 South Charleston Pike
Location: South Charleston OH
Postal Code: 45368 **E-mail:** dobbels.1@osu.edu
Investigator: Dr. Mark M. Loux **Title:** Professor
Affiliation: The Ohio State University
Address: 222 Kottman Hall, 2021 Coffey Road
Location: Columbus OH
Postal Code: 43210 **E-mail:** loux.1@osu.edu

Crop Description

Crop 1: ZEAMX Zea mays Corn
Variety: PIONEER 33W84 **Description:** RR/LL
BBCH Scale: BCOR **Planting Date:** 4/20/10
Planting Method: SEEDED seeded **Rate, Unit:** 32097 S/A
Depth, Unit: 1.5 IN
Row Spacing, Unit: 30 IN
Seed Bed: SMOOTH smooth **Soil Temperature, Unit:** 58 F
Soil Moisture: DRY dry **Emergence Date:** 5/3/10

Pest Description

Pest 1 Type: W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

Pest 2 Type: W **Code:** AMBEL Ambrosia artemisiifolia
Common Name: Common ragweed

Pest 3 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed

Pest 4 Type: W **Code:** CHEAL Chenopodium album
Common Name: Common lambsquarters

Pest 5 Type: W **Code:** POLPY Polygonum pensylvanicum
Common Name: Pennsylvania smartweed

Pest 6 Type: W **Code:** AMARE Amaranthus retroflexus
Common Name: Redroot pigweed

Pest 7 Type: W **Code:** ABUTH Abutilon theophrasti
Common Name: Velvetleaf

Site and Design

Plot Width, Unit: 6.67 FT **Site Type:** FIELD field
Plot Length, Unit: 30 FT **Experimental Unit:** 1 PLOT plot
Plot Area, Unit: 200.1 FT2 **Tillage Type:** CONTIL conventional-till
Replications: 3 **Study Design:** RACOBL Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

Soil Description

Description Name: F-7 West
% OM: 3 **Texture:** SICL silty clay loam
pH: 6.7 **Soil Name:** Kokomo
CEC: 25 **Fert. Level:** G good
Soil Drainage: G good

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Application Description

	A
Application Date:	5/25/10
Time of Day:	9:00 A.M.
Application Method:	SPRAY
Application Timing:	POST
Application Placement:	BROFO
Applied By:	Loux
Air Temperature, Unit:	69 F
% Relative Humidity:	79
Wind Velocity, Unit:	7 MPH
Wind Direction:	E
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	64 F
Soil Moisture:	NORMAL
% Cloud Cover:	40
Next Rain Occurred On:	5/31/10

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	ZEAMX BCOR
Stage Scale Used:	BBCH
Stage Majority, Percent:	14 100
Height, Unit:	9 IN
Height Minimum, Maximum:	8 9

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	SETFA W
Stage Majority, Percent:	13 100
Height, Unit:	4 IN
Height Minimum, Maximum:	3 4
Density, Unit:	101.2 M2
Pest 2 Code, Type, Scale:	AMBEL W
Stage Majority, Percent:	16 100
Height, Unit:	4 IN
Height Minimum, Maximum:	3 4
Pest 3 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	18 90
Stage Minimum, Percent:	16 10
Stage Maximum, Percent:	18 90
Height, Unit:	7 IN
Height Minimum, Maximum:	6 7
Density, Unit:	5.2 M2
Pest 4 Code, Type, Scale:	CHEAL W
Stage Majority, Percent:	18 90
Stage Minimum, Percent:	16 10
Stage Maximum, Percent:	18 90
Height, Unit:	2 IN
Height Minimum, Maximum:	1 2
Density, Unit:	14.4 M2
Pest 5 Code, Type, Scale:	POLPY W
Stage Majority, Percent:	15 100
Height, Unit:	4 IN
Height Minimum, Maximum:	3 4
Density, Unit:	6.4 M2
Pest 6 Code, Type, Scale:	AMARE W
Stage Majority, Percent:	16 100
Height, Unit:	2 IN
Height Minimum, Maximum:	2 3
Density, Unit:	10.4 M2
Pest 7 Code, Type, Scale:	ABUTH W
Stage Majority, Percent:	16 90
Stage Minimum, Percent:	15 10
Stage Maximum, Percent:	16 90
Height, Unit:	3 IN
Height Minimum, Maximum:	2 3
Density, Unit:	4 M2

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Application Equipment

	A
Appl. Equipment:	6 foot boom
Equipment Type:	SPRBAC
Operating Pressure, Unit:	40 PSI
Nozzle Type:	TEEJET AI
Nozzle Size:	100015
Nozzle Spacing, Unit:	18 IN
Boom Length, Unit:	6 FT
Boom Height, Unit:	20 IN
Ground Speed, Unit:	3 MPH
Carrier:	WATER
Spray Volume, Unit:	15 GPA
Mix Size, Unit:	0.33 Gallons
Propellant:	CO2

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Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate Unit	Appl Code	1	2	3	4	5	6	7	8	9
	Pest Code					SETFA	AMBTR	AMBEL	CHEAL	ABUTH	POLPY	AMARE	SETFA	AMBTR
	Rating Date					6/8/10	6/8/10	6/8/10	6/8/10	6/8/10	6/8/10	6/8/10	6/22/10	6/22/10
	Rating Type					CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit					%	%	%	%	%	%	%	%	%
	Trt-Eval Interval					14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	28 DA-A	28 DA-A
	Plant-Eval Interval					49 DP-1	49 DP-1	49 DP-1	49 DP-1	49 DP-1	49 DP-1	49 DP-1	63 DP-1	63 DP-1
	Days After Emergence					36 DE-	36 DE-	36 DE-	36 DE-	36 DE-	36 DE-	36 DE-	50 DE-	50 DE-
1	Touchdown Hi-Tech	4.17	24	oz/a	A	97	89	100	62	100	92	100	65	75
1	N-Pak 8-0-0-9	100	1.5	qt/a										
2	Touchdown Hi-Tech	4.17	24	oz/a	A	98	80	100	89	98	88	100	73	57
2	Alliance	100	0.75	qt/a										
3	Touchdown Hi-Tech	4.17	24	oz/a	A	98	81	99	98	100	88	100	78	63
3	AG 10003	100	0.6	qt/a										
4	Touchdown Hi-Tech	4.17	24	oz/a	A	100	77	97	97	97	80	100	68	62
4	AG 10004	100	0.6	qt/a										
5	Touchdown Hi-Tech	4.17	24	oz/a	A	100	83	100	94	100	85	100	80	63
5	AG 10009	100	0.6	qt/a										
6	Touchdown Hi-Tech	4.17	24	oz/a	A	100	83	100	97	100	87	100	67	60
6	AG 10003	100	0.45	qt/a										
7	Touchdown Hi-Tech	4.17	24	oz/a	A	100	79	98	97	100	83	100	80	76
7	AG 10004	100	0.45	qt/a										
8	Touchdown Hi-Tech	4.17	24	oz/a	A	100	85	98	99	100	85	100	78	78
8	AG 10009	100	0.45	qt/a										
9	Touchdown Hi-Tech	4.17	24	oz/a	A	100	83	94	100	100	81	100	78	75
9	AG 03019	100	0.3	qt/a										
10	Touchdown Hi-Tech	4.17	24	oz/a	A	95	84	99	63	100	85	100	60	70
10	N-Pak 8-0-0-9	100	3	qt/a										
	LSD (P=.05)					2.5	8.2	7.0	11.5	3.3	9.7	0.0	11.2	12.0
	Standard Deviation					1.5	4.8	4.1	6.7	1.9	5.6	0.0	6.5	7.0
	CV					1.48	5.84	4.11	7.47	1.96	6.61	0.0	8.98	10.31
	Bartlett's X2					0.0	8.69	11.635	10.71	0.871	3.496	0.0	8.155	5.151
	P(Bartlett's X2)					.	0.369	0.04*	0.219	0.351	0.899	.	0.319	0.741
	Replicate F					2.739	2.823	0.075	0.663	1.976	10.130	0.000	1.420	1.019
	Replicate Prob(F)					0.0915	0.0858	0.9279	0.5275	0.1676	0.0013	1.0000	0.2675	0.3809
	Treatment F					4.391	1.575	0.629	14.244	1.000	1.142	0.000	3.692	3.763
	Treatment Prob(F)					0.0037	0.1967	0.7580	0.0001	0.4742	0.3876	1.0000	0.0088	0.0081

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Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate Unit	Appl Code	10	11	12	13	14	15	16	17	18
	Pest Code					AMBEL	CHEAL	ABUTH	POLPY	AMARE	SETFA	AMBTR	AMBEL	CHEAL
	Rating Date					6/22/10	6/22/10	6/22/10	6/22/10	6/22/10	7/8/10	7/8/10	7/8/10	7/8/10
	Rating Type					CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit					%	%	%	%	%	%	%	%	%
	Trt-Eval Interval					28 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A	44 DA-A	44 DA-A	44 DA-A	44 DA-A
	Plant-Eval Interval					63 DP-1	63 DP-1	63 DP-1	63 DP-1	63 DP-1	79 DP-1	79 DP-1	79 DP-1	79 DP-1
	Days After Emergence					50 DE-	50 DE-	50 DE-	50 DE-	50 DE-	66 DE-	66 DE-	66 DE-	66 DE-
1	Touchdown Hi-Tech	4.17	24	oz/a	A	100	50	100	100	95	67	63	100	37
1	N-Pak 8-0-0-9	100	1.5	qt/a										
2	Touchdown Hi-Tech	4.17	24	oz/a	A	83	85	100	100	95	60	50	99	70
2	Alliance	100	0.75	qt/a										
3	Touchdown Hi-Tech	4.17	24	oz/a	A	97	85	93	100	97	62	47	92	80
3	AG 10003	100	0.6	qt/a										
4	Touchdown Hi-Tech	4.17	24	oz/a	A	95	90	100	100	100	60	53	100	77
4	AG 10004	100	0.6	qt/a										
5	Touchdown Hi-Tech	4.17	24	oz/a	A	90	83	93	93	85	62	47	92	70
5	AG 10009	100	0.6	qt/a										
6	Touchdown Hi-Tech	4.17	24	oz/a	A	97	68	97	100	83	63	47	100	73
6	AG 10003	100	0.45	qt/a										
7	Touchdown Hi-Tech	4.17	24	oz/a	A	100	92	100	98	90	67	63	100	73
7	AG 10004	100	0.45	qt/a										
8	Touchdown Hi-Tech	4.17	24	oz/a	A	93	88	98	85	92	60	58	100	72
8	AG 10009	100	0.45	qt/a										
9	Touchdown Hi-Tech	4.17	24	oz/a	A	97	83	98	97	92	60	57	100	77
9	AG 03019	100	0.3	qt/a										
10	Touchdown Hi-Tech	4.17	24	oz/a	A	93	53	100	100	93	57	37	100	33
10	N-Pak 8-0-0-9	100	3	qt/a										
	LSD (P=.05)					14.7	13.9	7.8	9.6	11.2	15.7	18.3	5.6	11.7
	Standard Deviation					8.6	8.1	4.6	5.6	6.5	9.2	10.6	3.2	6.8
	CV					9.08	10.4	4.65	5.77	7.06	14.87	20.4	3.31	10.3
	Bartlett's X2					7.288	5.945	4.997	4.145	5.593	10.427	5.704	3.499	8.895
	P(Bartlett's X2)					0.40	0.653	0.288	0.246	0.693	0.166	0.68	0.174	0.26
	Replicate F					2.047	3.984	1.446	2.085	4.392	1.110	0.052	2.333	0.487
	Replicate Prob(F)					0.1582	0.0369	0.2615	0.1533	0.0280	0.3511	0.9499	0.1256	0.6226
	Treatment F					1.017	10.581	1.054	2.240	1.840	0.352	1.898	3.431	18.129
	Treatment Prob(F)					0.4630	0.0001	0.4389	0.0694	0.1294	0.9434	0.1182	0.0125	0.0001

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Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate Unit	Appl Code	ABUTH 19	AMARE 20	POLPY 21	HIBTR 22
	Pest Code					ABUTH	AMARE	POLPY	HIBTR
	Rating Date					7/8/10	7/8/10	7/8/10	7/8/10
	Rating Type					CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit					%	%	%	%
	Trt-Eval Interval					44 DA-A	44 DA-A	44 DA-A	44 DA-A
	Plant-Eval Interval					79 DP-1	79 DP-1	79 DP-1	79 DP-1
	Days After Emergence					66 DE-	66 DE-	66 DE-	66 DE-
1	Touchdown Hi-Tech	4.17	24	oz/a	A	93	100	100	100
1	N-Pak 8-0-0-9	100	1.5	qt/a					
2	Touchdown Hi-Tech	4.17	24	oz/a	A	100	100	100	100
2	Alliance	100	0.75	qt/a					
3	Touchdown Hi-Tech	4.17	24	oz/a	A	100	90	100	100
3	AG 10003	100	0.6	qt/a					
4	Touchdown Hi-Tech	4.17	24	oz/a	A	100	85	100	87
4	AG 10004	100	0.6	qt/a					
5	Touchdown Hi-Tech	4.17	24	oz/a	A	97	87	100	93
5	AG 10009	100	0.6	qt/a					
6	Touchdown Hi-Tech	4.17	24	oz/a	A	100	93	100	97
6	AG 10003	100	0.45	qt/a					
7	Touchdown Hi-Tech	4.17	24	oz/a	A	100	93	100	100
7	AG 10004	100	0.45	qt/a					
8	Touchdown Hi-Tech	4.17	24	oz/a	A	100	86	100	93
8	AG 10009	100	0.45	qt/a					
9	Touchdown Hi-Tech	4.17	24	oz/a	A	97	87	100	97
9	AG 03019	100	0.3	qt/a					
10	Touchdown Hi-Tech	4.17	24	oz/a	A	100	93	100	100
10	N-Pak 8-0-0-9	100	3	qt/a					
	LSD (P=.05)					7.6	16.8	0.0	9.8
	Standard Deviation					4.4	9.8	0.0	5.7
	CV					4.49	10.74	0.0	5.91
	Bartlett's X2					1.327	0.303	0.0	1.832
	P(Bartlett's X2)					0.515	1.00	.	0.767
	Replicate F					1.189	1.352	0.000	5.318
	Replicate Prob(F)					0.3274	0.2839	1.0000	0.0153
	Treatment F					0.830	0.967	0.000	1.818
	Treatment Prob(F)					0.5979	0.4967	1.0000	0.1340

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Pest Code
SETFA, Setaria faberi, = US
AMBTR, Ambrosia trifida, = US
AMBEL, Ambrosia artemisiifolia, = US
CHEAL, Chenopodium album, = US
ABUTH, Abutilon theophrasti, = US
POLPY, Polygonum pensylvanicum, = US
AMARE, Amaranthus retroflexus, = US
HIBTR, Hibiscus trionum, = US
Rating Type
CONTRO = control / burndown or knockdown
Rating Unit
% = percent
Plant-Eval Interval
49 DP-1 = 1 4/20/10
63 DP-1 = 1 4/20/10
79 DP-1 = 1 4/20/10