

LSU Northeast Research Station

Evaluation of Expert and Touchdown for weed control in Roundup Ready corn.

Trial ID: SJ05C003
Location:Study Dir.: Scott Martin
Investigator: Bill Williams**GENERAL TRIAL INFORMATION****Study Director:** Scott Martin
Investigator: Bill Williams**Conducted Under GLP (Y/N):** N**Conducted Under GEP (Y/N):** N

Conclusions: There were few significant differences in initial weed control between most treatments. Late season weed control was generally better when herbicides were applied POST rather than EPOST. Still, the best control was observed in plots receiving two applications of Touchdown or when the program included a strong residual component. Expert generally resulted in superior weed control compared to Steadfast plus Callisto or Touchdown. Note that the Steadfast rate (0.5 oz/a) was 75% of recommended (0.75 oz/A) and that research demonstrates that Steadfast rates should not be reduced. Tank mixing Expert with 6 oz/A Touchdown plus 0.8 pt/A atrazine improved weed control compared to Expert alone. Overall, Expert plus Touchdown plus atrazine resulted in the best weed control and was the only EPOST application resulting in excellent season long control of most of the weeds evaluated. However, 24 oz/A Touchdown plus 2 qt/A atrazine resulted in the highest corn yields.

CROP AND WEED DESCRIPTION

Weed Code	Common Name	Scientific Name
1.	CASOB Sickle pod	Cassia obtusifolia
2.	BRAPP Signalgrass, broadleaf	Brachiaria platyphylla
3.	ERICA Horseweed	Conyza canadensis
4.	SORHA Johnson grass	Sorghum halepense
5.	LAMAM Henbit	Lamium amplexicaule
6.	IPOHE Morningglory, entireleaf	Ipomoea hederacea
7.	DIGSA Crabgrass, large	Digitaria sanguinalis

Crop 1: ZEAMX CORN, FIELD**Variety:** Gensis 2A16RR**Planting Date:** 4/4/05**Planting Method:** HILL DROP**Rate:** 30000 S/A**Depth:** 2 "**Row Spacing:** 40 in**Seed Bed:** MEDIUM**Soil Moisture:** NORMAL**Emergence Date:** 4/14/05**SITE AND DESIGN****Plot Width, Unit:** 13.3 FT**Plot Length, Unit:** 30 FT**Reps:** 3**Site Type:** FIELD**Tillage Type:** CONVENTIONAL-TILL**Study Design:** RANDOMIZED COMPLETE BLOCK**SOIL DESCRIPTION**

% Sand: 36

% OM: 1.1

Texture: Loam

% Silt: 48

pH: 5.7

Soil Name: Mhoon silty clay loam

% Clay: 16

CEC: 8.8

Fert. Level: EXCELLENT

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MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.	4/6/05	5:30 AM	0.26	in	Rainfall	0	n/a
2.	4/12/05	3:00 PM	0.88	in	Rainfall	0	n/a
3.	4/26/05	3:00 AM	1.04	in	Rainfall	0	n/a
4.	4/27/05	8:30 AM	0.04	in	Rainfall	0	n/a
5.	4/30/05	3:00 AM	0.21	in	Rainfall	0	n/a
6.	5/10/05	6:30 PM	0.25	in	Rainfall	0	n/a
7.	5/15/05	5:30 PM	0.46	in	Rainfall	0	n/a
8.	5/25/05	8:00 PM	0.78	in	Rainfall	0	n/a
9.	5/29/05	1:00 AM	0.63	in	Rainfall	0	n/a
10.	5/30/05	11:00 A	1.51	in	Rainfall	0	n/a
11.	5/31/05	8:00 PM	0.26	in	Rainfall	0	n/a
12.	6/2/05	4:00 PM	0.04	in	Rainfall	0	n/a
13.	6/6/05	7:00 PM	0.39	in	Rainfall	0	n/a
14.	6/18/05	11:00 A	0.42	in	Rainfall	0	n/a
15.	7/3/04	6:00 PM	0.06	in	Rainfall	0	n/a
16.	7/6/05	1:30 PM	1.6	in	Rainfall	0	n/a
17.	7/8/05	1:45 PM	0.93	in	Rainfall	0	n/a
18.	7/10/05	1:00 PM	0.04	in	Rainfall	0	n/a
19.	7/14/05	2:00 PM	0.44	in	Rainfall	0	n/a
20.	7/16/05	10:00 P	0.04	in	Rainfall	0	n/a
21.	7/17/05	1:00 PM	0.25	in	Rainfall	0	n/a
22.	7/18/05	7:00 PM	0.05	in	Rainfall	0	n/a
23.	7/22/05	2:30 PM	0.15	in	Rainfall	0	n/a
24.	8/4/05	3:30 PM	0.27	in	Rainfall	0	n/a
25.	8/5/05	8:00 PM	0.45	in	Rainfall	0	n/a
26.	8/6/05	6:00 PM	0.25	in	Rainfall	0	n/a
27.	8/16/05	6:00 PM	1.31	in	Rainfall	0	n/a
28.	8/22/05	9:00 PM	0.05	in	Rainfall	0	n/a

Overall Moisture Conditions: Dry

Closest Weather Station: Northeast Research Station

Distance: 0.5

Unit: MI

APPLICATION DESCRIPTION

	A	B	C
Application Date:	4/20/05	4/27/05	5/10/05
Time of Day:	3:00	11:00	1:30
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	EPOST	POST	LPOST
Applic. Placement:	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	84 F	75 F	90 F
% Relative Humidity:	46	31	48
Wind Velocity, Unit:	6 S	1 S	1 W
Soil Temp., Unit:	82 F	75 F	89 F
Soil Moisture:	dry	moist	wet
% Cloud Cover:	60	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMX V2	ZEAMX V3	ZEAMX V6
Stage Scale:	4-5 in	6-7 in	23 in

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WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	CASOB cot	CASOB 1-2 lf	CASOB n/a
Stage Scale:	1"	1-2 in	4-6 in
Weed 2 Code, Stage:	BRAPP 3-4 lf	BRAPP 4-6 lf	BRAPP 2-3 T
Stage Scale:	1-4 in	4-6 in	4-6 in
Weed 3 Code, Stage:	ERICA n/a	ERICA n/a	ERICA n/a
Stage Scale:	8-12 in	10-14 in	18-20 in
Weed 4 Code, Stage:	SORHA n/a	SORHA n/a	SORHA n/a
Stage Scale:	4-6 in	8-10 in	16-18 in
Weed 5 Code, Stage:	LAMAM 2 lf	LAMAM 3-4 lf	LAMAM n/a
Stage Scale:	0.5 in	1-2 iin	n/a
	"		
Weed 6 Code, Stage:	IPOHE cot	IPOHE 1-2 lf	IPOHE 1-2 lf
Stage Scale:	1 in	1-2 in	3-4 in
Weed 7 Code, Stage:	DIGSA n/a	DIGSA n/a	DIGSA 3-4 lf
Stage Scale:	n/a	n/a	3-4 in

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	Tractor	Tractor	Tractor
Operating Pressure:	34	34	34
Nozzle Type:	Ven.	Ven.	Ven.
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	20 "	20 "	20 "
Nozzles/Row:	2	2	2
Carrier:	Water	Water	Water
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA
Propellant:	CO2	CO2	CO2

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Evaluation of Expert and Touchdown for weed control in Roundup Ready corn.

Trial ID: SJ05C003
Location:Study Dir.: Scott Martin
Investigator: Bill Williams

Weed Code	BRAPP	BRAPP	BRAPP	BRAPP	CASOB
Crop Code					
Part Rated	PLATOT P	PLATOT P	PLATOT P	PLATOT P	PLATOT P
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%
Rating Date	4/28/05	5/11/05	5/26/05	7/27/05	4/28/05
Trt-Eval Interval	8 DA-A	14 DA-B	16 DA-C	78 DA-C	8 DA-A
ARM Action Codes					
# Subsamples, Dec.					

Trt No.	Treatment Name	Rate	Grow Unit	Stg	1	2	3	4	5	
1	Expert	3	QT/A	POST	0	d 92	ab 87	bc 93	a 0	c
2	Touchdown IQ 24		OZ/A	EPOST	90	b 87	bcd 93	a 88	ab 92	ab
	Touchdown IQ 24		OZ/A	LPOST						
3	Steadfast	0.5	OZ/A	POST	0	d 85	cd 83	c 87	abc 0	c
	Callisto	3	OZ/A	POST						
4	nontreated				0	d 0	e 0	e 0	e 0	c
5	Expert	3	QT/A	EPOST	93	ab 95	a 90	ab 92	a 93	ab
6	Touchdown IQ 24		OZ/A	EPOST	93	ab 82	d 73	d 77	d 93	ab
7	Touchdown IQ 24		OZ/A	POST	0	d 83	d 83	c 80	cd 0	c
8	Steadfast	0.5	OZ/A	EPOST	85	c 90	abc 85	bc 83	bcd 88	b
	Callisto	3	OZ/A	EPOST						
9	Touchdown IQ 24		OZ/A	EPOST	95	a 92	ab 85	bc 83	bcd 95	a
	Atrazine	2.0	QT/A	EPOST						
10	Expert	3	QT/A	EPOST	95	a 95	a 90	ab 93	a 95	a
	Touchdown IQ 6		OZ/A	EPOST						
	Atrazine	0.8	PT/A	EPOST						
LSD (P=.05)					3.7	5.0	5.5	6.8	5.0	
Bartlett's X2					0.831	2.21	3.106	4.618	3.236	
P(Bartlett's X2)					0.66	0.819	0.795	0.707	0.357	

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

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

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Weed Code	CASOB	CASOB	CASOB	SORHA	SORHA
Crop Code					
Part Rated	PLATOT P	PLATOT P	PLATOT P	PLATOT P	PLATOT P
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%
Rating Date	5/11/05	5/26/05	7/27/05	5/11/05	5/26/05
Trt-Eval Interval	14 DA-B	16 DA-C	78 DA-C	14 DA-B	16 DA-C
ARM Action Codes					
# Subsamples, Dec.					

Trt No.	Treatment Name	Rate	Grow Unit	Stg	6	7	8	9	10					
1	Expert	3	QT/A	POST	92	ab	87	ab	93	a	88	ab	82	bc
2	Touchdown IQ 24		OZ/A	EPOST	77	d	93	a	83	b	85	ab	93	a
	Touchdown IQ 24		OZ/A	LPOST										
3	Steadfast	0.5	OZ/A	POST	85	bcd	80	bc	82	b	88	ab	87	ab
	Callisto	3	OZ/A	POST										
4	nontreated				0	f	0	e	0	d	0	c	0	d
5	Expert	3	QT/A	EPOST	93	ab	85	abc	80	b	80	b	80	bc
6	Touchdown IQ 24		OZ/A	EPOST	63	e	57	d	57	c	87	ab	78	c
7	Touchdown IQ 24		OZ/A	POST	78	cd	63	d	60	c	88	ab	87	ab
8	Steadfast	0.5	OZ/A	EPOST	87	abc	75	c	83	b	92	a	87	ab
	Callisto	3	OZ/A	EPOST										
9	Touchdown IQ 24		OZ/A	EPOST	85	bcd	93	a	87	ab	88	ab	82	bc
	Atrazine	2.0	QT/A	EPOST										
10	Expert	3	QT/A	EPOST	95	a	95	a	92	a	87	ab	87	ab
	Touchdown IQ 6		OZ/A	EPOST										
	Atrazine	0.8	PT/A	EPOST										
LSD (P=.05)					8.4	10.2	7.7	9.8	8.2					
Bartlett's X2					5.967	6.223	6.34	4.813	4.084					
P(Bartlett's X2)					0.544	0.399	0.501	0.777	0.849					

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Weed Code	SORHA	IPOHE	IPOHE	ERICA	ERICA
Crop Code					
Part Rated	PLATOT P	PLATOT P	PLATOT P	PLATOT P	PLATOT P
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%
Rating Date	7/27/05	5/26/05	7/27/05	4/28/05	5/11/05
Trt-Eval Interval	78 DA-C	16 DA-C	78 DA-C	8 DA-A	14 DA-B
ARM Action Codes					
# Subsamples, Dec.					

Trt No.	Treatment Name	Rate	Grow Unit	Stg	11	12	13	14	15					
1	Expert	3	QT/A	POST	57	d	93	ab	90	a	0	d	90	a
2	Touchdown IQ 24	24	OZ/A	EPOST	87	a	92	abc	93	a	90	ab	92	a
	Touchdown IQ 24		OZ/A	LPOST										
3	Steadfast	0.5	OZ/A	POST	87	a	95	a	92	a	0	d	90	a
	Callisto	3	OZ/A	POST										
4	nontreated				0	e	0	d	0	d	0	d	0	b
5	Expert	3	QT/A	EPOST	73	c	92	abc	92	a	87	bc	95	a
6	Touchdown IQ 24	24	OZ/A	EPOST	77	bc	87	c	57	c	92	ab	92	a
7	Touchdown IQ 24	24	OZ/A	POST	87	a	88	bc	75	b	0	d	90	a
8	Steadfast	0.5	OZ/A	EPOST	80	abc	93	ab	90	a	83	c	93	a
	Callisto	3	OZ/A	EPOST										
9	Touchdown IQ 24	24	OZ/A	EPOST	83	ab	95	a	87	a	95	a	95	a
	Atrazine	2.0	QT/A	EPOST										
10	Expert	3	QT/A	EPOST	87	a	95	a	90	a	92	ab	95	a
	Touchdown IQ 6	6	OZ/A	EPOST										
	Atrazine	0.8	PT/A	EPOST										
LSD (P=.05)					8.9	6.1	7.2	6.5	7.2					
Bartlett's X2					1.059	3.947	2.231	4.345	5.149					
P(Bartlett's X2)					0.994	0.557	0.946	0.227	0.398					

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Weed Code	LAMAM		DIGSA		ZEAMX		ZEAMX		
Crop Code	PLATOT P		PLATOT P		GRAIN C	GRAIN C			
Part Rated	CONTROL		CONTROL		lb/ple	Bu/A			
Rating Data Type	%		%		13% Mst	15% Mst			
Rating Unit	4/28/05		7/27/05		9/8/05	9/8/05			
Trt-Eval Interval	8 DA-A		78 DA-C						
ARM Action Codes						TY1			
# Subsamples, Dec.						0			
Trt No.	Treatment Name	Rate	Grow Unit	Stg	16	17	18	19	
1	Expert	3	QT/A	POST	0	b 93	a 22	bcd 138	bcd
2	Touchdown IQ 24	24	OZ/A	EPOST	90	a 92	ab 22	bcd 140	bcd
	Touchdown IQ 24		OZ/A	LPOST					
3	Steadfast	0.5	OZ/A	POST	0	b 77	cd 23	bc 144	bc
	Callisto	3	OZ/A	POST					
4	nontreated				0	b 0	f 16	e 98	e
5	Expert	3	QT/A	EPOST	93	a 87	b 22	bcd 138	bcd
6	Touchdown IQ 24	24	OZ/A	EPOST	93	a 67	e 25	ab 157	ab
7	Touchdown IQ 24	24	OZ/A	POST	0	b 67	e 18	de 115	de
8	Steadfast	0.5	OZ/A	EPOST	90	a 72	de 22	bcd 136	bcd
	Callisto	3	OZ/A	EPOST					
9	Touchdown IQ 24	24	OZ/A	EPOST	95	a 80	c 27	a 172	a
	Atrazine	2.0	QT/A	EPOST					
10	Expert	3	QT/A	EPOST	95	a 93	a 21	cd 130	cd
	Touchdown IQ 6	6	OZ/A	EPOST					
	Atrazine	0.8	PT/A	EPOST					
LSD (P=.05)					5.3	5.9	4.1	26.0	
Bartlett's X2					3.257	3.013	4.445	4.445	
P(Bartlett's X2)					0.196	0.884	0.88	0.88	

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Column 19: TY1 = 6.28233*[18]