TEXAS PANICUM CONTROL IN CORN AND SOYBEANS - 2012 AND 2013 RESULTS

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Synopsis:

- Herbicides applied at planting in both corn and soybeans did not provide full-season control and required a postemergence herbicide.
- Postemergence control in corn was highest with two applications of glyphosate (97%) or single application of Accent Q (89%). A single application of glyphosate provided only 78% control. The addition of Resolve with glyphosate did not improve initial control compared to glyphosate alone, but did provide residual control resulting in improved full-season control (83%).
- Postemergence control in soybeans was 100% with either glyphosate or Select Max in 2012. In 2013, when Texas panicum emergence was delayed, one application of glyphosate was not adequate and required either a second glyphosate application or tankmixing glyphosate with a residual herbicide, such as Zidua.

CORN:

Two field sites were used, one near Greenwood, DE and the second near Georgetown, DE, both naturally infested with Texas panicum. Both fields were conventionally tilled and irrigated. Georgetown site only included preemergence treatments, and the Greenwood site had both a preemergence and a postemergence trial. The postemergence trial had an application of Bicep Magnum made over the entire experimental area. Georgetown site was planted on April 19 and Greenwood was planted on April 30.

All treatments were made with a CO_2 backpack sprayer delivering 20 gal/A at 31 PSI. Plots were 10 feet wide and 25 feet long. All treatments were replicated three times.

Table 1. Preemergence treatments for Texas panicum control at field locations near Greenwood and Georgetown, DE.

					Greenwood						Georgetown	
					Field Corn Stunting		Texas Panicum Control		Texas Panicum Control		Texas Panicum Control	
					%		%		%		%	
Trt No.	Treatment name	Rate	Unit	Grow Stage*	May 15 25 DAP*		May 15 25 DAP*		June 4 45 DAP*		June 6 37 DAP*	
1	Untreated				0.0		0.0		0.0		0.0	
2	Zidua	2	oz wt/A	PRE	5.7	a	73.3	a	74.3	a	76.7	a
	Atrazine 4L	1.5	qt/A	PRE								
3	Capreno	3.3	fl oz/A	PRE	0.0	a	71.7	a	60.0	a	66.7	a
4	Prequel Premix	1.6	oz wt/A	PRE	2.3	a	81.7	a	76.0	a	55.0	a
5	Corvus Premix	3.3	fl oz/A	PRE	0.0	a	78.3	a	82.7	a	70.0	a
6	Balance Flexx	3	fl oz/A	PRE	4.7	a	79.3	a	76.7	a	60.0	a

7	Instigate Premix	6	oz wt/A	PRE	5.7	a	75.0	a	71.7	a	66.7	a
8	Lexar	3	qt/A	PRE	2.3	a	78.3	a	66.8	a	56.7	a
9	Prowl H2O	3	pt/A	PRE	0.0	a	73.3	a	73.3	a	57.3	a
	Atrazine 4L	1.5	qt/A	PRE								
10	Bicep II Magnum	2.1	qt/A	PRE	0.0	a	70.0	a	70.0	a	21.7	b
	LSD (P=.05)				6.03		12.21		18.30		25.54	
	Standard Deviation				3.48		5.49		7.06		14.68	
	CV				151.61		9.32		14.44		24.89	
	Treatment Prob(F)				0.2232		0.5203		0.3946		0.0191	

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

*Abbreviations: DAP= days after planting; PRE=preemergence

At Greenwood, all treatments were similar for Texas panicum control at both rating dates. None of the treatments provided full-season control. There were no apparent trends in herbicide.

Table 2. Postemergence control of Texas panicum at field site near Greenwood, DE

Trt No.	Treatment Name	Product Rate	Product Rate Unit	Applic. timing	Texas Panicum Control % June 6 14 DAP		Texas Panicum Control % June 19 27 DAP		Texas Panicum Control % Aug 20 89 DAP	
1	Untreated Check				0.0		0.0		0.0	
2	Accent Q	0.9	oz wt/A	4 WAP	91.0	a	90.7	a	88.7	ab
	+COC+Liquid AMS	0.8	qt/A	4 WAP						
3	Option	1.5	oz wt/A	4 WAP	87.7	a	80.7	b	79.3	cd
	+MSO+Liquid AMS	0.8	qt/A	4 WAP						
4	Laudis	3	fl oz/A	4 WAP	79.3	bcd	70.0	cd	73.3	de
	+COC+Liquid AMS	0.8	qt/A	4 WAP						
5	Capreno	3	fl oz/A	4 WAP	86.7	ab	69.3	cd	71.7	de
	+COC+Liquid AMS	0.8	qt/A	4 WAP						
6	Impact	1	fl oz/A	4 WAP	77.7	d	61.7	d	60.0	f
	+COC+Liquid AMS	0.8	qt/A	4 WAP						
7	Impact	1	fl oz/A	4 WAP	78.3	cd	61.7	d	68.3	ef
	Atrazine 4L	1.5	pt/A	4 WAP						
	+COC+Liquid AMS	0.8	qt/A	4 WAP						
8	Roundup WthrMax	32	fl oz/A	4 WAP	84.3	a-d	74.1	bc	83.4	bc
	Resolve	1	oz wt/A	4 WAP						
	+Liquid AMS	2.5	gal/100 gal	4 WAP						
9	Roundup WthrMax	32	fl oz/A	4 WAP	86.7	ab	78.3	bc	77.7	cd
	+Liquid AMS	2.5	gal/100 gal	4 WAP						
10	Roundup WthrMax	22	fl oz/A	4 WAP	86.0	abc	99.7	a	97.3	a
	+Liquid AMS	2.5	gal/100 gal	4 WAP						
	Roundup WthrMax	22	fl oz/A	6 WAP						
	+Liquid AMS	2.5	gal/100 gal	6 WAP						
	LSD (P=.05)				8.32		9.93		9.08	
	Standard Deviation				4.75		5.67		5.22	
	CV				5.64		7.44		6.71	
	Treatment Prob(F)				0.0392		0.0001		0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)
*Abbreviations: DAP= days after planting
#Roundup PowerMax was applied at 1 lb acid equivalent per acre

Postemergence control was highest with two applications of glyphosate or one application of Accent Q. A single application of glyphosate provided only 78% control. The addition of Resolve did not improve initial control compared to glyphosate alone, but did provide residual control resulting in improved full-season control.

SOYBEANS:

2012

Field trial was conducted near Greenwood, DE with a field naturally infested with Texas panicum. Field was planted no-till with 'SS4370' soybeans on May 21. Soybeans were drilled in 7-inch row spacing. The site was partially irrigated. Preemergence treatments were made on May 23 and postemergence treatments were made on June 19. All treatments made with a CO_2 backpack sprayer delivering 20 gal/A at 31 PSI. Plots were 10 feet wide and 25 feet long. All treatments were replicated 3 times.

None of the preemergence herbicide treatments were significantly different from one another. Zidua had a rating that was numerically highest and Command was also above 80% control at 27 DAP, but by 8 weeks after planting the treatment ratings were between 55 and 60%. None of these treatments were sufficient to provide full season control and required a postemergence herbicide. All the postemergence treatments provide 100% control of Texas panicum. Soybean growth was excellent so the soybean canopy was sufficient to stop the emergence of new seedlings after the POST treatments.

Trt. No.	Treatment name	Product	rate	Grow stage*	Soybean Stunting % 6/19/2012 27 DAP*		Texas Panicum Control % 6/19/2012 27 DAP*		Texas Panicum Control % 7/19/2012 57 DAP*	
1	Untreated Check				0		0		0	
2	Command	2	pt/A	PRE	0	b	83.3	a	60	b
3	Prowl	1.8	pt/A	PRE	0	b	68.3	a	55	b
4	Dual Magnum	1.5	pt/A	PRE	0	b	73.8	a	60	b
5	Zidua	2	oz wt/A	PRE	30	a	93.3	a	55	b
6	Roundup PowrMax#	28.4	fl oz/A	28 DAP	0	b			100	a
8	Roundup PowrMax	28.4	fl oz/A	28 DAP					100	a
	Select Max	12	fl oz/A	28 DAP						
9	Select Max	12	fl oz/A	28 DAP					100	a
	Crop Oil Conc.	1	qt/A	28 DAP						

	Liquid AMS (34%)	5.5	gal/100 gal	28 DAP				
10	Zidua	2	oz wt/A	28 DAP			100	a
	Roundup PowrMax	28.4	fl oz/A	28 DAP				
	LSD (P=.05)				8.42	21.77	13.59	
	Standard Deviation				4.47	10.37	5.89	
	CV				74.54	13.03	7.26	
	Treatment Prob(F)				0.0001	0.1089	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)
*Abbreviations: DAP= days after planting; PRE=preemergence
#Roundup PowerMax was applied at 1 lb acid equivalent per acre

2013

Field trial was conducted near Georgetown, DE with a field naturally infested with Texas panicum. The field site was double-cropped soybeans planted in 15" rows following winter wheat harvest. The entire field was sprayed with glyphosate prior to planting. Preemergence herbicides were applied August 1 and included Dual, Prowl, or Zidua. Postemergence treatments were applied August 20 and August 30 and included Roundup alone and Select plus Roundup. All treatments made with a CO_2 backpack sprayer delivering 20 gal/A at 31 PSI. Plots were 10 feet wide and 25 feet long. All treatments were replicated 3 times.

Texas panicum was controlled with glyphosate applications at planting, and further emergence was delayed. Due to the delayed emergence, the soil-applied herbicide treatments were not effective. The highest level of control was observed with two applications of glyphosate and glyphosate tankmixed with Zidua. Both of these treatments were able to control late emerging seedlings.

Table 1. Texas panicum control in double-cropped soybeans, ratings taken late-season, before harvest.

Trt no.	Treatments	Product	Rate	Stage	TX panicum	
1	Untreated Check				0	
2	Command	2	pt/A	PRE	50	de
3	Prowl	1.8	pt/A	PRE	0	f
4	Dual Magnum	1.5	pt/A	PRE	43.3	e
5	Zidua	2	oz wt/A	PRE	43.3	e
6	Roundup PowerMax	28.4	fl oz/A	28 DAP	66.7	bc
7	Roundup PowerMax	28.4	fl oz/A	28 DAP	80	ab
	fb Roundup PowerMax	28.4	fl oz/A	42 DAP		
8	Roundup PowerMax	28.4	fl oz/A	28 DAP	60	cd
	+ Select Max	12	fl oz/A	28 DAP		
9	Select Max + COC + AMS	12	fl oz/A	28 DAP	68.3	bc
10	Zidua	2	oz wt/A	28 DAP	86.7	a
	+ Roundup PowerMax	28.4	fl oz/A	28 DAP		

LSD (P=.05)	8.42
Standard Deviation	4.47
CV	74.54
Treatment Prob(F)	0.0001

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Summary: None of the preemergence herbicide treatments provided full season control, both in full-season soybeans or double-cropped soybeans. In 2012, all the postemergence treatments provide 100% control of Texas panicum, but in 2013 87% control was the highest achieved. Growers should apply glyphosate in a timely manner and scout fields to determine if additional Texas panicum plants emerge and retreat as necessary. Addition of a residual herbicide with glyphosate may prevent a second POST application.