

MSU Weed Science Research Program

Additives for Improvement of Glyphosate Activity in Winter Wheat

Trial ID: WT02-08
 Conducted: C-12 Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Date Planted: 9/30/07
 Variety: Red Ruby
 Population: 2 million seeds/Acre
 Soil Type: Sandy Loam
 Plot Size: 10 X 28 FT

Row Spacing: 7.5 IN
 No. of Reps: 4
 % OM: 2.8
 pH: 7.2
 Design: RANDOMIZED COMPLETE BLOCK

Tillage: 8/28/07: disked down soybeans x2
 9/29/07: soil finish x2
 Fertilizer: None at planting
 3/17/08: Bulk spread Urea at 100lb/Acre (46#/A N) on all treatments

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	THLAR	PENNYCRESS, FIELD	THLASPI ARVENSE L.
2.	ANTCO	MAYWEED	ANTHEMIS COTULA L.
3.	LAMAM	HENBIT	LAMIUM AMPLEXICAULE L.
4.	STEME	CHICKWEED, COMMON	STELLARIA MEDIA (L.)
Crop	Code	Common Name	
1.	TRZAW	WHEAT, WINTER	

Application Description

A
 Application Timing: POST "A"
 Date Treated: 4/30/08
 Time Treated: 2:30 PM
 % Cloud Cover: 0
 Air Temp., Unit: 57 F
 % Relative Humidity: 37
 Wind Speed/Unit/Dir: 6 mph S
 Soil Temp., Unit: 55 F
 Soil/Leaf Surface M: 5 5
 Soil Moist (1=w 5=d): 5

Crop Stage at Each Application

A
 Crop Name: TRZAW
 Height (In.): 12-14

Weed Stage at Each Application

A
 Weed 1 Name: THLAR
 Height (In.): 8-12
 Stage (L): flowering
 Weed 2 Name: ANTCO
 Height (In.): 4-6
 Stage (L): many
 Weed 3 Name: LAMAM
 Height (In.): 6-10
 Stage (L): flowering
 Weed 4 Name: STEME
 Height (In.): 4-6
 Stage (L): many

Weed Density (plants/sq. ft.)

Date:	1	2	3
7/25/08	7/25/08	7/25/08	7/25/08
Weed Name:	ANGR	AMBEL	POLCO
Density:	0.375	6.75	0.25

Application Equipment

Appl	Sprayer Type	Speed MPH	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	GPA	Carrier	PSI
A	Cub	3.7	Flat Fan	110015	24	20	80	10	DI H20	30

MSU Weed Science Research Program

Additives for Improvement of Glyphosate Activity in Winter Wheat

Trial ID: WT02-08
 Conducted: C-12 Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code								TRZAW	TRZAW	TRZAW	TRZAW
Crop Code								control	control	control	control
Rating Data Type								percent	percent	percent	percent
Rating Unit								5/7/08	5/9/08	5/15/08	5/21/08
Rating Date								7 DAT	9 DAT	15 DAT	22 DAT
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	0	0	0	0
1	Buccaneer	3	L	4	fl oz/a	POST	A				
2	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	1	7	9	19
2	Buccaneer	3	L	4	fl oz/a	POST	A				
2	AMS		WG	8.5	lb/100 gal	POST	A				
3	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	0	5	7	20
3	Buccaneer	3	L	4	fl oz/a	POST	A				
3	Bronc		L	2.5	gal/100 gal	POST	A				
4	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	0	8	14	23
4	Buccaneer	3	L	4	fl oz/a	POST	A				
4	Bronc Max		L	2	qt/100 gal	POST	A				
5	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	8	28	45	58
5	Buccaneer	3	L	4	fl oz/a	POST	A				
5	Bronc		L	2.5	gal/100 gal	POST	A				
5	R-11		L	1	qt/100 gal	POST	A				
6	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	5	21	33	40
6	Buccaneer	3	L	4	fl oz/a	POST	A				
6	Bronc Max		L	2	qt/100 gal	POST	A				
6	R-11		L	1	qt/100 gal	POST	A				
7	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	2	17	29	36
7	Buccaneer	3	L	4	fl oz/a	POST	A				
7	Cayuse Plus		L	3	qt/100 gal	POST	A				
8	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	8	25	46	56
8	Buccaneer	3	L	4	fl oz/a	POST	A				
8	Bronc		L	2.5	gal/100 gal	POST	A				
8	R-11		L	1	qt/100 gal	POST	A				
8	EDT Concentrate		L	1	qt/100 gal	POST	A				
9	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	5	16	26	38
9	Buccaneer	3	L	4	fl oz/a	POST	A				
9	Bronc Max		L	2	qt/100 gal	POST	A				
9	R-11		L	1	qt/100 gal	POST	A				
9	EDT Concentrate		L	1	qt/100 gal	POST	A				
10	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	1	19	20	36
10	Buccaneer	3	L	4	fl oz/a	POST	A				
10	Bronc Plus Dry EDT		WG	10	lb/100 gal	POST	A				
11	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	4	25	36	49
11	Buccaneer	3	L	4	fl oz/a	POST	A				
11	Bronc		L	2.5	gal/100 gal	POST	A				
11	R-11		L	1	qt/100 gal	POST	A				
11	Coverage G-20		L	4	fl oz/a	POST	A				

MSU Weed Science Research Program

Additives for Improvement of Glyphosate Activity in Winter Wheat

Trial ID: WT02-08
 Conducted: C-12 Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code								TRZAW	TRZAW	TRZAW	TRZAW
Crop Code								control	control	control	control
Rating Data Type								percent	percent	percent	percent
Rating Unit								5/7/08	5/9/08	5/15/08	5/21/08
Rating Date								7 DAT	9 DAT	15 DAT	22 DAT
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	3	11	16	30
12	Buccaneer	3	L	4	fl oz/a	POST	A				
12	Bronc Max		L	2	qt/100 gal	POST	A				
12	R-11		L	1	qt/100 gal	POST	A				
12	Coverage G-20		L	4	fl oz/a	POST	A				
13	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	6	29	41	54
13	Buccaneer (Premix)	3	L	4	fl oz/a	POST	A				
13	Bronc		L	2.5	gal/100 gal	POST	A				
13	R-11		L	1	qt/100 gal	POST	A				
13	In-Place		L	1	fl oz/a	POST	A				
14	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	3	11	19	31
14	Buccaneer (Premix)	3	L	4	fl oz/a	POST	A				
14	Bronc Max		L	2	qt/100 gal	POST	A				
14	R-11		L	1	qt/100 gal	POST	A				
14	In-Place		L	1	fl oz/a	POST	A				
15	Untreated							0	0	0	0
LSD (P=.10)								2.7	4.4	5.4	6.4
Standard Deviation								2.3	3.7	4.6	5.4
CV								74.68	25.28	20.14	16.46

MSU Weed Science Research Program

Additives for Improvement of Glyphosate Activity in Winter Wheat

Trial ID: WT02-08
 Conducted: C-12 Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code								TRZAW	TRZAW	TRZAW
Crop Code								control	moisture	yield
Rating Data Type								percent	percent	bu/acre
Rating Unit								6/2/08	7/15/08	7/15/08
Rating Date								29 DAT	76 DA-A	76 DA-A
Trt-Eval Interval										

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code			
1	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	0	13.2	87.1
1	Buccaneer	3	L	4	fl oz/a	POST	A			
2	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	38	17.8	33.0
2	Buccaneer	3	L	4	fl oz/a	POST	A			
2	AMS		WG	8.5	lb/100 gal	POST	A			
3	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	36	18.2	31.6
3	Buccaneer	3	L	4	fl oz/a	POST	A			
3	Bronc		L	2.5	gal/100 gal	POST	A			
4	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	40	18.4	34.0
4	Buccaneer	3	L	4	fl oz/a	POST	A			
4	Bronc Max		L	2	qt/100 gal	POST	A			
5	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	93	0.0	0.0
5	Buccaneer	3	L	4	fl oz/a	POST	A			
5	Bronc		L	2.5	gal/100 gal	POST	A			
5	R-11		L	1	qt/100 gal	POST	A			
6	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	80	18.4	6.8
6	Buccaneer	3	L	4	fl oz/a	POST	A			
6	Bronc Max		L	2	qt/100 gal	POST	A			
6	R-11		L	1	qt/100 gal	POST	A			
7	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	71	18.6	19.3
7	Buccaneer	3	L	4	fl oz/a	POST	A			
7	Cayuse Plus		L	3	qt/100 gal	POST	A			
8	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	94	0.0	0.0
8	Buccaneer	3	L	4	fl oz/a	POST	A			
8	Bronc		L	2.5	gal/100 gal	POST	A			
8	R-11		L	1	qt/100 gal	POST	A			
8	EDT Concentrate		L	1	qt/100 gal	POST	A			
9	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	80	13.7	7.3
9	Buccaneer	3	L	4	fl oz/a	POST	A			
9	Bronc Max		L	2	qt/100 gal	POST	A			
9	R-11		L	1	qt/100 gal	POST	A			
9	EDT Concentrate		L	1	qt/100 gal	POST	A			
10	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	70	19.1	14.8
10	Buccaneer	3	L	4	fl oz/a	POST	A			
10	Bronc Plus Dry EDT		WG	10	lb/100 gal	POST	A			
11	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	88	0.0	0.0
11	Buccaneer	3	L	4	fl oz/a	POST	A			
11	Bronc		L	2.5	gal/100 gal	POST	A			
11	R-11		L	1	qt/100 gal	POST	A			
11	Coverage G-20		L	4	fl oz/a	POST	A			

MSU Weed Science Research Program

Additives for Improvement of Glyphosate Activity in Winter Wheat

Trial ID: WT02-08
 Conducted: C-12 Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code									
Crop Code							TRZAW	TRZAW	TRZAW
Rating Data Type							control	moisture	yield
Rating Unit							percent	percent	bu/acre
Rating Date							6/2/08	7/15/08	7/15/08
Trt-Eval Interval							29 DAT	76 DA-A	76 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code			
12	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	58	18.9	27.9
12	Buccaneer	3	L	4	fl oz/a	POST	A			
12	Bronc Max		L	2	qt/100 gal	POST	A			
12	R-11		L	1	qt/100 gal	POST	A			
12	Coverage G-20		L	4	fl oz/a	POST	A			
13	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	92	0.0	0.0
13	Buccaneer (Premix)	3	L	4	fl oz/a	POST	A			
13	Bronc		L	2.5	gal/100 gal	POST	A			
13	R-11		L	1	qt/100 gal	POST	A			
13	In-Place		L	1	fl oz/a	POST	A			
14	CACL2 (400 ppm)		WG	0.147	g/100 ml	POST	A	70	19.0	18.2
14	Buccaneer (Premix)	3	L	4	fl oz/a	POST	A			
14	Bronc Max		L	2	qt/100 gal	POST	A			
14	R-11		L	1	qt/100 gal	POST	A			
14	In-Place		L	1	fl oz/a	POST	A			
15	Untreated							0	14.1	92.3
LSD (P=.10)								6.8	3.03	5.02
Standard Deviation								5.7	2.54	4.22
CV								9.37	20.13	17.01