

North Carolina State University

Roundup Ready Creeping Bentgrass Control Alternatives

Trial ID: 02-D25

Study Dir.: Travis Gannon

Location: Sandhills Station

Investigator: Fred Yelverton

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	CO2 SPRAY	CO2 SPRAY	CO2 SPRAY
Operating Pressure:	42 PSI	42 PSI	42 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	VS8002XR	VS8002XR	VS8002XR
Nozzle Spacing, Unit:	10 INCH	10 INCH	10 INCH
Nozzles/Row:	4	4	4
Boom Length, Unit:	40 INCH	40 INCH	40 INCH
Boom Height, Unit:	10 INCH	10 INCH	10 INCH
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	WATER	WATER	WATER
Spray Volume, Unit:	32.5 GPA	32.5 GPA	32.5 GPA
Propellant:	COMP. CO2	COMP. CO2	COMP. CO2

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									AGRPA	AGRPA	AGRPA	
									CONTROL	CONTROL	CONTROL	
									%	%	%	
									04-16-02	04-22-02	05-08-02	
									6 DA-A	12 DA-A	28 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Nontreated									0.0 h	0.0 j	0.0 h
2	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		7.5 cde	66.3 a-d	96.8 a
3	Roundup Pro Roundup Pro	3 L 3 L		1.5 LB AE/A 1.5 LB AE/A				APRIL 10 A MAY 8 B		10.0 abc	62.5 bcd	94.5 a
4	Roundup Pro Roundup Pro Roundup Pro	3 L 3 L 3 L		1.5 LB AE/A 1.5 LB AE/A 1.5 LB AE/A				APRIL 10 A MAY 8 B JUNE 5 C		6.3 def	60.0 cde	95.5 a
5	Fusilade II AgriDex COC	2 L L		0.375 LB A/A 1 % V/V				APRIL 10 A APRIL 10 A		5.0 efg	26.3 fg	53.8 bc
6	Fusilade II AgriDex COC Fusilade II AgriDex COC	2 L L 2 L L		0.375 LB A/A 1 % V/V 0.375 LB A/A 1 % V/V				APRIL 10 A APRIL 10 A MAY 8 B MAY 8 B		5.0 efg	18.8 ghi	46.3 cd
7	Fusilade II AgriDex COC Fusilade II AgriDex COC Fusilade II AgriDex COC	2 L L 2 L L 2 L L		0.375 LB A/A 1 % V/V 0.375 LB A/A 1 % V/V 0.375 LB A/A 1 % V/V				APRIL 10 A APRIL 10 A MAY 8 B MAY 8 B JUNE 5 C JUNE 5 C		5.0 efg	23.8 gh	35.0 cde
8	Roundup Pro Fusilade II	3 L 2 L		1.5 LB AE/A 0.375 LB A/A				APRIL 10 A APRIL 10 A		11.3 ab	71.3 abc	99.0 a
9	Roundup Pro Fusilade II Roundup Pro Fusilade II	3 L 2 L 3 L 2 L		1.5 LB AE/A 0.375 LB A/A 1.5 LB AE/A 0.375 LB A/A				APRIL 10 A APRIL 10 A MAY 8 B MAY 8 B		8.8 bcd	60.0 cde	98.0 a
10	Roundup Pro Fusilade II Roundup Pro Fusilade II Roundup Pro Fusilade II	3 L 2 L 3 L 2 L 3 L 2 L		1.5 LB AE/A 0.375 LB A/A 1.5 LB AE/A 0.375 LB A/A 1.5 LB AE/A 0.375 LB A/A				APRIL 10 A APRIL 10 A MAY 8 B MAY 8 B JUNE 5 C JUNE 5 C		12.5 a	71.3 abc	99.0 a
11	Envoy AgriDex COC	0.94 EC L		0.25 LB A/A 1 % V/V				APRIL 10 A APRIL 10 A		3.8 fg	16.3 g-j	25.0 def

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								AGRPA	AGRPA	AGRPA					
								CONTROL	CONTROL	CONTROL					
								%	%	%					
								04-16-02	04-22-02	05-08-02					
								6 DA-A	12 DA-A	28 DA-A					
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Form Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code						
12	Envoy	0.94	EC	0.25	LB A/A			APRIL 10	A	5.0	efg	21.3	ghi	31.3	de
	AgriDex COC		L		1 % V/V			APRIL 10	A						
	Envoy	0.94	EC	0.25	LB A/A			MAY 8	B						
	AgriDex COC		L		1 % V/V			MAY 8	B						
13	Envoy	0.94	EC	0.25	LB A/A			APRIL 10	A	5.0	efg	21.3	ghi	35.0	cde
	AgriDex COC		L		1 % V/V			APRIL 10	A						
	Envoy	0.94	EC	0.25	LB A/A			MAY 8	B						
	AgriDex COC		L		1 % V/V			MAY 8	B						
	Envoy	0.94	EC	0.25	LB A/A			JUNE 5	C						
	AgriDex COC		L		1 % V/V			JUNE 5	C						
14	Vantage	1	L	0.375	LB A/A			APRIL 10	A	5.0	efg	20.0	ghi	37.5	cde
	AgriDex COC		L		1 % V/V			APRIL 10	A						
15	Vantage	1	L	0.375	LB A/A			APRIL 10	A	5.0	efg	11.3	g-j	22.5	efg
	AgriDex COC		L		1 % V/V			APRIL 10	A						
	Vantage	1	L	0.375	LB A/A			MAY 8	B						
	AgriDex COC		L		1 % V/V			MAY 8	B						
16	Vantage	1	L	0.375	LB A/A			APRIL 10	A	5.0	efg	16.3	g-j	21.3	e-h
	AgriDex COC		L		1 % V/V			APRIL 10	A						
	Vantage	1	L	0.375	LB A/A			MAY 8	B						
	AgriDex COC		L		1 % V/V			MAY 8	B						
	Vantage	1	L	0.375	LB A/A			JUNE 5	C						
	AgriDex COC		L		1 % V/V			JUNE 5	C						
17	Oust		DG	1	OZ/A			APRIL 10	A	5.0	efg	12.5	g-j	41.3	cde
	X-77		L	0.25	% V/V			APRIL 10	A						
18	Image	70	DG	0.5	LB A/A			APRIL 10	A	2.5	gh	6.3	hij	3.8	fgh
	X-77		L	0.25	% V/V			APRIL 10	A						
19	Image	70	DG	0.5	LB A/A			APRIL 10	A	3.8	fg	0.0	j	2.5	gh
	MSMA	6	L	2	LB A/A			APRIL 10	A						
	X-77		L	0.25	% V/V			APRIL 10	A						
20	AAtrex	4	L	2	LB A/A			APRIL 10	A	6.3	def	82.5	a	68.5	b
	AgriDex COC		L	1	QT/A			APRIL 10	A						
21	Sencor	75	DF	0.25	LB A/A			APRIL 10	A	8.8	bcd	43.8	ef	0.0	h
	MSMA	6	L	2	LB A/A			APRIL 10	A						
22	Balance	75	WG	0.2	LB A/A			APRIL 10	A	10.0	abc	80.0	ab	0.0	h
23	Balance	75	WG	0.1	LB A/A			APRIL 10	A	7.5	cde	52.5	de	0.0	h
	Balance	75	WG	0.1	LB A/A			MAY 8	B						

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Weed Code									AGRPA	AGRPA	AGRPA	
Rating Data Type									CONTROL	CONTROL	CONTROL	
Rating Unit									%	%	%	
Rating Date									05-22-02	06-05-02	06-19-02	
Trt-Eval Interval									42 DA-A	56 DA-A	70 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code			
1	Nontreated									0.0 g	0.0 g	0.0 j
2	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		90.0 ab	75.0 ab	63.8 b-e
3	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		99.0 a	98.0 a	95.8 a
	Roundup Pro	3 L		1.5 LB AE/A				MAY 8 B				
4	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		99.0 a	98.0 a	99.0 a
	Roundup Pro	3 L		1.5 LB AE/A				MAY 8 B				
	Roundup Pro	3 L		1.5 LB AE/A				JUNE 5 C				
5	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A		40.0 de	48.8 cd	48.8 def
	AgriDex COC	L		1 % V/V				APRIL 10 A				
6	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A		71.0 bc	71.0 bc	62.5 b-e
	AgriDex COC	L		1 % V/V				APRIL 10 A				
	Fusilade II	2 L		0.375 LB A/A				MAY 8 B				
	AgriDex COC	L		1 % V/V				MAY 8 B				
7	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A		75.0 bc	83.8 ab	75.0 a-d
	AgriDex COC	L		1 % V/V				APRIL 10 A				
	Fusilade II	2 L		0.375 LB A/A				MAY 8 B				
	AgriDex COC	L		1 % V/V				MAY 8 B				
	Fusilade II	2 L		0.375 LB A/A				JUNE 5 C				
	AgriDex COC	L		1 % V/V				JUNE 5 C				
8	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		98.0 a	94.5 ab	89.8 ab
	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A				
9	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		98.0 a	99.0 a	96.0 a
	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A				
	Roundup Pro	3 L		1.5 LB AE/A				MAY 8 B				
	Fusilade II	2 L		0.375 LB A/A				MAY 8 B				
10	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		99.0 a	99.0 a	99.0 a
	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A				
	Roundup Pro	3 L		1.5 LB AE/A				MAY 8 B				
	Fusilade II	2 L		0.375 LB A/A				MAY 8 B				
	Roundup Pro	3 L		1.5 LB AE/A				JUNE 5 C				
	Fusilade II	2 L		0.375 LB A/A				JUNE 5 C				
11	Envoy	0.94 EC		0.25 LB A/A				APRIL 10 A		13.8 fg	11.3 fg	12.5 g-j
	AgriDex COC	L		1 % V/V				APRIL 10 A				

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								AGRPA	AGRPA	AGRPA		
								CONTROL	CONTROL	CONTROL		
								%	%	%		
								05-22-02	06-05-02	06-19-02		
								42 DA-A	56 DA-A	70 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Form Unit	Product Rate	Product Unit	Grow Stg	Appl Code			
12	Envoy	0.94	EC	0.25	LB A/A			APRIL 10	A	86.3 ab	98.0 a	86.3 ab
	AgriDex COC		L		1 % V/V			APRIL 10	A			
	Envoy	0.94	EC	0.25	LB A/A			MAY 8	B			
	AgriDex COC		L		1 % V/V			MAY 8	B			
13	Envoy	0.94	EC	0.25	LB A/A			APRIL 10	A	58.8 cd	96.8 a	97.0 a
	AgriDex COC		L		1 % V/V			APRIL 10	A			
	Envoy	0.94	EC	0.25	LB A/A			MAY 8	B			
	AgriDex COC		L		1 % V/V			MAY 8	B			
	Envoy	0.94	EC	0.25	LB A/A			JUNE 5	C			
	AgriDex COC		L		1 % V/V			JUNE 5	C			
14	Vantage	1	L	0.375	LB A/A			APRIL 10	A	16.3 fg	21.3 efg	15.0 g-j
	AgriDex COC		L		1 % V/V			APRIL 10	A			
15	Vantage	1	L	0.375	LB A/A			APRIL 10	A	72.5 bc	82.5 ab	81.3 ab
	AgriDex COC		L		1 % V/V			APRIL 10	A			
	Vantage	1	L	0.375	LB A/A			MAY 8	B			
	AgriDex COC		L		1 % V/V			MAY 8	B			
16	Vantage	1	L	0.375	LB A/A			APRIL 10	A	82.5 ab	83.8 ab	78.8 abc
	AgriDex COC		L		1 % V/V			APRIL 10	A			
	Vantage	1	L	0.375	LB A/A			MAY 8	B			
	AgriDex COC		L		1 % V/V			MAY 8	B			
	Vantage	1	L	0.375	LB A/A			JUNE 5	C			
	AgriDex COC		L		1 % V/V			JUNE 5	C			
17	Oust		DG	1	OZ/A			APRIL 10	A	31.3 ef	32.5 def	52.5 c-f
	X-77		L	0.25	% V/V			APRIL 10	A			
18	Image	70	DG	0.5	LB A/A			APRIL 10	A	5.0 g	8.8 fg	33.8 fgh
	X-77		L	0.25	% V/V			APRIL 10	A			
19	Image	70	DG	0.5	LB A/A			APRIL 10	A	0.0 g	20.0 fg	30.0 f-i
	MSMA	6	L	2	LB A/A			APRIL 10	A			
	X-77		L	0.25	% V/V			APRIL 10	A			
20	AAtrex	4	L	2	LB A/A			APRIL 10	A	70.0 bc	86.3 ab	85.0 ab
	AgriDex COC		L	1	QT/A			APRIL 10	A			
21	Sencor	75	DF	0.25	LB A/A			APRIL 10	A	0.0 g	12.5 fg	26.3 f-j
	MSMA	6	L	2	LB A/A			APRIL 10	A			
22	Balance	75	WG	0.2	LB A/A			APRIL 10	A	2.5 g	8.8 fg	27.5 f-j
23	Balance	75	WG	0.1	LB A/A			APRIL 10	A	33.8 ef	5.0 g	16.3 g-j
	Balance	75	WG	0.1	LB A/A			MAY 8	B			

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									AGRPA	AGRPA	
									CONTROL	CONTROL	
									%	%	
									07-01-02	07-16-02	
									82 DA-A	97 DA-A	
Trt	Treatment	Form	Form	Rate	Product	Product	Grow	Appl			
No.	Name	Conc	Type	Rate	Rate	Rate	Unit	Stg	Code		
1	Nontreated									0.0 i	0.0 j
2	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		52.5 c-g	55.0 c-f
3	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		94.5 a	95.8 a
	Roundup Pro	3 L		1.5 LB AE/A				MAY 8 B			
4	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		99.0 a	99.0 a
	Roundup Pro	3 L		1.5 LB AE/A				MAY 8 B			
	Roundup Pro	3 L		1.5 LB AE/A				JUNE 5 C			
5	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A		47.5 d-h	51.3 def
	AgriDex COC	L		1 % V/V				APRIL 10 A			
6	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A		54.8 c-f	81.0 abc
	AgriDex COC	L		1 % V/V				APRIL 10 A			
	Fusilade II	2 L		0.375 LB A/A				MAY 8 B			
	AgriDex COC	L		1 % V/V				MAY 8 B			
7	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A		72.5 a-d	91.3 ab
	AgriDex COC	L		1 % V/V				APRIL 10 A			
	Fusilade II	2 L		0.375 LB A/A				MAY 8 B			
	AgriDex COC	L		1 % V/V				MAY 8 B			
	Fusilade II	2 L		0.375 LB A/A				JUNE 5 C			
	AgriDex COC	L		1 % V/V				JUNE 5 C			
8	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		91.0 a	93.5 ab
	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A			
9	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		97.0 a	97.0 a
	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A			
	Roundup Pro	3 L		1.5 LB AE/A				MAY 8 B			
	Fusilade II	2 L		0.375 LB A/A				MAY 8 B			
10	Roundup Pro	3 L		1.5 LB AE/A				APRIL 10 A		99.0 a	99.0 a
	Fusilade II	2 L		0.375 LB A/A				APRIL 10 A			
	Roundup Pro	3 L		1.5 LB AE/A				MAY 8 B			
	Fusilade II	2 L		0.375 LB A/A				MAY 8 B			
	Roundup Pro	3 L		1.5 LB AE/A				JUNE 5 C			
	Fusilade II	2 L		0.375 LB A/A				JUNE 5 C			
11	Envoy	0.94 EC		0.25 LB A/A				APRIL 10 A		7.5 jkl	11.3 ij
	AgriDex COC	L		1 % V/V				APRIL 10 A			

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								AGRPA CONTROL %	AGRPA CONTROL %		
								07-01-02	07-16-02		
								82 DA-A	97 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code		
12	Envoy	0.94	EC	0.25	LB A/A			APRIL 10	A	78.8 abc	68.8 bcd
	AgriDex COC		L		1 % V/V			APRIL 10	A		
	Envoy	0.94	EC	0.25	LB A/A			MAY 8	B		
	AgriDex COC		L		1 % V/V			MAY 8	B		
13	Envoy	0.94	EC	0.25	LB A/A			APRIL 10	A	99.0 a	99.0 a
	AgriDex COC		L		1 % V/V			APRIL 10	A		
	Envoy	0.94	EC	0.25	LB A/A			MAY 8	B		
	AgriDex COC		L		1 % V/V			MAY 8	B		
	Envoy	0.94	EC	0.25	LB A/A			JUNE 5	C		
	AgriDex COC		L		1 % V/V			JUNE 5	C		
14	Vantage	1	L	0.375	LB A/A			APRIL 10	A	15.0 i-l	17.5 hij
	AgriDex COC		L		1 % V/V			APRIL 10	A		
15	Vantage	1	L	0.375	LB A/A			APRIL 10	A	76.3 abc	83.8 ab
	AgriDex COC		L		1 % V/V			APRIL 10	A		
	Vantage	1	L	0.375	LB A/A			MAY 8	B		
	AgriDex COC		L		1 % V/V			MAY 8	B		
16	Vantage	1	L	0.375	LB A/A			APRIL 10	A	77.5 abc	90.0 ab
	AgriDex COC		L		1 % V/V			APRIL 10	A		
	Vantage	1	L	0.375	LB A/A			MAY 8	B		
	AgriDex COC		L		1 % V/V			MAY 8	B		
	Vantage	1	L	0.375	LB A/A			JUNE 5	C		
	AgriDex COC		L		1 % V/V			JUNE 5	C		
17	Oust		DG	1	OZ/A			APRIL 10	A	57.3 b-e	53.5 def
	X-77		L	0.25	% V/V			APRIL 10	A		
18	Image	70	DG	0.5	LB A/A			APRIL 10	A	28.8 f-k	56.3 cde
	X-77		L	0.25	% V/V			APRIL 10	A		
19	Image	70	DG	0.5	LB A/A			APRIL 10	A	31.3 e-j	45.0 d-g
	MSMA	6	L	2	LB A/A			APRIL 10	A		
	X-77		L	0.25	% V/V			APRIL 10	A		
20	AAtrex	4	L	2	LB A/A			APRIL 10	A	82.5 ab	86.0 ab
	AgriDex COC		L	1	QT/A			APRIL 10	A		
21	Sencor	75	DF	0.25	LB A/A			APRIL 10	A	22.5 h-l	25.0 g-j
	MSMA	6	L	2	LB A/A			APRIL 10	A		
22	Balance	75	WG	0.2	LB A/A			APRIL 10	A	20.0 i-l	30.0 f-i
23	Balance	75	WG	0.1	LB A/A			APRIL 10	A	27.5 g-k	38.8 e-h
	Balance	75	WG	0.1	LB A/A			MAY 8	B		

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Trial Comments

4-10-02 - Trial initiated on 'Penncross' conventional bentgrass stand.

7-26-02 - Unable to rate trial due to severe wilt. Will continue to monitor regrowth.

8-13-02 - Unable to rate trial due to severe wilt. Will continue to monitor regrowth.

8-27-02 - Plot was destroyed in preparation for renovations.