

University of GA Coop Ext Service

Evaluation of Experimental "Extended Release" Fertilizers on Tall Fescue Turf

Trial ID: Andersons1

Study Director: Jonathan Bohn

Location: Griffin, GA

Investigator: Clint Waltz

General Trial Information

Study Director: Jonathan Bohn

Title: Technician

Affiliation: C&SS UGA

Investigator: Clint Waltz

Title: Asst. Professor

Affiliation: C&SS UGA

E-mail: CWaltz@UGA.edu

Trial Location

City: Griffin

Trial Status: ARCHIVED

State/Prov.: GA

Initiation Date: 4-24-2003

Planned Completion Date: 9-30-2003

Directions:

Georgia Experiment Station, Turfgrass Plots, K-31 Tall Fescue Stand

Cooperator/Landowner

Cooperator: Warren Davenport

City: Atlanta

State/Prov: GA

Crop Description

Crop 1: FESAR *Festuca arundinacea*

Tall Fescue

Variety: K-31

Description: Established

BBCH Scale: BGRM

Site and Design

Plot Width, Unit: 5 FT

Plot Length, Unit: 5 FT

Replications: 4

Study Design: Randomized Complete Block

Moisture Conditions

Closest Weather Station: Griffin Station

Distance: 300 Unit: YD

University of GA Coop Ext Service**Application Description**

	A	B
Application Date:	4-22-2003	6-20-2003
Time of Day:	12:00 pm	3:00 pm
Application Method:	SPREAD	SPREAD
Application Timing:	COVER	COVER
Application Placement:	FOLIAR	FOLIAR
Applied By:	J. Bohn	J. Bohn
Air Temperature, Unit:	65 F	84 F
% Relative Humidity:	50	68
Wind Velocity, Unit:	7.5 MPH	2.1 MPH
Dew Presence (Y/N):	N	N
Soil Temperature, Unit:	68 F	88 F
Soil Moisture:	ADEQUATE	ADEQUATE
% Cloud Cover:	0	15

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	FESAR BGRM	FESAR BGRM
Stage Scale Used:	BBCH	BBCH
Stage Majority, Percent:	100	100
Height, Unit:	3	3

Application Equipment

	A	B
Appl. Equipment:	Shaker Jar	Shaker Jar
Hours to Incorp.:	72	72

University of GA Coop Ext Service

Evaluation of Experimental "Extended Release" Fertilizers on Tall Fescue Turf						
Trial ID: Andersons1			Study Director: Jonathan Bohn			
Location: Griffin, GA			Investigator: Clint Waltz			
Crop Code			FESAR	FESAR	FESAR	FESAR
Crop Variety			K-31	K-31	K-31	K-31
Rating Date			4-28-2003	5-2-2003	5-12-2003	5-20-2003
Rating Data Type			TQ	TQ	TQ	TQ
Rating Unit			1-9	1-9	1-9	1-9
Assessed By			FCW	FCW	FCW	FCW
Days After Last Applic.			6	10	20	28
Trt-Eval Interval			6 DA-A	10 DA-A	20 DA-A	28 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Appl Code
1	Untreated					
				7.0 b		
2	AND 3058	38 GR	1.25 lb ai/1000 ft2	A	8.0 a	
	AND 3058	38 GR	1.25 lb ai/1000 ft2	B	8.0 a	
3	AND 3059	38 GR	1.25 lb ai/1000 ft2	A	7.9 a	
	AND 3059	38 GR	1.25 lb ai/1000 ft2	B	8.0 a	
4	AND 3060	38 GR	1.25 lb ai/1000 ft2	A	8.0 a	
	AND 3060	38 GR	1.25 lb ai/1000 ft2	B	8.0 a	
5	AND 3061B	38 GR	1.25 lb ai/1000 ft2	A	8.0 a	
	AND 3061B	38 GR	1.25 lb ai/1000 ft2	B	8.0 a	
6	AND 3063	38 GR	1.25 lb ai/1000 ft2	A	8.0 a	
	AND 3063	38 GR	1.25 lb ai/1000 ft2	B	8.0 a	
7	AND 3064	29 GR	1.25 lb ai/1000 ft2	A	8.0 a	
	AND 3064	29 GR	1.25 lb ai/1000 ft2	B	8.0 a	
8	AND 3066	38 GR	1.25 lb ai/1000 ft2	A	8.0 a	
	AND 3066	38 GR	1.25 lb ai/1000 ft2	B	8.0 a	
LSD (P=.05)				0.13	0.00	0.13
Standard Deviation				0.09	0.00	0.09
CV				1.12	0.0	1.12
				0.35	0.00	0.36
				0.24	0.00	0.25
				3.14	0.0	3.63

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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							FESAR	FESAR	FESAR	FESAR	FESAR	FESAR
							K-31	K-31	K-31	K-31	K-31	K-31
							6-23-2003	7-3-2003	7-16-2003	7-24-2003	7-31-2003	4-28-2003
							TQ	TQ	TQ	TQ	TQ	COLOR
							1-9	1-9	1-9	1-9	1-9	1-9
							FCW	FCW	FCW	JB	FCW	FCW
							3	13	26	34	41	6
							62 DA-A	72 DA-A	85 DA-A	93 DA-A	100 DA-A	6 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Appl Code						
1	Untreated						6.5 a	6.4 b	5.9 b	6.0 a	4.0 a	6.0 b
2	AND 3058	38	GR	1.25	lb ai/1000 ft2	A	6.4 a	6.8 a	6.5 a	6.0 a	4.3 a	8.0 a
	AND 3058	38	GR	1.25	lb ai/1000 ft2	B						
3	AND 3059	38	GR	1.25	lb ai/1000 ft2	A	6.3 a	7.0 a	6.5 a	6.0 a	4.3 a	7.9 a
	AND 3059	38	GR	1.25	lb ai/1000 ft2	B						
4	AND 3060	38	GR	1.25	lb ai/1000 ft2	A	6.5 a	7.0 a	6.5 a	6.0 a	4.0 a	8.0 a
	AND 3060	38	GR	1.25	lb ai/1000 ft2	B						
5	AND 3061B	38	GR	1.25	lb ai/1000 ft2	A	6.5 a	7.0 a	6.5 a	6.0 a	4.1 a	7.9 a
	AND 3061B	38	GR	1.25	lb ai/1000 ft2	B						
6	AND 3063	38	GR	1.25	lb ai/1000 ft2	A	6.5 a	6.9 a	6.5 a	6.0 a	4.0 a	8.0 a
	AND 3063	38	GR	1.25	lb ai/1000 ft2	B						
7	AND 3064	29	GR	1.25	lb ai/1000 ft2	A	6.5 a	7.0 a	6.5 a	6.0 a	4.1 a	7.9 a
	AND 3064	29	GR	1.25	lb ai/1000 ft2	B						
8	AND 3066	38	GR	1.25	lb ai/1000 ft2	A	6.5 a	7.0 a	6.5 a	6.0 a	4.3 a	8.0 a
	AND 3066	38	GR	1.25	lb ai/1000 ft2	B						
LSD (P=.05)							0.30	0.23	0.39	0.00	0.65	0.24
Standard Deviation							0.20	0.15	0.27	0.00	0.44	0.16
CV							3.12	2.24	4.13	0.0	10.66	2.08

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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							FESAR	FESAR	FESAR	FESAR	FESAR	FESAR
							K-31	K-31	K-31	K-31	K-31	K-31
							5-2-2003	5-12-2003	5-20-2003	6-4-2003	6-10-2003	6-23-2003
							COLOR	COLOR	COLOR	COLOR	COLOR	COLOR
							1-9	1-9	1-9	1-9	1-9	1-9
							FCW	FCW	FCW	FCW	JB	FCW
							10	20	28	43	49	3
							10 DA-A	20 DA-A	28 DA-A	43 DA-A	49 DA-A	62 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code						
1	Untreated						6.0 b	6.0 b	6.8 b	6.8 b	7.0 b	6.1 b
2	AND 3058	38	GR	1.25	lb ai/1000 ft2	A	8.0 a	8.0 a	8.0 a	7.8 a	7.4 a	6.6 a
	AND 3058	38	GR	1.25	lb ai/1000 ft2	B						
3	AND 3059	38	GR	1.25	lb ai/1000 ft2	A	8.0 a	8.0 a	8.0 a	7.9 a	7.3 ab	6.5 a
	AND 3059	38	GR	1.25	lb ai/1000 ft2	B						
4	AND 3060	38	GR	1.25	lb ai/1000 ft2	A	8.0 a	8.0 a	8.0 a	7.6 a	7.1 ab	6.5 a
	AND 3060	38	GR	1.25	lb ai/1000 ft2	B						
5	AND 3061B	38	GR	1.25	lb ai/1000 ft2	A	8.0 a	8.0 a	8.0 a	7.6 a	7.1 ab	6.5 a
	AND 3061B	38	GR	1.25	lb ai/1000 ft2	B						
6	AND 3063	38	GR	1.25	lb ai/1000 ft2	A	8.0 a	8.0 a	8.0 a	7.8 a	7.1 ab	6.6 a
	AND 3063	38	GR	1.25	lb ai/1000 ft2	B						
7	AND 3064	29	GR	1.25	lb ai/1000 ft2	A	8.0 a	8.0 a	8.0 a	7.8 a	7.3 ab	6.5 a
	AND 3064	29	GR	1.25	lb ai/1000 ft2	B						
8	AND 3066	38	GR	1.25	lb ai/1000 ft2	A	8.0 a	8.0 a	8.0 a	7.6 a	7.1 ab	6.6 a
	AND 3066	38	GR	1.25	lb ai/1000 ft2	B						
LSD (P=.05)							0.00	0.00	0.15	0.41	0.25	0.28
Standard Deviation							0.00	0.00	0.10	0.28	0.17	0.19
CV							0.0	0.0	1.3	3.63	2.36	2.91

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

University of GA Coop Ext Service

							FESAR	FESAR	FESAR	FESAR	FESAR	FESAR
							K-31	K-31	k-31	k-31	K-31	K-31
							7-3-2003	7-16-2003	7-24-2003	7-31-2003	5-20-2003	6-11-2003
							COLOR	COLOR	COLOR	COLOR	CCI	CCI
							1-9	1-9	1-9	1-9	0 - 999	0 - 999
							FCW	FCW	JB	FCW	FCW	FCW
							13	26	34	41	28	50
							72 DA-A	85 DA-A	93 DA-A	100 DA-A	28 DA-A	50 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Appl Code						
1	Untreated						6.0 b	6.0 b	6.0 b	5.4 b	297 b	274 a
2	AND 3058	38	GR	1.25	lb ai/1000 ft2	A	7.0 a	6.5 a	6.5 a	6.0 a	365 a	289 a
	AND 3058	38	GR	1.25	lb ai/1000 ft2	B						
3	AND 3059	38	GR	1.25	lb ai/1000 ft2	A	7.0 a	6.5 a	6.6 a	6.0 a	358 a	270 a
	AND 3059	38	GR	1.25	lb ai/1000 ft2	B						
4	AND 3060	38	GR	1.25	lb ai/1000 ft2	A	7.0 a	6.5 a	6.5 a	6.0 a	362 a	262 a
	AND 3060	38	GR	1.25	lb ai/1000 ft2	B						
5	AND 3061B	38	GR	1.25	lb ai/1000 ft2	A	7.0 a	6.5 a	6.5 a	6.0 a	361 a	286 a
	AND 3061B	38	GR	1.25	lb ai/1000 ft2	B						
6	AND 3063	38	GR	1.25	lb ai/1000 ft2	A	7.0 a	6.5 a	6.5 a	6.0 a	360 a	285 a
	AND 3063	38	GR	1.25	lb ai/1000 ft2	B						
7	AND 3064	29	GR	1.25	lb ai/1000 ft2	A	7.0 a	6.5 a	6.5 a	6.0 a	349 a	273 a
	AND 3064	29	GR	1.25	lb ai/1000 ft2	B						
8	AND 3066	38	GR	1.25	lb ai/1000 ft2	A	7.0 a	6.5 a	6.5 a	6.0 a	336 a	266 a
	AND 3066	38	GR	1.25	lb ai/1000 ft2	B						
LSD (P=.05)							0.00	0.00	0.13	0.13	38.0	26.5
Standard Deviation							0.00	0.00	0.09	0.09	25.8	18.0
CV							0.0	0.0	1.37	1.49	7.41	6.54

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Crop Code	FESAR	FESAR	FESAR	FESAR	FESAR	FESAR						
Crop Variety	K-31	K-31	K-31	K-31	K-31	K-31						
Rating Date	6-19-2003	6-27-2003	7-24-2003	8-1-2003	5-22-2003	6-2-2003						
Rating Data Type	CCI	CCI	CCI	CCI	WET	WET						
Rating Unit	0 - 999	0 - 999	0 - 999	0 - 999	g	g						
Assessed By	FCW	FCW	FCW	FCW								
Days After Last Applic.	58	7	34	42	30	41						
Trt-Eval Interval	58 DA-A	66 DA-A	93 DA-A	101 DA-A	30 DA-A	41 DA-A						
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code						
1	Untreated						280 a	297 a	318 a	309 a	5.04 b	6.21 b
2	AND 3058	38	GR	1.25	lb ai/1000 ft2	A	242 a	344 a	327 a	292 a	10.77 a	12.17 a
	AND 3058	38	GR	1.25	lb ai/1000 ft2	B						
3	AND 3059	38	GR	1.25	lb ai/1000 ft2	A	237 a	307 a	335 a	327 a	9.26 a	10.77 a
	AND 3059	38	GR	1.25	lb ai/1000 ft2	B						
4	AND 3060	38	GR	1.25	lb ai/1000 ft2	A	255 a	348 a	341 a	295 a	8.35 ab	10.22 a
	AND 3060	38	GR	1.25	lb ai/1000 ft2	B						
5	AND 3061B	38	GR	1.25	lb ai/1000 ft2	A	248 a	306 a	334 a	298 a	9.39 a	11.29 a
	AND 3061B	38	GR	1.25	lb ai/1000 ft2	B						
6	AND 3063	38	GR	1.25	lb ai/1000 ft2	A	268 a	360 a	329 a	306 a	8.68 ab	11.18 a
	AND 3063	38	GR	1.25	lb ai/1000 ft2	B						
7	AND 3064	29	GR	1.25	lb ai/1000 ft2	A	239 a	343 a	332 a	299 a	9.63 a	11.86 a
	AND 3064	29	GR	1.25	lb ai/1000 ft2	B						
8	AND 3066	38	GR	1.25	lb ai/1000 ft2	A	270 a	357 a	314 a	300 a	8.84 ab	10.58 a
	AND 3066	38	GR	1.25	lb ai/1000 ft2	B						
LSD (P=.05)							62.2	56.3	60.3	38.7	3.745	3.268
Standard Deviation							42.3	38.3	41.0	26.3	2.546	2.222
CV							16.61	11.52	12.48	8.69	29.12	21.09

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

University of GA Coop Ext Service

Crop Code	FESAR	FESAR	FESAR	FESAR	FESAR	FESAR						
Crop Variety	K-31	K-31	K-31	K-31	K-31	K-31						
Rating Date	6-10-2003	6-13-2003	6-16-2003	6-19-2003	6-27-2003	7-18-2003						
Rating Data Type	WET	WET	WET	WET	WET	WET						
Rating Unit	g	g	g	g	g	g						
Assessed By												
Days After Last Applic.	49	52	55	58	7	28						
Trt-Eval Interval	49 DA-A	52 DA-A	55 DA-A	58 DA-A	66 DA-A	87 DA-A						
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code						
1	Untreated						6.70 b	3.93 b	2.69 a	3.70 a	0.85 a	4.64 b
2	AND 3058	38	GR	1.25	lb ai/1000 ft2	A	10.23 ab	5.46 ab	4.76 a	6.16 a	2.29 a	6.53 ab
	AND 3058	38	GR	1.25	lb ai/1000 ft2	B						
3	AND 3059	38	GR	1.25	lb ai/1000 ft2	A	11.20 a	6.46 a	4.81 a	6.33 a	2.31 a	7.93 a
	AND 3059	38	GR	1.25	lb ai/1000 ft2	B						
4	AND 3060	38	GR	1.25	lb ai/1000 ft2	A	8.49 ab	5.07 ab	4.46 a	4.59 a	3.11 a	5.36 ab
	AND 3060	38	GR	1.25	lb ai/1000 ft2	B						
5	AND 3061B	38	GR	1.25	lb ai/1000 ft2	A	9.21 ab	5.16 ab	3.89 a	4.23 a	3.28 a	6.86 ab
	AND 3061B	38	GR	1.25	lb ai/1000 ft2	B						
6	AND 3063	38	GR	1.25	lb ai/1000 ft2	A	7.64 ab	5.00 ab	3.88 a	5.74 a	2.56 a	7.41 ab
	AND 3063	38	GR	1.25	lb ai/1000 ft2	B						
7	AND 3064	29	GR	1.25	lb ai/1000 ft2	A	8.39 ab	4.98 ab	3.27 a	5.18 a	3.00 a	6.67 ab
	AND 3064	29	GR	1.25	lb ai/1000 ft2	B						
8	AND 3066	38	GR	1.25	lb ai/1000 ft2	A	8.42 ab	5.32 ab	4.03 a	3.24 a	3.16 a	7.47 ab
	AND 3066	38	GR	1.25	lb ai/1000 ft2	B						
LSD (P=.05)							3.650	1.884	2.366	4.760	2.391	2.567
Standard Deviation							2.482	1.281	1.608	3.236	1.626	1.745
CV							28.26	24.78	40.48	66.12	63.3	26.41

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

University of GA Coop Ext Service

							FESAR	FESAR	FESAR	FESAR	FESAR	FESAR
							K-31	K-31	K-31	K-31	K-31	K-31
							5-22-2003	6-2-2003	6-10-2003	6-13-2003	6-16-2003	6-19-2003
							DRY	DRY	DRY	DRY	DRY	DRY
							g	g	g	g	g	g
							30	41	49	52	55	58
							30 DA-A	41 DA-A	49 DA-A	52 DA-A	55 DA-A	58 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Appl Code						
1	Untreated						0.52 c	1.57 b	1.57 b	0.84 a	0.63 a	1.06 a
2	AND 3058	38	GR	1.25	lb ai/1000 ft2	A	1.84 a	3.07 a	2.37 ab	1.12 a	1.02 a	1.59 a
	AND 3058	38	GR	1.25	lb ai/1000 ft2	B						
3	AND 3059	38	GR	1.25	lb ai/1000 ft2	A	1.30 abc	2.66 a	2.59 a	1.27 a	1.02 a	1.68 a
	AND 3059	38	GR	1.25	lb ai/1000 ft2	B						
4	AND 3060	38	GR	1.25	lb ai/1000 ft2	A	1.09 abc	2.47 a	1.92 ab	0.98 a	0.94 a	1.19 a
	AND 3060	38	GR	1.25	lb ai/1000 ft2	B						
5	AND 3061B	38	GR	1.25	lb ai/1000 ft2	A	1.34 abc	2.79 a	2.11 ab	1.00 a	0.78 a	1.17 a
	AND 3061B	38	GR	1.25	lb ai/1000 ft2	B						
6	AND 3063	38	GR	1.25	lb ai/1000 ft2	A	1.52 ab	2.80 a	1.70 ab	0.99 a	0.82 a	1.52 a
	AND 3063	38	GR	1.25	lb ai/1000 ft2	B						
7	AND 3064	29	GR	1.25	lb ai/1000 ft2	A	1.00 abc	2.93 a	1.92 ab	0.90 a	0.60 a	1.37 a
	AND 3064	29	GR	1.25	lb ai/1000 ft2	B						
8	AND 3066	38	GR	1.25	lb ai/1000 ft2	A	0.78 bc	2.71 a	1.93 ab	1.10 a	0.90 a	0.81 a
	AND 3066	38	GR	1.25	lb ai/1000 ft2	B						
LSD (P=.05)							0.861	0.815	0.872	0.442	0.590	1.348
Standard Deviation							0.580	0.554	0.593	0.301	0.401	0.917
CV							49.37	21.13	29.47	29.35	47.89	70.63

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

University of GA Coop Ext Service

Crop Code					FESAR	FESAR
Crop Variety					K-31	K-31
Rating Date					6-27-2003	7-18-2003
Rating Data Type					DRY	DRY
Rating Unit					g	g
Assessed By						
Days After Last Applic.					7	28
Trt-Eval Interval					66 DA-A	87 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Appl Code
1	Untreated					
2	AND 3058	38	GR	1.25	lb ai/1000 ft2	A
	AND 3058	38	GR	1.25	lb ai/1000 ft2	B
3	AND 3059	38	GR	1.25	lb ai/1000 ft2	A
	AND 3059	38	GR	1.25	lb ai/1000 ft2	B
4	AND 3060	38	GR	1.25	lb ai/1000 ft2	A
	AND 3060	38	GR	1.25	lb ai/1000 ft2	B
5	AND 3061B	38	GR	1.25	lb ai/1000 ft2	A
	AND 3061B	38	GR	1.25	lb ai/1000 ft2	B
6	AND 3063	38	GR	1.25	lb ai/1000 ft2	A
	AND 3063	38	GR	1.25	lb ai/1000 ft2	B
7	AND 3064	29	GR	1.25	lb ai/1000 ft2	A
	AND 3064	29	GR	1.25	lb ai/1000 ft2	B
8	AND 3066	38	GR	1.25	lb ai/1000 ft2	A
	AND 3066	38	GR	1.25	lb ai/1000 ft2	B
LSD (P=.05)					0.636	0.509
Standard Deviation					0.426	0.345
CV					98.85	30.4

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)