

# North Carolina State University

POA ANNUA CONTROL AND PERENNIAL RYEGRASS TOLERANCE TO MON 44951 75WG

Trial ID: 03-T2  
Location: PINEHURST

Study Dir.: LEON WARREN  
Investigator: Fred Yelverton

### GENERAL TRIAL INFORMATION

**Study Director:** LEON WARREN **Title:** RESEARCH ASSOCIATE  
**Affiliation:** NORTH CAROLINA STATE UNIVERSITY  
**Postal Code:** 27695  
**Investigator:** FRED YELVERTON **Title:** PROFESSOR  
**Affiliation:** NORTH CAROLINA STATE UNIVERSITY  
**Postal Code:** 27695

### TRIAL LOCATION

**City:** PINEHURST **Trial Status:** COMPLETED  
**State/Prov.:** NC **Initiation Date:** 10-4-02  
**Country:** USA **Unit:** .

### COOPERATOR/LANDOWNER

**Cooperator:** KEVIN ROBINSON **Country:** USA  
**Org:** PINEHURST COUNTRY CLUB **Phone No:** (910) 235-8518  
**City:** PINEHURST  
**State/Prov:** NC

**Conducted Under GLP (Y/N):** N **Conducted Under GEP (Y/N):** N

**Objective:** COMPARE MON 44951 75WDG TOLERANCE TO PERENNIAL RYEGRASS WHEN APPLIED 4 AND 1 DAYS PRIOR TO OVERSEEDING IN BERMUDAGRASS; DETERMINE ANNUAL BLUEGRASS EFFICACY

### CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	POAAN	Annual bluegrass	Poa annua

**Crop 1:** CYNDA BERMUDAGRASS

**Crop 2:** LOLPE RYEGRASS, PERENNIAL **Variety:** MIXTURES  
**Planting Date:** 10-8-02 **Planting Method:** SEEDED  
**Depth:** .125 IN **Soil Moisture:** MOIST **Emergence Date:** 10-18-02

### SITE AND DESIGN

**Plot Width, Unit:** 4 FT **Plot Length, Unit:** 12 FT **Reps:** 4  
**Site Type:** TURF - GOLF COURSE FAIRWAY  
**Tillage Type:** NA **Study Design:** RANDOMIZED COMPLETE BLOCK

### SOIL DESCRIPTION

**% OM:** 1.25  
**pH:** 5.9  
**CEC:** 10.0 **Fert. Level:** EXCELLENT

**Overall Moisture Conditions:** TEST AREA IRRIGATED AS NEEDED

### APPLICATION DESCRIPTION

	A	B	C
<b>Application Date:</b>	10-4-02	10-7-02	3-31-03
<b>Time of Day:</b>	9:45 AM	10:00 AM	2:00 PM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	10 DBO	7 DBO	MAR 31
<b>Applic. Placement:</b>	SOIL	SOIL	BROFOL
<b>Air Temp., Unit:</b>	82.6 F	72.8 F	50 F
<b>% Relative Humidity:</b>	71	90	47
<b>Wind Velocity, Unit:</b>	0.6 MPH	0.9 MPH	3.1 MPH
<b>Dew Presence (Y/N):</b>	Y	Y	N
<b>Soil Temp., Unit:</b>	77 F	74 F	57 F
<b>Soil Moisture:</b>	GOOD	GOOD	MOIST
<b>% Cloud Cover:</b>	0	100	70

### CROP STAGE AT EACH APPLICATION

	A	B	C
<b>Crop 1 Code, Stage:</b>	CYNDA MOWED	CYNDA MOWED	CYNDA MOWED
<b>Stage Scale:</b>	NA	NA	10% GREEN
<b>Height, Unit:</b>	0.5 IN	0.5 IN	0.5 IN
<b>Crop 2 Code, Stage:</b>	LOLPE PRESEED	LOLPE PRESEED	LOLPE MOWED
<b>Stage Scale:</b>	NA	NA	TILLERED
<b>Height, Unit:</b>	0 IN	0 IN	0.5 IN

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## WEED STAGE AT EACH APPLICATION

	A	B	C
<b>Weed 1 Code, Stage:</b>	POAAN PRE	POAAN PRE	POAAN FLOWERING
<b>Stage Scale:</b>	NA	NA	NA
<b>Density, Unit:</b>	. .	. .	5 FT2

## APPLICATION EQUIPMENT

	A	B	C
<b>Appl. Equipment:</b>	BACSPR	BACSPR	BACSPR
<b>Operating Pressure:</b>	36 PSI	36 PSI	35 PSI
<b>Nozzle Type:</b>	FLAT FAN	FLAT FAN	FLAT FAN
<b>Nozzle Size:</b>	XR 8002VS	XR 8002VS	XR 8002VS
<b>Nozzle Spacing, Unit:</b>	10 IN	10 IN	10 IN
<b>Band Width, Unit:</b>	40 IN	40 IN	40 IN
<b>Boom Length, Unit:</b>	40 IN	40 IN	40 IN
<b>Boom Height, Unit:</b>	10 IN	10 IN	10 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH	3 MPH
<b>Carrier:</b>	WATER	WATER	WATER
<b>Spray Volume, Unit:</b>	32.5 GPA	32.5 GPA	32.5 GPA
<b>Propellant:</b>	COMCO2	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y	Y	Y

Trt No	Treatment Application Comment
	Spring treatments go on 1/2 of the plot

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											POAAN	POAAN	POAAN	POAAN
											CONTROL PERCENT	CONTROL PERCENT	CONTROL PERCENT	CONTROL PERCENT
											1-7-03	2-14-03	3-13-03	3-31-03
											95 DA-A	133 DA-A	160 DA-A	178 DA-A
											P	P	P	P
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume				
1	MON 44951	75	WG	0.06	lb ai/a			4 DBO	A		98.0 a	98.0 a	100.0 a	93.8 ab
	X-77		L	0.5	% v/v			4 DBO	A					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
2	MON 44951	75	WG	0.125	lb ai/a			4 DBO	A		99.0 a	98.0 a	100.0 a	98.8 a
	X-77		L	0.5	% v/v			4 DBO	A					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
3	MON 44951	75	WG	0.06	lb ai/a			1 DBO	B		96.8 a	80.0 a	96.3 a	80.8 b
	X-77		L	0.5	% v/v			1 DBO	B					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
4	MON 44951	75	WG	0.125	lb ai/a			1 DBO	B		98.0 a	94.8 a	100.0 a	95.5 a
	X-77		L	0.5	% v/v			1 DBO	B					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
5	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
6	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
7	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
8	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
9	TRANXIT GTA	25	DF	0.03	lb ai/a			1 DBO	B		99.3 a	97.3 a	96.3 a	97.0 a
	X-77		L	0.5	% v/v			1 DBO	B					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
10	NONTREATED										0.0 b	0.0 b	0.0 b	0.0 c
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
LSD (P=.05)											2.85	21.90	4.49	14.47
Standard Deviation											1.89	14.54	2.98	9.60
CV											2.31	18.64	3.63	12.37
Grand Mean											81.83	78.0	82.08	77.63
Bartlett's X2											9.965	19.391	0.0	22.559
P(Bartlett's X2)											0.019*	0.001*	0.001*	0.001*
Replicate F											2.991	1.574	0.156	1.994
Replicate Prob(F)											0.0643	0.2372	0.9240	0.1582
Treatment F											1803.355	28.541	729.188	64.504
Treatment Prob(F)											0.0001	0.0001	0.0001	0.0001

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										POAFRONT	POABACK	LOLPE	LOLPE	
Crop Code										CONTROL	CONTROL	REDUCTION	REDUCTION	
Rating Data Type										PERCENT	PERCENT	PERCENT	PERCENT	
Rating Unit										5-2-03	5-2-03	1-7-03	2-14-03	
Rating Date										210 DA-A	210 DA-A	95 DA-A	133 DA-A	
Trt-Eval Interval										P	P	P	P	
ARM Action Codes														
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume				
1	MON 44951	75	WG	0.06	lb ai/a			4 DBO	A		97.5 a	91.8 ab	0.0 b	5.0 a
	X-77		L	0.5	% v/v			4 DBO	A					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
2	MON 44951	75	WG	0.125	lb ai/a			4 DBO	A		99.0 a	94.8 a	7.5 a	6.3 a
	X-77		L	0.5	% v/v			4 DBO	A					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
3	MON 44951	75	WG	0.06	lb ai/a			1 DBO	B		95.0 a	71.8 b	0.0 b	5.0 a
	X-77		L	0.5	% v/v			1 DBO	B					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
4	MON 44951	75	WG	0.125	lb ai/a			1 DBO	B		97.5 a	92.0 ab	12.5 a	3.8 a
	X-77		L	0.5	% v/v			1 DBO	B					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
5	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C		72.5 bc			
	X-77		L	0.25	% v/v			MAR 31	C					
6	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C		71.3 bc			
	X-77		L	0.25	% v/v			MAR 31	C					
7	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C		85.0 ab			
	X-77		L	0.25	% v/v			MAR 31	C					
8	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C		85.0 ab			
	X-77		L	0.25	% v/v			MAR 31	C					
9	TRANXIT GTA	25	DF	0.03	lb ai/a			1 DBO	B		98.5 a	97.0 a	0.0 b	2.5 a
	X-77		L	0.5	% v/v			1 DBO	B					
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
10	NONTREATED										66.3 c	0.0 c	0.0 b	0.0 a
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C					
	X-77		L	0.25	% v/v			MAR 31	C					
LSD (P=.05)											14.91	20.51	6.05	8.18
Standard Deviation											10.27	13.61	4.01	5.43
CV											11.84	18.26	120.42	144.7
Grand Mean											86.75	74.54	3.33	3.75
Bartlett's X2											30.14	12.492	0.251	0.594
P(Bartlett's X2)											0.001*	0.014*	0.616	0.964
Replicate F											2.785	2.198	2.241	0.802
Replicate Prob(F)											0.0599	0.1307	0.1255	0.5120
Treatment F											6.136	30.565	7.241	0.679
Treatment Prob(F)											0.0001	0.0001	0.0012	0.6460

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Weed Code											LOLPE	LOLPE
Crop Code											REDUCT	REDUCT
Rating Data Type											PERCENT	PERCENT
Rating Unit											3-13-03	3-31-03
Rating Date											160 DA-A	178 DA-A
Trt-Eval Interval											P	P
ARM Action Codes												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume		
1	MON 44951	75	WG	0.06	lb ai/a			4 DBO	A		0.0 a	0.0 a
	X-77		L	0.5	% v/v			4 DBO	A			
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
2	MON 44951	75	WG	0.125	lb ai/a			4 DBO	A		5.0 a	5.0 a
	X-77		L	0.5	% v/v			4 DBO	A			
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
3	MON 44951	75	WG	0.06	lb ai/a			1 DBO	B		0.0 a	1.3 a
	X-77		L	0.5	% v/v			1 DBO	B			
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
4	MON 44951	75	WG	0.125	lb ai/a			1 DBO	B		5.0 a	5.0 a
	X-77		L	0.5	% v/v			1 DBO	B			
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
5	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
6	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
7	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
8	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
9	TRANXIT GTA	25	DF	0.03	lb ai/a			1 DBO	B		1.3 a	0.0 a
	X-77		L	0.5	% v/v			1 DBO	B			
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
10	NONTREATED										0.0 a	0.0 a
	MON 44951	75	WG	0.02	lb ai/a			MAR 31	C			
	X-77		L	0.25	% v/v			MAR 31	C			
LSD (P=.05)											5.60	7.44
Standard Deviation											3.72	4.94
CV											198.26	263.31
Grand Mean											1.88	1.88
Bartlett's X2											2.735	4.803
P(Bartlett's X2)											0.255	0.091
Replicate F											1.482	3.462
Replicate Prob(F)											0.2595	0.0433
Treatment F											1.764	1.000
Treatment Prob(F)											0.1810	0.4509

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### Trial Comments

09-04-02: VERTICUT IN 2 DIRECTIONS

10-15-02: SCALPED TEST AREA AND OVERSEEDED WITH 450 LB/A ALLSPORT RYEGRASS

01-01-03: TEST AREA OVERSPRAYED WITH 0.38 LB AI/A PROGRASS BY SUPERINTENDENT

01-07-03: MON 44951 75WG APPLIED AT 4 AND 1 DAYS BEFORE OVERSEEDING RESULTED IN UNACCEPTABLE RYEGRASS INJURY