

**MASSACHUSETTS
WEED SCIENCE RESEARCH RESULTS
2005**

VOLUME 24



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MASSACHUSETTS AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF MASSACHUSETTS AMHERST**

PREFACE

The purpose of this report is to inform cooperators in industry, colleagues at other institutions, and other persons interested in weed control, of the results of our research projects conducted in 2005. This information is our annual summary of ongoing field research in Weed Science at the University of Massachusetts, Amherst. Interpretation of the data may be modified by additional experiments. In spite of careful proofreading, there may be some typing or compilation errors in this report. Should you find an obvious error, please bring it to the attention of the author.

Information herein does not constitute a recommendation or endorsement of any product. Current recommendations for weed control in various crop commodities are available from the University of Massachusetts Extension.

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Prof. Prasanta C. Bhowmik
Amherst, MA
January 16, 2006

**MASSACHUSETTS
WEED SCIENCE RESEARCH RESULTS - 2005**

Weed management research in turfgrass and field crops at the University of Massachusetts is conducted by Prof. Prasanta C. Bhowmik. Other personnel in weed science research in 2005 were:

Research Technician	Edwin McGlew
Graduate Research Assistants	Debanjan Sanyal Nishanth Tharayil Saikat Ghosh Dipayan Sarkar Susan Cheplick

Our research program has been funded by one Regional Research Project: This includes NE-187 "Best Management Practices for Turfgrass Systems in the East". Our program is also funded by grant-in-aid support from industries. The following contributors are gratefully acknowledged for their support of our weed science projects in 2005.

Bayer Crop Protection
Monsanto- The Agricultural Group
The Scotts Company
Syngenta Crop Protection

Thanks to Virginia White, Department of Biology, Amherst College for weather data. Appreciation is also extended to others who provided seeds, supplies, equipments, and/or services for these studies.

Dekalb
Lofts Seed Inc.

2005 RESEARCH PROJECTS

Regional Research Project

NE-187 Project

"Best Management Practices for Turfgrass Systems in the East". Projects are underway to evaluate various bio-rational strategies to suppress weed species under turfgrass systems. Studies include weed invasion and subsequent spread of weed species under various low maintenance turfgrass systems.

Other Research Projects

Use directions for herbicide treatments. Much of our field research is aimed at gaining information on various phases of herbicide application that will influence specific label directions for herbicide use on a given crop. This is extremely important to the user groups in Massachusetts for weed management under diverse ecological systems. Also, this information leads to Weed Control Recommendation Guides for all New England States.

Assessment of new technology: Comparative evaluations of Roundup Ready corn herbicide systems are underway to determine the best fit under New England conditions. Studies are being conducted to determine the performance of lower than normally recommended rates of herbicides. Alachlor, metolachlor, atrazine, isoxaflutole, mesotrione and other commonly used herbicides have been included in some studies.

Experimental herbicides and surfactants: New herbicides are being evaluated for their efficacy, crop safety, and lower crop and soil residues under Massachusetts conditions. Herbicide formulations, additives, and antidotes have been included in field crops and turfgrasses.

Development of low maintenance strategies with growth regulators: Use of growth regulators along with various cultural practices may enhance our weed management practices in turfgrass areas, including golf courses. Spring and fall treatments of growth regulators have been examined for their effectiveness in *Poa annua* control in putting greens. Safety of these growth regulators is being examined carefully in relation to bentgrass growth and development over a period of several years.

TURFGRASS DATA COLLECTION METHODS

A. TURFGRASS

I. WEED CONTROL STUDIES. Visual ratings were estimated on weed control throughout the growing season based on a scale of 0 to 100%.

PERCENT WEED CONTROL: Zero percent control meaning the treatment did not affect the weeds in question and the weeds were still present, as in the untreated check plot. One 100% control meaning the treatment was effective and completely controlled the species in question.

WEED COUNTS: Weed counts represent the number of plants or shoots or tillers per unit area or per plot, based on randomly placed 400 cm² quadrats in each plot.

II. TOLERANCE STUDIES.

PERCENT TURF INJURY: Turfgrass injury was rated on a scale of 0 to 100%, 0% injury meaning no injury to the turfgrass, and 100% injury meaning the turfgrass is completely dead.

QUALITY AND COLOR. Visual ratings were estimated throughout the growing season. Turf quality and color were rated on a scale of 1 to 9. In our studies, a rating of 6 is commercially acceptable for both turf color and quality.

TURF QUALITY: Turf quality of 1 means dead turfgrass with bare ground, while 9 means a thick, lush stand of turfgrass.

TURF COLOR: Rating of 1 means dead turfgrass with brown color and bare ground, while 9 means a desirable turfgrass with dark green color.

III. GROWTH REGULATOR STUDIES. Various methods were used to determine the effectiveness of various growth regulator treatments.

1. Number of seed heads per unit area (cm² or in²)
2. Percent seed head reductions or suppression
3. Percent top growth reduction, (turf height measurement from clippings)
4. Clippings weight (fresh weight of clippings taken at 2 week intervals)

FIELD CROPS DATA COLLECTION METHODS

B. FIELD CROPS

I. WEED CONTROL IN CORN: Corn injury ratings were visually estimated on a scale of 0% to 100%, 0% indicating no corn injury, and 100% indicating completely dead plant. Corn height was also determined to assess any plant injury.

Weed control ratings were reported for the major weed species present in each experiment. Weed control was rated on a scale of 0% to 100%, where 0% = no control, and 100% = complete weed control. A rating of 95% or more is considered excellent weed control.

Field corn was harvested late in the fall, when the plants showed physiological maturity. Corn plants from a 7 ft. long section of the center row in each plot were harvested for silage and grain yields. Fresh weights of ears and corn stalks were determined. Five corn ears were sub-sampled for the determination of fresh weight, dry weight. Two corn stalks from each plot were chopped into silage with a gas-powered chopper. The silage was collected in paper bags, and fresh and dry weights were determined. Grain yields were adjusted to 15% moisture.

II. PERENNIAL WEEDS: Perennial weed control was visually rated on a scale of 0% to 100%, where 0% means no weed control, and 100% means complete control.

In quackgrass experiments, quackgrass shoot numbers per 800 cm² were determined at 4 weed intervals over the growing season to assess the effectiveness of treatments. At each rating, the quackgrass shoots were cut, and sampled for dry weight determination.

At the last sampling, soil cores were taken from the areas where the last quackgrass shoots were sampled. The soil cores were 10 cm in diameter and 15 cm in depth. The quackgrass rhizomes were separated from soil, and wrapped in moist paper towels into plastic bags. Then the rhizomes were cut into sections, each piece having at least one node. The rhizomes were then counted and carefully wrapped in moist paper towels which had been treated with a dilute bleach:water solution (1:10) to prevent any fungal contamination. The rhizome packets were placed on trays in an incubator with a constant temperature of 36 C. After 7 to 10 days of incubation, sprouted rhizome sections were determined.

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TUREGRASS

UNIVERSITY OF MASSACHUSETTS-AMHERST

ETQ KENTUCKY BLUEGRASS SPRING MITIGATION IN GOLF COURSE AND COMMERCIAL TURF

Trial ID: 0507TG2
Location: TRC-SDF

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

CROP AND PEST DESCRIPTION

Weed 1. TRIRE

2. DIGSA

Crop 1: POAPR

Plot Width, Unit: 3.5 FT

Plot Length, Unit: 10 FT

Reps: 4

Study Design: RANDOMIZED COMPLETE BLOCK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Jun-24-05		Jul-22-05		Aug-18-05	
Time of Day:	AM		AM		AM	
Application Method:	SPRAY		SPRAY		SPRAY	
Application Timing:	POST		4 WAIT		8 WAIT	
Air Temp., Unit:	26.7 C		28.9 C		22.2 C	
% Relative Humidity:	61		59		62	
Wind Velocity, Unit:	5 MPH		0 MPH		2 MPH	
Soil Temp., Unit:	23.8 C	22.7 C	27.3 C	26.1 C	23.1 C	21.8 C
Soil Moisture:	@ 0.5"	@ 2.0"	@ 0.5"	@ 2.0"	@ 0.5"	@ 2.0"
% Cloud Cover:	50		90		75	

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK		SAME		SAME	
Operating Pressure:	22 PSI					
Nozzle Type:	TEEJET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Boom Length, Unit:	20 INCH					
Boom Height, Unit:	17 INCH					
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Propellant:	CO2					

UNIVERSITY OF MASSACHUSETTS-AMHERST

ETQ KENTUCKY BLUEGRASS SPRING MITIGATION IN GOLF COURSE AND COMMERCIAL TURF

Trial ID: 0507TG2
Location: TRC-SDF

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code					POAPR	POAPR	POAPR	POAPR	
Crop Code					COLOR	COLOR	COLOR	COLOR	
Part Rated					1-9	1-9	1-9	1-9	
Rating Data Type					Jun-30-05	Jul-13-05	Jul-21-05	Jul-28-05	
Rating Date					1 WAIT	3 WAIT	4 WAIT	5 WAIT	
Crop Stage									
Weed Stage									
Trit-Eval Interval					6 DA-A	19 DA-A	27 DA-A	34 DA-A	
Trit No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg				
1	ROUNDUP PRO	3.0	SL	1.5 LB AE/A POST		3.25 c	1.00 c	1.0 f	1.00 e
2	ROUNDUP PRO	3.0	SL	1.5 LB AE/A POST		3.00 c	1.00 c	1.0 f	1.00 e
	ROUNDUP PRO	3.0	SL	1.5 LB AE/A 4 WAIT					
3	FUSILADE II	2.0	EC	0.38 LB AE/A POST		8.88 a	5.25 b	5.3 bc	3.00 cd
	CROP OIL CONC.			1.0 % V/V					
	FUSILADE II	2.0	EC	0.38 LB AE/A 4 WAIT					
	CROP OIL CONC.			1.0 % V/V					
4	ENVOY	0.94	EC	0.25 LB A/A POST		8.50 a	3.25 b	2.5 ef	2.25 de
	CROP OIL CONC.			1.0 % V/V					
	ENVOY	0.94	EC	0.25 LB A/A 4 WAIT					
	CROP OIL CONC.			1.0 % V/V					
5	FUSILADE II	2.0	EC	0.38 LB AE/A POST		9.00 a	3.75 b	3.8 cde	3.00 cd
	CROP OIL CONC.			1.0 % V/V					
	FUSILADE II	2.0	EC	0.38 LB AE/A 4 WAIT					
	CROP OIL CONC.			1.0 % V/V					
	ENVOY	0.94	EC	0.25 LB A/A 8 WAIT					
	CROP OIL CONC.			1.0 % V/V					
6	VANTAGE	1.0	EC	0.47 LB A/A POST		8.25 a	5.13 b	4.3 bcd	3.25 cd
	CROP OIL CONC.			1.0 % V/V					
	VANTAGE	1.0	EC	0.47 LB A/A 4 WAIT					
	CROP OIL CONC.			1.0 % V/V					
7	REVOLVER	0.19	SC	0.03 LB A/A POST		8.38 a	5.00 b	3.0 de	2.25 de
8	REVOLVER	0.19	SC	0.03 LB A/A POST		8.38 a	4.38 b	3.0 de	2.50 de
	REVOLVER	0.19	SC	0.03 LB A/A 4 WAIT					
9	FINALE	1.0	SL	1.5 LB A/A POST		1.25 d	1.00 c	1.0 f	1.50 e
10	FINALE	1.0	SL	1.5 LB A/A POST		1.00 d	1.00 c	1.0 f	1.00 e
	FINALE	1.0	SL	1.5 LB A/A 4 WAIT					
11	REWARD	3.73	EC	1.0 LB A/A POST		1.00 d	4.75 b	5.8 b	1.00 e
	X-77			0.5 % V/V					
	REWARD	3.73	EC	1.0 LB A/A 4 WAIT					
	X-77			0.5 % V/V					
12	TRANXIT GTA	25	DF	0.03 LB A/A POST		5.75 b	3.75 b	5.3 bc	6.75 b
	X-77			0.5 % V/V					

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Weed Code					POAPR	POAPR	POAPR	POAPR	
Crop Code					COLOR	COLOR	COLOR	COLOR	
Part Rated					1-9	1-9	1-9	1-9	
Rating Data Type					Jun-30-05	Jul-13-05	Jul-21-05	Jul-28-05	
Rating Date					1 WAIT	3 WAIT	4 WAIT	5 WAIT	
Crop Stage					6 DA-A	19 DA-A	27 DA-A	34 DA-A	
Weed Stage									
Trt-Eval Interval									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg				
13	TRANXIT GTA X-77	25 DF		0.03 LB A/A 0.5 % V/V	POST	8.38 a	5.38 b	5.3 bc	4.00 c
	TRANXIT GTA X-77	25 DF		0.03 LB A/A 0.5 % V/V	4 WAIT				
14	UNTREATED CHECK					9.00 a	9.00 a	9.0 a	8.75 a
LSD (P=.05)					0.760	1.456	1.09	0.967	
Standard Deviation					0.532	1.019	0.76	0.677	
CV					8.87	26.6	20.98	22.98	
Bartlett's X2					23.063	6.413	4.551	11.221	
P(Bartlett's X2)					0.006*	0.601	0.715	0.189	
Replicate F					3.197	3.159	2.690	1.000	
Replicate Prob(F)					0.0338	0.0353	0.0595	0.4031	
Treatment F					156.243	20.072	37.571	45.498	
Treatment Prob(F)					0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

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Weed Code				POAPR	POAPR	POAPR		
Crop Code				COLOR	COLOR	COLOR		
Part Rated				1-9	1-9	1-9		
Rating Data Type				Aug-11-05	Aug-19-05	Aug-24-05		
Rating Date				7 WAIT	8 WAIT	9 WAIT		
Crop Stage								
Weed Stage								
Trt-Eval Interval				48 DA-A	56 DA-A	61 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg			
1	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	POST	1.0 b	1.0 c	1.00 c
2	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	POST	1.0 b	1.0 c	1.00 c
	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	4 WAIT			
3	FUSILADE II	2.0	EC	0.38 LB AE/A	POST	1.8 b	1.0 c	1.75 c
	CROP OIL CONC.			1.0 % V/V				
	FUSILADE II	2.0	EC	0.38 LB AE/A	4 WAIT			
	CROP OIL CONC.			1.0 % V/V				
4	ENVOY	0.94	EC	0.25 LB A/A	POST	1.3 b	1.0 c	1.25 c
	CROP OIL CONC.			1.0 % V/V				
	ENVOY	0.94	EC	0.25 LB A/A	4 WAIT			
	CROP OIL CONC.			1.0 % V/V				
5	FUSILADE II	2.0	EC	0.38 LB AE/A	POST	1.5 b	1.0 c	1.25 c
	CROP OIL CONC.			1.0 % V/V				
	FUSILADE II	2.0	EC	0.38 LB AE/A	4 WAIT			
	CROP OIL CONC.			1.0 % V/V				
	ENVOY	0.94	EC	0.25 LB A/A	8 WAIT			
	CROP OIL CONC.			1.0 % V/V				
6	VANTAGE	1.0	EC	0.47 LB A/A	POST	1.0 b	1.0 c	1.00 c
	CROP OIL CONC.			1.0 % V/V				
	VANTAGE	1.0	EC	0.47 LB A/A	4 WAIT			
	CROP OIL CONC.			1.0 % V/V				
7	REVOLVER	0.19	SC	0.03 LB A/A	POST	1.5 b	1.0 c	1.50 c
8	REVOLVER	0.19	SC	0.03 LB A/A	POST	1.5 b	1.0 c	1.50 c
	REVOLVER	0.19	SC	0.03 LB A/A	4 WAIT			
9	FINALE	1.0	SL	1.5 LB A/A	POST	2.0 b	1.8 c	1.50 c
10	FINALE	1.0	SL	1.5 LB A/A	POST	1.0 b	1.0 c	1.00 c
	FINALE	1.0	SL	1.5 LB A/A	4 WAIT			
11	REWARD	3.73	EC	1.0 LB A/A	POST	1.0 b	1.0 c	1.00 c
	X-77			0.5 % V/V				
	REWARD	3.73	EC	1.0 LB A/A	4 WAIT			
	X-77			0.5 % V/V				
12	TRANXIT GTA	25	DF	0.03 LB A/A	POST	8.0 a	7.0 b	7.38 b
	X-77			0.5 % V/V				
13	TRANXIT GTA	25	DF	0.03 LB A/A	POST	1.5 b	1.0 c	1.25 c
	X-77			0.5 % V/V				
	TRANXIT GTA	25	DF	0.03 LB A/A	4 WAIT			
	X-77			0.5 % V/V				

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Weed Code				
Crop Code		POAPR	POAPR	POAPR
Part Rated		COLOR	COLOR	COLOR
Rating Data Type		1-9	1-9	1-9
Rating Date		Aug-11-05	Aug-19-05	Aug-24-05
Crop Stage		7 WAIT	8 WAIT	9 WAIT
Weed Stage				
Trt-Eval Interval		48 DA-A	56 DA-A	61 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit
				Grow Stg
14	UNTREATED CHECK			
		8.5	a	
		8.5	a	
		8.25	a	
LSD (P=.05)		0.97	0.72	0.831
Standard Deviation		0.68	0.51	0.581
CV		29.15	25.07	26.57
Bartlett's X2		4.16	0.569	6.17
P(Bartlett's X2)		0.842	0.752	0.628
Replicate F		0.468	2.302	0.260
Replicate Prob(F)		0.7063	0.0921	0.8538
Treatment F		56.064	94.138	68.280
Treatment Prob(F)		0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code	POAPR	POAPR	POAPR	POAPR
Crop Code	%	%	%	%
Part Rated	INJURY	INJURY	INJURY	INJURY
Rating Data Type	Jun-30-05	Jul-13-05	Jul-21-05	Jul-28-05
Rating Date	1 WAIT	3 WAIT	4 WAIT	5 WAIT
Crop Stage	6 DA-A	19 DA-A	27 DA-A	34 DA-A
Weed Stage				
Tri-Eval Interval				
Tri Treatment				
No. Name	Form Conc	Form Type	Rate Rate	Grow Unit Stg
13 TRANXIT GTA	25 DF		0.03 LB A/A	POST
X-77			0.5 % V/V	
TRANXIT GTA	25 DF		0.03 LB A/A	4 WAIT
X-77			0.5 % V/V	
14 UNTREATED CHECK				
	11.3 d	37.5 b	43.8 c	45.0 d
	0.0 d	0.0 c	0.0 d	0.0 f
LSD (P=.05)	11.09	17.77	13.90	13.56
Standard Deviation	7.76	12.44	9.73	9.49
CV	22.44	21.22	15.37	13.43
Bartlett's X2	30.696	34.217	14.486	15.179
P(Bartlett's X2)	0.001*	0.001*	0.152	0.086
Replicate F	1.168	1.980	1.915	0.289
Replicate Prob(F)	0.3341	0.1329	0.1431	0.8328
Treatment F	112.165	23.494	33.383	42.352
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code					POAPR	POAPR	POAPR	POAPR
Crop Code					%	%	%	%
Part Rated					INJURY	INJURY	INJURY	INJURY
Rating Data Type					Aug-11-05	Aug-19-05	Aug-24-05	Sep-15-05
Rating Date					7 WAIT	8 WAIT	9 WAIT	12 WAIT
Crop Stage					48 DA-A	56 DA-A	61 DA-A	83 DA-A
Weed Stage								
Trt-Eval Interval								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg			
1	ROUNDUP PRO	3.0	SL	1.5 LB AE/A POST		100.0 a	100.0 a	100.0 a
2	ROUNDUP PRO	3.0	SL	1.5 LB AE/A POST		100.0 a	100.0 a	100.0 a
	ROUNDUP PRO	3.0	SL	1.5 LB AE/A 4 WAIT				
3	FUSILADE II	2.0	EC	0.38 LB AE/A POST		89.0 a	100.0 a	93.8 a
	CROP OIL CONC.			1.0 % V/V				
	FUSILADE II	2.0	EC	0.38 LB AE/A 4 WAIT				
	CROP OIL CONC.			1.0 % V/V				
4	ENVOY	0.94	EC	0.25 LB A/A POST		94.0 a	100.0 a	95.0 a
	CROP OIL CONC.			1.0 % V/V				
	ENVOY	0.94	EC	0.25 LB A/A 4 WAIT				
	CROP OIL CONC.			1.0 % V/V				
5	FUSILADE II	2.0	EC	0.38 LB AE/A POST		92.8 a	100.0 a	95.0 a
	CROP OIL CONC.			1.0 % V/V				
	FUSILADE II	2.0	EC	0.38 LB AE/A 4 WAIT				
	CROP OIL CONC.			1.0 % V/V				
	ENVOY	0.94	EC	0.25 LB A/A 8 WAIT				
	CROP OIL CONC.			1.0 % V/V				
6	VANTAGE	1.0	EC	0.47 LB A/A POST		97.3 a	99.5 a	97.8 a
	CROP OIL CONC.			1.0 % V/V				
	VANTAGE	1.0	EC	0.47 LB A/A 4 WAIT				
	CROP OIL CONC.			1.0 % V/V				
7	REVOLVER	0.19	SC	0.03 LB A/A POST		95.8 a	100.0 a	95.3 a
8	REVOLVER	0.19	SC	0.03 LB A/A POST		96.5 a	100.0 a	94.0 a
	REVOLVER	0.19	SC	0.03 LB A/A 4 WAIT				
9	FINALE	1.0	SL	1.5 LB A/A POST		83.3 a	95.0 a	87.0 a
10	FINALE	1.0	SL	1.5 LB A/A POST		100.0 a	100.0 a	100.0 a
	FINALE	1.0	SL	1.5 LB A/A 4 WAIT				
11	REWARD	3.73	EC	1.0 LB A/A POST		98.8 a	98.8 a	99.5 a
	X-77			0.5 % V/V				
	REWARD	3.73	EC	1.0 LB A/A 4 WAIT				
	X-77			0.5 % V/V				
12	TRANXIT GTA	25	DF	0.03 LB A/A POST		23.8 b	27.5 b	27.5 b
	X-77			0.5 % V/V				
13	TRANXIT GTA	25	DF	0.03 LB A/A POST		93.8 a	99.5 a	95.3 a
	X-77			0.5 % V/V				
	TRANXIT GTA	25	DF	0.03 LB A/A 4 WAIT				
	X-77			0.5 % V/V				

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Weed Code	POAPR	POAPR	POAPR	POAPR
Crop Code	%	%	%	%
Part Rated	INJURY	INJURY	INJURY	INJURY
Rating Data Type	Aug-11-05	Aug-19-05	Aug-24-05	Sep-15-05
Rating Date	7 WAIT	8 WAIT	9 WAIT	12 WAIT
Crop Stage	48 DA-A	56 DA-A	61 DA-A	83 DA-A
Weed Stage				
Trt-Eval Interval				
Trt Treatment	Form	Form	Rate	Grow
No. Name	Conc	Type	Rate Unit	Stg
14 UNTREATED CHECK	0.0 c	0.0 c	0.0 c	0.0 b
LSD (P=.05)	9.80	4.44	7.91	3.03
Standard Deviation	6.85	3.10	5.53	2.12
CV	8.24	3.56	6.56	2.3
Bartlett's X2	34.68	18.356	23.964	3.126
P(Bartlett's X2)	0.001*	0.001*	0.004*	0.077
Replicate F	1.519	0.822	1.557	0.829
Replicate Prob(F)	0.2248	0.4898	0.2152	0.4859
Treatment F	81.408	414.130	122.046	629.490
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code					TRIRE	TRIRE	TRIRE	TRIRE
Crop Code					%	%	%	%
Part Rated					CONTROL	CONTROL	CONTROL	CONTROL
Rating Data Type					Jul-28-05	Aug-11-05	Aug-19-05	Aug-24-05
Rating Date								
Crop Stage								
Weed Stage					5 WAIT	7 WAIT	8 WAIT	9 WAIT
Trt-Eval Interval					34 DA-A	48 DA-A	56 DA-A	61 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg			
13	TRANXIT GTA X-77	25	DF	0.03 LB A/A	POST	73.3 c	96.0 a	95.0 a
	TRANXIT GTA X-77	25	DF	0.03 LB A/A	4 WAIT			
				0.5 % V/V				
14	UNTREATED CHECK					0.0 d	0.0 b	0.0 b
LSD (P=.05)					15.91	36.62	37.55	34.58
Standard Deviation					11.13	25.63	26.27	24.20
CV					20.88	42.34	43.76	39.12
Bartlett's X2					39.933	52.872	50.497	46.812
P(Bartlett's X2)					0.001*	0.001*	0.001*	0.001*
Replicate F					0.144	0.254	0.261	0.536
Replicate Prob(F)					0.9330	0.8583	0.8531	0.6601
Treatment F					63.305	10.044	9.050	10.720
Treatment Prob(F)					0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code Crop Code Part Rated Rating Data Type Rating Date Crop Stage Weed Stage Trt-Eval Interval					TRIRE % CONTROL Sep-15-05 12 WAIT 83 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Grow Stg	
1	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	POST	83.8 a
2	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	POST	95.0 a
	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	4 WAIT	
3	FUSILADE II CROP OIL CONC.	2.0	EC	0.38 LB AE/A 1.0 % V/V	POST	0.0 b
	FUSILADE II CROP OIL CONC.	2.0	EC	0.38 LB AE/A 1.0 % V/V	4 WAIT	
4	ENVOY CROP OIL CONC.	0.94	EC	0.25 LB A/A 1.0 % V/V	POST	25.0 ab
	ENVOY CROP OIL CONC.	0.94	EC	0.25 LB A/A 1.0 % V/V	4 WAIT	
5	FUSILADE II CROP OIL CONC.	2.0	EC	0.38 LB AE/A 1.0 % V/V	POST	49.3 ab
	FUSILADE II CROP OIL CONC.	2.0	EC	0.38 LB AE/A 1.0 % V/V	4 WAIT	
	ENVOY CROP OIL CONC.	0.94	EC	0.25 LB A/A 1.0 % V/V	8 WAIT	
	ENVOY CROP OIL CONC.	0.94	EC	0.25 LB A/A 1.0 % V/V	8 WAIT	
6	VANTAGE CROP OIL CONC.	1.0	EC	0.47 LB A/A 1.0 % V/V	POST	3.8 b
	VANTAGE CROP OIL CONC.	1.0	EC	0.47 LB A/A 1.0 % V/V	4 WAIT	
7	REVOLVER	0.19	SC	0.03 LB A/A	POST	5.0 b
8	REVOLVER	0.19	SC	0.03 LB A/A	POST	12.5 b
	REVOLVER	0.19	SC	0.03 LB A/A	4 WAIT	
9	FINALE	1.0	SL	1.5 LB A/A	POST	70.0 ab
10	FINALE	1.0	SL	1.5 LB A/A	POST	87.5 a
	FINALE	1.0	SL	1.5 LB A/A	4 WAIT	
11	REWARD X-77	3.73	EC	1.0 LB A/A 0.5 % V/V	POST	29.8 ab
	REWARD X-77	3.73	EC	1.0 LB A/A 0.5 % V/V	4 WAIT	
12	TRANXIT GTA X-77	25	DF	0.03 LB A/A 0.5 % V/V	POST	85.0 a
13	TRANXIT GTA X-77	25	DF	0.03 LB A/A 0.5 % V/V	POST	53.8 ab
	TRANXIT GTA X-77	25	DF	0.03 LB A/A 0.5 % V/V	4 WAIT	

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code	TRIRE		
Crop Code			
Part Rated	%		
Rating Data Type	CONTROL		
Rating Date	Sep-15-05		
Crop Stage			
Weed Stage	12 WAIT		
Trt-Eval Interval	83 DA-A		
Trt Treatment	Form Form	Rate	Grow
No. Name	Conc Type	Rate Unit	Stg
14 UNTREATED CHECK			0.0 b
LSD (P=.05)	43.24		
Standard Deviation	30.26		
CV	70.57		
Bartlett's X2	28.899		
P(Bartlett's X2)	0.002*		
Replicate F	1.447		
Replicate Prob(F)	0.2438		
Treatment F	5.750		
Treatment Prob(F)	0.0001		

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

ETQ KENTUCKY BLUEGRASS SPRING MITIGATION IN GOLF COURSE AND COMMERCIAL TURF

Trial ID: 0507TG2
Location: TRC-SDF

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

					DIGSA	DIGSA	DIGSA	DIGSA	
					%	%	%	%	
					CONTROL	CONTROL	CONTROL	CONTROL	
					Jul-28-05	Aug-11-05	Aug-19-05	Aug-24-05	
					5 WAIT	7 WAIT	8 WAIT	9 WAIT	
					34 DA-A	48 DA-A	56 DA-A	61 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg				
1	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	POST	94.8 ab	89.8 b	88.5 c	81.3 b
2	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	POST	100.0 a	100.0 a	99.8 a	100.0 a
	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	4 WAIT				
3	FUSILADE II	2.0	EC	0.38 LB AE/A	POST	99.5 a	99.8 a	100.0 a	97.3 a
	CROP OIL CONC.			1.0 % V/V					
	FUSILADE II	2.0	EC	0.38 LB AE/A	4 WAIT				
	CROP OIL CONC.			1.0 % V/V					
4	ENVOY	0.94	EC	0.25 LB A/A	POST	100.0 a	100.0 a	99.8 a	98.8 a
	CROP OIL CONC.			1.0 % V/V					
	ENVOY	0.94	EC	0.25 LB A/A	4 WAIT				
	CROP OIL CONC.			1.0 % V/V					
5	FUSILADE II	2.0	EC	0.38 LB AE/A	POST	99.0 a	100.0 a	99.8 a	100.0 a
	CROP OIL CONC.			1.0 % V/V					
	FUSILADE II	2.0	EC	0.38 LB AE/A	4 WAIT				
	CROP OIL CONC.			1.0 % V/V					
	ENVOY	0.94	EC	0.25 LB A/A	8 WAIT				
	CROP OIL CONC.			1.0 % V/V					
6	VANTAGE	1.0	EC	0.47 LB A/A	POST	94.8 ab	99.8 a	99.5 a	97.5 a
	CROP OIL CONC.			1.0 % V/V					
	VANTAGE	1.0	EC	0.47 LB A/A	4 WAIT				
	CROP OIL CONC.			1.0 % V/V					
7	REVOLVER	0.19	SC	0.03 LB A/A	POST	0.0 c	0.0 c	0.0 d	0.0 e
8	REVOLVER	0.19	SC	0.03 LB A/A	POST	0.0 c	0.0 c	0.0 d	0.0 e
	REVOLVER	0.19	SC	0.03 LB A/A	4 WAIT				
9	FINALE	1.0	SL	1.5 LB A/A	POST	90.8 ab	91.3 ab	87.5 c	57.5 d
10	FINALE	1.0	SL	1.5 LB A/A	POST	99.5 a	100.0 a	99.5 a	100.0 a
	FINALE	1.0	SL	1.5 LB A/A	4 WAIT				
11	REWARD	3.73	EC	1.0 LB A/A	POST	83.8 ab	93.3 ab	91.3 bc	70.0 c
	X-77			0.5 % V/V					
	REWARD	3.73	EC	1.0 LB A/A	4 WAIT				
	X-77			0.5 % V/V					
12	TRANXIT GTA	25	DF	0.03 LB A/A	POST	0.0 c	0.0 c	0.0 d	0.0 e
	X-77			0.5 % V/V					

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code	DIGSA												
Crop Code													
Part Rated	%	%	%	%									
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL									
Rating Date	Jul-28-05	Aug-11-05	Aug-19-05	Aug-24-05									
Crop Stage													
Weed Stage	5 WAIT	7 WAIT	8 WAIT	9 WAIT									
Trt-Eval Interval	34 DA-A	48 DA-A	56 DA-A	61 DA-A									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg								
13	TRANXIT GTA X-77	25	DF	0.03 LB A/A	POST	80.8	b	96.5	ab	95.3	ab	88.8	ab
	TRANXIT-GTA X-77	25	DF	0.03 LB A/A	4 WAIT								
				0.5 % V/V									
14	UNTREATED CHECK					0.0	c	0.0	c	0.0	d	0.0	e
LSD (P=.05)						11.36		5.47		5.31		10.65	
Standard Deviation						7.95		3.83		3.71		7.46	
CV						11.81		5.52		5.41		11.71	
Bartlett's X2						47.126		37.349		62.662		22.844	
P(Bartlett's X2)						0.001*		0.001*		0.001*		0.001*	
Replicate F						0.676		0.807		1.199		2.456	
Replicate Prob(F)						0.5720		0.4974		0.3229		0.0774	
Treatment F						125.778		568.163		593.323		136.709	
Treatment Prob(F)						0.0001		0.0001		0.0001		0.0001	

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code					DIGSA
Crop Code					%
Part Rated					CONTROL
Rating Data Type					Sep-15-05
Rating Date					
Crop Stage					
Weed Stage					12 WAIT
Tri-Eval Interval					83 DA-A
Tri No.	Treatment Name	Form Conc	Form Type	Rate Unit	Grow Stg
1	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	POST 90.0 a
2	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	POST 99.0 a
	ROUNDUP PRO	3.0	SL	1.5 LB AE/A	4 WAIT
3	FUSILADE II	2.0	EC	0.38 LB AE/A	POST 99.3 a
	CROP OIL CONC.			1.0 % V/V	
	FUSILADE II	2.0	EC	0.38 LB AE/A	4 WAIT
	CROP OIL CONC.			1.0 % V/V	
4	ENVOY	0.94	EC	0.25 LB A/A	POST 99.5 a
	CROP OIL CONC.			1.0 % V/V	
	ENVOY	0.94	EC	0.25 LB A/A	4 WAIT
	CROP OIL CONC.			1.0 % V/V	
5	FUSILADE II	2.0	EC	0.38 LB AE/A	POST 100.0 a
	CROP OIL CONC.			1.0 % V/V	
	FUSILADE II	2.0	EC	0.38 LB AE/A	4 WAIT
	CROP OIL CONC.			1.0 % V/V	
	ENVOY	0.94	EC	0.25 LB A/A	8 WAIT
	CROP OIL CONC.			1.0 % V/V	
6	VANTAGE	1.0	EC	0.47 LB A/A	POST 98.5 a
	CROP OIL CONC.			1.0 % V/V	
	VANTAGE	1.0	EC	0.47 LB A/A	4 WAIT
	CROP OIL CONC.			1.0 % V/V	
7	REVOLVER	0.19	SC	0.03 LB A/A	POST 0.0 c
8	REVOLVER	0.19	SC	0.03 LB A/A	POST 0.0 c
	REVOLVER	0.19	SC	0.03 LB A/A	4 WAIT
9	FINALE	1.0	SL	1.5 LB A/A	POST 57.5 b
10	FINALE	1.0	SL	1.5 LB A/A	POST 99.0 a
	FINALE	1.0	SL	1.5 LB A/A	4 WAIT
11	REWARD	3.73	EC	1.0 LB A/A	POST 67.5 b
	X-77			0.5 % V/V	
	REWARD	3.73	EC	1.0 LB A/A	4 WAIT
	X-77			0.5 % V/V	
12	TRANXIT GTA	25	DF	0.03 LB A/A	POST 0.0 c
	X-77			0.5 % V/V	
13	TRANXIT GTA	25	DF	0.03 LB A/A	POST 81.3 a
	X-77			0.5 % V/V	
	TRANXIT GTA	25	DF	0.03 LB A/A	4 WAIT
	X-77			0.5 % V/V	

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code					DIGSA
Crop Code					
Part Rated					%
Rating Data Type					CONTROL
Rating Date					Sep-15-05
Crop Stage					
Weed Stage					12 WAIT
Trt-Eval Interval					83 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg
14	UNTREATED CHECK				0.0 c
LSD (P=.05)					12.17
Standard Deviation					8.52
CV					13.38
Bartlett's X2					69.473
P(Bartlett's X2)					0.001*
Replicate F					0.907
Replicate Prob(F)					0.4467
Treatment F					105.364
Treatment Prob(F)					0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls).

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UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH MON 44951 IN COOL-SEASON TURFGRASS

Trial ID: 0508TG3
Location: S. AMHERST

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
Study Design: RANDOMIZED COMPLETE BLOCK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Aug-05-05		Sep-19-05			
Time of Day:	AM		AM			
Application Method:	SPRAY		SPRAY			
Application Timing:	POST		6 WAIT			
Air Temp., Unit:	33.3 C		21.2 C			
% Relative Humidity:	64		59			
Wind Velocity, Unit:	2 MPH		2 MPH			
Soil Temp., Unit:	26.8 C	25.8 C	20.9 C	20.5 C		
Soil Moisture:	@ 0.5"	@ 2.0"	@ 0.5"	@ 2.0"		
% Cloud Cover:	80		15			

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK		SAME			
Operating Pressure:	22 PSI					
Nozzle Type:	TEEJET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Boom Length, Unit:	20 INCH					
Boom Height, Unit:	17 INCH					
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Propellant:	CO2					

Oct-14-05 (0508TG3)

AOV Means Table Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH MON 44951 IN COOL-SEASON TURFGRASS

Trial ID: 0508TG3
Location: S. AMHERST

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code					CYPES	CYPES	CYPES	CYPES	
Crop Code					%	%	%	%	
Part Rated					CONTROL	CONTROL	CONTROL	CONTROL	
Rating Data Type					Aug-19-05	Aug-23-05	Aug-29-05	Sep-04-05	
Rating Date					2 WAIT	3 WAIT	4 WAIT	5 WAIT	
Crop Stage									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg				
1	MON 44951 X-77	75	WG	0.25 OZ/A 0.25 % V/V	POST	36.3 c	47.5 bc	65.0 b	72.5 a
2	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	POST	47.5 abc	72.5 a	85.0 ab	98.3 a
3	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	POST	55.0 ab	66.3 ab	85.0 ab	97.5 a
4	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	POST	52.5 abc	77.5 a	88.8 a	100.0 a
5	MON 44951 X-77	75	WG	1.25 OZ/A 0.25 % V/V	POST	57.5 a	75.0 a	90.0 a	99.5 a
6	MON 44951 X-77	75	WG	1.5 OZ/A 0.25 % V/V	POST	50.0 abc	65.0 ab	82.5 ab	96.5 a
7	MON 44951 X-77	75	WG	0.25 OZ/A 0.25 % V/V	POST	40.0 bc	42.5 c	65.0 b	90.8 a
	MON 44951 X-77	75	WG	0.25 OZ/A 0.25 % V/V	6 WAIT				
8	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	POST	42.5 abc	50.0 bc	68.8 ab	92.5 a
	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	6 WAIT				
9	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	POST	52.5 abc	65.0 ab	81.3 ab	92.5 a
	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	6 WAIT				
10	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	POST	57.5 a	58.8 abc	81.3 ab	97.0 a
	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	6 WAIT				
11	UNTREATED CHECK					0.0 d	0.0 d	0.0 c	0.0 b
LSD (P=.05)					10.57	14.43	13.90	23.09	
Standard Deviation					7.32	9.99	9.63	15.99	
CV					16.39	17.73	13.36	18.77	
Bartlett's X2					5.599	6.801	4.934	50.596	
P(Bartlett's X2)					0.779	0.658	0.84	0.001*	

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH MON 44951 IN COOL-SEASON TURFGRASS

Trial ID: 0508TG3
Location: S. AMHERST

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code				AGSPL	AGSPL	TRIRE
Crop Code				%	%	%
Part Rated				INJURY	INJURY	CONTROL
Rating Data Type				Aug-19-05	Sep-04-05	Sep-04-05
Rating Date				2 WAIT	5 WAIT	5 WAIT
Crop Stage				14 DA-A	30 DA-A	30 DA-A
Trt-Eval Interval						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	
1	MON 44951 X-77	75 WG		0.25 OZ/A 0.25 % V/V	POST	25.0 ab
2	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	POST	33.8 ab
3	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	POST	42.5 a
4	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	POST	40.0 ab
5	MON 44951 X-77	75 WG		1.25 OZ/A 0.25 % V/V	POST	47.5 a
6	MON 44951 X-77	75 WG		1.5 OZ/A 0.25 % V/V	POST	45.0 a
7	MON 44951 X-77	75 WG		0.25 OZ/A 0.25 % V/V	POST	32.5 ab
	MON 44951 X-77	75 WG		0.25 OZ/A 0.25 % V/V	6 WAIT	28.8 ab
8	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	POST	32.5 ab
	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	6 WAIT	36.3 ab
9	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	POST	52.5 a
	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	6 WAIT	80.0 a
10	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	POST	53.8 a
	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	6 WAIT	63.8 a
11	UNTREATED CHECK					0.0 b
	LSD (P=.05)			27.14	34.22	25.63
	Standard Deviation			18.80	23.70	17.75
	CV			51.05	50.49	27.26
	Bartlett's X2			4.743	16.383	24.723
	P(Bartlett's X2)			0.856	0.089	0.003*
	Replicate F			1.381	2.602	0.560
	Replicate Prob(F)			0.2676	0.0703	0.6458
	Treatment F			2.602	4.217	7.647
	Treatment Prob(F)			0.0209	0.0010	0.0001

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UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH MON 44951 IN COOL-SEASON TURFGRASS

Trial ID: 0508TG3B
Location: S. AMHERST

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
Study Design: RANDOMIZED COMPLETE BLOCK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Aug-29-05					
Time of Day:	PM					
Application Method:	SPRAY					
Application Timing:	POST					
Air Temp., Unit:	32 C					
% Relative Humidity:	48					
Wind Velocity, Unit:	2 MPH					
Soil Temp., Unit:	27 C		24.7 C			
Soil Moisture:	@ 0.5"		@ 2.0"			
% Cloud Cover:	10					

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEEJET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Boom Length, Unit:	20 INCH					
Boom Height, Unit:	17 INCH					
Carrier:	WATER					
Spray Volume, Unit:	100 GPA					
Propellant:	CO2					

Trt No

Treatment Application Comment

6 WAIT TREATMENTS (#7-10) WERE NOT APPLIED - RAINED OUT, GROUND FLOODED

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH MON 44951 IN COOL-SEASON TURFGRASS

Trial ID: 0508TG3B
Location: S. AMHERST

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code				AGSPL	AGSPL	AGSPL
Crop Code				%	%	%
Part Rated				INJURY	INJURY	INJURY
Rating Data Type				Sep-04-05	Sep-12-05	Sep-27-05
Rating Date				1 WAIT	2 WAIT	4 WAIT
Crop Stage				6 DA-A	14 DA-A	29 DA-A
Trt-Eval Interval						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	
1	MON 44951 X-77	75 WG		0.25 OZ/A 0.25 % V/V	POST	28.8 a
2	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	POST	29.9 a
3	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	POST	33.8 a
4	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	POST	22.5 a
5	MON 44951 X-77	75 WG		1.25 OZ/A 0.25 % V/V	POST	27.5 a
6	MON 44951 X-77	75 WG		1.5 OZ/A 0.25 % V/V	POST	36.3 a
7	MON 44951 X-77	75 WG		0.25 OZ/A 0.25 % V/V	POST	22.5 a
	MON 44951 X-77	75 WG		0.25 OZ/A 0.25 % V/V	6 WAIT	42.5 b
8	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	POST	35.0 a
	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	6 WAIT	55.0 ab
9	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	POST	26.3 a
	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	6 WAIT	52.5 ab
10	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	POST	31.3 a
	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	6 WAIT	57.5 ab
11	UNTREATED CHECK					3.8 b
LSD (P=.05)				14.79	18.14	25.24
Standard Deviation				10.23	12.56	17.45
CV				37.84	24.68	33.79
Bartlett's X2				13.036	5.183	6.293
P(Bartlett's X2)				0.161	0.818	0.71
Replicate F				1.759	2.093	2.189
Replicate Prob(F)				0.1770	0.1221	0.1108
Treatment F				3.083	9.403	7.988
Treatment Prob(F)				0.0086	0.0001	0.0001

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH MON 44951 IN COOL-SEASON TURFGRASS

Trial ID: 0508TG3B
 Location: S. AMHERST

Study Dir.: PRASANTA C. BHOWMIK
 Investigator: PRASANTA C. BHOWMIK

Weed Code					CYPES	CYPES	CYPES	
Crop Code								
Part Rated					%	%	%	
Rating Data Type					CONTROL	CONTROL	CONTROL	
Rating Date					Sep-04-05	Sep-12-05	Sep-27-05	
Crop Stage					1 WAIT	2 WAIT	4 WAIT	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Grow Stg			
1	MON 44951 X-77	75	WG	0.25 OZ/A 0.25 % V/V	POST	18.8 a	50.0 bc	83.8 a
2	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	POST	20.0 a	70.0 ab	87.8 a
3	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	POST	28.8 a	66.3 abc	92.5 a
4	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	POST	25.0 a	80.0 a	94.6 a
5	MON 44951 X-77	75	WG	1.25 OZ/A 0.25 % V/V	POST	26.3 a	73.8 ab	86.0 a
6	MON 44951 X-77	75	WG	1.5 OZ/A 0.25 % V/V	POST	22.5 a	65.0 abc	84.3 a
7	MON 44951 X-77	75	WG	0.25 OZ/A 0.25 % V/V	POST	16.3 a	40.0 c	83.8 a
	MON 44951 X-77	75	WG	0.25 OZ/A 0.25 % V/V	6 WAIT			
8	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	POST	25.0 a	40.0 c	89.0 a
	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	6 WAIT			
9	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	POST	23.8 a	58.8 abc	86.0 a
	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	6 WAIT			
10	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	POST	23.8 a	65.0 abc	92.8 a
	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	6 WAIT			
11	UNTREATED CHECK					0.0 b	0.0 d	0.0 b
LSD (P=.05)						9.58	17.48	17.42
Standard Deviation						6.63	12.10	12.04
CV						31.72	21.87	15.05
Bartlett's X2						6.457	15.207	8.716
P(Bartlett's X2)						0.693	0.085	0.367

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UNIVERSITY OF MASSACHUSETTS-AMHERST

BROADLEAF WEED CONTROL IN COOL-SEASON TURFGRASS WITH MON 44951

Trial ID: 0509TG4
Location: TRC-SDF

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
Study Design: RANDOMIZED COMPLETE BLOCK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Jun-08-05		Jul-20-05			
Time of Day:	AM		AM			
Application Method:	SPRAY		SPRAY			
Application Timing:	POST		6 WAIT			
Air Temp., Unit:	30 C		26.7 C			
% Relative Humidity:	48		54			
Wind Velocity, Unit:	3 MPH		5 MPH			
Soil Temp., Unit:	22.5 C	21.2 C	26.1 C	25.4 C		
Soil Moisture:	@ 0.5"	@ 2.0"	@ 0.5"	@ 2.0"		
% Cloud Cover:	0		0			

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK		SAME			
Operating Pressure:	22 PSI					
Nozzle Type:	TEEJET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Boom Length, Unit:	20 INCH					
Boom Height, Unit:	17 INCH					
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Propellant:	CO2					

Oct-14-05 (0509TG4)

AOV Means Table Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

BROADLEAF WEED CONTROL IN COOL-SEASON TURFGRASS WITH MON 44951

Trial ID: 0509TG4
Location: TRC-SDF

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code	POAPR	POAPR	POAPR	POAPR	POAPR					
Crop Code	COLOR	COLOR	COLOR	COLOR	COLOR					
Part Rated										
Rating Data Type										
Rating Unit	1-9	1-9	1-9	1-9	1-9					
Rating Date	Jun-15-05	Jun-24-05	Jun-30-05	Jul-13-05	Jul-21-05					
Crop Stage	1 WAIT	2 WAIT	3 WAIT	5 WAIT	6 WAIT					
Trt-Eval Interval	7 DA-A	16 DA-A	22 DA-A	35 DA-A	43 DA-A					
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg					
1	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	POST	8.38 ab	8.38 abc	8.63 ab	8.63 abc	9.00 a
2	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	POST	8.50 ab	8.50 abc	8.38 bc	8.88 ab	9.00 a
3	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	POST	8.13 b	8.13 bcd	8.25 bc	8.63 abc	9.00 a
4	MON 44951 X-77	75 WG		1.5 OZ/A 0.25 % V/V	POST	8.25 b	7.88 cd	7.88 c	8.50 abc	8.88 a
5	MON 44951 X-77	75 WG		2.0 OZ/A 0.25 % V/V	POST	8.00 b	7.63 d	7.38 d	8.00 c	8.88 a
6	MON 44951 X-77 MON 44951 X-77	75 WG 75 WG		0.5 OZ/A 0.25 % V/V 0.5 OZ/A 0.25 % V/V	POST 6 WAIT	8.50 ab	8.63 ab	8.38 bc	8.63 abc	8.50 ab
7	MON 44951 X-77 MON 44951 X-77	75 WG 75 WG		0.75 OZ/A 0.25 % V/V 0.75 OZ/A 0.25 % V/V	POST 6 WAIT	8.38 ab	8.38 abc	8.13 bc	8.88 ab	8.50 ab
8	MON 44951 X-77 MON 44951 X-77	75 WG 75 WG		1.0 OZ/A 0.25 % V/V 1.0 OZ/A 0.25 % V/V	POST 6 WAIT	8.25 b	8.00 bcd	8.38 bc	8.25 bc	8.00 b
9	UNTREATED CK					9.00 a	9.00 a	9.00 a	9.00 a	9.00 a
LSD (P=.05)						0.464	0.445	0.426	0.450	0.462
Standard Deviation						0.318	0.305	0.292	0.308	0.316
CV						3.8	3.69	3.53	3.58	3.62
Bartlett's X2						3.032	1.49	3.822	3.781	4.423
P(Bartlett's X2)						0.882	0.96	0.80	0.805	0.352
Replicate F						11.954	6.758	2.041	3.195	1.572
Replicate Prob(F)						0.0001	0.0018	0.1349	0.0416	0.2220
Treatment F						3.240	7.509	9.816	4.244	4.838
Treatment Prob(F)						0.0121	0.0001	0.0001	0.0027	0.0012

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code	Crop Code	Part Rated	Rating Data Type	Rating Unit	Rating Date	Crop Stage	Trt-Eval Interval	POAPR COLOR	POAPR COLOR	POAPR COLOR	POAPR COLOR	POAPR COLOR
								1-9	1-9	1-9	1-9	1-9
					Jul-28-05	7 WAIT	50 DA-A	Aug-11-05	Aug-19-05	Aug-24-05	Sep-18-05	14 WAIT
								64 DA-A	72 DA-A	77 DA-A	102 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg						
1	MON 44951 X-77	75	WG	0.5	OZ/A 0.25 % V/V	POST		8.63 a	9.00 a	9.00 a	8.88 a	9.00 a
2	MON 44951 X-77	75	WG	0.75	OZ/A 0.25 % V/V	POST		9.00 a	9.00 a	9.00 a	8.88 a	8.88 a
3	MON 44951 X-77	75	WG	1.0	OZ/A 0.25 % V/V	POST		9.00 a	9.00 a	9.00 a	8.63 a	9.00 a
4	MON 44951 X-77	75	WG	1.5	OZ/A 0.25 % V/V	POST		8.88 a	8.88 a	8.75 a	8.88 a	8.75 a
5	MON 44951 X-77	75	WG	2.0	OZ/A 0.25 % V/V	POST		9.00 a	9.00 a	9.00 a	8.88 a	9.00 a
6	MON 44951 X-77	75	WG	0.5	OZ/A 0.25 % V/V	POST		7.63 b	6.88 b	7.25 b	7.25 b	8.88 a
	MON 44951 X-77	75	WG	0.5	OZ/A 0.25 % V/V	6 WAIT						
7	MON 44951 X-77	75	WG	0.75	OZ/A 0.25 % V/V	POST		7.75 b	7.00 b	7.13 b	7.00 b	8.88 a
	MON 44951 X-77	75	WG	0.75	OZ/A 0.25 % V/V	6 WAIT						
8	MON 44951 X-77	75	WG	1.0	OZ/A 0.25 % V/V	POST		7.75 b	6.75 b	6.25 c	6.50 c	9.00 a
	MON 44951 X-77	75	WG	1.0	OZ/A 0.25 % V/V	6 WAIT						
9	UNTREATED CK							9.00 a	9.00 a	9.00 a	8.88 a	8.88 a
LSD (P=.05)								0.500	0.429	0.424	0.445	0.258
Standard Deviation								0.343	0.294	0.291	0.305	0.177
CV								4.03	3.55	3.52	3.72	1.98
Bartlett's X2								4.479	2.194	1.593	6.282	0.099
P(Bartlett's X2)								0.345	0.334	0.661	0.616	0.999
Replicate F								2.108	0.215	1.616	5.863	2.667
Replicate Prob(F)								0.1257	0.8852	0.2118	0.0038	0.0706
Treatment F								12.961	51.604	55.192	41.273	1.000
Treatment Prob(F)								0.0001	0.0001	0.0001	0.0001	0.4613

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

BROADLEAF WEED CONTROL IN COOL-SEASON TURFGRASS WITH MON 44951

Trial ID: 0509TG4
Location: TRC-SDF

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code	TRIRE	TRIRE	TRIRE	TRIRE					
Crop Code									
Part Rated	%	%	%	%					
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL					
Rating Unit									
Rating Date	Jun-15-05	Jun-24-05	Jun-30-05	Jul-13-05					
Crop Stage	1 WAIT	2 WAIT	3 WAIT	5 WAIT					
Trt-Eval Interval	7 DA-A	16 DA-A	22 DA-A	35 DA-A					
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg				
1	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	POST	17.5 a	22.5 bc	37.5 b	17.5 cd
2	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	POST	20.0 a	30.0 bc	40.0 b	30.0 bcd
3	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	POST	20.0 a	47.5 ab	52.5 ab	55.0 ab
4	MON 44951 X-77	75 WG		1.5 OZ/A 0.25 % V/V	POST	25.0 a	42.5 ab	60.0 ab	76.3 a
5	MON 44951 X-77	75 WG		2.0 OZ/A 0.25 % V/V	POST	32.5 a	58.8 a	75.0 a	71.3 a
6	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	POST	20.0 a	21.3 bc	33.8 b	17.5 cd
	MON 44951 X-77	75 WG		0.5 OZ/A 0.25 % V/V	6 WAIT				
7	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	POST	13.8 a	25.0 bc	32.5 b	22.5 cd
	MON 44951 X-77	75 WG		0.75 OZ/A 0.25 % V/V	6 WAIT				
8	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	POST	17.5 a	28.8 bc	48.8 ab	37.5 bc
	MON 44951 X-77	75 WG		1.0 OZ/A 0.25 % V/V	6 WAIT				
9	UNTREATED CK					0.0 b	0.0 c	0.0 c	0.0 d
LSD (P=.05)						12.25	20.92	22.32	21.71
Standard Deviation						8.40	14.33	15.29	14.88
CV						45.45	46.69	36.22	40.89
Bartlett's X2						5.675	9.226	6.619	14.965
P(Bartlett's X2)						0.578	0.237	0.47	0.036*
Replicate F						2.611	2.113	1.924	0.715
Replicate Prob(F)						0.0747	0.1250	0.1526	0.5525
Treatment F						4.340	5.707	7.515	12.250
Treatment Prob(F)						0.0024	0.0004	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code				TRIRE	TRIRE	TRIRE	TRIRE
Crop Code							
Part Rated				%	%	%	%
Rating Data Type				CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							
Rating Date				Jul-21-05	Jul-28-05	Aug-11-05	Aug-19-05
Crop Stage				6 WAIT	7 WAIT	9 WAIT	10 WAIT
Trt-Eval Interval				43 DA-A	50 DA-A	64 DA-A	72 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Grow Stg		
1	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	POST	0.0 b	0.0 c
2	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	POST	5.0 b	0.0 c
3	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	POST	5.0 b	5.0 c
4	MON 44951 X-77	75	WG	1.5 OZ/A 0.25 % V/V	POST	13.8 b	7.5 c
5	MON 44951 X-77	75	WG	2.0 OZ/A 0.25 % V/V	POST	55.0 a	31.3 b
6	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	POST	11.3 b	75.0 a
	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	6 WAIT		75.0 ab
7	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	POST	22.5 b	77.5 a
	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	6 WAIT		67.5 b
8	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	POST	20.0 b	75.0 a
	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	6 WAIT		85.0 a
9	UNTREATED CK					0.0 b	0.0 c
LSD (P=.05)				14.86	8.85	13.00	12.63
Standard Deviation				10.18	6.07	8.90	8.65
CV				69.15	20.13	30.67	38.22
Bartlett's X2				3.418	2.619	2.336	0.348
P(Bartlett's X2)				0.755	0.758	0.674	0.951
Replicate F				0.884	3.491	3.326	4.213
Replicate Prob(F)				0.4632	0.0312	0.0366	0.0158
Treatment F				11.318	137.736	67.318	49.878
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code					TRIRE	TRIRE
Crop Code					%	%
Part Rated					CONTROL	CONTROL
Rating Data Type					Aug-24-05	Sep-18-05
Rating Unit					11 WAIT	14 WAIT
Rating Date					77 DA-A	102 DA-A
Crop Stage						
Trt-Eval Interval						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	
1	MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V	POST	0.0 b
2	MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V	POST	0.0 b
3	MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V	POST	0.0 b
4	MON 44951 X-77	75	WG	1.5 OZ/A 0.25 % V/V	POST	0.0 b
5	MON 44951 X-77	75	WG	2.0 OZ/A 0.25 % V/V	POST	17.5 b
6	MON 44951 X-77 MON 44951 X-77	75	WG	0.5 OZ/A 0.25 % V/V 0.5 OZ/A 0.25 % V/V	POST 6 WAIT	63.8 a
7	MON 44951 X-77 MON 44951 X-77	75	WG	0.75 OZ/A 0.25 % V/V 0.75 OZ/A 0.25 % V/V	POST 6 WAIT	60.0 a
8	MON 44951 X-77 MON 44951 X-77	75	WG	1.0 OZ/A 0.25 % V/V 1.0 OZ/A 0.25 % V/V	POST 6 WAIT	76.3 a
9	UNTREATED CK					10.0 ab
LSD (P=.05)					17.10	8.60
Standard Deviation					11.71	5.89
CV					48.47	169.71
Bartlett's X2					2.779	0.063
P(Bartlett's X2)					0.427	0.969
Replicate F					4.299	2.260
Replicate Prob(F)					0.0146	0.1073
Treatment F					31.077	4.040
Treatment Prob(F)					0.0001	0.0037

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

TIMING OF APPLICATION OF CERTAINTY FOR TALL FESCUE CONTROL IN KENTUCKY BLUEGRASS

Trial ID: 0510TG5
Location: TRC-SDF

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
Study Design: RANDOMIZED COMPLETE BLOCK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Jun-08-05		Jun-30-05		Jul-20-05	
Time of Day:	AM		AM		AM	
Application Method:	SPRAY		SPRAY		SPRAY	
Application Timing:	POST		3 WAIT		6 WAIT	
Air Temp., Unit:	30 C		23.9 C		26.7 C	
% Relative Humidity:	48		78		54	
Wind Velocity, Unit:	3 MPH		2 MPH		5 MPH	
Soil Temp., Unit:	22.5 C	21.2 C	25.2 C	24.3 C	26.1 C	25.4 C
Soil Moisture:	@ 0.5"	@ 2.0"	@ 0.5"	@ 2.0"	@ 0.5"	@ 2.0"
% Cloud Cover:	0		95		0	

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK		SAME		SAME	
Operating Pressure:	22 PSI					
Nozzle Type:	TEEJET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Boom Length, Unit:	20 INCH					
Boom Height, Unit:	17 INCH					
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Propellant:	CO2					

UNIVERSITY OF MASSACHUSETTS-AMHERST

TIMING OF APPLICATION OF CERTAINTY FOR TALL FESCUE CONTROL IN KENTUCKY BLUEGRASS

Trial ID: 0510TG5
Location: TRC-SDF

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code					TRIRE	TRIRE	TRIRE	TRIRE
Crop Code								
Part Rated					%	%	%	%
Rating Data Type					CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit								
Rating Date					Jun-15-05	Jun-24-05	Jun-30-05	Jul-13-05
Crop Stage					1 WAIT	2 WAIT	3 WAIT	5 WAIT
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg			
1	CERTAINTY X-77	75 WG		0.375 OZ A/A POST 0.25 % V/V		17.5 b	32.5 b	62.5 b
	CERTAINTY X-77	75 WG		0.375 OZ A/A 3 WAIT 0.25 % V/V				
	CERTAINTY X-77	75 WG		0.375 OZ A/A 6 WAIT 0.25 % V/V				
2	CERTAINTY X-77	75 WG		0.56 OZ A/A POST 0.25 % V/V		18.3 b	40.0 ab	60.0 b
	CERTAINTY X-77	75 WG		0.56 OZ A/A 3 WAIT 0.25 % V/V				
3	CERTAINTY X-77	75 WG		0.75 OZ A/A POST 0.25 % V/V		26.8 a	43.3 ab	75.0 a
	CERTAINTY X-77	75 WG		0.75 OZ A/A 3 WAIT 0.25 % V/V				
4	CERTAINTY X-77	75 WG		0.75 OZ A/A POST 0.25 % V/V		25.0 a	55.0 a	77.5 a
5	UNTREATED CK					0.0 c	0.0 c	0.0 c
LSD (P=.05)					5.33	13.70	12.10	11.96
Standard Deviation					3.46	8.89	7.85	7.77
CV					19.76	26.03	14.28	10.89
Bartlett's X2					2.358	2.624	3.111	13.645
P(Bartlett's X2)					0.501	0.453	0.375	0.003*
Replicate F					0.418	1.237	1.676	1.876
Replicate Prob(F)					0.7433	0.3392	0.2249	0.1874
Treatment F					37.516	21.772	65.068	107.758
Treatment Prob(F)					0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code					TRIRE	TRIRE	TRIRE	TRIRE	
Crop Code									
Part Rated					%	%	%	%	
Rating Data Type					CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit									
Rating Date					Jul-21-05	Jul-28-05	Aug-11-05	Aug-19-05	
Crop Stage					6 WAIT	7 WAIT	9 WAIT	10 WAIT	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg				
1	CERTAINTY X-77	75	WG	0.375 OZ A/A 0.25 % V/V	POST	93.8 a	95.3 a	96.0 a	97.8 a
	CERTAINTY X-77	75	WG	0.375 OZ A/A 0.25 % V/V	3 WAIT				
	CERTAINTY X-77	75	WG	0.375 OZ A/A 0.25 % V/V	6 WAIT				
2	CERTAINTY X-77	75	WG	0.56 OZ A/A 0.25 % V/V	POST	94.3 a	81.0 b	28.3 b	23.3 c
	CERTAINTY X-77	75	WG	0.56 OZ A/A 0.25 % V/V	3 WAIT				
3	CERTAINTY X-77	75	WG	0.75 OZ A/A 0.25 % V/V	POST	98.8 a	98.0 a	95.0 a	91.8 b
	CERTAINTY X-77	75	WG	0.75 OZ A/A 0.25 % V/V	3 WAIT				
4	CERTAINTY X-77	75	WG	0.75 OZ A/A 0.25 % V/V	POST	45.0 b	0.0 c	0.0 c	0.0 d
5	UNTREATED CK					0.0 c	0.0 c	0.0 c	0.0 d
LSD (P=.05)					11.98	9.62	8.67	3.38	
Standard Deviation					7.77	6.24	5.63	2.19	
CV					11.71	11.38	12.84	5.15	
Bartlett's X2					11.26	1.219	2.312	2.379	
P(Bartlett's X2)					0.01*	0.27	0.128	0.304	
Replicate F					0.162	1.889	1.037	2.672	
Replicate Prob(F)					0.9199	0.1852	0.4113	0.0947	
Treatment F					123.113	261.521	297.473	1967.662	
Treatment Prob(F)					0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code					TRIRE	TRIRE
Crop Code					%	%
Part Rated					CONTROL	CONTROL
Rating Data Type					Aug-24-05	Sep-15-05
Rating Unit					11 WAIT	14 WAIT
Rating Date						
Crop Stage						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	
1	CERTAINTY X-77	75	WG	0.375 OZ A/A POST 0.25 % V/V		93.8 a
	CERTAINTY X-77	75	WG	0.375 OZ A/A 3 WAIT 0.25 % V/V		70.0 a
	CERTAINTY X-77	75	WG	0.375 OZ A/A 6 WAIT 0.25 % V/V		
2	CERTAINTY X-77	75	WG	0.56 OZ A/A POST 0.25 % V/V		28.3 b
	CERTAINTY X-77	75	WG	0.56 OZ A/A 3 WAIT 0.25 % V/V		6.8 b
3	CERTAINTY X-77	75	WG	0.75 OZ A/A POST 0.25 % V/V		88.3 a
	CERTAINTY X-77	75	WG	0.75 OZ A/A 3 WAIT 0.25 % V/V		10.0 b
4	CERTAINTY X-77	75	WG	0.75 OZ A/A POST 0.25 % V/V		0.0 c
5	UNTREATED CK					0.0 c
LSD (P=.05)					6.13	16.93
Standard Deviation					3.98	10.99
CV					9.47	63.34
Bartlett's X2					0.247	4.994
P(Bartlett's X2)					0.884	0.082
Replicate F					2.360	1.704
Replicate Prob(F)					0.1228	0.2192
Treatment F					538.717	29.312
Treatment Prob(F)					0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

TIMING OF APPLICATION OF CERTAINTY FOR TALL FESCUE CONTROL IN KENTUCKY BLUEGRASS					
Trial ID: 0510TG5		Study Dir.: PRASANTA C. BHOWMIK			
Location: TRC-SDF		Investigator: PRASANTA C. BHOWMIK			

Weed Code	FESAR	FESAR	FESAR	FESAR	FESAR						
Crop Code	COLOR	%	%	%	%						
Part Rated		INJURY	INJURY	INJURY	INJURY						
Rating Data Type	1-9										
Rating Unit	Jun-15-05	Jun-24-05	Jun-30-05	Jul-13-05	Jul-21-05						
Rating Date	1 WAIT	2 WAIT	3 WAIT	5 WAIT	6 WAIT						
Crop Stage											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg					
1	CERTAINTY X-77	75 WG		0.375 OZ	A/A POST		8.00 b	23.8 a	27.5 a	77.5 a	100.0 a
	CERTAINTY X-77	75 WG		0.375 OZ	A/A 3 WAIT						
	CERTAINTY X-77	75 WG		0.375 OZ	A/A 6 WAIT						
2	CERTAINTY X-77	75 WG		0.56 OZ	A/A POST		8.00 b	25.0 a	33.8 a	86.3 a	100.0 a
	CERTAINTY X-77	75 WG		0.56 OZ	A/A 3 WAIT						
3	CERTAINTY X-77	75 WG		0.75 OZ	A/A POST		7.88 b	26.3 a	30.0 a	90.0 a	100.0 a
	CERTAINTY X-77	75 WG		0.75 OZ	A/A 3 WAIT						
4	CERTAINTY X-77	75 WG		0.75 OZ	A/A POST		7.75 b	28.8 a	41.3 a	42.5 b	25.0 b
5	UNTREATD CK						9.00 a	0.0 b	0.0 b	0.0 c	0.0 c
LSD (P=.05)							0.372	6.01	17.67	15.88	2.81
Standard Deviation							0.242	3.90	11.47	10.31	1.83
CV							2.97	18.79	43.27	17.4	2.81
Bartlett's X2							0.748	0.0	6.412	7.124	0.0
P(Bartlett's X2)							0.688	0.001*	0.093	0.068	0.00*
Replicate F							1.357	0.521	0.976	0.137	1.000
Replicate Prob(F)							0.3026	0.6762	0.4361	0.9358	0.4262
Treatment F							17.143	36.288	7.498	54.576	2850.000
Treatment Prob(F)							0.0001	0.0001	0.0029	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code					FESAR	FESAR	FESAR	FESAR	FESAR
Crop Code					%	%	%	%	%
Part Rated					INJURY	INJURY	INJURY	INJURY	INJURY
Rating Data Type									
Rating Unit									
Rating Date					Jul-28-05	Aug-11-05	Aug-19-05	Aug-24-05	Sep-15-05
Crop Stage					7 WAIT	9 WAIT	10 WAIT	11 WAIT	14 WAIT
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg				
1	CERTAINTY X-77	75 WG		0.375 OZ A/A POST 0.25 % V/V		100.0 a	100.0 a	100.0 a	100.0 a
	CERTAINTY X-77	75 WG		0.375 OZ A/A 3 WAIT 0.25 % V/V					
	CERTAINTY X-77	75 WG		0.375 OZ A/A 6 WAIT 0.25 % V/V					
2	CERTAINTY X-77	75 WG		0.56 OZ A/A POST 0.25 % V/V		100.0 a	99.8 a	100.0 a	100.0 a
	CERTAINTY X-77	75 WG		0.56 OZ A/A 3 WAIT 0.25 % V/V					
3	CERTAINTY X-77	75 WG		0.75 OZ A/A POST 0.25 % V/V		100.0 a	100.0 a	100.0 a	100.0 a
	CERTAINTY X-77	75 WG		0.75 OZ A/A 3 WAIT 0.25 % V/V					
4	CERTAINTY X-77	75 WG		0.75 OZ A/A POST 0.25 % V/V		5.0 b	0.0 b	0.0 b	0.0 b
5	UNTREATD CK					0.0 b	0.0 b	0.0 b	0.0 b
LSD (P=.05)					6.89	0.34	0.00	0.00	0.00
Standard Deviation					4.47	0.22	0.00	0.00	0.00
CV					7.33	0.37	0.0	0.0	0.0
Bartlett's X2					0.0	0.0	0.0	0.0	0.0
P(Bartlett's X2)					0.00*	0.00*	0.00*	0.00*	0.00*
Replicate F					1.000	1.000	0.000	0.000	0.000
Replicate Prob(F)					0.4262	0.4262	1.0000	1.0000	1.0000
Treatment F					571.000	239601.000	0.000	0.000	0.000
Treatment Prob(F)					0.0001	0.0001	1.0000	1.0000	1.0000

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)



GREENHOUSE

UNIVERSITY OF MASSACHUSETTS-AMHERST

TOLERANCE OF KENTUCKY BLUEGRASS TO MON 44951

Trial ID: 0451GH1-A Study Dir.: PRASANTA C. BHOWMIK
 Location: GROWTH CHAMBER Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK
 Investigator: PRASANTA C. BHOWMIK
 Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
 Study Design: SPLIT-PLOT

MAINTENANCE

Field Prep./Maintenance: MOWED 2X per WEEK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Feb-13-04					
Time of Day:	AM					
Application Method:	SPRAY					

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEEJET					
Nozzle Size:	11004 VS					
Boom Height, Unit:	12 INCH					
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Propellant:	CO2					

Trt No	Treatment Application Comment
	10 WEEK OLD KENTUCKY BLUEGRASS PLANTED 12/4/03, 5 WK OLD PLANTED 1/8/04

UNIVERSITY OF MASSACHUSETTS-AMHERST

TOLERANCE OF KENTUCKY BLUEGRASS TO MON 44951

Trial ID: 0451GH1-A

Study Dir.: PRASANTA C. BHOWMIK

Location: GROWTH CHAMBER

Investigator: PRASANTA C. BHOWMIK

Rating Data Type				HEIGHT	COLOR	COLOR
Rating Unit				(mm)	(1-9)	(1-9)
Rating Date				Feb-18-04	Feb-18-04	Feb-27-04
Crop Stage				5 DAT	5 DAT	2 WAT
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	
1	5 WEEK OLD K.BLUE UNTREATED NIS (MON 0818)			0.25 % V/V	POST	17.5 a 8.0 ab 7.88 a
2	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.01 LB A/A 0.25 % V/V	POST	7.0 bc 6.3 b-e 2.00 bc
3	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.02 LB A/A 0.25 % V/V	POST	6.3 bc 6.0 b-e 1.75 bc
4	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.04 LB A/A 0.25 % V/V	POST	6.3 bc 5.8 cde 1.75 bc
5	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.06 LB A/A 0.25 % V/V	POST	5.5 c 4.8 e 1.25 c
6	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.08 LB A/A 0.25 % V/V	POST	6.0 bc 5.0 de 1.00 c
7	10 WEEK OLD K.BLUE UNTREATED NIS (MON 0818)			0.25 % V/V	POST	18.8 a 8.5 a 8.00 a
8	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.01 LB A/A 0.25 % V/V	POST	9.0 b 7.5 abc 7.75 a
9	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.02 LB A/A 0.25 % V/V	POST	9.0 b 7.0 a-d 5.75 a
10	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.04 LB A/A 0.25 % V/V	POST	9.0 b 6.8 a-e 4.00 b
11	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.06 LB A/A 0.25 % V/V	POST	8.3 bc 6.3 b-e 3.00 bc
12	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.08 LB A/A 0.25 % V/V	POST	8.3 bc 6.5 a-e 1.75 bc
LSD (P=.05)				1.92	1.36	1.697
Standard Deviation				1.33	0.95	1.175
CV				14.42	14.49	30.75
Bartlett's X2				7.373	13.78	18.762
P(Bartlett's X2)				0.768	0.245	0.016*

UNIVERSITY OF MASSACHUSETTS-AMHERST

TOLERANCE OF KENTUCKY BLUEGRASS TO MON 44951

Trial ID: 0451GH1-A

Study Dir.: PRASANTA C. BHOWMIK

Location: GROWTH CHAMBER

Investigator: PRASANTA C. BHOWMIK

Rating Data Type					%	%	%	%	
Rating Unit					LIVE	LIVE	LIVE	LIVE	
Rating Date					Feb-27-04	Mar-05-04	Mar-11-04	Mar-19-04	
Crop Stage					2 WAT	3 WAT	4 WAT	5 WAT	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg				
1	5 WEEK OLD K.BLUE UNTREATED NIS (MON 0818)			0.25 % V/V	POST	87.0 a	87.5 a	81.3 a	82.5 a
2	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.01 LB A/A 0.25 % V/V	POST	18.8 cd	4.3 c	1.3 d	5.0 c
3	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.02 LB A/A 0.25 % V/V	POST	11.3 cd	0.0 c	0.0 d	0.0 c
4	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.04 LB A/A 0.25 % V/V	POST	11.3 cd	0.0 c	0.0 d	0.0 c
5	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.06 LB A/A 0.25 % V/V	POST	3.8 d	0.0 c	0.0 d	0.0 c
6	5 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.08 LB A/A 0.25 % V/V	POST	2.5 d	0.0 c	0.0 d	0.0 c
7	10 WEEK OLD K.BLUE UNTREATED NIS (MON 0818)			0.25 % V/V	POST	85.0 a	82.5 a	82.5 a	81.3 a
8	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.01 LB A/A 0.25 % V/V	POST	78.8 a	73.8 a	55.0 b	50.0 b
9	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.02 LB A/A 0.25 % V/V	POST	61.3 ab	45.0 b	26.3 c	22.5 c
10	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.04 LB A/A 0.25 % V/V	POST	43.8 bc	28.8 bc	6.3 d	5.3 c
11	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.06 LB A/A 0.25 % V/V	POST	32.5 bcd	16.3 c	4.3 d	2.3 c
12	10 WEEK OLD K.BLUE MON 44951 NIS (MON 0818)	75 DG		0.08 LB A/A 0.25 % V/V	POST	15.0 cd	4.3 c	1.3 d	0.3 c
LSD (P=.05)						23.82	18.34	14.14	16.11
Standard Deviation						16.49	12.70	9.79	11.16
CV						43.91	44.53	45.55	53.78
Bartlett's X2						27.755	22.205	37.749	35.909
P(Bartlett's X2)						0.004*	0.002*	0.001*	0.001*

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UNIVERSITY OF MASSACHUSETTS-AMHERST

TOLERANCE OF CREEPING BENTGRASS TO MON 44951

Trial ID: 0451GH1-B Study Dir.: PRASANTA C. BHOWMIK
 Location: GROWTH CHAMBER Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK
 Investigator: PRASANTA C. BHOWMIK
 Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
 Study Design: SPLIT-PLOT

MAINTENANCE

Field Prep./Maintenance: MOWED 2X per WEEK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Feb-13-04					
Time of Day:	AM					
Application Method:	SPRAY					

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEEJET					
Nozzle Size:	11004 VS N/A					
Boom Height, Unit:	12 INCH					
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Propellant:	CO2					

Trt No	Treatment Application Comment
	10 WEEK OLD CREEPING BENT PLANTED 12/4/03, 5 WEEK OLD PLANTED 1/8/04

UNIVERSITY OF MASSACHUSETTS-AMHERST

TOLERANCE OF CREEPING BENTGRASS TO MON 44951

Trial ID: 0451GH1-B Study Dir.: PRASANTA C. BHOWMIK
 Location: GROWTH CHAMBER Investigator: PRASANTA C. BHOWMIK

Rating Data Type				HEIGHT	COLOR	%
Rating Unit				(mm)	(1-9)	LIVE
Rating Date				Feb-18-04	Feb-18-04	Feb-27-04
Crop Stage				5 DAT	5 DAT	2 WAT
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Grow Stg	
1	5 WEEK OLD C.BENT UNTREATED NIS (MON 0818)			0.25 % V/V	POST	19.5 a 5.5 a 0.0 a
2	5 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.01 LB A/A 0.25 % V/V	POST	6.3 b 3.0 ab 0.0 a
3	5 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.02 LB A/A 0.25 % V/V	POST	6.8 b 4.8 ab 0.0 a
4	5 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.04 LB A/A 0.25 % V/V	POST	7.3 b 5.5 a 0.0 a
5	5 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.06 LB A/A 0.25 % V/V	POST	7.3 b 4.8 ab 0.0 a
6	5 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.08 LB A/A 0.25 % V/V	POST	7.3 b 4.5 ab 0.0 a
7	10 WEEK OLD C.BENT UNTREATED NIS (MON 0818)			0.25 % V/V	POST	18.3 a 3.3 ab 22.5 a
8	10 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.01 LB A/A 0.25 % V/V	POST	7.8 b 3.0 ab 1.3 a
9	10 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.02 LB A/A 0.25 % V/V	POST	7.0 b 2.5 b 0.0 a
10	10 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.04 LB A/A 0.25 % V/V	POST	6.8 b 3.5 ab 0.0 a
11	10 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.06 LB A/A 0.25 % V/V	POST	7.3 b 3.5 ab 0.0 a
12	10 WEEK OLD C.BENT MON 44951 NIS (MON 0818)	75 DG		0.08 LB A/A 0.25 % V/V	POST	6.8 b 3.5 ab 0.0 a
LSD (P=.05)				2.20	1.53	17.22
Standard Deviation				1.53	1.06	11.92
CV				16.96	26.95	602.49
Bartlett's X2				15.721	9.336	12.578
P(Bartlett's X2)				0.152	0.591	0.001*

UNIVERSITY OF MASSACHUSETTS-AMHERST

TOLERANCE OF 14 WEEK OLD CREEPING BENTGRASS PLUGS TO MESOTRIONE

Trial ID: 0525GH6	Study Dir.: PRASANTA C. BHOWMIK
Location: GROWTH ROOM	Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK
 Investigator: PRASANTA C. BHOWMIK

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

Plot Width, Unit: 1 FT Plot Length, Unit: 2 FT Reps: 4
 Study Design: RANDOMIZED COMPLETE BLOCK

MAINTENANCE

Field Prep./Maintenance: MOWED THREE DAYS PRIOR TO SPRAY (MARCH 8)

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Mar-11-05					
Time of Day:	AM					
Application Method:	SPRAY					
Application Timing:	POST					

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEEJET XR					
Nozzle Size:	11004 VS					
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Propellant:	CO2					

UNIVERSITY OF MASSACHUSETTS-AMHERST

TOLERANCE OF 14 WEEK OLD CREEPING BENTGRASS PLUGS TO MESOTRIONE

Trial ID: 0525GH6
 Location: GROWTH ROOM

Study Dir.: PRASANTA C. BHOWMIK
 Investigator: PRASANTA C. BHOWMIK

Crop Code					AGSPL	AGSPL	AGSPL	AGSPL	
Part Rated					%	%	%	%	
Rating Data Type					INJURY	INJURY	INJURY	INJURY	
Rating Unit									
Rating Date					Mar-21-05	Mar-25-05	Apr-01-05	Apr-08-05	
Crop Stage Scale					10 DAT	2 WAT	3 WAT	4 WAT	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Grow. Stg				
1	MESOTRIONE	4.0	SC	0.007 LB A/A	POST	66.3 ab	74.5 a	91.0 a	95.8 a
2	MESOTRIONE	4.0	SC	0.015 LB A/A	POST	62.5 ab	83.8 a	94.3 a	96.3 a
3	MESOTRIONE	4.0	SC	0.031 LB A/A	POST	66.3 ab	83.8 a	95.0 a	99.0 a
4	MESOTRIONE	4.0	SC	0.062 LB A/A	POST	71.3 ab	85.0 a	96.0 a	99.5 a
5	MESOTRIONE	4.0	SC	0.125 LB A/A	POST	86.3 a	94.0 a	98.8 a	99.5 a
6	MESOTRIONE	4.0	SC	0.25 LB A/A	POST	72.5 ab	92.5 a	99.0 a	99.5 a
7	UNTREATED CHECK					24.5 b	23.8 b	24.5 b	22.5 b
LSD (P=.05)					33.78	28.37	27.81	25.32	
Standard Deviation					22.74	19.10	18.72	17.05	
CV					35.41	24.88	21.89	19.5	
Bartlett's X2					11.313	27.056	48.149	75.312	
P(Bartlett's X2)					0.079	0.001*	0.001*	0.001*	
Replicate F					1.850	1.723	1.338	1.236	
Replicate Prob(F)					0.1742	0.1980	0.2933	0.3258	
Treatment F					2.826	6.446	8.346	11.320	
Treatment Prob(F)					0.0406	0.0009	0.0002	0.0001	

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

Crop Code	AGSPL	AGSPL						
Part Rated	%	%						
Rating Data Type	INJURY	INJURY						
Rating Unit								
Rating Date	Apr-15-05	Apr-22-05						
Crop Stage Scale	5 WAT	6 WAT						
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg		
1	MESOTRIONE	4.0	SC	0.007	LB A/A	POST	94.3	a
2	MESOTRIONE	4.0	SC	0.015	LB A/A	POST	95.0	a
3	MESOTRIONE	4.0	SC	0.031	LB A/A	POST	98.8	a
4	MESOTRIONE	4.0	SC	0.062	LB A/A	POST	99.8	a
5	MESOTRIONE	4.0	SC	0.125	LB A/A	POST	99.5	a
6	MESOTRIONE	4.0	SC	0.25	LB A/A	POST	99.8	a
7	UNTREATED CHECK						20.0	b
LSD (P=.05)							22.77	22.48
Standard Deviation							15.33	15.13
CV							17.68	17.3
Bartlett's X2							65.267	43.549
P(Bartlett's X2)							0.001*	0.001*
Replicate F							1.370	1.252
Replicate Prob(F)							0.2838	0.3203
Treatment F							14.821	15.497
Treatment Prob(F)							0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

TOLERANCE OF 14 WEEK OLD CREEPING BENTGRASS PLUGS TO MESOTRIONE

Trial ID: 0525GH6
 Location: GROWTH ROOM

Study Dir.: PRASANTA C. BHOWMIK
 Investigator: PRASANTA C. BHOWMIK

					AGSPL	AGSPL	AGSPL
					CLIPPING	CLIPPING	CLIPPING
					FW (gm)	FW (gm)	FW (gm)
					Mar-25-05	Apr-08-05	Apr-22-05
					2 WAT	4 WAT	6 WAT
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Stg	
1	MESOTRIONE	4.0	SC	0.007	LB A/A	POST	0.350 a
2	MESOTRIONE	4.0	SC	0.015	LB A/A	POST	0.340 a
3	MESOTRIONE	4.0	SC	0.031	LB A/A	POST	0.395 a
4	MESOTRIONE	4.0	SC	0.062	LB A/A	POST	0.370 a
5	MESOTRIONE	4.0	SC	0.125	LB A/A	POST	0.230 a
6	MESOTRIONE	4.0	SC	0.25	LB A/A	POST	0.220 a
7	UNTREATED CHECK						0.660 a
LSD (P=.05)					0.2916	0.1081	0.1817
Standard Deviation					0.1963	0.0728	0.1223
CV					53.57	107.78	118.89
Bartlett's X2					6.859	44.195	38.361
P(Bartlett's X2)					0.334	0.001*	0.001*
Replicate F					1.767	1.609	1.189
Replicate Prob(F)					0.1894	0.2222	0.3419
Treatment F					2.215	10.539	14.941
Treatment Prob(F)					0.0893	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)



FIELD CROPS

UNIVERSITY OF MASSACHUSETTS-AMHERST

WEED CONTROL IN FIELD CORN WITH VARIOUS PRODUCTS

Trial ID: 0551CN1
Location: BLOCK 10

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

CROP AND PEST DESCRIPTION

Weed 1.CHEAL

2.DIGSA

Crop 1:ZEAMA

Variety: CPS 4081 RR

Planting Date: May-23-05

Plot Width, Unit: 7.5 FT

Plot Length, Unit: 20 FT

Reps: 4

Study Design: RANDOMIZED COMPLETE BLOCK

MAINTENANCE

Field Prep./Maintenance: PLOW, BROADCAST 15-8-12 @ 500 lbs/A, DISC

SOIL DESCRIPTION

Texture: SILT LOAM
pH: 7.0 CEC: 5.6

% OM: 3.1
Soil Name: HADLEY SILT LOAM

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	May-26-05		Jun-14-05		Jun-21-05	
Time of Day:	AM		AM		AM	
Application Method:	SPRAY		SPRAY		SPRAY	
Application Timing:	PRE		E-POST		M-POST	
Air Temp., Unit:	11.1 C		26.7 C		22.2 C	
% Relative Humidity:	92		76		66	
Wind Velocity, Unit:	4 MPH		0 MPH		4 MPH	
Soil Temp., Unit:	12.3 C	11.3 C	30 C	28.9 C	27.1 C	23.5 C
Soil Moisture:	@ 0.5"	@ 2.0"	@ 0.5"	@ 2.0"	@ 0.5"	@ 2.0"
% Cloud Cover:	100		95		30	

UNIVERSITY OF MASSACHUSETTS-AMHERST

CROP STAGE AT EACH APPLICATION						
	A	B	C	D	E	F
ZEAMA			6 LEAF 18 INCH		6-7 LEAF 27 INCH	

APPLICATION EQUIPMENT						
	A	B	C	D	E	F
Appl. Equipment:	BACKPACK		SAME		SAME	
Operating Pressure:	22 PSI					
Nozzle Type:	TEEJET XR					
Nozzle Size:	11002 VS					
Nozzle Spacing, Unit:	20 INCH					
Boom Length, Unit:	60 INCH					
Boom Height, Unit:	17 INCH					
Carrier:	WATER					
Spray Volume, Unit:	20 GPA					
Propellant:	CO2					

Oct-13-05 (0551CN1)

AOV Means Table Page 1 of 1

UNIVERSITY OF MASSACHUSETTS-AMHERST

WEED CONTROL IN FIELD CORN WITH VARIOUS PRODUCTS

Trial ID: 0551CN1
Location: BLOCK 10

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code					ZEAMA SILAGE YIELD (TONS/A)	ZEAMA GRAIN YIELD (BU/A)
Crop Code					Oct-04-05	Oct-04-05
Part Rated					T7	T8
Rating Data Type					1	0
Rating Unit						
Rating Date						
Weed Stage						
PRM Data Type						
# Subsamples, Dec.						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	
1	UNTREATED CK					
					8.8 c	28 c
2	DEFINE OPTION DISTINCT MSO UAN	4.0 SC 35 WG 76.4 WG		12 FL OZ/A PRE 1.5 OZ WT/A M-POST 4 OZ WT/A 1.5 PT/A 1.5 QT/A		
					30.4 ab	153 ab
3	OPTION DISTINCT MSO UAN	35 WG 76.4 WG		1.5 OZ WT/A M-POST 4 OZ WT/A 1.5 PT/A 1.5 QT/A		
					23.0 b	111 b
4	DEFINE OPTION CALLISTO MSO UAN	4 SC 35 WG 4 L		10 FL OZ/A E-POST 1.5 OZ WT/A 2 FL OZ/A 1.5 PT/A 1.5 QT/A		
					33.3 a	168 ab
5	LUMAX ATRAZINE	3.95 L 4 L		2.5 QT/A PRE 0.5 LB A/A		
					35.6 a	186 a
6	BICEP II MAG TOUCHDOWN	5.5 L 3 L		1.3 QT/A PRE 24 FL OZ/A M-POST		
					38.2 a	196 a
7	TOUCHDOWN	3 L		24 FL OZ/A M-POST		
					31.2 ab	161 ab
8	STEADFAST ATZ	89.3 G		14 OZ WT/A M-POST		
					22.3 b	118 b
LSD (P=.05)					7.02	45.3
Standard Deviation					4.77	30.8
CV					17.15	21.99
Bartlett's X2					10.021	6.249
P(Bartlett's X2)					0.187	0.511
Replicate F					3.171	3.016
Replicate Prob(F)					0.0455	0.0528
Treatment F					15.816	12.399
Treatment Prob(F)					0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

WEED CONTROL IN FIELD CORN WITH VARIOUS PRODUCTS

Trial ID: 0551CN1
Location: BLOCK 10

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code	DIGSA							
Crop Code	DIGSA							
Part Rated	DIGSA							
Rating Data Type	%	%	%					
Rating Unit	CONTROL	CONTROL	CONTROL					
Rating Date	Jun-09-05	Jul-25-05	Aug-19-05					
Weed Stage	2 WAIT	9 WAIT	12 WAIT					
PRM Data Type								
# Subsamples, Dec.								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg			
1	UNTREATED CK					0.0 c	0.0 d	0.0 d
2	DEFINE OPTION DISTINCT MSO UAN	4.0 SC 35 WG 76.4 WG		12 FL OZ/A PRE 1.5 OZ WT/A M-POST 4 OZ WT/A 1.5 PT/A 1.5 QT/A		88.8 b	92.5 a	95.0 ab
3	OPTION DISTINCT MSO UAN	35 WG 76.4 WG		1.5 OZ WT/A M-POST 4 OZ WT/A 1.5 PT/A 1.5 QT/A		0.0 c	17.5 c	7.5 c
4	DEFINE OPTION CALLISTO MSO UAN	4 SC 35 WG 4 L		10 FL OZ/A E-POST 1.5 OZ WT/A 2 FL OZ/A 1.5 PT/A 1.5 QT/A		0.0 c	81.3 b	90.0 b
5	LUMAX ATRAZINE	3.95 L 4 L		2.5 QT/A PRE 0.5 LB A/A		99.3 a	99.8 a	100.0 a
6	BICEP II MAG TOUCHDOWN	5.5 L 3 L		1.3 QT/A PRE 24 FL OZ/A M-POST		97.5 a	98.0 a	98.8 a
7	TOUCHDOWN	3 L		24 FL OZ/A M-POST		0.0 c	98.3 a	99.3 a
8	STEADFAST ATZ	89.3 G		14 OZ WT/A M-POST		0.0 c	2.5 d	0.0 d
LSD (P=.05)						3.53	10.02	5.29
Standard Deviation						2.40	6.81	3.60
CV						6.72	11.13	5.87
Bartlett's X2						9.64	35.095	24.68
P(Bartlett's X2)						0.008*	0.001*	0.001*
Replicate F						0.557	1.229	1.406
Replicate Prob(F)						0.6489	0.3239	0.2688
Treatment F						1692.121	181.025	737.527
Treatment Prob(F)						0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

WEED CONTROL IN FIELD CORN WITH VARIOUS PRODUCTS

Trial ID: 0551CN1
Location: BLOCK 10

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

					SETLU	SETLU	SETLU	
					%	%	%	
					CONTROL	CONTROL	CONTROL	
					Jul-13-05	Jul-25-05	Aug-19-05	
					7 WAIT	9 WAIT	12 WAIT	
Weed Code	Crop Code	Part Rated	Rating Data Type	Rating Unit				
Rating Date	Weed Stage	PRM Data Type	# Subsamples, Dec.					
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg			
1	UNTREATED CK					0.0 d	0.0 b	0.0 b
2	DEFINE OPTION DISTINCT MSO UAN	4.0 SC 35 WG 76.4 WG		12 FL OZ/A 1.5 OZ WT/A 4 OZ WT/A 1.5 PT/A 1.5 QT/A	PRE M-POST	95.0 a	100.0 a	100.0 a
3	OPTION DISTINCT MSO UAN	35 WG 76.4 WG		1.5 OZ WT/A 4 OZ WT/A 1.5 PT/A 1.5 QT/A	M-POST	43.8 b	96.3 a	100.0 a
4	DEFINE OPTION CALLISTO MSO UAN	4 SC 35 WG 4 L		10 FL OZ/A 1.5 OZ WT/A 2 FL OZ/A 1.5 PT/A 1.5 QT/A	E-POST	88.8 a	100.0 a	100.0 a
5	LUMAX ATRAZINE	3.95 L 4 L		2.5 QT/A 0.5 LB A/A	PRE	97.0 a	99.3 a	100.0 a
6	BICEP II MAG TOUCHDOWN	5.5 L 3 L		1.3 QT/A 24 FL OZ/A	PRE M-POST	99.3 a	98.8 a	100.0 a
7	TOUCHDOWN	3 L		24 FL OZ/A	M-POST	99.3 a	100.0 a	100.0 a
8	STEADFAST ATZ	89.3 G		14 OZ WT/A	M-POST	22.5 c	70.0 a	100.0 a
LSD (P=.05)					13.14	24.43	0.00	
Standard Deviation					8.94	16.61	0.00	
CV					13.1	20.0	0.0	
Bartlett's X2					42.005	36.208	0.0	
P(Bartlett's X2)					0.001*	0.001*	0.00*	
Replicate F					2.317	1.025	0.000	
Replicate Prob(F)					0.1049	0.4018	1.0000	
Treatment F					80.405	17.843	0.000	
Treatment Prob(F)					0.0001	0.0001	1.0000	

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

WEED CONTROL IN FIELD CORN WITH VARIOUS PRODUCTS

Trial ID: 0551CN1
Location: BLOCK 10

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code	CHEAL							
Crop Code	CHEAL							
Part Rated	CHEAL							
Rating Data Type	% CONTROL	% CONTROL	% CONTROL					
Rating Unit								
Rating Date	Jun-09-05	Jul-25-05	Aug-19-05					
Weed Stage	2 WAIT	9 WAIT	12 WAIT					
PRM Data Type								
# Subsamples, Dec.								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg			
1	UNTREATED CK					0.0 c	0.0 c	0.0 c
2	DEFINE OPTION DISTINCT MSO UAN	4.0 SC 35 WG 76.4 WG		12 FL OZ/A PRE 1.5 OZ WT/A M-POST 4 OZ WT/A 1.5 PT/A 1.5 QT/A		85.8 b	100.0 a	100.0 a
3	OPTION DISTINCT MSO UAN	35 WG 76.4 WG		1.5 OZ WT/A M-POST 4 OZ WT/A 1.5 PT/A 1.5 QT/A		0.0 c	100.0 a	100.0 a
4	DEFINE OPTION CALLISTO MSO UAN	4 SC 35 WG 4 L		10 FL OZ/A E-POST 1.5 OZ WT/A 2 FL OZ/A 1.5 PT/A 1.5 QT/A		0.0 c	100.0 a	100.0 a
5	LUMAX ATRAZINE	3.95 L 4 L		2.5 QT/A PRE 0.5 LB A/A		99.8 a	100.0 a	100.0 a
6	BICEP II MAG TOUCHDOWN	5.5 L 3 L		1.3 QT/A PRE 24 FL OZ/A M-POST		98.0 a	99.3 ab	99.5 a
7	TOUCHDOWN	3 L		24 FL OZ/A M-POST		0.0 c	98.8 b	98.3 b
8	STEADFAST ATZ	89.3 G		14 OZ WT/A M-POST		0.0 c	100.0 a	99.8 a
LSD (P=.05)						4.43	0.58	0.65
Standard Deviation						3.01	0.39	0.44
CV						8.51	0.45	0.51
Bartlett's X2						15.355	1.162	2.005
P(Bartlett's X2)						0.001*	0.281	0.367
Replicate F						1.490	0.538	0.636
Replicate Prob(F)						0.2462	0.6611	0.5999
Treatment F						1059.998	32129.076	25280.273
Treatment Prob(F)						0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

WEED CONTROL IN FIELD CORN WITH VARIOUS PRODUCTS

Trial ID: 0551CN1
Location: BLOCK 10

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

Weed Code					AMARE	AMARE	AMARE	
Crop Code								
Part Rated					%	%	%	
Rating Data Type					CONTROL	CONTROL	CONTROL	
Rating Unit								
Rating Date					Jul-13-05	Jul-25-05	Aug-19-05	
Weed Stage					7 WAIT	9 WAIT	12 WAIT	
PRM Data Type								
# Subsamples, Dec.								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg			
1	UNTREATED CK					0.0 c	0.0 b	0.0 b
2	DEFINE OPTION DISTINCT MSO UAN	4.0 35 76.4	SC WG WG	12 FL OZ/A 1.5 OZ WT/A 4 OZ WT/A 1.5 PT/A 1.5 QT/A	PRE M-POST	100.0 a	100.0 a	100.0 a
3	OPTION DISTINCT MSO UAN	35 76.4	WG WG	1.5 OZ WT/A 4 OZ WT/A 1.5 PT/A 1.5 QT/A	M-POST	100.0 a	100.0 a	100.0 a
4	DEFINE OPTION CALLISTO MSO UAN	4 35 4	SC WG L	10 FL OZ/A 1.5 OZ WT/A 2 FL OZ/A 1.5 PT/A 1.5 QT/A	E-POST	100.0 a	100.0 a	100.0 a
5	LUMAX ATRAZINE	3.95 4	L L	2.5 QT/A 0.5 LB A/A	PRE	99.8 a	100.0 a	100.0 a
6	BICEP II MAG TOUCHDOWN	5.5 3	L L	1.3 QT/A 24 FL OZ/A	PRE M-POST	99.0 ab	100.0 a	100.0 a
7	TOUCHDOWN	3	L	24 FL OZ/A	M-POST	98.5 b	99.8 a	99.8 a
8	STEADFAST ATZ	89.3	G	14 OZ WT/A	M-POST	99.5 a	100.0 a	100.0 a
LSD (P=.05)					0.81	0.26	0.26	
Standard Deviation					0.55	0.18	0.18	
CV					0.63	0.2	0.2	
Bartlett's X2					1.679	0.0	0.0	
P(Bartlett's X2)					0.642	0.00*	0.00*	
Replicate F					0.376	1.000	1.000	
Replicate Prob(F)					0.7715	0.4123	0.4123	
Treatment F					16242.249	159886.719	159886.719	
Treatment Prob(F)					0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

UNIVERSITY OF MASSACHUSETTS-AMHERST

WEED CONTROL IN FIELD CORN WITH VARIOUS PRODUCTS

Trial ID: 0551CN1
Location: BLOCK 10

Study Dir.: PRASANTA C. BHOWMIK
Investigator: PRASANTA C. BHOWMIK

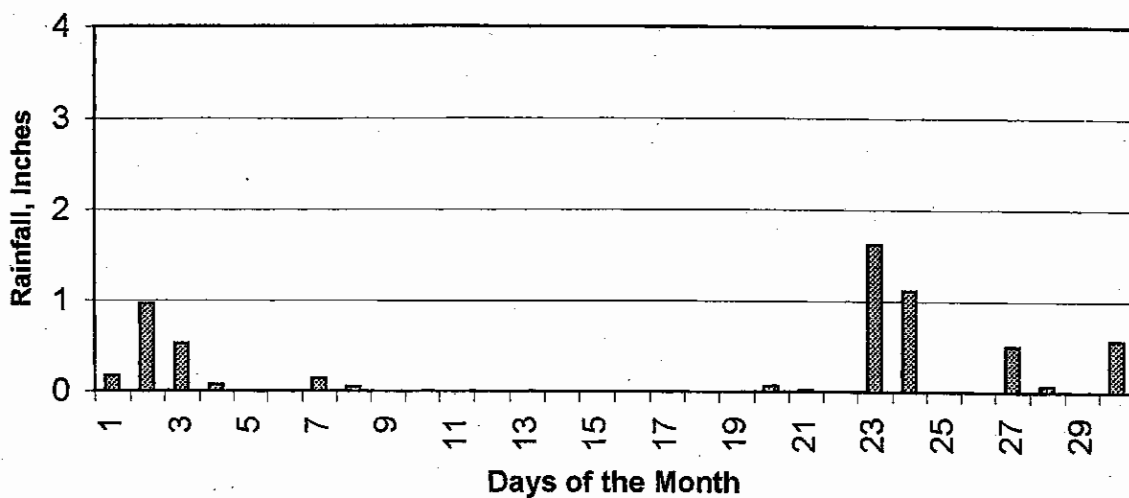
				AMBEL	AMBEL
				%	%
				CONTROL	CONTROL
				Jul-25-05	Aug-19-05
				9 WAIT	12 WAIT
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg
1	UNTREATED CK				
				0.0 b	0.0 b
2	DEFINE	4.0 SC		12 FL OZ/A	PRE
	OPTION	35 WG		1.5 OZ WT/A	M-POST
	DISTINCT	76.4 WG		4 OZ WT/A	
	MSO			1.5 PT/A	
	UAN			1.5 QT/A	
				100.0 a	100.0 a
3	OPTION	35 WG		1.5 OZ WT/A	M-POST
	DISTINCT	76.4 WG		4 OZ WT/A	
	MSO			1.5 PT/A	
	UAN			1.5 QT/A	
				100.0 a	100.0 a
4	DEFINE	4 SC		10 FL OZ/A	E-POST
	OPTION	35 WG		1.5 OZ WT/A	
	CALLISTO	4 L		2 FL OZ/A	
	MSO			1.5 PT/A	
	UAN			1.5 QT/A	
				100.0 a	100.0 a
5	LUMAX	3.95 L		2.5 QT/A	PRE
	ATRAZINE	4 L		0.5 LB A/A	
				100.0 a	100.0 a
6	BICEP II MAG	5.5 L		1.3 QT/A	PRE
	TOUCHDOWN	3 L		24 FL OZ/A	M-POST
				98.8 a	99.0 a
7	TOUCHDOWN	3 L		24 FL OZ/A	M-POST
				100.0 a	99.3 a
8	STEADFAST ATZ	89.3 G		14 OZ WT/A	M-POST
				97.5 a	100.0 a
LSD (P=.05)				2.71	0.67
Standard Deviation				1.84	0.46
CV				2.12	0.52
Bartlett's X2				5.853	0.074
P(Bartlett's X2)				0.016*	0.785
Replicate F				0.649	0.546
Replicate Prob(F)				0.5925	0.6562
Treatment F				1460.837	23713.852
Treatment Prob(F)				0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

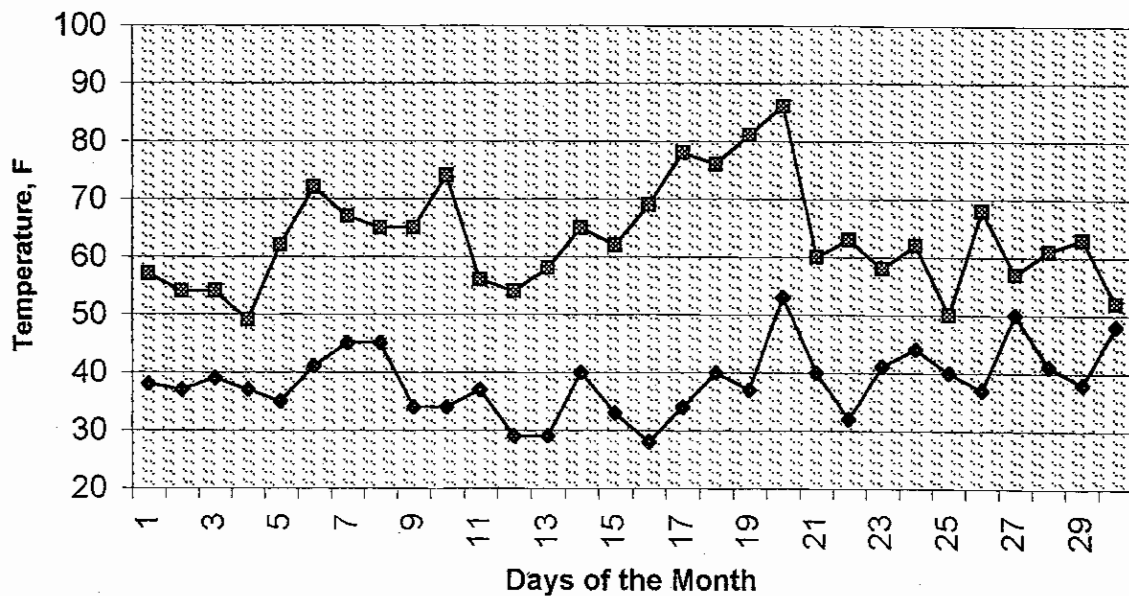
Weather Data

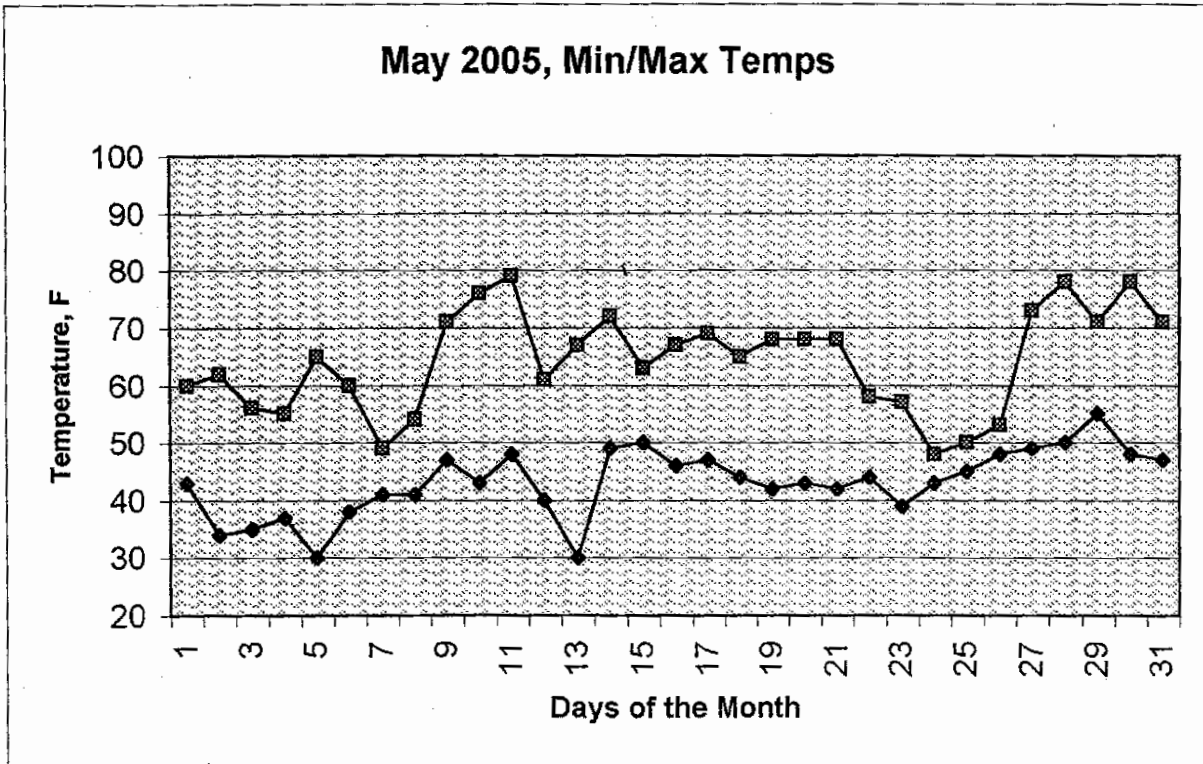
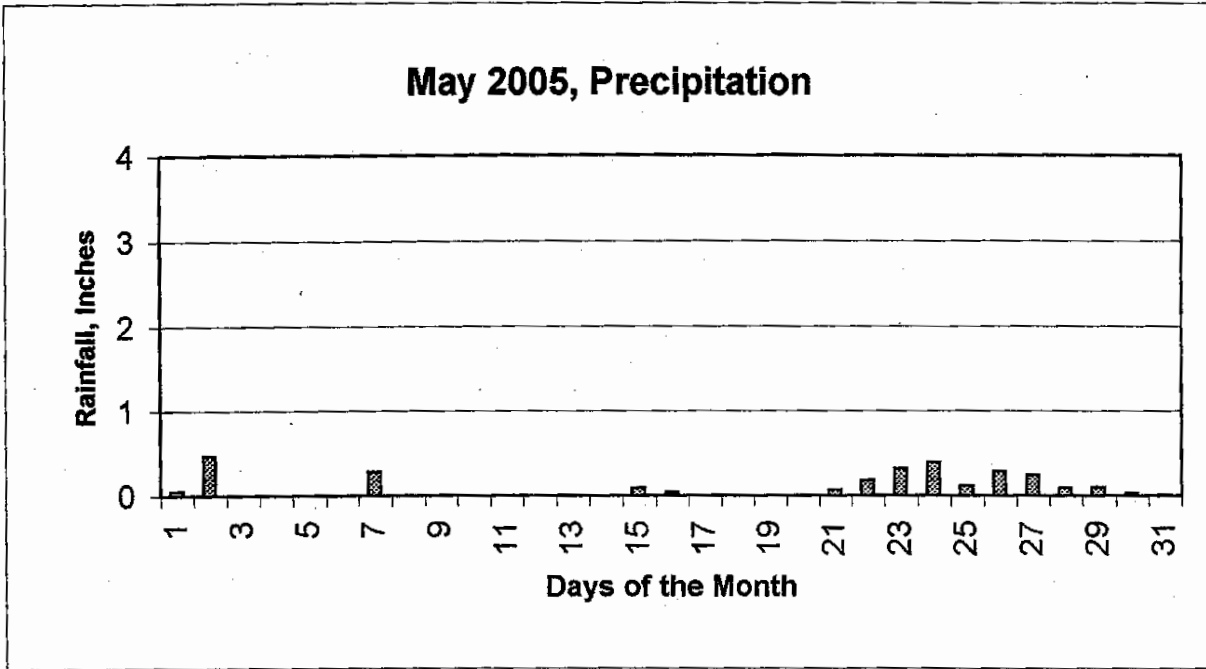
Amherst, MA

April 2005, Precipitation

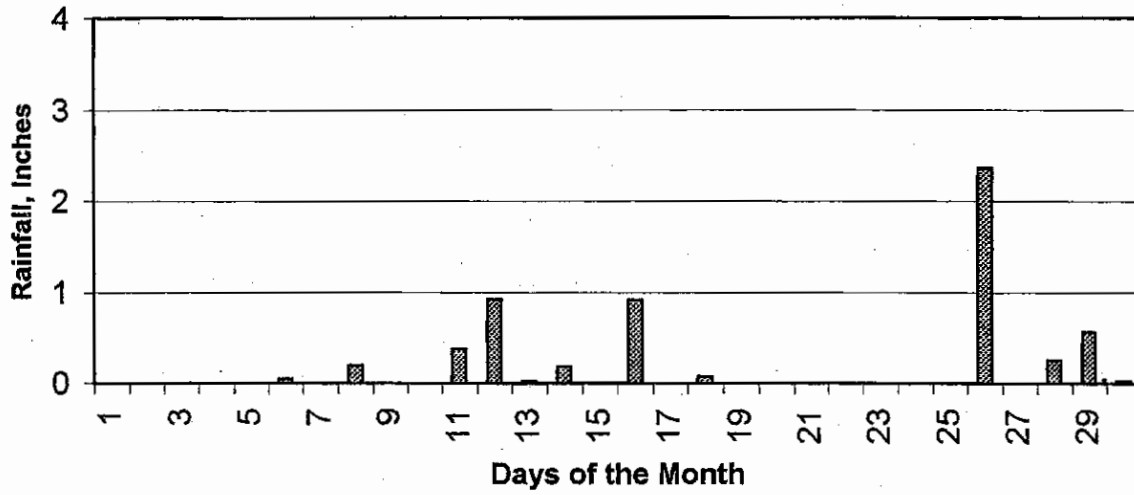


April 2005, Min/Max Temps

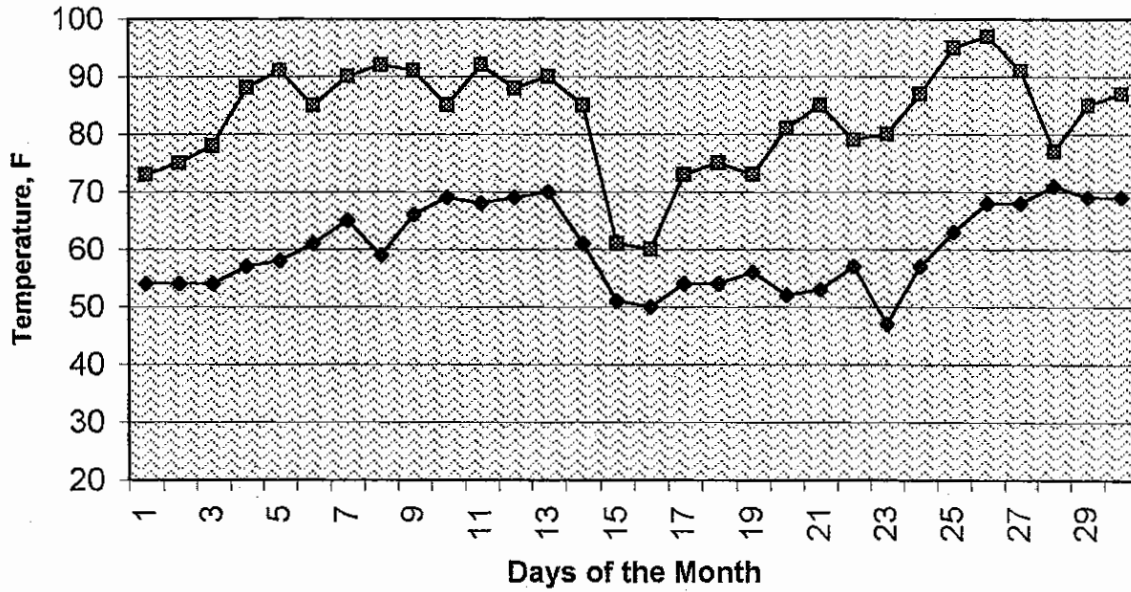


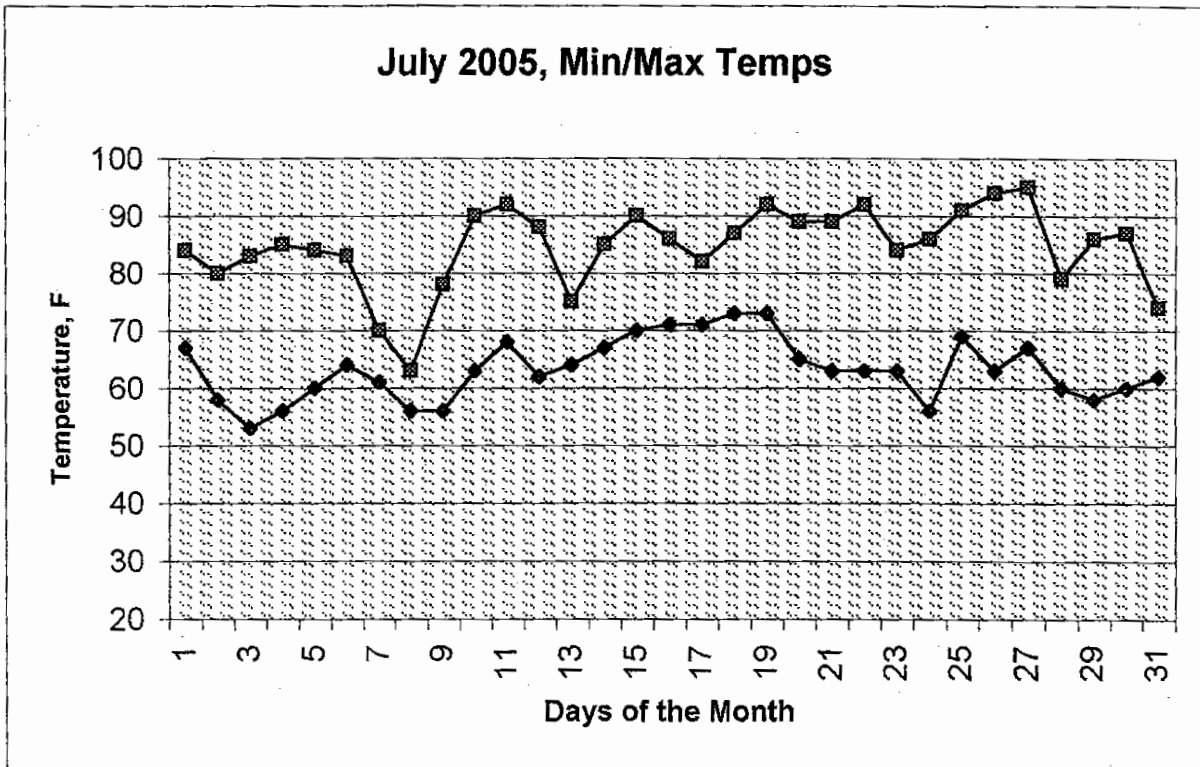
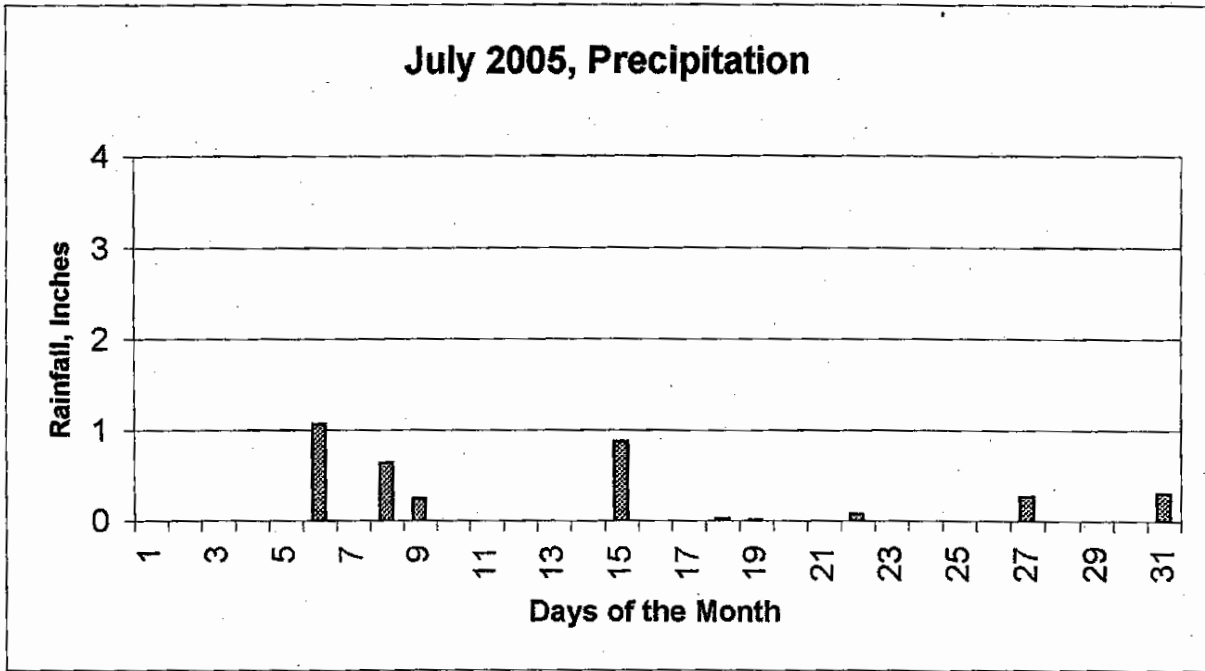


June 2005, Precipitation

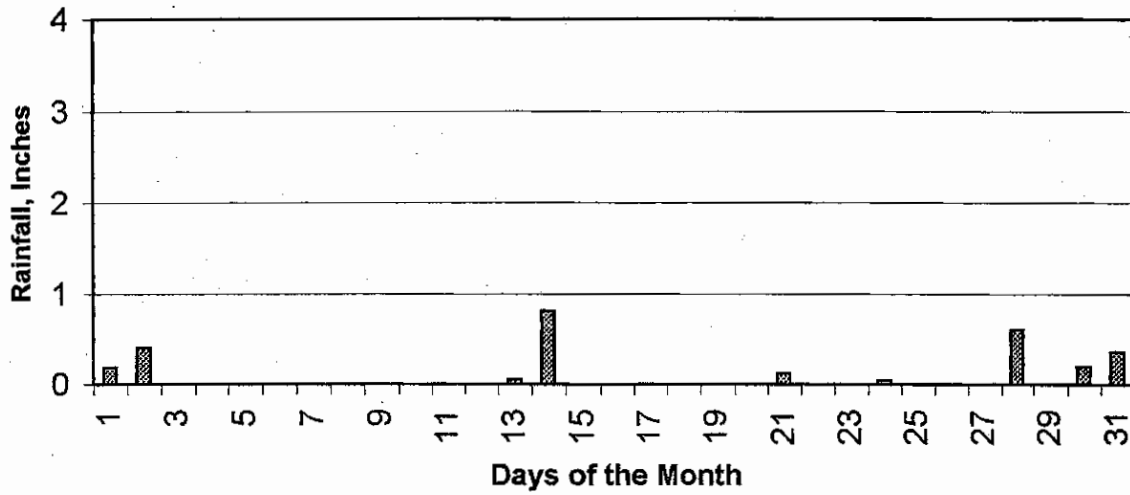


June 2005, Min/Max Temps

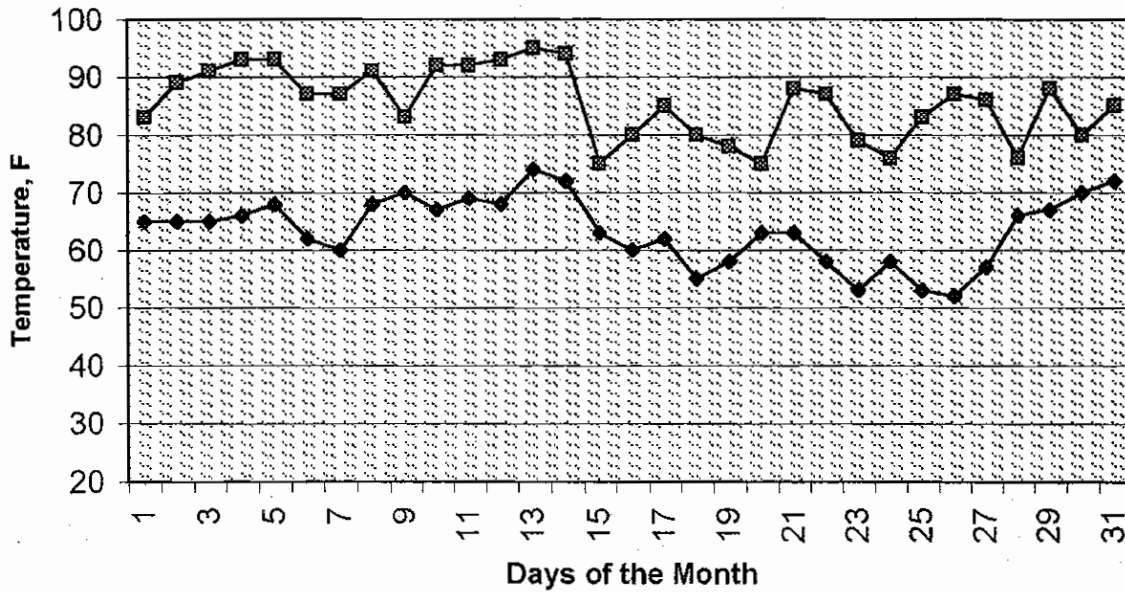


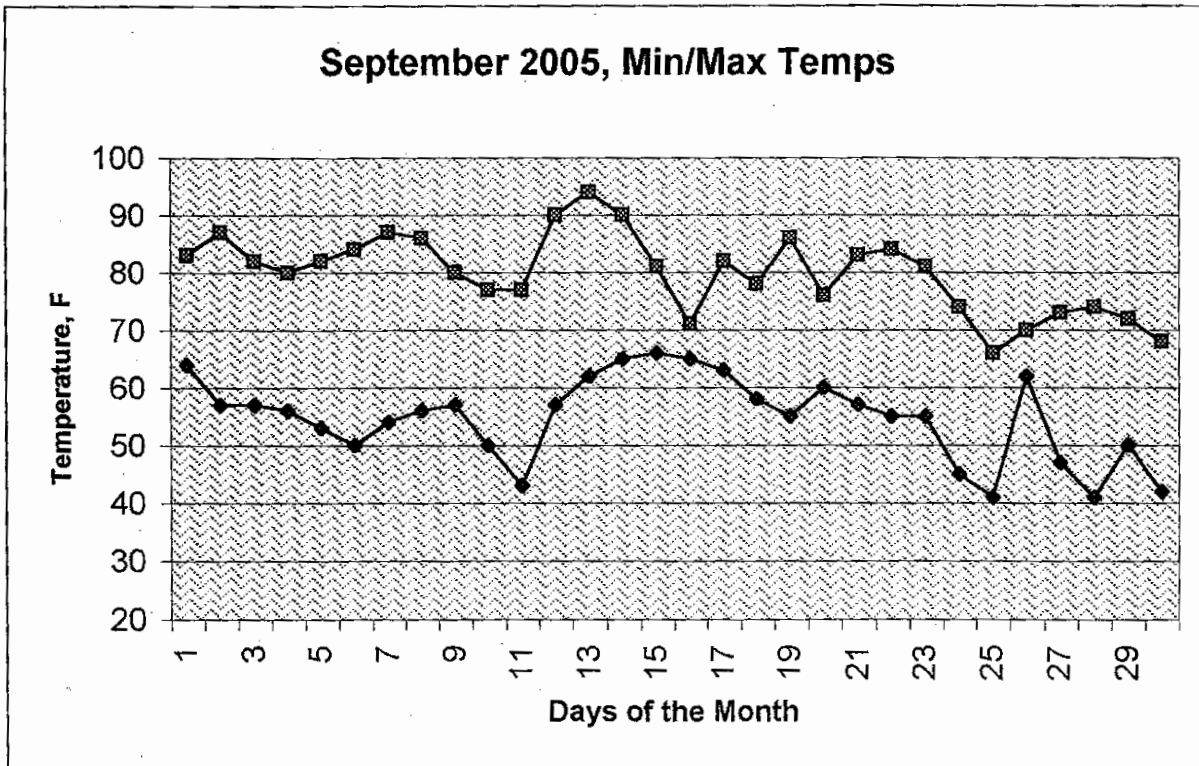
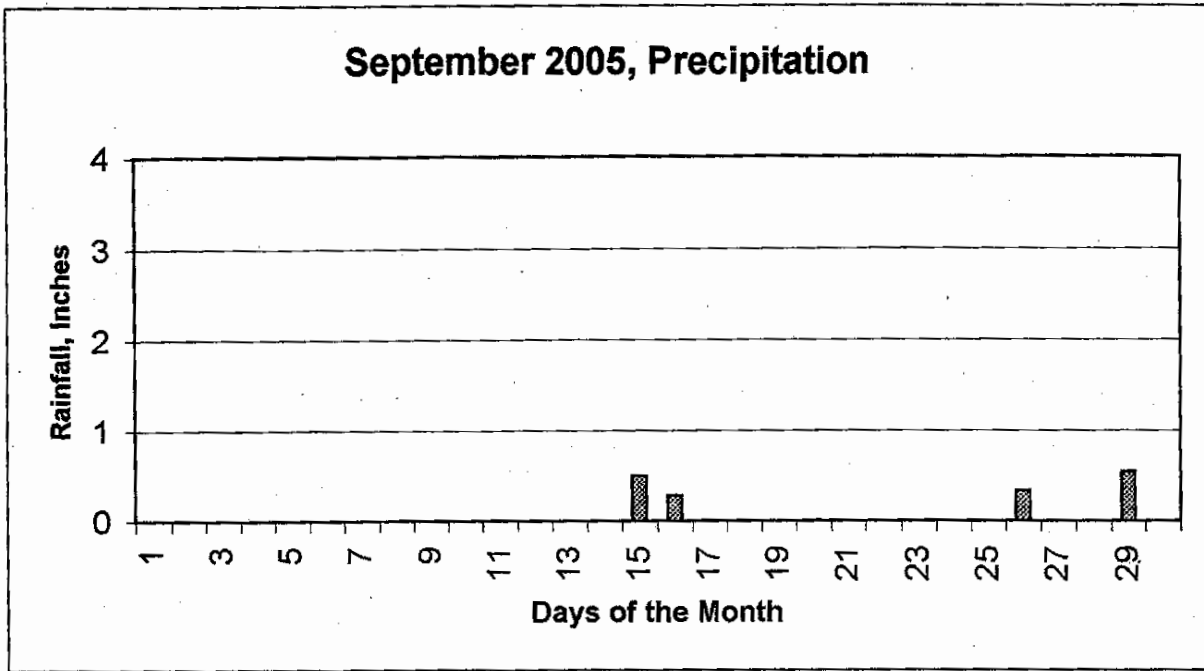


August 2005, Precipitation

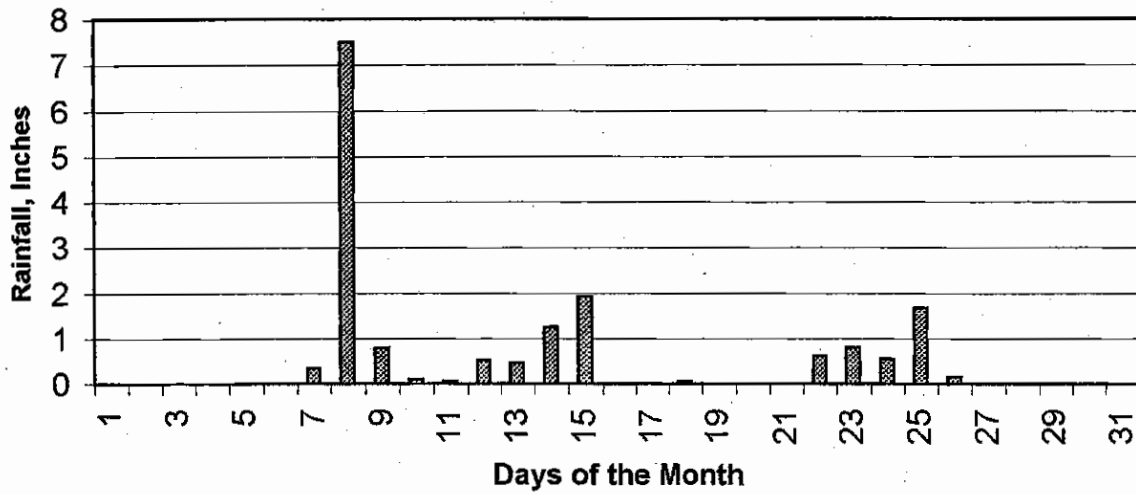


August 2005, Min/Max Temps

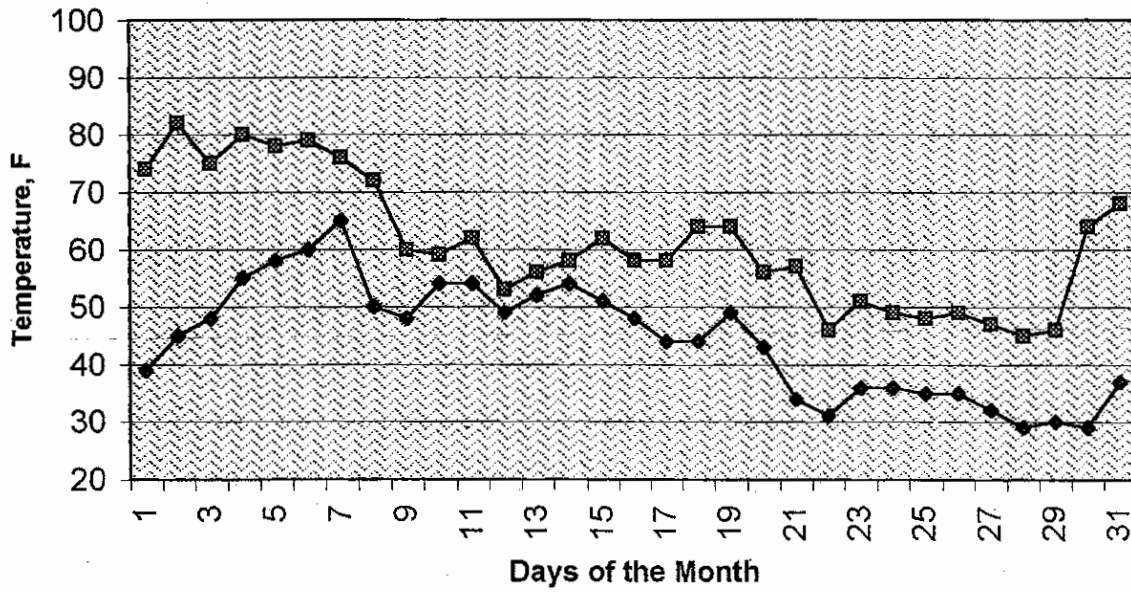




October 2005, Precipitation



October 2005, Min/Max Temps



HERBICIDE INDEX – TURFGRASS

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experiment in which parameter is found.)

CERTAINTY	75 WG	36
ENVOY	0.94 EC	4
FINALE	1.0 SL	4
FUSILADE II	2.0 EC	.....	4
MON 44951	75 WG	.....	22, 25, 30
REVOLVER	0.19 SC	.....	4
REWARD	3.73 EC	.....	4
ROUNDUP PRO	3.0 SL	.....	4
TRANXIT GTA	25 DF	.....	4
VANTAGE	1.0 EC	.....	4
SURFACTANTS			
CROP OIL CONCENTRATE		.....	4
X-77		.....	4, 22, 25, 30, 36

HERBICIDE INDEX – GREENHOUSE

(Page number is the first page of the
experiment in which parameter is found.)

MESOTRIONE	4.0 SC	.....	50
MON 44951	75 DG	.....	44, 48
SURFACTANTS			
MON 0818		.....	44, 48

HERBICIDE INDEX – FIELD CORN

(Page number is the first page of the
experiment in which parameter is found.)

ATRAZINE	4 L	.....	57
BICEP II MAG	5.5 L	.....	57
CALLISTO	4 L	.....	57
DEFINE	4 SC	.....	57
DISTINCT	76.4 WG	.....	57
LUMAX	3.95 EC	.....	57
OPTION	35 WG	.....	57
STEADFAST ATZ	89.3 G	.....	57
TOUCHDOWN	3 L	.....	57

SURFACTANTS / LIQUID FERTILIZER

METHYLATED OIL (MSO)	.....	57
SPRAY OPTIMIZER 28%N (UAN)	.....	57

CROP INDEX

(Page number is the first page of the
experiment in which parameter is found.)

TURFGRASS

Kentucky Bluegrass (POAPR)	.....	4, 8, 30
Creeping Bentgrass (AGSPL)	.....	23, 26
Tall Fescue (FESAR)	.....	39

GREENHOUSE

Kentucky Bluegrass (POAPR)	.....	44, 45
Creeping Bentgrass (AGSPL)	.....	48, 50, 52

FIELD CORN

Corn: CPS 4081 RR (ZEAMA)	55
Corn yield: silage, grain	57

WEED INDEX

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experiment in which parameter is found.)

TURFGRASS

Large Crabgrass	(DIGSA).....	16
White Clover	(TRIPE).....	12, 23, 32, 36
Yellow Nutsedge	(CYPES).....	22, 27

FIELD CORN

Redroot Pigweed	(AMARE).....	61
Common Ragweed	(AMBEL).....	62
C. Lambsquarters	(CHEAL).....	60
Large Crabgrass	(DIGSA).....	58
Foxtail, yellow	(SETLU).....	59