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MASSACHUSETTS WEED SCIENCE RESEARCH RESULTS 2006

VOLUME 25

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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 2006. 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.

Prof. Prasanta C. Bhowmik
Amherst, MA
June 29, 2007

MASSACHUSETTS
WEED SCIENCE RESEARCH RESULTS - 2006

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 2006 were:

Graduate Research Assistants	Nishanth Tharayil
	Saikat Ghosh
	Dipayan Sarkar
	Susan Cheplick

Our research program has been partially funded by grant-in-aid support from industries. The following contributors are gratefully acknowledged for their support of our weed science projects in 2006.

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

Appreciation is also extended to others who provided seeds, supplies, equipments, and/or services for these studies.

Syngenta Seeds, Inc.

2006 RESEARCH PROJECTS

Field 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.

Development of Growing Degree Day Model: We have initiated a joint research project between the Pennsylvania State University and University of Massachusetts. The main objective of this collaborative project is to develop a Growing Degree Day (GDD) Model by monitoring weed emergence patterns and by calculating growing degree-days (GDD) accumulation. Field data will be collected from four different locations.

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 cm^2 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 (cm^2 or in^2)
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 cm^2 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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Turfgrass

Field Crops

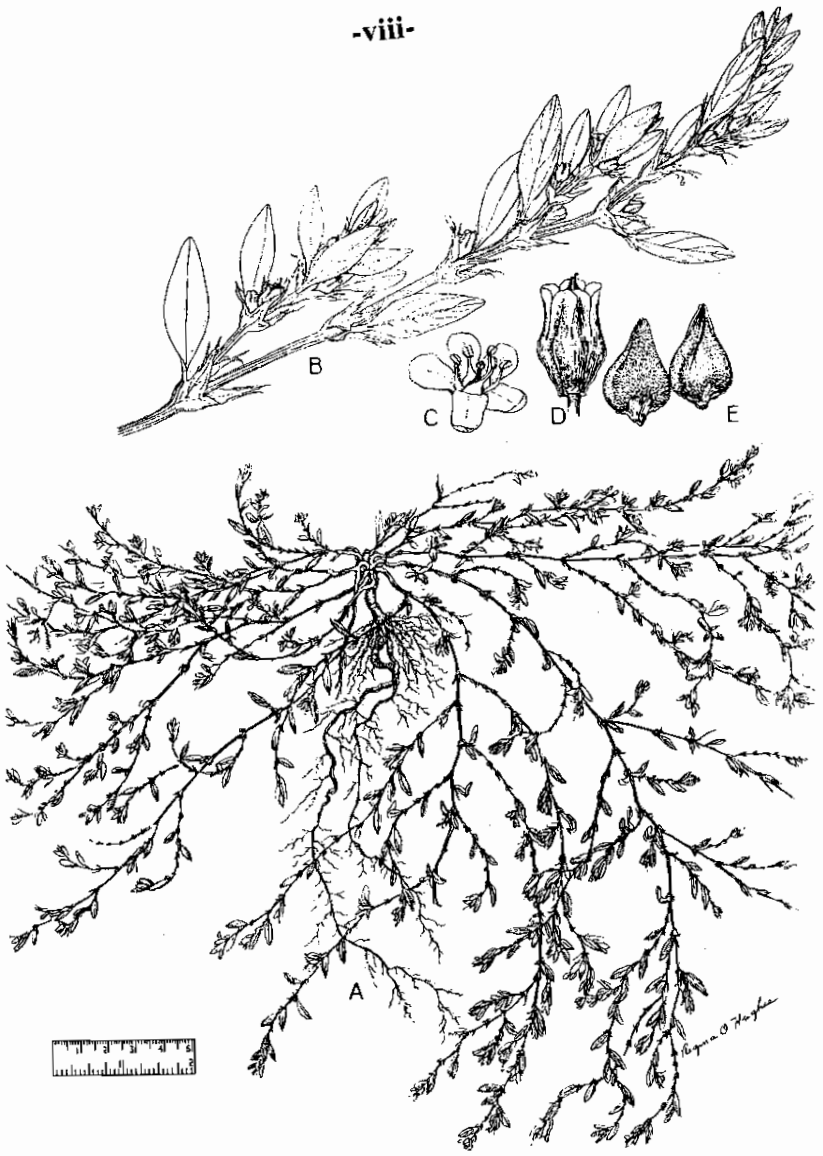


FIGURE 56.—*Polygonum aviculare* L. Prostrate knotweed. *A*, habit—× 0.5; *B*, flowering branch, enlarged—× 2.5; *C*, flower—× 7.5; *D*, fruiting calyx—× 7.5; *E*, achenes—× 7.5.

TURFGRASS

Sep-29-06 (0651TG1)

UNIVERSITY OF MASSACHUSETTS-AMHERST

BROADLEAF WEED CONTROL WITH FALL APPLICATION OF CERTAINTY

Trial ID: 0651-TG-1 Investigator: PRASANTA C. BHOWMIK
Location: SDF-TRC Study Dir.: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK **Title:** _____
Affiliation: UNIVERSITY OF MASSACHUSETTS **Postal Code:** _____

Other Investigator: N. Tharayil and D. Riego. _____ **Title:** _____
Affiliation: _____ **Postal Code:** _____

Trial Status: _____ **Initiation Date:** _____ **Country:** _____
City: _____ **State/Prov.:** _____ **Postal Code:** _____

CROP AND PEST DESCRIPTION

Weed 1._____ _____ 2._____ _____ 3._____ _____
4._____ _____ 5._____ _____ 6._____ _____
7._____ _____ 8._____ _____ 9._____ _____

Crop 1: _____ _____ **Variety:** _____ **Planting Date:** _____
Planting Method: _____ **Rate:** _____ _____ **Depth:** ____ __
Perennial Age: ____ _____ **Row Spacing:** ____ _____ **Seed Bed:** _____
Soil Temperature: _____ _ **Soil Moisture:** _____ **Emergence Date:** _____

Crop 2: _____ _____ **Variety:** _____ **Planting Date:** _____
Planting Method: _____ **Rate:** _____ _____ **Depth:** ____ __
Perennial Age: ____ _____ **Row Spacing:** ____ _____ **Seed Bed:** _____
Soil Temperature: _____ _ **Soil Moisture:** _____ **Emergence Date:** _____

Crop 3: _____ _____ **Variety:** _____ **Planting Date:** _____
Planting Method: _____ **Rate:** _____ _____ **Depth:** ____ __
Perennial Age: ____ _____ **Row Spacing:** ____ _____ **Seed Bed:** _____
Soil Temperature: _____ _ **Soil Moisture:** _____ **Emergence Date:** _____

Plot Width, Unit: 3.5 FT **Plot Length, Unit:** 10 FT **Reps:** 4
Site Type: _____
Tillage Type: _____ **Study Design:** RANDOMIZED COMPLETE BLOCK
Field Prep./Maintenance: _____
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.	_____	_____	____
2.	_____	_____	____
3.	_____	_____	____

SOIL DESCRIPTION

Texture: _____ **% OM:** ____ **% Sand:** ___ **% Silt:** ___ **% Clay:** ___
pH: ____ **CEC:** ____ **Soil Name:** _____ **Fertility Level:** _____

UNIVERSITY OF MASSACHUSETTS-AMHERST

BROADLEAF WEED CONTROL WITH FALL APPLICATION OF CERTAINTY

Trial ID: 0651-TG-1 Investigator: PRASANTA C. BHOWMIK
Location: SDF-TRC Study Dir.: PRASANTA C. BHOWMIK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Sep-13-05					
Time of Day:	AM					
Application Method:	SPRAY					
Application Timing:	POST					
Air Temp., Unit:	26.7 C					
% Relative Humidity:	70					
Wind Velocity, Unit:	1 MPH					
Soil Temp., Unit:	24.2 C	22.5 C				
Soil Moisture:	@ 0.5"	@ 2.0"				
% Cloud Cover:	0					

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:	50 GPA					
Propellant:	CO2					

UNIVERSITY OF MASSACHUSETTS-AMHERST

BROADLEAF WEED CONTROL WITH FALL APPLICATION OF CERTAINTY

Trial ID: 0651-TG-1 Investigator: PRASANTA C. BHOWMIK
Location: SDF-TRC Study Dir.: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	%COVER Aug-24-06 345 DA-A	TRFRE Aug-24-06 345 DA-A	%COVER Sep-13-06 365 DA-A	TRFRE Sep-13-06 365 DA-A
1	SULFOSULFURON	0.5	OZ/A	98.0 a	32.5 ab	95.8 a	42.5 a
	NIS (X-77)	0.25	% V/V				
2	SULFOSULFURON	0.75	OZ/A	97.3 a	45.0 ab	97.3 a	66.3 a
	NIS (X-77)	0.25	% V/V				
3	SULFOSULFURON	1.0	OZ/A	96.0 a	0.0 b	95.8 a	36.3 a
	NIS (X-77)	0.25	% V/V				
4	SULFOSULFURON	1.5	OZ/A	95.3 a	52.5 ab	95.3 a	58.8 a
	NIS (X-77)	0.25	% V/V				
5	SULFOSULFURON	2.0	OZ/A	94.0 a	38.8 ab	97.3 a	46.3 a
	NIS (X-77)	0.25	% V/V				
6	SULFOSULFURON	0.5	OZ/A	96.5 a	30.0 ab	96.5 a	37.5 a
	NIS (X-77)	0.25	% V/V				
	SULFOSULFURON	0.5	OZ/A				
	NIS (X-77)	0.25	% V/V				
7	SULFOSULFURON	0.75	OZ/A	97.3 a	57.5 ab	95.3 a	58.8 a
	NIS (X-77)	0.25	% V/V				
	SULFOSULFURON	0.75	OZ/A				
	NIS (X-77)	0.25	% V/V				
8	SULFOSULFURON	1.0	OZ/A	97.3 a	47.0 ab	97.3 a	52.5 a
	NIS (X-77)	0.25	% V/V				
	SULFOSULFURON	1.0	OZ/A				
	NIS (X-77)	0.25	% V/V				
9	SULFOSULFURON	1.5	OZ/A	94.8 a	63.8 ab	93.8 a	58.8 a
	NIS (X-77)	0.25	% V/V				
	SULFOSULFURON	1.5	OZ/A				
	NIS (X-77)	0.25	% V/V				
10	TRIMEC CLASSIC	3	PT/A	97.3 a	90.8 a	97.3 a	77.5 a
11	UNTREATED CHECK			97.3 a	0.0 b	97.3 a	0.0 b
	LSD (P=.05)			4.59	42.31	3.27	29.50
	Standard Deviation			3.18	29.30	2.27	20.43
	CV			3.3	70.42	2.36	42.01
	Bartlett's X2			17.5	7.543	9.4	7.211
	P(Bartlett's X2)			0.041*	0.479	0.495	0.615

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

BROADLEAF WEED CONTROL WITH FALL APPLICATION OF CERTAINTY

Trial ID: 0651-TG-1 Investigator: PRASANTA C. BHOWMIK
Location: SDF-TRC Study Dir.: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	POAPR COVER % Jun-15-06 275 DA-A	TRFRE CONTROL % Jun-15-06 275 DA-A	PLAMA CONTROL % Jun-15-06 275 DA-A	TAROF CONTROL % Jun-15-06 275 DA-A
1	SULFOSULFURON	0.5	OZ/A	86.3 ab	12.5 b	0.0 a	0.0 a
	NIS (X-77)	0.25	% V/V				
2	SULFOSULFURON	0.75	OZ/A	83.8 ab	25.0 b	0.0 a	0.0 a
	NIS (X-77)	0.25	% V/V				
3	SULFOSULFURON	1.0	OZ/A	90.0 ab	0.0 b	0.0 a	0.0 a
	NIS (X-77)	0.25	% V/V				
4	SULFOSULFURON	1.5	OZ/A	75.0 b	36.3 ab	0.0 a	0.0 a
	NIS (X-77)	0.25	% V/V				
5	SULFOSULFURON	2.0	OZ/A	75.0 b	28.8 ab	0.0 a	0.0 a
	NIS (X-77)	0.25	% V/V				
6	SULFOSULFURON	0.5	OZ/A	86.3 ab	10.0 b	0.0 a	0.0 a
	NIS (X-77)	0.25	% V/V				
	SULFOSULFURON	0.5	OZ/A				
	NIS (X-77)	0.25	% V/V				
7	SULFOSULFURON	0.75	OZ/A	83.8 ab	37.5 ab	0.0 a	0.0 a
	NIS (X-77)	0.25	% V/V				
	SULFOSULFURON	0.75	OZ/A				
	NIS (X-77)	0.25	% V/V				
8	SULFOSULFURON	1.0	OZ/A	78.8 b	33.8 ab	0.0 a	0.0 a
	NIS (X-77)	0.25	% V/V				
	SULFOSULFURON	1.0	OZ/A				
	NIS (X-77)	0.25	% V/V				
9	SULFOSULFURON	1.5	OZ/A	76.3 b	35.0 ab	0.0 a	0.0 a
	NIS (X-77)	0.25	% V/V				
	SULFOSULFURON	1.5	OZ/A				
	NIS (X-77)	0.25	% V/V				
10	TRIMEC CLASSIC	3	PT/A	90.0 ab	78.8 a	0.0 a	0.0 a
11	UNTREATED CHECK			95.0 a	0.0 b	0.0 a	0.0 a
	LSD (P=.05)			9.81	33.67	0.00	0.00
	Standard Deviation			6.80	23.32	0.00	0.00
	CV			8.12	86.21	0.0	0.0
	Bartlett's X2			9.89	10.986	0.0	0.0
	P(Bartlett's X2)			0.359	0.203	0.00*	0.00*

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

BROADLEAF WEED CONTROL WITH FALL APPLICATION OF CERTAINTY

Trial ID: 0651-TG-1 Investigator: PRASANTA C. BHOWMIK
Location: SDF-TRC Study Dir.: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	POAPR COVER % May-26-06 255 DA-A	TRFRE CONTROL % May-26-06 255 DA-A	PLAMA CONTROL % May-26-06 255 DA-A	TAROF CONTROL % May-26-06 255 DA-A
1	SULFOSULFURON NIS (X-77)	0.5 0.25	OZ/A % V/V	90.8 ab	7.5 b	0.0 a	0.0 a
2	SULFOSULFURON NIS (X-77)	0.75 0.25	OZ/A % V/V	85.0 abc	25.0 b	0.0 a	0.0 a
3	SULFOSULFURON NIS (X-77)	1.0 0.25	OZ/A % V/V	88.8 ab	0.0 b	0.0 a	0.0 a
4	SULFOSULFURON NIS (X-77)	1.5 0.25	OZ/A % V/V	75.0 c	38.8 ab	0.0 a	0.0 a
5	SULFOSULFURON NIS (X-77)	2.0 0.25	OZ/A % V/V	73.8 c	36.3 ab	0.0 a	0.0 a
6	SULFOSULFURON NIS (X-77) SULFOSULFURON NIS (X-77)	0.5 0.25 0.5 0.25	OZ/A % V/V OZ/A % V/V	85.0 abc	12.5 b	0.0 a	0.0 a
7	SULFOSULFURON NIS (X-77) SULFOSULFURON NIS (X-77)	0.75 0.25 0.75 0.25	OZ/A % V/V OZ/A % V/V	85.0 abc	30.0 ab	0.0 a	0.0 a
8	SULFOSULFURON NIS (X-77) SULFOSULFURON NIS (X-77)	1.0 0.25 1.0 0.25	OZ/A % V/V OZ/A % V/V	77.5 bc	35.0 ab	0.0 a	0.0 a
9	SULFOSULFURON NIS (X-77) SULFOSULFURON NIS (X-77)	1.5 0.25 1.5 0.25	OZ/A % V/V OZ/A % V/V	78.8 bc	32.5 ab	0.0 a	0.0 a
10	TRIMEC CLASSIC	3	PT/A	89.5 ab	77.5 a	0.0 a	0.0 a
11	UNTREATED CHECK			93.8 a	0.0 b	0.0 a	0.0 a
	LSD (P=.05)			8.72	33.85	0.00	0.00
	Standard Deviation			6.04	23.44	0.00	0.00
	CV			7.2	87.42	0.0	0.0
	Bartlett's X2			8.349	11.411	0.0	0.0
	P(Bartlett's X2)			0.595	0.179	0.00*	0.00*

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


A
B
C
D
Regina A. Hughes

UNIVERSITY OF MASSACHUSETTS-AMHERST

FALL APPLICATION OF RONSTAR TREATMENTS ON BENTGRASS GREEN

Trial ID: 0652TG2 Study Dir.: PRASANTA C. BHOWMIK
Location: SDF-TRC Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PRASANTA C. BHOWMIK Title: _____
Affiliation: _____ Postal Code: _____

Investigator: Bhowmik, P.C., N. Tharayil and D. Sarkar. Title: _____
Affiliation: _____ Postal Code: _____

Trial Status: _____ Initiation Date: _____ Country: _____
City: _____ State/Prov.: _____ Postal Code: _____
Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1._____ _____ 2._____ _____

Crop 1:_____ _____ Variety: _____ Planting Date: _____
Planting Method: _____ Rate: _____ _____ Depth: ____ __
Perennial Age: ____ _____ Row Spacing: ____ _____ Seed Bed: _____
Soil Temperature: _____ _ Soil Moisture: _____ Emergence Date: _____

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 3
Site Type: _____
Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.	_____	_____	____

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.	_____	_____	____	_____	___	_____	_____

SOIL DESCRIPTION

Texture: _____ % OM: ____ % Sand: ____ % Silt: ____ % Clay: ____
pH: ____ CEC: ____ Soil Name: _____ Fertility Level: _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.	_____	_____	_____	__	_____	_____	___

Overall Moisture Conditions: _____
Closest Weather Station: _____ Distance: _____ Unit: __

UNIVERSITY OF MASSACHUSETTS-AMHERST

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Oct-03-05					
Time of Day:	AM					
Application Method:	SHAKE					
Application Timing:	POST					
Applic. Placement:						
Air Temp., Unit:	17.2 C					
% Relative Humidity:	85					
Wind Velocity, Unit:	3 MPH					
Dew Presence (Y/N):	_	_	_	_	_	_
Water Hardness:						
Soil Temp., Unit:	18.4 C	17.6 C				
Soil Moisture:	@ 0.5"	@ 2.0"				
% Cloud Cover:	0					

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 _____ Stage:						
Stage Scale:						
Height, Unit:						

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 _____ Stage:						
Stage Scale:						
Density, Unit:						

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	MASON JAR					
Operating Pressure:	GRAVITY					
Nozzle Type:	LID W/					
Nozzle Size:	HOLES					
Nozzle Spacing, Unit:						
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:						
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:	AIR					
Spray Volume, Unit:						
Spray pH:						
Propellant:	ARM					
Tank Mix (Y/N):	_	_	_	_	_	_

Trt No	Treatment Application Comment
__	

Jul-31-07 (0652TG2) AOV Means Table Page 1 of 1

UNIVERSITY OF MASSACHUSETTS-AMHERST

FALL APPLICATION OF RONSTAR TREATMENTS ON BENTGRASS GREEN

Trial ID: 0652TG2 Study Dir.: PRASANTA C. BHOWMIK
Location: SDF-TRC Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	TAROF May-26-06 235 DA-A	TAROF Jun-15-06 255 DA-A
	Weed Code						TAROF	TAROF
	Rating Data Type							
	Rating Date						May-26-06	Jun-15-06
	Trt-Eval Interval						235 DA-A	255 DA-A
1	UNTREATED CHECK						0.0 b	0.0 b
2	RONSTAR	2	G	2	LB A/A	POST	78.3 a	78.3 a
3	RONSTAR	2	G	3	LB A/A	POST	50.0 a	53.3 a
4	RONSTAR	0.55	G	2	LB A/A	POST	71.7 a	68.3 a
5	RONSTAR	0.55	G	3	LB A/A	POST	66.7 a	70.0 a
6	BENSULIDE			12.5	LB A/A	POST	76.7 a	78.3 a
	LSD (P=.05)						32.44	32.99
	Standard Deviation						17.83	18.14
	CV						31.17	31.24
	Bartlett's X2						11.143	15.467
	P(Bartlett's X2)						0.025*	0.004*
	Replicate F						1.865	2.095
	Replicate Prob(F)						0.2050	0.1739
	Treatment F						8.391	8.143
	Treatment Prob(F)						0.0024	0.0027

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

FALL APPLICATION OF RONSTAR TREATMENTS ON BENTGRASS GREEN

Trial ID: 0652TG2 Study Dir.: PRASANTA C. BHOWMIK
Location: SDF-TRC Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	CERVU May-26-06 235 DA-A	CERVU Jun-15-06 265 DA-A
	Weed Code						CERVU	CERVU
	Rating Data Type							
	Rating Date						May-26-06	Jun-15-06
	Trt-Eval Interval						235 DA-A	265 DA-A
1	UNTREATED CHECK						0.0 d	0.0 d
2	RONSTAR	2	G	2	LB A/A	POST	76.7 ab	70.0 bc
3	RONSTAR	2	G	3	LB A/A	POST	81.7 a	76.7 ab
4	RONSTAR	0.55	G	2	LB A/A	POST	70.0 bc	66.7 c
5	RONSTAR	0.55	G	3	LB A/A	POST	66.7 c	63.3 c
6	BENSULIDE			12.5	LB A/A	POST	76.7 ab	80.0 a
	LSD (P=.05)						6.78	7.36
	Standard Deviation						3.73	4.05
	CV						6.02	6.81
	Bartlett's X2						2.504	1.551
	P(Bartlett's X2)						0.475	0.671
	Replicate F						2.800	2.627
	Replicate Prob(F)						0.1082	0.1211
	Treatment F						205.060	162.237
	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

COMPARISON OF VARIOUS MESOTRIONE PRODUCTS ALONE AND IN COMBINATION WITH OTHERS

Trial ID: 0654TG4 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PROF. BHOWMIK Title: _____
Affiliation: _____ Postal Code: _____

Investigator: Bhowmik, P.C., R. Keese and D. Sarkar. Title: _____
Affiliation: _____ Postal Code: _____

Trial Status: _____ Initiation Date: _____ Country: _____
City: _____ State/Prov.: _____ Postal Code: _____
Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1._____ _____ 2._____ _____

Crop 1:_____ _____ Variety: _____ Planting Date: _____
Planting Method: _____ Rate: _____ _____ Depth: ____ __
Perennial Age: ____ _____ Row Spacing: ____ _____ Seed Bed: _____
Soil Temperature: ____ _ Soil Moisture: _____ Emergence Date: _____

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
Site Type: _____
Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.	_____	_____	____

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.	_____	_____	____	_____	___	_____	_____ >

SOIL DESCRIPTION

Texture: _____ % OM: ____ % Sand: ____ % Silt: ____ % Clay: ____
pH: ____ CEC: ____ Soil Name: _____ Fertility Level: _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.	_____	_____	_____	__	_____	____	___

Overall Moisture Conditions: _____
Closest Weather Station: _____ Distance: _____ Unit: __

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS MESOTRIONE PRODUCTS ALONE AND IN COMBINATION WITH OTHERS

Trial ID: 0654TG4 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Apr-20-06		Jun-11-06			
Time of Day:	AM		AM			
Application Method:	BROD		BROD			
Application Timing:	PRE		E-POST			
Air Temp., Unit:	72.8 F		67.4 F			
% Relative Humidity:	12		34.3			
Wind Velocity, Unit:	5 MPH		15 MPH			
Soil Temp., Unit:	55.5 F	52.8 F	72.8 F	67.8 F		
Soil Moisture:	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"		
% Cloud Cover:	0		0			

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEE JET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Boom Length, Unit:	40 INCH					
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Propellant:	CO2					

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS MESOTRIONE PRODUCTS ALONE AND IN COMBINATION WITH OTHERS

Trial ID: 0654TG4 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code Rating Data Type Rating Date Trt-Eval Interval		DIGSA % CONT May-26-06 -16 DA-A	CERVU % CONT May-26-06 -16 DA-A	TRFRE % CONT May-26-06 -16 DA-A	TAROF % CONT May-26-06 -16 DA-A
Trt No. Treatment Name	Rate Rate Unit				
01 EXC 878	173 LB/A	85.0 a	77.5 a	83.8 a	68.8 ab
02 EXC 892	173 LB/A	87.5 a	70.0 a	85.0 a	83.8 a
03 EXC 888	173 LB/A	92.5 a	93.3 a	92.0 a	92.0 a
04 EXC 890	173 LB/A	92.5 a	88.8 a	88.8 a	83.8 a
05 EXC 889	173 LB/A	72.5 b	30.0 b	45.0 b	38.8 b
06 EXC 881	173 LB/A	91.3 a	85.8 a	85.8 a	82.0 a
07 EXC 886	173 LB/A	86.3 a	82.5 a	71.3 a	80.0 a
08 EXC 887	173 LB/A	91.3 a	91.3 a	78.8 a	72.5 ab
09 EXC 891	173 LB/A	90.0 a	73.8 a	86.3 a	90.0 a
10 UNTREATED CHECK		0.0 c	0.0 c	0.0 c	0.0 c
LSD (P=.05)		10.50	24.12	21.63	28.75
Standard Deviation		7.24	16.63	14.91	19.82
CV		9.18	24.0	20.81	28.66
Bartlett's X2		11.459	26.024	19.786	22.502
P(Bartlett's X2)		0.12	0.001*	0.011*	0.004*

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS MESOTRIONE PRODUCTS ALONE AND IN COMBINATION WITH OTHERS

Trial ID: 0654TG4 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code Rating Data Type Rating Date Trt-Eval Interval			DIGSA % CONT Jun-15-06 4 DA-A	CERVU % CONT Jun-15-06 4 DA-A	TRFRE % CONT Jun-15-06 4 DA-A	TAROF % CONT Jun-15-06 4 DA-A
Trt No.	Treatment Name	Rate Rate Unit				
01	EXC 878	173 LB/A	81.3 ab	70.0 a	85.0 ab	72.5 a
02	EXC 892	173 LB/A	85.0 a	67.5 a	85.0 ab	87.5 a
03	EXC 888	173 LB/A	87.5 a	92.5 a	86.3 ab	88.8 a
04	EXC 890	173 LB/A	86.3 a	75.0 a	90.0 a	85.0 a
05	EXC 889	173 LB/A	73.8 b	45.0 b	68.5 b	52.5 b
06	EXC 881	173 LB/A	87.5 a	78.8 a	82.5 ab	82.5 a
07	EXC 886	173 LB/A	86.3 a	82.5 a	77.5 ab	81.3 a
08	EXC 887	173 LB/A	90.0 a	86.3 a	77.5 ab	76.3 a
09	EXC 891	173 LB/A	88.8 a	72.5 a	81.3 ab	87.5 a
10	UNTREATED CHECK		0.0 c	0.0 c	0.0 c	0.0 c
LSD (P=.05)			8.08	18.57	11.27	16.52
Standard Deviation			5.57	12.80	7.76	11.38
CV			7.27	19.1	10.57	15.95
Bartlett's X2			12.809	18.795	10.024	15.056
P(Bartlett's X2)			0.119	0.016*	0.187	0.058

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS MESOTRIONE PRODUCTS ALONE AND IN COMBINATION WITH OTHERS

Trial ID: 0654TG4 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code Rating Data Type Rating Date Trt-Eval Interval		DIGSA % CONT Jul-14-06 33 DA-A	CERVU % CONT Jul-14-06 33 DA-A	TRFRE % CONT Jul-14-06 33 DA-A	TAROF % CONT Jul-14-06 33 DA-A
Trt No. Treatment Name	Rate Rate Unit				
01 EXC 878	173 LB/A	80.0 b	86.3 a	86.3 ab	90.0 a
02 EXC 892	173 LB/A	82.5 ab	85.0 a	86.3 ab	90.0 a
03 EXC 888	173 LB/A	81.3 ab	90.0 a	85.0 ab	90.0 a
04 EXC 890	173 LB/A	82.5 ab	87.5 a	90.0 a	87.5 a
05 EXC 889	173 LB/A	56.3 c	86.3 a	78.8 b	85.0 a
06 EXC 881	173 LB/A	90.0 a	90.0 a	86.3 ab	87.5 a
07 EXC 886	173 LB/A	83.8 ab	90.0 a	87.5 a	87.5 a
08 EXC 887	173 LB/A	81.3 ab	90.0 a	90.0 a	90.0 a
09 EXC 891	173 LB/A	87.5 ab	90.0 a	88.8 a	90.0 a
10 UNTREATED CHECK		0.0 d	0.0 b	0.0 c	0.0 b
LSD (P=.05)		5.99	5.05	5.28	4.48
Standard Deviation		4.13	3.48	3.64	3.09
CV		5.69	4.38	4.67	3.87
Bartlett's X2		6.875	0.685	6.874	0.094
P(Bartlett's X2)		0.333	0.877	0.333	0.993

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

Sep-29-06 (0654TG4) AOV Means Table Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS MESOTRIONE PRODUCTS ALONE AND IN COMBINATION WITH OTHERS

Trial ID: 0654TG4 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	DIGSA % CONT Aug-03-06 53 DA-A	CERVU % CONT Aug-03-06 53 DA-A	TRFRE % CONT Aug-03-06 53 DA-A	TAROF % CONT Aug-03-06 53 DA-A
01	EXC 878	173	LB/A	57.5 b	0.0 a	90.0 a	60.0 a
02	EXC 892	173	LB/A	51.3 b	0.0 a	93.8 a	22.5 a
03	EXC 888	173	LB/A	50.0 b	0.0 a	95.0 a	23.8 a
04	EXC 890	173	LB/A	60.0 b	0.0 a	92.5 a	35.0 a
05	EXC 889	173	LB/A	12.5 c	20.0 a	88.8 a	41.3 a
06	EXC 881	173	LB/A	86.3 a	0.0 a	90.0 a	20.0 a
07	EXC 886	173	LB/A	58.8 b	0.0 a	91.3 a	21.3 a
08	EXC 887	173	LB/A	53.8 b	0.0 a	92.5 a	17.5 a
09	EXC 891	173	LB/A	73.8 ab	0.0 a	90.0 a	0.0 a
10	UNTREATED CHECK			0.0 c	0.0 a	0.0 b	0.0 a
	LSD (P=.05)			16.82	18.35	5.79	48.79
	Standard Deviation			11.59	12.65	3.99	33.62
	CV			23.01	632.46	4.84	139.37
	Bartlett's X2			10.884	0.0	5.41	0.398
	P(Bartlett's X2)			0.208	0.00*	0.492	1.00

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

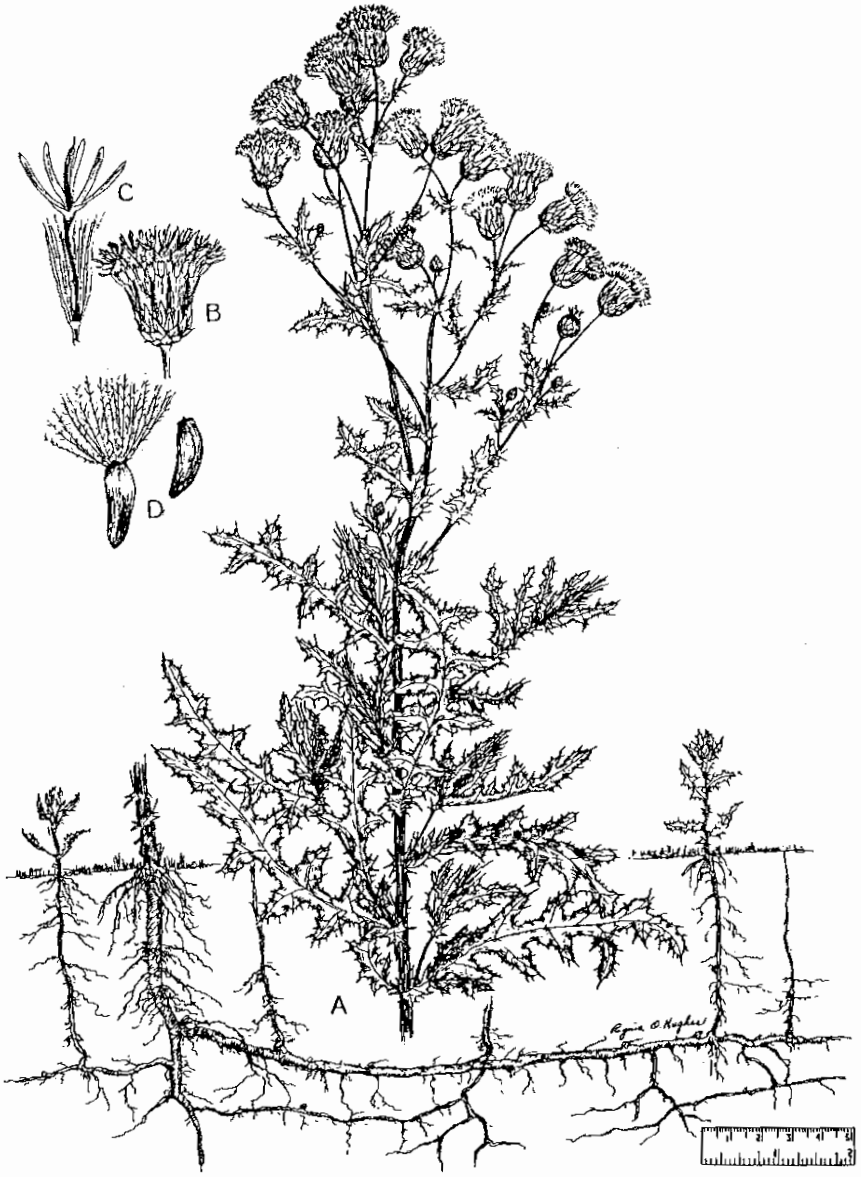
UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS MESOTRIONE PRODUCTS ALONE AND IN COMBINATION WITH OTHERS

Trial ID: 0654TG4 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code Rating Data Type Rating Date Trt-Eval Interval		DIGSA % CONT Aug-24-06 74 DA-A	TRFRE % CONT Aug-24-06 74 DA-A	DIGSA % CONT Sep-13-06 94 DA-A	TRFRE % CONT Sep-13-06 94 DA-A
Trt No. Treatment Name	Rate Rate Unit				
01 EXC 878	173 LB/A	27.5 bc	90.0 a	65.0 ab	93.8 a
02 EXC 892	173 LB/A	27.5 bc	92.5 a	67.5 ab	95.0 a
03 EXC 888	173 LB/A	21.3 bc	93.8 a	35.0 bcd	90.0 a
04 EXC 890	173 LB/A	28.8 bc	93.8 a	51.3 bc	95.0 a
05 EXC 889	173 LB/A	0.0 c	91.3 a	17.5 cd	90.0 a
06 EXC 881	173 LB/A	87.5 a	91.3 a	91.3 a	88.8 a
07 EXC 886	173 LB/A	27.5 bc	90.0 a	35.0 bcd	90.0 a
08 EXC 887	173 LB/A	20.0 bc	92.5 a	57.5 ab	93.8 a
09 EXC 891	173 LB/A	55.0 b	91.3 a	72.5 ab	91.3 a
10 UNTREATED CHECK		0.0 c	0.0 b	0.0 d	0.0 b
LSD (P=.05)		23.61	7.07	26.51	5.35
Standard Deviation		16.27	4.88	18.27	3.69
CV		55.15	5.9	37.1	4.46
Bartlett's X2		13.748	9.266	20.114	11.821
P(Bartlett's X2)		0.056	0.32	0.01*	0.037*

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)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Sep-29-06 (0655TG5) Site Description Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF FULL SEASON WEED CONTROL WITH TWO PROGRAMS

Trial ID: 0655TG5 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PROF. BHOWMIK Title: _____
Affiliation: _____ Postal Code: _____

Investigator: Bhowmik, P.C., R. Keese and D. Sarkar. Title: _____
Affiliation: _____ Postal Code: _____

Trial Status: _____ Initiation Date: _____ Country: _____
City: _____ State/Prov.: _____ Postal Code: _____
Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1._____ _____ 2._____ _____

Crop 1:_____ _____ Variety: _____ Planting Date: _____
Planting Method: _____ Rate: _____ _____ Depth: ____ __
Perennial Age: ____ _____ Row Spacing: ____ _____ Seed Bed: _____
Soil Temperature: ____ _ Soil Moisture: _____ Emergence Date: _____

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
Site Type: _____
Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____
_____

Previous:	Crops	Pesticides	Year
1.	_____	_____	____

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.	_____	_____	____	_____	___	_____	_____

SOIL DESCRIPTION

Texture: _____ % OM: ____ % Sand: ____ % Silt: ____ % Clay: ____
pH: ____ CEC: ____ Soil Name: _____ Fertility Level: _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.	_____	_____	_____	__	_____	_____	___

Overall Moisture Conditions: _____
Closest Weather Station: _____ Distance: _____ Unit: __

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF FULL SEASON WEED CONTROL WITH TWO PROGRAMS

Trial ID: 0655TG5 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Apr-20-06		Jun-11-06		Jul-08-06	
Time of Day:	AM		AM		AM	
Application Method:	BROD		BROD		BROD	
Application Timing:	PRE		E-POST		E-POST	
Air Temp., Unit:	72.8 F		67.4 F		76.0 F	
% Relative Humidity:	12		34.3		44	
Wind Velocity, Unit:	10 MPH		15 MPH		5 MPH	
Soil Temp., Unit:	55.5 F	52.8 F	72.8 F	67.8 F	74.6 F	73.2 F
Soil Moisture:	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"
% Cloud Cover:	0		0		0	

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEE JET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Boom Length, Unit:	40 INCH					
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Propellant:	CO2					

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF FULL SEASON WEED CONTROL WITH TWO PROGRAMS

Trial ID: 0655TG5 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code			DIGSA	CERVU	TRFRE	TAROF
Rating Data Type			% CONT	% CONT	% CONT	% CONT
Rating Date			May-26-06	May-26-06	May-26-06	May-26-06
Trt-Eval Interval			-16 DA-A	-16 DA-A	-16 DA-A	-16 DA-A
Trt No.	Treatment Name	Rate Rate Unit				
01	EXC 856 (29-3-4)	125 LB/A	93.8 a	80.0 a	82.5 a	77.5 a
	EXC 856 (29-3-4)	125 LB/A				
	EXC 852 (29-3-4)	125 LB/A				
	EXC 852 (29-3-4)	125 LB/A				
02	EXC 916 (30-3-4)	125 LB/A	91.3 a	60.0 b	57.5 b	33.8 b
	EXC 915 (28-3-3)	125 LB/A				
	EXC 915 (28-3-3)	125 LB/A				
03	UNTREATED CHECH		0.0 b	0.0 c	0.0 c	0.0 b
LSD (P=.05)			4.33	16.31	15.53	40.71
Standard Deviation			2.50	9.43	8.98	23.53
CV			4.05	20.2	19.23	63.44
Bartlett's X2			1.124	1.268	0.643	6.259
P(Bartlett's X2)			0.289	0.26	0.423	0.012*

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF FULL SEASON WEED CONTROL WITH TWO PROGRAMS

Trial ID: 0655TG5 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code			DIGSA	CERVU	TRFRE	TAROF
Rating Data Type			% CONT	% CONT	% CONT	% CONT
Rating Date			Jun-15-06	Jun-15-06	Jun-15-06	Jun-15-06
Trt-Eval Interval			4 DA-A	4 DA-A	4 DA-A	4 DA-A
Trt No.	Treatment Name	Rate Rate Unit				
01	EXC 856 (29-3-4)	125 LB/A	90.0 a	58.8 a	81.3 a	80.0 a
	EXC 856 (29-3-4)	125 LB/A				
	EXC 852 (29-3-4)	125 LB/A				
	EXC 852 (29-3-4)	125 LB/A				
02	EXC 916 (30-3-4)	125 LB/A	90.0 a	70.0 a	67.5 a	60.0 a
	EXC 915 (28-3-3)	125 LB/A				
	EXC 915 (28-3-3)	125 LB/A				
03	UNTREATED CHECH		0.0 b	0.0 b	0.0 b	0.0 b
LSD (P=.05)			0.00	44.18	13.91	26.74
Standard Deviation			0.00	25.54	8.04	15.46
CV			0.0	59.5	16.21	33.12
Bartlett's X2			0.0	2.602	2.322	0.0
P(Bartlett's X2)			0.00*	0.107	0.128	0.00*

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF FULL SEASON WEED CONTROL WITH TWO PROGRAMS

Trial ID: 0655TG5 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code			DIGSA	CERVU	TRFRE	TAROF
Rating Data Type			% CONT	% CONT	% CONT	% CONT
Rating Date			Jul-14-06	Jul-14-06	Jul-14-06	Jul-14-06
Trt-Eval Interval			33 DA-A	33 DA-A	33 DA-A	33 DA-A
Trt No.	Treatment Name	Rate Rate Unit				
01	EXC 856 (29-3-4)	125 LB/A	87.5 a	91.3 a	88.8 a	91.3 a
	EXC 856 (29-3-4)	125 LB/A				
	EXC 852 (29-3-4)	125 LB/A				
	EXC 852 (29-3-4)	125 LB/A				
02	EXC 916 (30-3-4)	125 LB/A	80.0 b	90.0 a	77.5 b	86.3 a
	EXC 915 (28-3-3)	125 LB/A				
	EXC 915 (28-3-3)	125 LB/A				
03	UNTREATED CHECH		0.0 c	0.0 b	0.0 c	0.0 b
LSD (P=.05)			6.45	2.50	4.33	6.29
Standard Deviation			3.73	1.44	2.50	3.63
CV			6.67	2.39	4.51	6.14
Bartlett's X2			2.029	0.0	0.698	1.124
P(Bartlett's X2)			0.154	0.00*	0.403	0.289

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF FULL SEASON WEED CONTROL WITH TWO PROGRAMS

Trial ID: 0655TG5 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code Rating Data Type Rating Date Trt-Eval Interval		DIGSA % CONT Aug-03-06 53 DA-A	CERVU % CONT Aug-03-06 53 DA-A	TRFRE % CONT Aug-03-06 53 DA-A	TAROF % CONT Aug-03-06 53 DA-A
Trt No. Treatment Name	Rate Rate Unit				
01 EXC 856 (29-3-4) EXC 856 (29-3-4) EXC 852 (29-3-4) EXC 852 (29-3-4)	125 LB/A 125 LB/A 125 LB/A 125 LB/A	82.5 a	0.0 a	91.3 a	22.5 a
02 EXC 916 (30-3-4) EXC 915 (28-3-3) EXC 915 (28-3-3)	125 LB/A 125 LB/A 125 LB/A	72.5 a	0.0 a	78.8 a	43.8 a
03 UNTREATED CHECH		0.0 b	0.0 a	0.0 b	0.0 a
LSD (P=.05)		24.81	0.00	12.65	76.69
Standard Deviation		14.34	0.00	7.31	44.32
CV		27.75	0.0	12.9	200.71
Bartlett's X2		3.455	0.0	5.698	0.038
P(Bartlett's X2)		0.063	0.00*	0.017*	0.844

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

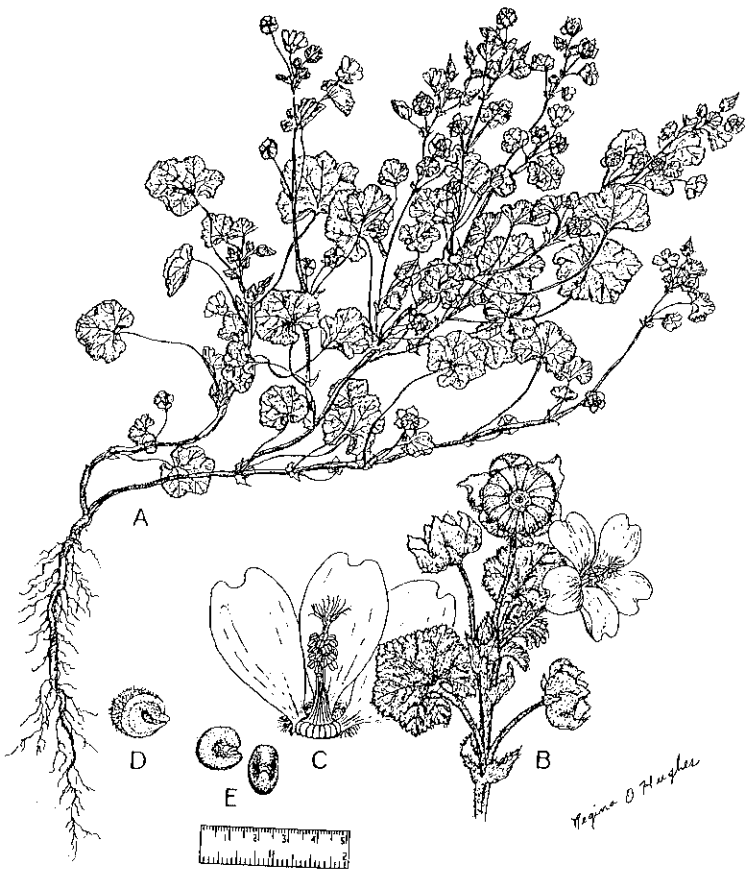
UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF FULL SEASON WEED CONTROL WITH TWO PROGRAMS

Trial ID: 0655TG5 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code				DIGSA	TRFRE	DIGSA	TRFRE
Rating Data Type				% CONT	% CONT	% CONT	% CONT
Rating Date				Aug-24-06	Aug-24-06	Sep-13-06	Sep-13-06
Trt-Eval Interval				74 DA-A	74 DA-A	94 DA-A	94 DA-A
Trt No.	Treatment Name	Rate	Rate Unit				
01	EXC 856 (29-3-4)	125	LB/A	65.0 a	91.3 a	86.3 a	92.5 a
	EXC 856 (29-3-4)	125	LB/A				
	EXC 852 (29-3-4)	125	LB/A				
	EXC 852 (29-3-4)	125	LB/A				
02	EXC 916 (30-3-4)	125	LB/A	58.8 a	73.8 b	75.0 a	85.0 b
	EXC 915 (28-3-3)	125	LB/A				
	EXC 915 (28-3-3)	125	LB/A				
03	UNTREATED CHECH			0.0 b	0.0 c	0.0 b	0.0 c
LSD (P=.05)				31.03	4.33	25.75	4.99
Standard Deviation				17.93	2.50	14.88	2.89
CV				43.47	4.55	27.69	4.88
Bartlett's X2				0.0	1.124	5.403	1.268
P(Bartlett's X2)				0.989	0.289	0.02*	0.26

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)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Sep-29-06 (0656TG6) Site Description Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF EXC878 AND AE747 IN CONTROLLING WEEDS IN COOL-SEASON TURFGRASS

Trial ID: 0656TG6 Study Dir.: P.C. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: P.C. BHOWMIK Title: _____
Affiliation: _____ Postal Code: _____

Investigator: Bhowmik, P.C. and R. Keese. Title: _____
Affiliation: _____ Postal Code: _____

Trial Status: _____ Initiation Date: _____ Country: _____
City: _____ State/Prov.: _____ Postal Code: _____
Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1._____ _____ 2._____ _____

Crop 1:_____ _____ Variety: _____ Planting Date: _____
Planting Method: _____ Rate: _____ _____ Depth: ____ __
Perennial Age: ____ _____ Row Spacing: ____ _____ Seed Bed: _____
Soil Temperature: _____ _ Soil Moisture: _____ Emergence Date: _____

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 3
Site Type: _____
Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous: Crops Pesticides Year
1. _____ _____ ____

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.	_____	_____	____	_____	___	_____	_____

SOIL DESCRIPTION

Texture: _____ % OM: ____ % Sand: ____ % Silt: ____ % Clay: ____
pH: ____ CEC: ____ Soil Name: _____ Fertility Level: _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.	_____	_____	_____	__	_____	_____	___

Overall Moisture Conditions: _____
Closest Weather Station: _____ Distance: _____ Unit: __

UNIVERSITY OF MASSACHUSETTS-AMHERST

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	May-10-06					
Time of Day:	PM					
Application Method:	SPRAY					
Application Timing:	PRE					
Applic. Placement:						
Air Temp., Unit:	63.4 F					
% Relative Humidity:	49.4					
Wind Velocity, Unit:	0 MPH					
Dew Presence (Y/N):						
Water Hardness:						
Soil Temp., Unit:	59.1 F	57.7 F				
Soil Moisture:	@ 0.5"	@ 2.00"				
% Cloud Cover:	95					

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 _____ Stage:						
Stage Scale:						
Height, Unit:						

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 _____ Stage:						
Stage Scale:						
Density, Unit:						

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEE JET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:	40 INCH					
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Spray pH:						
Propellant:	CO2					
Tank Mix (Y/N):						

Trt No	Treatment Application Comment

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF EXC878 AND AE747 IN CONTROLLING WEEDS IN COOL-SEASON TURFGRASS

Trial ID: 0656TG6 Study Dir.: P.C. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	TRFRE % CONT May-26-06 16 DA-A	TRFRE % CONT Jul-14-06 65 DA-A	TRFRE % CONT Aug-03-06 85 DA-A	TRFRE % CONT Aug-24-06 106 DA-A	TRFRE % CONT Sep-13-06 126 DA-A
01	EXC 878	.144	G	43.5	LB/A	PRE	50.0 a	31.7 ab	36.7 a	40.0 a	50.0 a
02	EXC 878	.144	G	86.6	LB/A	PRE	53.3 a	76.7 a	76.7 a	70.0 a	76.7 a
03	EXC 878	.144	G	173.0	LB/A	PRE	75.0 a	75.0 a	73.3 a	70.0 a	73.3 a
04	EXC 878	.144	G	259.5	LB/A	PRE	77.7 a	61.7 a	55.0 a	56.7 a	68.3 a
05	AE 747	630	SC	1.5	OZ/A	PRE	84.0 a	73.3 a	73.3 a	70.0 a	76.7 a
06	AE 747	630	SC	3.0	OZ/A	PRE	81.7 a	51.7 a	46.7 a	50.0 a	63.3 a
07	AE 747	630	SC	6.0	OZ/A	PRE	85.0 a	75.0 a	75.0 a	56.7 a	80.0 a
08	AE 747	630	SC	9.0	OZ/A	PRE	83.3 a	75.0 a	66.7 a	60.0 a	71.7 a
09	UNTREATED CHECK						0.0 b	0.0 b	0.0 b	0.0 a	30.0 a
	LSD (P=.05)						36.90	32.99	33.65	46.68	45.46
	Standard Deviation						21.21	19.06	19.44	26.97	26.26
	CV						32.35	32.98	34.76	51.28	40.06
	Bartlett's X2						24.473	9.394	6.468	3.265	16.739
	P(Bartlett's X2)						0.001*	0.226	0.486	0.86	0.033*
	Replicate F						1.779	0.099	1.656	0.341	0.882
	Replicate Prob(F)						0.2026	0.9059	0.2220	0.7160	0.4331
	Treatment F						5.184	5.742	5.060	2.025	1.127
	Treatment Prob(F)						0.0031	0.0015	0.0029	0.1093	0.3971

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF EXC878 AND AE747 IN CONTROLLING WEEDS IN COOL-SEASON TURFGRASS

Trial ID: 0656TG6 Study Dir.: P.C. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	TAROF % CONT May-26-06 16 DA-A	TAROF % CONT Jul-14-06 65 DA-A	TAROF % CONT Aug-03-06 85 DA-A	TAROF % CONT Aug-24-06 106 DA-A	TAROF % CONT Sep-13-06 126 DA-A
01	EXC 878	.144	G	43.5	LB/A	PRE	75.0 ab	61.7 b	58.3 a	60.0 a	16.7 a
02	EXC 878	.144	G	86.6	LB/A	PRE	78.3 ab	73.3 a	66.7 a	66.7 a	23.3 a
03	EXC 878	.144	G	173.0	LB/A	PRE	78.3 ab	75.0 a	63.3 a	56.7 a	13.3 a
04	EXC 878	.144	G	259.5	LB/A	PRE	73.3 b	80.0 a	75.0 a	70.0 a	36.7 a
05	AE 747	630	SC	1.5	OZ/A	PRE	78.3 ab	76.7 a	76.7 a	65.0 a	35.0 a
06	AE 747	630	SC	3.0	OZ/A	PRE	80.0 ab	76.7 a	76.7 a	70.0 a	40.0 a
07	AE 747	630	SC	6.0	OZ/A	PRE	86.7 a	76.7 a	71.7 a	70.0 a	23.3 a
08	AE 747	630	SC	9.0	OZ/A	PRE	85.0 ab	76.7 a	75.0 a	61.7 a	16.7 a
09	UNTREATED CHECK						0.0 c	0.0 c	0.0 b	0.0 b	6.7 a
	LSD (P=.05)						7.70	7.04	13.01	21.54	22.13
	Standard Deviation						4.45	4.07	7.52	12.44	12.78
	CV						6.31	6.14	12.01	21.54	54.36
	Bartlett's X2						3.229	3.869	6.478	5.444	5.648
	P(Bartlett's X2)						0.78	0.694	0.485	0.488	0.687
	Replicate F						0.421	1.063	2.180	2.655	5.207
	Replicate Prob(F)						0.6634	0.3686	0.1454	0.1010	0.0181
	Treatment F						108.842	116.909	31.467	9.538	2.428
	Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0624

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

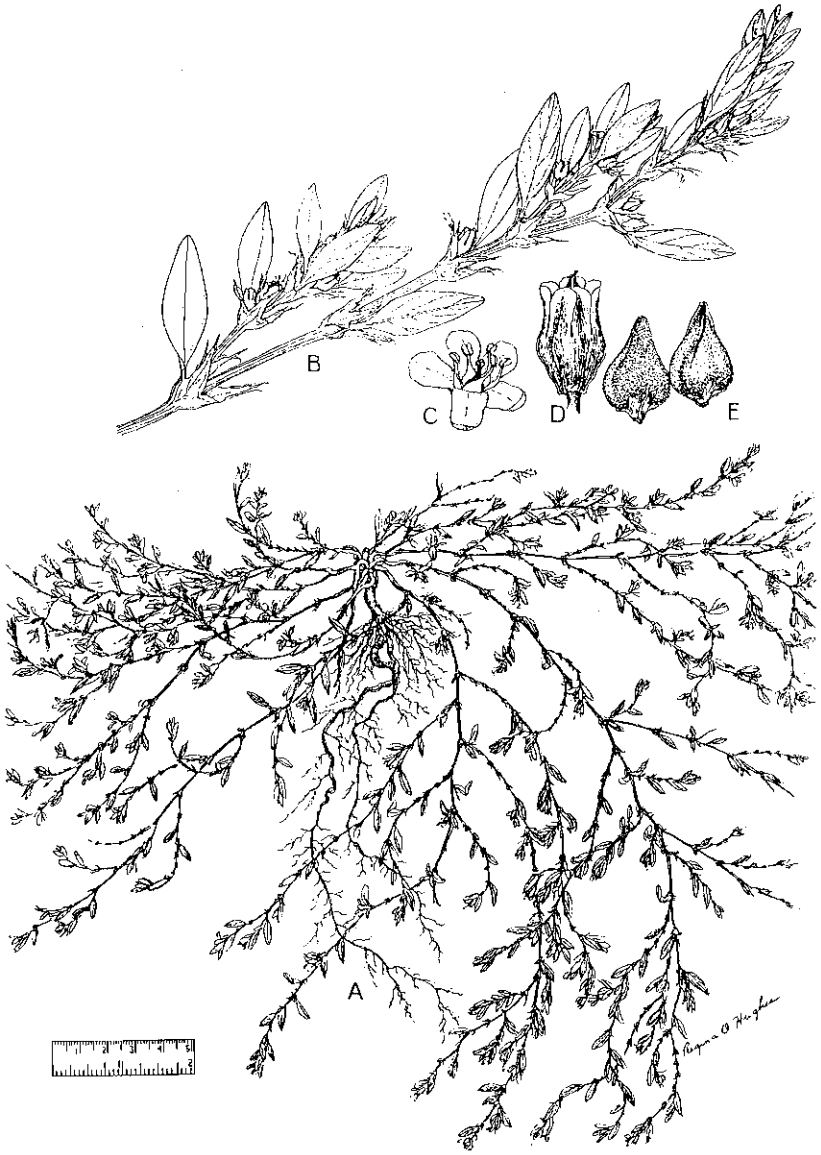
UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF EXC878 AND AE747 IN CONTROLLING WEEDS IN COOL-SEASON TURFGRASS

Trial ID: 0656TG6 Study Dir.: P.C. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	DIGSA % CONT May-26-06 16 DA-A	DIGSA % CONT Jul-14-06 65 DA-A	DIGSA % CONT Aug-03-06 85 DA-A	DIGSA % CONT Aug-24-06 106 DA-A	DIGSA % CONT Sep-13-06 126 DA-A
01	EXC 878	.144	G	43.5	LB/A	PRE	56.7 a	55.0 a	40.0 a	13.3 a	23.3 a
02	EXC 878	.144	G	86.6	LB/A	PRE	50.0 a	48.3 a	36.7 a	30.0 a	43.3 a
03	EXC 878	.144	G	173.0	LB/A	PRE	58.3 a	55.0 a	38.3 a	20.0 a	40.0 a
04	EXC 878	.144	G	259.5	LB/A	PRE	86.7 a	58.3 a	38.3 a	30.0 a	36.7 a
05	AE 747	630	SC	1.5	OZ/A	PRE	56.7 a	71.7 a	40.0 a	6.7 a	36.7 a
06	AE 747	630	SC	3.0	OZ/A	PRE	91.7 a	76.7 a	53.3 a	33.3 a	30.0 a
07	AE 747	630	SC	6.0	OZ/A	PRE	58.3 a	61.7 a	46.7 a	33.3 a	55.0 a
08	AE 747	630	SC	9.0	OZ/A	PRE	60.0 a	75.0 a	53.3 a	51.7 a	40.0 a
09	UNTREATED CHECK						0.0 a	0.0 b	0.0 a	0.0 a	3.3 a
	LSD (P=.05)						56.58	37.47	50.63	47.08	42.41
	Standard Deviation						32.68	21.65	29.25	27.20	24.50
	CV						56.75	38.84	75.93	112.12	71.51
	Bartlett's X2						13.519	12.23	0.944	9.824	8.518
	P(Bartlett's X2)						0.06	0.093	0.996	0.199	0.385
	Replicate F						5.831	2.491	4.099	1.653	2.232
	Replicate Prob(F)						0.0125	0.1143	0.0365	0.2225	0.1396
	Treatment F						1.892	3.415	0.875	1.023	1.052
	Treatment Prob(F)						0.1322	0.0175	0.5565	0.4584	0.4403

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)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Sep-29-06 (0657TG7) Site Description Page 1 of 3

UNIVERSITY OF MASSACHUSETTS-AMHERST

KENTUCKY BLUEGRASS TOLERANCE TO MONTHLY APPLICATIONS OF CERTAINTY

Trial ID: 0657TG7 Study Dir.: Prof. Bhowmik
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: Prof. Bhowmik Title: _____
Affiliation: _____ Postal Code: _____

Investigator: Bhowmik, P.C., D. Sarkar, N. Tharayil and D. Riego. _____
Affiliation: _____ Postal Code: _____

Trial Status: _____ Initiation Date: _____ Country: _____
City: _____ State/Prov.: _____ Postal Code: _____
Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1. _____ 2. _____

Crop 1: _____ Variety: _____ Planting Date: _____
Planting Method: _____ Rate: _____ Depth: _____
Perennial Age: _____ Row Spacing: _____ Seed Bed: _____
Soil Temperature: _____ Soil Moisture: _____ Emergence Date: _____

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
Site Type: _____
Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

Texture: _____ % OM: _____ % Sand: _____ % Silt: _____ % Clay: _____
pH: _____ CEC: _____ Soil Name: _____ Fertility Level: _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: _____
Closest Weather Station: _____ Distance: _____ Unit: _____

UNIVERSITY OF MASSACHUSETTS-AMHERST

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	May-31-06		Jun-12-06		Jul-08-06	
Time of Day:	PM		AM		AM	
Application Method:	SPRAY		SPRAY		SPRAY	
Application Timing:	POST		POST		POST	
Applic. Placement:						
Air Temp., Unit:	82.5 F		72.6 F		76 F	
% Relative Humidity:	43.5		36.2		44	
Wind Velocity, Unit:	5 MPH		3 MPH		5 MPH	
Dew Presence (Y/N):	_	_	_	_	_	_
Water Hardness:						
Soil Temp., Unit:	88.3 F	83.6 F	66.2 F	64.5 F	74.6 F	73.2 F
Soil Moisture:	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"
% Cloud Cover:	0		4		0	

	G	H	I	J	K	L
Application Date:	Aug-09-06		Sep-13-06			
Time of Day:	AM		AM			
Application Method:	SPRAY		SPRAY			
Application Timing:	POST		POST			
Applic. Placement:						
Air Temp., Unit:	73.5 F		60.4 F			
% Relative Humidity:	38.3		49.1			
Wind Velocity, Unit:	2 MPH		1 MPH			
Dew Presence (Y/N):	_	_	_	_	_	_
Water Hardness:						
Soil Temp., Unit:	75.9 F	74.4 F	64.0 F	63.5 F		
Soil Moisture:	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"		
% Cloud Cover:	0		98			

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 _____ Stage:						
Stage Scale:						
Height, Unit:						

	G	H	I	J	K	L
Crop 1 _____ Stage:						
Stage Scale:						
Height, Unit:						

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 _____ Stage:						
Stage Scale:						
Density, Unit:						

	G	H	I	J	K	L
Weed 1 _____ Stage:						
Stage Scale:						
Density, Unit:						

UNIVERSITY OF MASSACHUSETTS-AMHERST

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEE JET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:	40 INCH					
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Spray pH:						
Propellant:	CO2					
Tank Mix (Y/N):	_	_	_	_	_	_

	G	H	I	J	K	L
Appl. Equipment:						
Operating Pressure:						
Nozzle Type:						
Nozzle Size:						
Nozzle Spacing, Unit:						
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:						
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:						
Spray Volume, Unit:						
Spray pH:						
Propellant:						
Tank Mix (Y/N):	_	_	_	_	_	_

Trt No	Treatment Application Comment

UNIVERSITY OF MASSACHUSETTS-AMHERST

KENTUCKY BLUEGRASS TOLERANCE TO MONTHLY APPLICATIONS OF CERTAINTY

Trial ID: 0657TG7 Study Dir.: Prof. Bhowmik
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	POAPR %STAND Jul-14-06 44 DA-A	POAPR %STAND Aug-03-06 64 DA-A	POAPR %STAND Aug-24-06 85 DA-A	POAPR %STAND Sep-13-06 105 DA-A
01	CERTAINTY NI SURF	0.75 0.25	OZ/A % V/V	97.5 a	63.5 a	66.8 a	89.0 a
02	CERTAINTY NI SURF CERTAINTY NI SURF	0.75 0.25 0.75 0.25	OZ/A % V/V OZ/A % V/V	78.8 b	72.5 a	68.8 a	70.0 a
03	CERTAINTY NI SURF	0.75 0.25	OZ/A % V/V	97.0 a	78.3 a	77.5 a	80.3 a
04	CERTAINTY NI SURF CERTAINTY NI SURF	0.75 0.25 0.75 0.25	OZ/A % V/V OZ/A % V/V	52.5 c	30.0 b	22.5 b	22.5 b
05	CERTAINTY NI SURF	0.75 0.25	OZ/A % V/V	95.0 a	71.3 a	63.8 a	73.8 a
06	CERTAINTY NI SURF CERTAINTY NI SURF	0.75 0.25 0.75 0.25	OZ/A % V/V OZ/A % V/V	93.8 a	76.3 a	65.0 a	64.5 a
07	CERTAINTY NI SURF	0.75 0.25	OZ/A % V/V	100.0 a	93.8 a	83.8 a	87.5 a
08	CERTAINTY NI SURF CERTAINTY NI SURF	0.75 0.25 0.75 0.25	OZ/A % V/V OZ/A % V/V	98.0 a	97.0 a	75.0 a	84.5 a
09	CERTAINTY NI SURF	0.75 0.25	OZ/A % V/V	99.0 a	96.0 a	96.0 a	95.0 a
10	CERTAINTY NI SURF CERTAINTY NI SURF	0.75 0.25 0.75 0.25	OZ/A % V/V OZ/A % V/V	98.5 a	95.0 a	93.8 a	93.8 a
11	CERTAINTY NI SURF	0.75 0.25	OZ/A % V/V	98.5 a	94.8 a	95.0 a	93.8 a
12	CERTAINTY NI SURF CERTAINTY NI SURF	0.75 0.25 0.75 0.25	OZ/A % V/V OZ/A % V/V	95.0 a	96.0 a	93.8 a	92.5 a
13	CERTAINTY NI SURF	0.75 0.25	OZ/A % V/V	96.0 a	96.0 a	95.0 a	92.5 a
14	CERTAINTY NI SURF CERTAINTY NI SURF	0.75 0.25 0.75 0.25	OZ/A % V/V OZ/A % V/V	96.0 a	97.5 a	93.8 a	95.0 a
15	UNTREATED CHECK			98.3 a	96.0 a	96.0 a	95.0 a
	LSD (P=.05)			8.29	20.43	22.93	18.10
	Standard Deviation			5.80	14.30	16.05	12.66
	CV			6.24	17.11	20.29	15.45
	Bartlett's X2			32.642	78.127	55.502	36.443
	P(Bartlett's X2)			0.001*	0.001*	0.001*	0.001*

Sep-29-06 (0658TG8) Site Description Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

EVALUATION OF VARIOUS FORMULATIONS OF GLYPHOSATE IN TALL FESCUE

Trial ID: 0658TG8 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PROF. BHOWMIK Title: _____
Affiliation: _____ Postal Code: _____

Investigator: Bhowmik, P.C. D. Sarkar, N. Tharayil and D. Riego. _____
Affiliation: _____ Postal Code: _____

Trial Status: _____ Initiation Date: _____ Country: _____
City: _____ State/Prov.: _____ Postal Code: _____
Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1._____ _____ 2._____ _____

Crop 1:_____ _____ Variety: _____ Planting Date: _____
Planting Method: _____ Rate: _____ _____ Depth: ____ __
Perennial Age: ____ _____ Row Spacing: ____ _____ Seed Bed: _____
Soil Temperature: ____ _ Soil Moisture: _____ Emergence Date: _____

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
Site Type: _____
Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

Texture: _____ % OM: ____ % Sand: ____ % Silt: ____ % Clay: ____
pH: ____ CEC: ____ Soil Name: _____ Fertility Level: _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: _____
Closest Weather Station: _____ Distance: _____ Unit: __

UNIVERSITY OF MASSACHUSETTS-AMHERST

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Jul-08-06					
Time of Day:	AM					
Application Method:	SPRAY					
Application Timing:	POST					
Applic. Placement:						
Air Temp., Unit:	76 F					
% Relative Humidity:	44					
Wind Velocity, Unit:	5 MPH					
Dew Presence (Y/N):	_	_	_	_	_	_
Water Hardness:						
Soil Temp., Unit:	74.6 F	73.2 F				
Soil Moisture:	@ 0.5"	@ 2.00"				
% Cloud Cover:	0					

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 Stage:						
Stage Scale:						
Height, Unit:						

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 Stage:						
Stage Scale:						
Density, Unit:						

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEE JET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:	40 INCH					
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Spray pH:						
Propellant:	CO2					
Tank Mix (Y/N):	_	_	_	_	_	_

Trt No	Treatment Application Comment

UNIVERSITY OF MASSACHUSETTS-AMHERST

EVALUATION OF VARIOUS FORMULATIONS OF GLYPHOSATE IN TALL FESCUE

Trial ID: 0658TG8 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	FESAR %CONTROL Jul-28-06 20 DA-A	TRFRE %CONTROL Jul-28-06 20 DA-A	FESAR %CONTROL Aug-03-06 26 DA-A	TRFRE %CONTROL Aug-03-06 26 DA-A
	Weed Code						
	Rating Data Type						
	Rating Date			Jul-28-06	Jul-28-06	Aug-03-06	Aug-03-06
	Trt-Eval Interval			20 DA-A	20 DA-A	26 DA-A	26 DA-A
01	MON 77360	0.75	QT/A	90.0 b	90.8 a	90.0 b	71.3 b
02	MON 77360	1.5	QT/A	97.3 a	98.8 a	97.5 a	95.8 a
03	MON 79918	0.75	QT/A	88.8 b	93.3 a	85.0 b	83.8 ab
04	MON 79918	1.5	QT/A	98.0 a	98.3 a	97.8 a	94.5 a
05	MON 79788	0.75	QT/A	91.3 b	92.0 a	88.8 b	85.0 ab
06	MON 79788	1.5	QT/A	98.0 a	96.5 a	97.3 a	91.3 ab
07	MON 79859	0.5	QT/A	90.0 b	98.3 a	87.5 b	88.8 ab
08	MON 79859	1.0	QT/A	98.3 a	98.3 a	97.5 a	95.0 a
09	MON 79859	0.75	QT/A	97.0 a	95.3 a	95.8 a	87.5 ab
10	MON 79859	1.5	QT/A	99.5 a	99.5 a	98.8 a	98.3 a
11	UNTREATED CHECK			0.0 c	0.0 b	0.0 c	0.0 c
	LSD (P=.05)			3.94	6.19	4.42	14.39
	Standard Deviation			2.73	4.29	3.06	9.97
	CV			3.17	4.91	3.6	12.3
	Bartlett's X2			17.627	27.57	9.58	30.567
	P(Bartlett's X2)			0.024*	0.001*	0.296	0.001*

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

UNIVERSITY OF MASSACHUSETTS-AMHERST

EVALUATION OF VARIOUS FORMULATIONS OF GLYPHOSATE IN TALL FESCUE

Trial ID: 0658TG8 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Weed Code Rating Data Type Rating Date Trt-Eval Interval			FESAR %CONTROL Aug-24-06 47 DA-A	TRFRE %CONTROL Aug-24-06 47 DA-A	FESAR %CONTROL Sep-13-06 67 DA-A	TRFRE %CONTROL Sep-13-06 67 DA-A
Trt No.	Treatment Name	Rate Rate Unit				
01	MON 77360	0.75 QT/A	88.8 bcd	62.5 b	87.5 ab	47.5 b
02	MON 77360	1.5 QT/A	97.0 ab	97.5 a	95.8 a	88.8 a
03	MON 79918	0.75 QT/A	82.5 d	83.8 a	73.8 c	83.8 a
04	MON 79918	1.5 QT/A	97.8 ab	95.0 a	96.0 a	92.5 a
05	MON 79788	0.75 QT/A	87.5 cd	88.8 a	80.0 bc	85.0 a
06	MON 79788	1.5 QT/A	97.3 ab	90.0 a	95.8 a	85.0 a
07	MON 79859	0.5 QT/A	88.8 bcd	87.5 a	86.3 ab	80.0 a
08	MON 79859	1.0 QT/A	94.8 abc	96.3 a	92.8 a	93.8 a
09	MON 79859	0.75 QT/A	95.8 abc	90.0 a	93.8 a	86.3 a
10	MON 79859	1.5 QT/A	99.5 a	98.8 a	95.8 a	94.5 a
11	UNTREATED CHECK		0.0 e	0.0 c	0.0 d	0.0 c
LSD (P=.05)			6.22	17.16	8.99	19.53
Standard Deviation			4.30	11.88	6.23	13.52
CV			5.09	14.69	7.63	17.77
Bartlett's X2			19.507	30.179	23.264	30.545
P(Bartlett's X2)			0.021*	0.001*	0.006*	0.001*

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

Sep-29-06 (0659TG9) Site Description Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

TALL FESCUE CONTROL WITH CERTAINTY

Trial ID: 0659TG9 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: PROF. BHOWMIK Title: _____
Affiliation: _____ Postal Code: _____

Investigator: Bhowmik, P.C. and D. Riego. Title: _____
Affiliation: _____ Postal Code: _____

Trial Status: _____ Initiation Date: _____ Country: _____
City: _____ State/Prov.: _____ Postal Code: _____
Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1._____ _____ 2._____ _____

Crop 1:_____ _____ Variety: _____ Planting Date: _____
Planting Method: _____ Rate: _____ _____ Depth: _____ __
Perennial Age: _____ _____ Row Spacing: _____ _____ Seed Bed: _____
Soil Temperature: _____ _ Soil Moisture: _____ Emergence Date: _____

Plot Width, Unit: 13.5 FT Plot Length, Unit: 40 FT Reps: 1
Site Type: _____
Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

Texture: _____ % OM: ____ % Sand: ____ % Silt: ____ % Clay: ____
pH: ____ CEC: ____ Soil Name: _____ Fertility Level: _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: _____
Closest Weather Station: _____ Distance: _____ Unit: __

UNIVERSITY OF MASSACHUSETTS-AMHERST

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Jun-11-06		Jun-12-06		Jul-08-06	
Time of Day:	AM		AM		AM	
Application Method:	SPRAY		SPRAY		SPRAY	
Application Timing:	POST		POST		POST	
Applic. Placement:						
Air Temp., Unit:	67.4 F		72.6 F		76 F	
% Relative Humidity:	34.3		36.2		44	
Wind Velocity, Unit:	15 MPH		3 MPH		5 MPH	
Dew Presence (Y/N):						
Water Hardness:						
Soil Temp., Unit:	72.8 F	67.8 F	66.2 F	64.6 F	74.6 F	73.2 F
Soil Moisture:	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"
% Cloud Cover:	0		4		0	

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 _____ Stage:						
Stage Scale:						
Height, Unit:						

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 _____ Stage:						
Stage Scale:						
Density, Unit:						

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEE JET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:	40 INCH					
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Spray pH:						
Propellant:	CO2					
Tank Mix (Y/N):						

Trt No	Treatment Application Comment

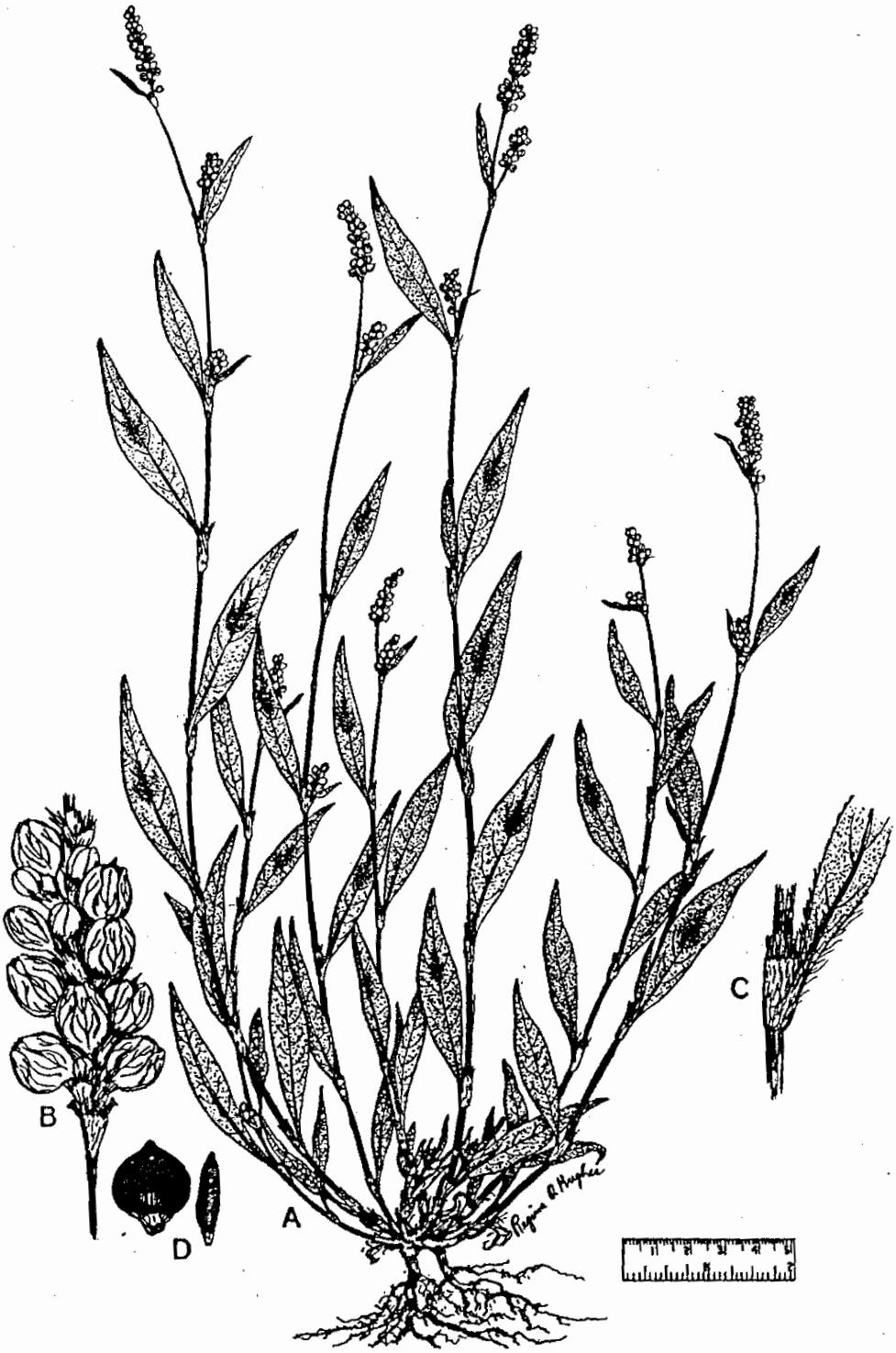
UNIVERSITY OF MASSACHUSETTS-AMHERST

TALL FESCUE CONTROL WITH CERTAINTY

Trial ID: 0659TG9 Study Dir.: PROF. BHOWMIK
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	FESAR %CONTROL Jul-28-06 47 DA-A	FESAR %CONTROL Aug-03-06 53 DA-A	FESAR %CONTROL Aug-24-06 74 DA-A	FESAR %CONTROL Sep-13-06 94 DA-A
01	CERTAINTY	0.75	OZ/A	100.0	100.0	100.0	100.0
	NI SURF	0.25	% V/V				
	CERTAINTY	0.75	OZ/A				
	NI SURF	0.25	% V/V				
02	CERTAINTY	1.00	OZ/A	100.0	100.0	100.0	100.0
	NI SURF	0.25	% V/V				
	CERTAINTY	1.00	OZ/A				
	NI SURF	0.25	% V/V				
03	UNTREATED CHECK			0.0	0.0	0.0	0.0
	LSD (P=.05)			.	.	.	.
	Standard Deviation			.	.	.	.
	CV			.	.	.	.
	Bartlett's X2			.	.	.	.
	P(Bartlett's X2)			.	.	.	.

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


B
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D
A

Sep-29-06 (0660TG10) Site Description Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH CERTAINTY IN MIXED COOL-SEASON TURFGRASS

Trial ID: 0660TG10 Study Dir.: Prof. Bhowmik
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: Prof. Bhowmik **Title:** _____
Affiliation: _____ **Postal Code:** _____

Investigator: Bhowmik, P.C. and D. Riego. **Title:** _____
Affiliation: _____ **Postal Code:** _____

Trial Status: _____ **Initiation Date:** _____ **Country:** _____
City: _____ **State/Prov.:** _____ **Postal Code:** _____
Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1._____ _____ 2._____ _____

Crop 1:_____ _____ **Variety:** _____ **Planting Date:** _____
Planting Method: _____ **Rate:** _____ _____ **Depth:** _____ __
Perennial Age: _____ _____ **Row Spacing:** _____ _____ **Seed Bed:** _____
Soil Temperature: _____ _ **Soil Moisture:** _____ **Emergence Date:** _____

Plot Width, Unit: 3.5 FT **Plot Length, Unit:** 10 FT **Reps:** 4
Site Type: _____
Tillage Type: _____ **Study Design:** RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

Texture: _____ **% OM:** _____ **% Sand:** _____ **% Silt:** _____ **% Clay:** _____
pH: _____ **CEC:** _____ **Soil Name:** _____ **Fertility Level:** _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: _____
Closest Weather Station: _____ **Distance:** _____ **Unit:** __

UNIVERSITY OF MASSACHUSETTS-AMHERST

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Jul-26-06					
Time of Day:	AM					
Application Method:	SPRAY					
Application Timing:	POST					
Applic. Placement:						
Air Temp., Unit:	85.4 F					
% Relative Humidity:	34.8					
Wind Velocity, Unit:	0 MPH					
Dew Presence (Y/N):						
Water Hardness:						
Soil Temp., Unit:	79.5 F	77.1 F				
Soil Moisture:	@ 0.5"	@ 2.00"				
% Cloud Cover:	0					

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 _____ Stage:						
Stage Scale:						
Height, Unit:						

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 _____ Stage:						
Stage Scale:						
Density, Unit:						

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEE JET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:	40 INCH					
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:	WATER					
Spray Volume, Unit:	50 GPA					
Spray pH:						
Propellant:	CO2					
Tank Mix (Y/N):						

Trt No	Treatment Application Comment

Sep-29-06 (0660TG10)

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH CERTAINTY IN MIXED COOL-SEASON TURFGRASS

Trial ID: 0660TG10 Study Dir.: Prof. Bhowmik
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	CYPES %CONTROL Aug-01-06 6 DA-A	CYPES %CONTROL Aug-09-06 14 DA-A	AGRPA INJURY 1-9 Aug-09-06 14 DA-A
	Weed Code					
	Rating Data Type					
	Rating Unit					
	Rating Date					
	Trt-Eval Interval					
1	CERTAINTY	0.25	OZ/A	47.5	47.5	2.75
	X-77	0.25	% V/V			
02	CERTAINTY	0.50	OZ/A	65.0	71.3	2.50
	X-77	0.25	% V/V			
03	CERTAINTY	0.75	OZ/A	55.0	50.0	2.63
	X-77	0.25	% V/V			
04	CERTAINTY	1.00	OZ/A	56.3	63.8	3.25
	X-77	0.25	% V/V			
05	CERTAINTY	0.25	OZ/A	67.5	65.0	2.38
	X-77	0.25	% V/V			
	CERTAINTY	0.25	OZ/A			
	X-77	0.25	% V/V			
06	CERTAINTY	0.50	OZ/A	70.0	63.8	2.88
	X-77	0.25	% V/V			
	CERTAINTY	0.50	OZ/A			
	X-77	0.25	% V/V			
07	CERTAINTY	0.75	OZ/A	66.3	68.8	3.25
	X-77	0.25	% V/V			
	CERTAINTY	0.75	OZ/A			
	X-77	0.25	% V/V			
08	MANAGE	1.33	OZ/A	72.5	76.3	1.50
	X-77	0.25	% V/V			
09	MANAGE	1.33	OZ/A	75.0	72.5	1.38
	X-77	0.25	% V/V			
	MANAGE	1.33	OZ/A			
	X-77	0.25	% V/V			
10	UNTREATED CHECK			0.0	0.0	1.00
	LSD (P=.05)			17.54	18.70	0.903
	Standard Deviation			12.09	12.89	0.622
	CV			21.03	22.27	26.47
	Bartlett's X2			5.315	7.527	2.971
	P(Bartlett's X2)			0.723	0.481	0.888

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH CERTAINTY IN MIXED COOL-SEASON TURFGRASS

Trial ID: 0660TG10 Study Dir.: Prof. Bhowmik
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	CYPES %CONTROL Aug-24-06 29 DA-A	CYPES %CONTROL Sep-27-06 63 DA-A
	Weed Code				
	Rating Data Type				
	Rating Unit				
	Rating Date				
	Trt-Eval Interval				
1	CERTAINTY	0.25	OZ/A	61.3	72.5
	X-77	0.25	% V/V		
02	CERTAINTY	0.50	OZ/A	75.0	78.8
	X-77	0.25	% V/V		
03	CERTAINTY	0.75	OZ/A	68.8	67.5
	X-77	0.25	% V/V		
04	CERTAINTY	1.00	OZ/A	80.0	80.0
	X-77	0.25	% V/V		
05	CERTAINTY	0.25	OZ/A	68.8	77.5
	X-77	0.25	% V/V		
	CERTAINTY	0.25	OZ/A		
	X-77	0.25	% V/V		
06	CERTAINTY	0.50	OZ/A	67.5	73.8
	X-77	0.25	% V/V		
	CERTAINTY	0.50	OZ/A		
	X-77	0.25	% V/V		
07	CERTAINTY	0.75	OZ/A	76.3	78.8
	X-77	0.25	% V/V		
	CERTAINTY	0.75	OZ/A		
	X-77	0.25	% V/V		
08	MANAGE	1.33	OZ/A	67.5	78.8
	X-77	0.25	% V/V		
09	MANAGE	1.33	OZ/A	75.0	73.8
	X-77	0.25	% V/V		
	MANAGE	1.33	OZ/A		
	X-77	0.25	% V/V		
10	UNTREATED CHECK			0.0	17.5
	LSD (P=.05)			13.85	20.88
	Standard Deviation			9.55	14.39
	CV			14.91	20.6
	Bartlett's X2			4.256	22.384
	P(Bartlett's X2)			0.833	0.008*

Sep-29-06 (0661TG11) Site Description Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH CERTAINTY IN MIXED COOL-SEASON TURFGRASS
SPARY TO WET

Trial ID: 0661TG11 Study Dir.: Prof. Bhowmik
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: Prof. Bhowmik Title: _____
Affiliation: _____ Postal Code: _____

Investigator: Bhowmik, P.C. and D. Riego. Title: _____
Affiliation: _____ Postal Code: _____

Trial Status: _____ Initiation Date: _____ Country: _____
City: _____ State/Prov.: _____ Postal Code: _____
Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1. _____ 2. _____

Crop 1: _____ Variety: _____ Planting Date: _____
Planting Method: _____ Rate: _____ Depth: _____
Perennial Age: _____ Row Spacing: _____ Seed Bed: _____
Soil Temperature: _____ Soil Moisture: _____ Emergence Date: _____

Plot Width, Unit: 3.5 FT Plot Length, Unit: 10 FT Reps: 4
Site Type: _____
Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

Texture: _____ % OM: _____ % Sand: _____ % Silt: _____ % Clay: _____
pH: _____ CEC: _____ Soil Name: _____ Fertility Level: _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: _____
Closest Weather Station: _____ Distance: _____ Unit: _____

UNIVERSITY OF MASSACHUSETTS-AMHERST

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Jul-26-06					
Time of Day:	AM					
Application Method:	SPRAY					
Application Timing:	POST					
Applic. Placement:						
Air Temp., Unit:	85.4 F					
% Relative Humidity:	34.8					
Wind Velocity, Unit:	0					
Dew Presence (Y/N):						
Water Hardness:						
Soil Temp., Unit:	79.5 F	77.1 F				
Soil Moisture:	@ 0.5"	@ 2.00"				
% Cloud Cover:	0					

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 _____ Stage:						
Stage Scale:						
Height, Unit:						

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 _____ Stage:						
Stage Scale:						
Density, Unit:						

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK					
Operating Pressure:	22 PSI					
Nozzle Type:	TEE JET					
Nozzle Size:	11004 VS					
Nozzle Spacing, Unit:	20 INCH					
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:	40 INCH					
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:	WATER					
Spray Volume, Unit:	100 GPA					
Spray pH:						
Propellant:	CO2					
Tank Mix (Y/N):						

Trt No	Treatment Application Comment
__	

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH CERTAINTY IN MIXED COOL-SEASON TURFGRASS
SPARY TO WET

Trial ID: 0661TG11 Study Dir.: Prof. Bhowmik
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	CYPES %CONTROL Aug-01-06 6 DA-A	CYPES %CONTROL Aug-09-06 14 DA-A	AGRPA INJURY 1-9 Aug-09-06 14 DA-A
1	CERTAINTY	0.25	OZ/A	52.5	55.0	1.25
	X-77	0.25	% V/V			
02	CERTAINTY	0.50	OZ/A	52.5	55.0	1.88
	X-77	0.25	% V/V			
03	CERTAINTY	0.75	OZ/A	57.5	68.8	1.50
	X-77	0.25	% V/V			
04	CERTAINTY	1.00	OZ/A	66.3	62.5	2.13
	X-77	0.25	% V/V			
05	CERTAINTY	0.25	OZ/A	53.8	51.3	1.25
	X-77	0.25	% V/V			
	CERTAINTY	0.25	OZ/A			
	X-77	0.25	% V/V			
06	CERTAINTY	0.50	OZ/A	67.5	65.0	1.38
	X-77	0.25	% V/V			
	CERTAINTY	0.50	OZ/A			
	X-77	0.25	% V/V			
07	CERTAINTY	0.75	OZ/A	62.5	68.8	2.00
	X-77	0.25	% V/V			
	CERTAINTY	0.75	OZ/A			
	X-77	0.25	% V/V			
08	MANAGE	1.33	OZ/A	76.3	76.3	1.25
	X-77	0.25	% V/V			
09	MANAGE	1.33	OZ/A	80.0	78.8	1.63
	X-77	0.25	% V/V			
	MANAGE	1.33	OZ/A			
	X-77	0.25	% V/V			
10	UNTREATED CHECK			0.0	0.0	1.00
	LSD (P=.05)			13.04	15.48	0.543
	Standard Deviation			8.98	10.67	0.374
	CV			15.8	18.35	24.52
	Bartlett's X2			8.376	26.506	4.255
	P(Bartlett's X2)			0.301	0.001*	0.833

UNIVERSITY OF MASSACHUSETTS-AMHERST

YELLOW NUTSEDGE CONTROL WITH CERTAINTY IN MIXED COOL-SEASON TURFGRASS
SPARY TO WET

Trial ID: 0661TG11 Study Dir.: Prof. Bhowmik
Location: TRC-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	CYPES %CONTROL Aug-22-06 27 DA-A	CYPES %CONTROL Sep-27-06 63 DA-A
1	CERTAINTY	0.25	OZ/A	57.5 a	81.3 a
	X-77	0.25	% V/V		
02	CERTAINTY	0.50	OZ/A	67.5 a	83.8 a
	X-77	0.25	% V/V		
03	CERTAINTY	0.75	OZ/A	70.8 a	74.4 a
	X-77	0.25	% V/V		
04	CERTAINTY	1.00	OZ/A	73.8 a	86.3 a
	X-77	0.25	% V/V		
05	CERTAINTY	0.25	OZ/A	56.3 a	86.3 a
	X-77	0.25	% V/V		
	CERTAINTY	0.25	OZ/A		
	X-77	0.25	% V/V		
06	CERTAINTY	0.50	OZ/A	61.3 a	80.0 a
	X-77	0.25	% V/V		
	CERTAINTY	0.50	OZ/A		
	X-77	0.25	% V/V		
07	CERTAINTY	0.75	OZ/A	66.3 a	78.8 a
	X-77	0.25	% V/V		
	CERTAINTY	0.75	OZ/A		
	X-77	0.25	% V/V		
08	MANAGE	1.33	OZ/A	68.8 a	85.0 a
	X-77	0.25	% V/V		
09	MANAGE	1.33	OZ/A	81.3 a	86.3 a
	X-77	0.25	% V/V		
	MANAGE	1.33	OZ/A		
	X-77	0.25	% V/V		
10	UNTREATED CHECK			0.0 b	0.0 b
	LSD (P=.05)			17.75	9.94
	Standard Deviation			12.21	6.84
	CV			20.24	9.22
	Bartlett's X2			7.238	8.236
	P(Bartlett's X2)			0.511	0.411

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

FIELD CROPS

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS TREATMENTS IN CONTROLLING ANNUAL GRASS AND BROADLEAF WEEDS

Trial ID: 0601CN1 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: P.C. BHOWMIK **Title:** _____
Affiliation: _____ **Postal Code:** _____

Investigator: Bhowmik, P.C., N. T. Tharayil and D. Sarkar. **Title:** _____
Affiliation: _____ **Postal Code:** _____

Trial Status: _____ **Initiation Date:** _____ **Country:** _____
City: _____ **State/Prov.:** _____ **Postal Code:** _____
Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1.CHEAL _____ 2.AMBAR _____
Weed 3.AMARE _____ 4.DIGSA _____
Weed 5.SETLU _____ 6._____ _____

Crop 1:ZEAMA N38-H9 **Variety:** ● VARIETIES **Planting Date:** _____
Planting Method: _____ **Rate:** _____ _____ **Depth:** ____ __
Perennial Age: ____ _____ **Row Spacing:** ____ _____ **Seed Bed:** _____
Soil Temperature: ____ _ **Soil Moisture:** _____ **Emergence Date:** _____

Plot Width, Unit: 7.5 FT **Plot Length, Unit:** 20 FT **Reps:** 3
Site Type: _____
Tillage Type: _____ **Study Design:** RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.			

MAINTENANCE

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

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

Texture: SILT LOAM **% OM:** 3.7 **% Sand:** ____ **% Silt:** ____ **% Clay:** ____
pH: 6.9 **CEC:** 7.1 **Soil Name:** HADLEY SILT LOAM **Fertility Level:** _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: _____
Closest Weather Station: _____ **Distance:** _____ **Unit:** __

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APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	May-21-06		Jun-02-06		Jun-12-06	
Time of Day:	AM		AM		AM	
Application Method:	SPRAY		SPRAY		SPRAY	
Application Timing:	PRE		E-POST		POST	
Applic. Placement:						
Air Temp., Unit:	63.6 F		68 F		66.9 F	
% Relative Humidity:	45.2		61.6		40.4	
Wind Velocity, Unit:	5 MPH		5 MPH		3 MPH	
Dew Presence (Y/N):						
Water Hardness:						
Soil Temp., Unit:	58.1 F	55.4 F	69.8 F	69.0 F	62.6 F	60.0 F
Soil Moisture:	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"	@ 0.5"	@ 2.00"
% Cloud Cover:	90		99		0	

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 ZEAMA Stage:						
Stage Scale:						
Height, Unit:						

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 CHEAL Stage:						
Stage Scale:						
Density, Unit:						

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:						
Operating Pressure:						
Nozzle Type:						
Nozzle Size:						
Nozzle Spacing, Unit:						
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:						
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:						
Spray Volume, Unit:						
Spray pH:						
Propellant:						
Tank Mix (Y/N):						

Trt No	Treatment Application Comment

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS TREATMENTS IN CONTROLLING ANNUAL GRASS AND BROADLEAF WEEDS

Trial ID: 0601CN1 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	DIGSA CONTROL % Jul-05-06 45 DA-A	DIGSA CONTROL % Jul-28-06 68 DA-A	DIGSA CONTROL % Aug-24-06 95 DA-A
	Weed Code			DIGSA	DIGSA	DIGSA
	Rating Data Type			CONTROL	CONTROL	CONTROL
	Rating Unit			%	%	%
	Rating Date			Jul-05-06	Jul-28-06	Aug-24-06
	Trt-Eval Interval			45 DA-A	68 DA-A	95 DA-A
01	UNTREATED CHECK			0.0	0.0	0.0
02	RADIUS (FLUFEN+IFT)	18	OZ/A	100.0	100.0	100.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
03	RADIUS (FLUFEN+IFT)	8	OZ/A	100.0	100.0	100.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
04	RADIUS (FLUFEN+IFT)	1.5	OZ/A	100.0	100.0	100.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
05	BALANCE PRO	1.5	OZ/A	100.0	99.3	100.0
	ATRAZINE	1	PT/A			
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
06	DEFINE (FLUFEN)	21	OZ/A	100.0	100.0	100.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
07	AE0172747 (TEMB+IDF)	1	OZ/A	99.7	98.7	100.0
	LIBERTY (GLUFOS)	32	OZ/A			
	AMMONIUM SULFATE	3.4	LB/A			
08	LIBERTY (GLUFOS)	32	OZ/A	100.0	99.0	96.7
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
09	LIBERTY (GLUFOS)	32	OZ/A	100.0	98.3	96.7
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
10	AE0172747 (TEMB+IDF)	1	OZ/A	93.3	95.7	100.0
	ROUNDUP (WMAX)	22	OZ/A			
	AMMONIUM SULFATE	1.7	LB/A			
11	ROUNDUP (WMAX)	22	OZ/A	100.0	100.0	100.0
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
12	ROUNDUP (WMAX)	22	OZ/A	100.0	100.0	90.0
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
13	AE0172747 (TEMB+IDF)	3	OZ/A	100.0	99.0	99.3
	OPTION (FLORAMSUL+)	1.5	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			

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Weed Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval			DIGSA CONTROL % Jul-05-06 45 DA-A	DIGSA CONTROL % Jul-28-06 68 DA-A	DIGSA CONTROL % Aug-24-06 95 DA-A
Trt No.	Treatment Name	Rate Rate Unit			
14	AE0172747 (TEMB+IDF) ACCENT (NICOSUL) COC UAN (28% N)	3 OZ/A 0.25 OZ/A 1 % V/V 1.5 QT/A	100.0	99.3	96.0
15	ROUNDUP (WMAX) AMMONIUM SULFATE	22 OZ/A 1.7 LB/A	100.0	99.7	100.0
16	ROUNDUP (WMAX)	22 OZ/A	100.0	99.7	96.7
LSD (P=.05)			4.83	2.21	8.56
Standard Deviation			2.90	1.32	5.13
CV			3.1	1.42	5.57
Bartlett's X2			9.078	21.165	10.897
P(Bartlett's X2)			0.003*	0.007*	0.053

Nov-08-06 (0601CN1)

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS TREATMENTS IN CONTROLLING ANNUAL GRASS AND BROADLEAF WEEDS

Trial ID: 0601CN1 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	SETLU CONTROL % Jul-05-06 45 DA-A	SETLU CONTROL % Jul-28-06 68 DA-A	SETLU CONTROL % Aug-24-06 95 DA-A
	Weed Code					
	Rating Data Type					
	Rating Unit					
	Rating Date					
	Trt-Eval Interval					
01	UNTREATED CHECK			0.0	0.0	0.0
02	RADIUS (FLUFEN+IFT)	18	OZ/A	100.0	99.7	95.3
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
03	RADIUS (FLUFEN+IFT)	8	OZ/A	100.0	99.7	88.3
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
04	RADIUS (FLUFEN+IFT)	1.5	OZ/A	100.0	99.3	97.7
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
05	BALANCE PRO	1.5	OZ/A	99.0	98.7	81.7
	ATRAZINE	1	PT/A			
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
06	DEFINE (FLUFEN)	21	OZ/A	100.0	100.0	89.3
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
07	AE0172747 (TEMB+IDF)	1	OZ/A	98.7	94.7	26.7
	LIBERTY (GLUFOS)	32	OZ/A			
	AMMONIUM SULFATE	3.4	LB/A			
08	LIBERTY (GLUFOS)	32	OZ/A	100.0	97.3	38.3
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
09	LIBERTY (GLUFOS)	32	OZ/A	100.0	98.0	53.3
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
10	AE0172747 (TEMB+IDF)	1	OZ/A	79.3	83.3	51.7
	ROUNDUP (WMAX)	22	OZ/A			
	AMMONIUM SULFATE	1.7	LB/A			
11	ROUNDUP (WMAX)	22	OZ/A	100.0	100.0	88.3
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
12	ROUNDUP (WMAX)	22	OZ/A	100.0	99.7	93.3
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
13	AE0172747 (TEMB+IDF)	3	OZ/A	98.7	98.7	80.0
	OPTION (FLORAMSUL+)	1.5	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			

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Trt No.	Treatment Name	Rate	Rate Unit	SETLU CONTROL % Jul-05-06 45 DA-A	SETLU CONTROL % Jul-28-06 68 DA-A	SETLU CONTROL % Aug-24-06 95 DA-A
	Weed Code			SETLU	SETLU	SETLU
	Rating Data Type			CONTROL	CONTROL	CONTROL
	Rating Unit			%	%	%
	Rating Date			Jul-05-06	Jul-28-06	Aug-24-06
	Trt-Eval Interval			45 DA-A	68 DA-A	95 DA-A
14	AE0172747 (TEMB+IDF)	3	OZ/A	98.7	98.7	59.3
	ACCENT (NICOSUL)	0.25	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
15	ROUNDUP (WMAX)	22	OZ/A	100.0	99.0	88.3
	AMMONIUM SULFATE	1.7	LB/A			
16	ROUNDUP (WMAX)	22	OZ/A	100.0	99.3	90.0
	LSD (P=.05)			10.69	5.32	32.56
	Standard Deviation			6.41	3.19	19.53
	CV			6.96	3.48	27.86
	Bartlett's X2			32.58	49.707	37.851
	P(Bartlett's X2)			0.001*	0.001*	0.001*

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS TREATMENTS IN CONTROLLING ANNUAL GRASS AND BROADLEAF WEEDS

Trial ID: 0601CN1 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	CHEAL CONTROL % Jul-05-06 45 DA-A	CHEAL CONTROL % Jul-28-06 68 DA-A	CHEAL CONTROL % Aug-24-06 95 DA-A
01	UNTREATED CHECK			0.0	0.0	0.0
02	RADIUS (FLUFEN+IFT)	18	OZ/A	100.0	100.0	98.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
03	RADIUS (FLUFEN+IFT)	8	OZ/A	100.0	99.7	98.3
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
04	RADIUS (FLUFEN+IFT)	1.5	OZ/A	100.0	100.0	100.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
05	BALANCE PRO	1.5	OZ/A	100.0	100.0	94.3
	ATRAZINE	1	PT/A			
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
06	DEFINE (FLUFEN)	21	OZ/A	100.0	100.0	100.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
07	AE0172747 (TEMB+IDF)	1	OZ/A	100.0	100.0	73.3
	LIBERTY (GLUFOS)	32	OZ/A			
	AMMONIUM SULFATE	3.4	LB/A			
08	LIBERTY (GLUFOS)	32	OZ/A	100.0	100.0	96.0
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
09	LIBERTY (GLUFOS)	32	OZ/A	100.0	100.0	95.0
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
10	AE0172747 (TEMB+IDF)	1	OZ/A	99.3	100.0	83.3
	ROUNDUP (WMAX)	22	OZ/A			
	AMMONIUM SULFATE	1.7	LB/A			
11	ROUNDUP (WMAX)	22	OZ/A	100.0	100.0	98.7
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
12	ROUNDUP (WMAX)	22	OZ/A	100.0	100.0	99.3
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
13	AE0172747 (TEMB+IDF)	3	OZ/A	100.0	100.0	96.0
	OPTION (FLORAMSUL+)	1.5	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code			CHEAL	CHEAL	CHEAL
Rating Data Type			CONTROL	CONTROL	CONTROL
Rating Unit			%	%	%
Rating Date			Jul-05-06	Jul-28-06	Aug-24-06
Trt-Eval Interval			45 DA-A	68 DA-A	95 DA-A
Trt No.	Treatment Name	Rate Rate Unit			
14	AE0172747 (TEMB+IDF)	3 OZ/A	100.0	100.0	93.3
	ACCENT (NICOSUL)	0.25 OZ/A			
	COC	1 % V/V			
	UAN (28% N)	1.5 QT/A			
15	ROUNDUP (WMAX)	22 OZ/A	100.0	100.0	85.0
	AMMONIUM SULFATE	1.7 LB/A			
16	ROUNDUP (WMAX)	22 OZ/A	100.0	99.0	80.0
LSD (P=.05)			0.48	0.47	15.60
Standard Deviation			0.29	0.28	9.36
CV			0.31	0.3	10.77
Bartlett's X2			0.0	0.567	34.921
P(Bartlett's X2)			0.00*	0.452	0.001*

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS TREATMENTS IN CONTROLLING ANNUAL GRASS AND BROADLEAF WEEDS

Trial ID: 0601CN1 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	AMARE CONTROL % Jul-05-06 45 DA-A	AMARE CONTROL % Jul-28-06 68 DA-A	AMARE CONTROL % Aug-24-06 95 DA-A
	Weed Code			AMARE	AMARE	AMARE
	Rating Data Type			CONTROL	CONTROL	CONTROL
	Rating Unit			%	%	%
	Rating Date			Jul-05-06	Jul-28-06	Aug-24-06
	Trt-Eval Interval			45 DA-A	68 DA-A	95 DA-A
01	UNTREATED CHECK			0.0	0.0	0.0
02	RADIUS (FLUFEN+IFT)	18	OZ/A	100.0	100.0	96.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
03	RADIUS (FLUFEN+IFT)	8	OZ/A	100.0	100.0	96.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
04	RADIUS (FLUFEN+IFT)	1.5	OZ/A	100.0	100.0	100.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
05	BALANCE PRO	1.5	OZ/A	100.0	100.0	99.3
	ATRAZINE	1	PT/A			
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
06	DEFINE (FLUFEN)	21	OZ/A	100.0	100.0	100.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
07	AE0172747 (TEMB+IDF)	1	OZ/A	100.0	100.0	90.0
	LIBERTY (GLUFOS)	32	OZ/A			
	AMMONIUM SULFATE	3.4	LB/A			
08	LIBERTY (GLUFOS)	32	OZ/A	100.0	100.0	96.7
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
09	LIBERTY (GLUFOS)	32	OZ/A	100.0	99.3	95.0
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
10	AE0172747 (TEMB+IDF)	1	OZ/A	100.0	100.0	96.7
	ROUNDUP (WMAX)	22	OZ/A			
	AMMONIUM SULFATE	1.7	LB/A			
11	ROUNDUP (WMAX)	22	OZ/A	100.0	100.0	100.0
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
12	ROUNDUP (WMAX)	22	OZ/A	100.0	100.0	99.3
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
13	AE0172747 (TEMB+IDF)	3	OZ/A	100.0	100.0	98.7
	OPTION (FLORAMSUL+)	1.5	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code			AMARE	AMARE	AMARE
Rating Data Type			CONTROL	CONTROL	CONTROL
Rating Unit			%	%	%
Rating Date			Jul-05-06	Jul-28-06	Aug-24-06
Trt-Eval Interval			45 DA-A	68 DA-A	95 DA-A
Trt No.	Treatment Name	Rate Rate Unit			
14	AE0172747 (TEMB+IDF)	3 OZ/A	100.0	100.0	96.7
	ACCENT (NICOSUL)	0.25 OZ/A			
	COC	1 % V/V			
	UAN (28% N)	1.5 QT/A			
15	ROUNDUP (WMAX)	22 OZ/A	100.0	100.0	96.0
	AMMONIUM SULFATE	1.7 LB/A			
16	ROUNDUP (WMAX)	22 OZ/A	100.0	100.0	95.3
LSD (P=.05)			0.00	0.48	7.84
Standard Deviation			0.00	0.29	4.70
CV			0.0	0.31	5.17
Bartlett's X2			0.0	0.0	13.634
P(Bartlett's X2)			0.00*	0.00*	0.254

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS TREATMENTS IN CONTROLLING ANNUAL GRASS AND BROADLEAF WEEDS

Trial ID: 0601CN1 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	AMBAR CONTROL % Jul-05-06 45 DA-A	AMBAR CONTROL % Jul-28-06 68 DA-A	AMBAR CONTROL % Aug-24-06 95 DA-A
	Weed Code					
	Rating Data Type					
	Rating Unit					
	Rating Date					
	Trt-Eval Interval					
01	UNTREATED CHECK			0.0	0.0	0.0
02	RADIUS (FLUFEN+IFT)	18	OZ/A	100.0	100.0	99.3
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
03	RADIUS (FLUFEN+IFT)	8	OZ/A	100.0	100.0	98.3
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
04	RADIUS (FLUFEN+IFT)	1.5	OZ/A	100.0	100.0	100.0
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
05	BALANCE PRO	1.5	OZ/A	100.0	100.0	95.3
	ATRAZINE	1	PT/A			
	AE0172747 (TEMB+IDF)	3	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
06	DEFINE (FLUFEN)	21	OZ/A	100.0	100.0	99.3
	AE0172747 (TEMB+IDF)	3	OZ/A			
	ATRAZINE	1	PT/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			
07	AE0172747 (TEMB+IDF)	1	OZ/A	100.0	100.0	88.3
	LIBERTY (GLUFOS)	32	OZ/A			
	AMMONIUM SULFATE	3.4	LB/A			
08	LIBERTY (GLUFOS)	32	OZ/A	100.0	98.3	86.0
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
09	LIBERTY (GLUFOS)	32	OZ/A	100.0	100.0	91.7
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	3.4	LB/A			
10	AE0172747 (TEMB+IDF)	1	OZ/A	100.0	100.0	92.7
	ROUNDUP (WMAX)	22	OZ/A			
	AMMONIUM SULFATE	1.7	LB/A			
11	ROUNDUP (WMAX)	22	OZ/A	100.0	100.0	99.3
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
12	ROUNDUP (WMAX)	22	OZ/A	100.0	100.0	97.7
	AE0172747 (TEMB+IDF)	1	OZ/A			
	ATRAZINE	1	PT/A			
	AMMONIUM SULFATE	1.7	LB/A			
13	AE0172747 (TEMB+IDF)	3	OZ/A	100.0	100.0	98.7
	OPTION (FLORAMSUL+)	1.5	OZ/A			
	COC	1	% V/V			
	UAN (28% N)	1.5	QT/A			

UNIVERSITY OF MASSACHUSETTS-AMHERST

Weed Code			AMBAR	AMBAR	AMBAR
Rating Data Type			CONTROL	CONTROL	CONTROL
Rating Unit			%	%	%
Rating Date			Jul-05-06	Jul-28-06	Aug-24-06
Trt-Eval Interval			45 DA-A	68 DA-A	95 DA-A
Trt No.	Treatment Name	Rate Rate Unit			
14	AE0172747 (TEMB+IDF)	3 OZ/A	100.0	100.0	96.7
	ACCENT (NICOSUL)	0.25 OZ/A			
	COC	1 % V/V			
	UAN (28% N)	1.5 QT/A			
15	ROUNDUP (WMAX)	22 OZ/A	100.0	100.0	95.0
	AMMONIUM SULFATE	1.7 LB/A			
16	ROUNDUP (WMAX)	22 OZ/A	100.0	100.0	91.0
LSD (P=.05)			0.00	1.20	10.61
Standard Deviation			0.00	0.72	6.36
CV			0.0	0.77	7.12
Bartlett's X2			0.0	0.0	26.545
P(Bartlett's X2)			0.00*	0.00*	0.014*

UNIVERSITY OF MASSACHUSETTS-AMHERST

COMPARISON OF VARIOUS TREATMENTS IN CONTROLLING ANNUAL GRASS AND BROADLEAF WEEDS

Trial ID: 0601CN1 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	ZEAMA SILAGE YIELD TONNES/A Sep-20-06 T7 2	ZEAMA GRAIN YIELD BU/A Sep-20-06 T10 2
01	UNTREATED CHECK			14.16 b	49.33 c
02	RADIUS (FLUFEN+IFT)	18	OZ/A	28.41 a	128.85 ab
	AE0172747 (TEMB+IDF)	3	OZ/A		
	COC	1	% V/V		
	UAN (28% N)	1.5	QT/A		
03	RADIUS (FLUFEN+IFT)	8	OZ/A	34.03 a	151.37 ab
	AE0172747 (TEMB+IDF)	3	OZ/A		
	ATRAZINE	1	PT/A		
	COC	1	% V/V		
	UAN (28% N)	1.5	QT/A		
04	RADIUS (FLUFEN+IFT)	1.5	OZ/A	32.29 a	150.66 ab
	AE0172747 (TEMB+IDF)	3	OZ/A		
	ATRAZINE	1	PT/A		
	COC	1	% V/V		
	UAN (28% N)	1.5	QT/A		
05	BALANCE PRO	1.5	OZ/A	30.46 a	145.39 ab
	ATRAZINE	1	PT/A		
	AE0172747 (TEMB+IDF)	3	OZ/A		
	COC	1	% V/V		
	UAN (28% N)	1.5	QT/A		
06	DEFINE (FLUFEN)	21	OZ/A	32.22 a	150.87 ab
	AE0172747 (TEMB+IDF)	3	OZ/A		
	ATRAZINE	1	PT/A		
	COC	1	% V/V		
	UAN (28% N)	1.5	QT/A		
07	AE0172747 (TEMB+IDF)	1	OZ/A	25.80 a	107.39 ab
	LIBERTY (GLUFOS)	32	OZ/A		
	AMMONIUM SULFATE	3.4	LB/A		
08	LIBERTY (GLUFOS)	32	OZ/A	26.63 a	103.86 b
	ATRAZINE	1	PT/A		
	AMMONIUM SULFATE	3.4	LB/A		
09	LIBERTY (GLUFOS)	32	OZ/A	33.44 a	129.32 ab
	AE0172747 (TEMB+IDF)	1	OZ/A		
	ATRAZINE	1	PT/A		
	AMMONIUM SULFATE	3.4	LB/A		
10	AE0172747 (TEMB+IDF)	1	OZ/A	29.50 a	148.33 ab
	ROUNDUP (WMAX)	22	OZ/A		
	AMMONIUM SULFATE	1.7	LB/A		
11	ROUNDUP (WMAX)	22	OZ/A	33.31 a	151.48 ab
	ATRAZINE	1	PT/A		
	AMMONIUM SULFATE	1.7	LB/A		
12	ROUNDUP (WMAX)	22	OZ/A	33.68 a	136.58 ab
	AE0172747 (TEMB+IDF)	1	OZ/A		
	ATRAZINE	1	PT/A		
	AMMONIUM SULFATE	1.7	LB/A		

UNIVERSITY OF MASSACHUSETTS-AMHERST

Trt No.	Treatment Name	Rate	Rate Unit	ZEAMA SILAGE YIELD TONNES/A	ZEAMA GRAIN YIELD BU/A
	Weed Code				
	Crop Code			ZEAMA	ZEAMA
	Part Rated			SILAGE	GRAIN
	Rating Data Type			YIELD	YIELD
	Rating Unit			TONNES/A	BU/A
	Rating Date			Sep-20-06	Sep-20-06
	Trt-Eval Interval				
	PRM Data Type			T7	T10
	# Subsamples, Dec.			2	2
13	AE0172747 (TEMB+IDF)	3	OZ/A	27.15 a	127.22 ab
	OPTION (FLORAMSUL+)	1.5	OZ/A		
	COC	1	% V/V		
	UAN (28% N)	1.5	QT/A		
14	AE0172747 (TEMB+IDF)	3	OZ/A	31.99 a	142.53 ab
	ACCENT (NICOSUL)	0.25	OZ/A		
	COC	1	% V/V		
	UAN (28% N)	1.5	QT/A		
15	ROUNDUP (WMAX)	22	OZ/A	31.10 a	144.34 ab
	AMMONIUM SULFATE	1.7	LB/A		
16	ROUNDUP (WMAX)	22	OZ/A	37.36 a	169.13 a
	LSD (P=.05)			7.537	35.167
	Standard Deviation			4.520	21.093
	CV			15.02	15.79
	Bartlett's X2			16.683	13.058
	P(Bartlett's X2)			0.338	0.598

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

Oct-12-06 (0602CN2) Site Description Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

EFFECTIVENESS OF KIH-485 IN CONTROLLING ANNUAL GRASS AND SMALL BROADLEAF WEEDS

Trial ID: 0602CN2 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

GENERAL TRIAL INFORMATION

Study Director: P.C. BHOWMIK Title: _____
Affiliation: _____ Postal Code: _____

Investigator: Bhowmik, P.C., N. T. Tharayil and D. Sarkar. Title: _____
Affiliation: _____ Postal Code: _____

Trial Status: _____ Initiation Date: _____ Country: _____
City: _____ State/Prov.: _____ Postal Code: _____
Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1._____ _____ 2._____ _____

Crop 1: Corn Variety: N38-H9 Planting Date: _____
Planting Method: _____ Rate: _____ _____ Depth: ____ __
Perennial Age: ____ _____ Row Spacing: ____ _____ Seed Bed: _____
Soil Temperature: ____ _ Soil Moisture: _____ Emergence Date: _____

Plot Width, Unit: 2.3 M Plot Length, Unit: 7.6 M Reps: 3
Site Type: _____
Tillage Type: _____ Study Design: RANDOMIZED COMPLETE BLOCK
Trial Initiation Comments: _____

Previous:	Crops	Pesticides	Year
1.	_____	_____	____

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.	_____	_____	____	_____	___	_____	_____

SOIL DESCRIPTION

Texture: _____ % OM: ____ % Sand: ____ % Silt: ____ % Clay: ____
pH: ____ CEC: ____ Soil Name: _____ Fertility Level: _____

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.	_____	_____	_____	__	_____	_____	___

Overall Moisture Conditions: _____
Closest Weather Station: _____ Distance: _____ Unit: __

UNIVERSITY OF MASSACHUSETTS-AMHERST

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	May-21-06					
Time of Day:	AM					
Application Method:	SPRAY					
Application Timing:	PRE					
Applic. Placement:						
Air Temp., Unit:	63.6 F					
% Relative Humidity:	45.2					
Wind Velocity, Unit:	5 MPH					
Dew Presence (Y/N):						
Water Hardness:						
Soil Temp., Unit:	58.1 F	55.4 F				
Soil Moisture:	@ 0.5"	@ 2.00"				
% Cloud Cover:	90					

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 _____ Stage:						
Stage Scale:						
Height, Unit:						

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 _____ Stage:						
Stage Scale:						
Density, Unit:						

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:						
Operating Pressure:						
Nozzle Type:						
Nozzle Size:						
Nozzle Spacing, Unit:						
Nozzles/Row:						
Band Width, Unit:						
Boom Length, Unit:						
Boom Height, Unit:						
Ground Speed, Unit:						
Incorporation Equip.:						
Hours to Incorp.:						
Incorp. Depth, Unit:						
Carrier:						
Spray Volume, Unit:						
Spray pH:						
Propellant:						
Tank Mix (Y/N):						

Trt No	Treatment Application Comment

UNIVERSITY OF MASSACHUSETTS-AMHERST

EFFECTIVENESS OF KIH-485 IN CONTROLLING ANNUAL GRASS AND SMALL BROADLEAF WEEDS

Trial ID: 0602CN2 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	DIGSA CONTROL % Jul-05-06 45 DA-A	DIGSA CONTROL % Jul-28-06 68 DA-A	DIGSA CONTROL % Aug-24-06 95 DA-A
	Weed Code			DIGSA	DIGSA	DIGSA
	Crop Code					
	Rating Data Type			CONTROL	CONTROL	CONTROL
	Rating Unit			%	%	%
	Rating Date			Jul-05-06	Jul-28-06	Aug-24-06
	Trt-Eval Interval			45 DA-A	68 DA-A	95 DA-A
01	UNTREATED CHECK			0.0	0.0	0.0
02	KIH-485	125	G A/HA	100.0	99.0	96.7
03	KIH-485	166	G A/HA	100.0	99.3	100.0
04	KIH-485	209	G A/HA	100.0	100.0	96.7
05	KIH-485	332	G A/HA	100.0	100.0	100.0
06	S-METOLACHLOR	1423	G A/HA	100.0	99.3	96.7
07	ACETOCHLOR	1736	G A/HA	100.0	99.3	100.0
08	ACETOCHLOR	2233	G A/HA	100.0	99.7	93.3
	LSD (P=.05)			0.00	0.68	10.02
	Standard Deviation			0.00	0.39	5.72
	CV			0.0	0.44	6.7
	Bartlett's X2			0.0	0.0	1.581
	P(Bartlett's X2)			0.00*	1.00	0.664

UNIVERSITY OF MASSACHUSETTS-AMHERST

EFFECTIVENESS OF KIH-485 IN CONTROLLING ANNUAL GRASS AND SMALL BROADLEAF WEEDS

Trial ID: 0602CN2 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	SETLU CONTROL % Jul-05-06 45 DA-A	SETLU CONTROL % Jul-28-06 68 DA-A	SETLU CONTROL % Aug-24-06 95 DA-A
	Weed Code			SETLU	SETLU	SETLU
	Crop Code					
	Rating Data Type			CONTROL	CONTROL	CONTROL
	Rating Unit			%	%	%
	Rating Date			Jul-05-06	Jul-28-06	Aug-24-06
	Trt-Eval Interval			45 DA-A	68 DA-A	95 DA-A
01	UNTREATED CHECK			0.0	0.0	0.0
02	KIH-485	125	G A/HA	98.7	98.7	85.0
03	KIH-485	166	G A/HA	100.0	99.3	96.7
04	KIH-485	209	G A/HA	100.0	99.7	86.7
05	KIH-485	332	G A/HA	100.0	100.0	98.3
06	S-METOLACHLOR	1423	G A/HA	100.0	99.3	96.7
07	ACETOCHLOR	1736	G A/HA	99.3	99.0	95.0
08	ACETOCHLOR	2233	G A/HA	100.0	99.7	93.3
	LSD (P=.05)			1.08	1.02	12.55
	Standard Deviation			0.62	0.58	7.17
	CV			0.71	0.67	8.8
	Bartlett's X2			0.0	1.119	6.544
	P(Bartlett's X2)			1.00	0.952	0.365

UNIVERSITY OF MASSACHUSETTS-AMHERST

EFFECTIVENESS OF KIH-485 IN CONTROLLING ANNUAL GRASS AND SMALL BROADLEAF WEEDS

Trial ID: 0602CN2 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	AMARE CONTROL % Jul-05-06 45 DA-A	AMARE CONTROL % Jul-28-06 68 DA-A	AMARE CONTROL % Aug-24-06 95 DA-A
	Weed Code			AMARE	AMARE	AMARE
	Crop Code					
	Rating Data Type			CONTROL	CONTROL	CONTROL
	Rating Unit			%	%	%
	Rating Date			Jul-05-06	Jul-28-06	Aug-24-06
	Trt-Eval Interval			45 DA-A	68 DA-A	95 DA-A
01	UNTREATED CHECK			0.0	0.0	0.0
02	KIH-485	125	G A/HA	97.0	98.0	97.7
03	KIH-485	166	G A/HA	100.0	100.0	96.0
04	KIH-485	209	G A/HA	100.0	98.7	98.3
05	KIH-485	332	G A/HA	100.0	99.7	99.3
06	S-METOLACHLOR	1423	G A/HA	94.3	92.7	86.7
07	ACETOCHLOR	1736	G A/HA	98.7	99.3	97.7
08	ACETOCHLOR	2233	G A/HA	99.3	98.7	99.3
	LSD (P=.05)			2.82	2.79	6.05
	Standard Deviation			1.61	1.59	3.45
	CV			1.87	1.86	4.09
	Bartlett's X2			4.363	9.735	7.44
	P(Bartlett's X2)			0.225	0.045*	0.282

UNIVERSITY OF MASSACHUSETTS-AMHERST

EFFECTIVENESS OF KIH-485 IN CONTROLLING ANNUAL GRASS AND SMALL BROADLEAF WEEDS

Trial ID: 0602CN2 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	AMBAR CONTROL % Jul-05-06 45 DA-A	AMBAR CONTROL % Jul-28-06 68 DA-A	AMBAR CONTROL % Aug-24-06 95 DA-A
01	UNTREATED CHECK			0.0	0.0	0.0
02	KIH-485	125	G A/HA	97.7	94.3	50.0
03	KIH-485	166	G A/HA	100.0	99.7	93.3
04	KIH-485	209	G A/HA	100.0	98.0	81.7
05	KIH-485	332	G A/HA	100.0	99.7	90.0
06	S-METOLACHLOR	1423	G A/HA	95.0	88.3	42.7
07	ACETOCHLOR	1736	G A/HA	100.0	98.7	76.7
08	ACETOCHLOR	2233	G A/HA	100.0	98.7	88.3
LSD (P=.05)				3.26	4.02	32.62
Standard Deviation				1.86	2.29	18.62
CV				2.15	2.71	28.5
Bartlett's X2				0.85	14.968	17.572
P(Bartlett's X2)				0.357	0.011*	0.007*

Oct-25-06 (06CNKUMI) AOV Means Table Page 1 of 2

UNIVERSITY OF MASSACHUSETTS-AMHERST

EFFECTIVENESS OF KIH-485 IN CONTROLLING ANNUAL GRASS AND SMALL BROADLEAF WEEDS

Trial ID: 0602CN2 Study Dir.: P.C. BHOWMIK
Location: AGRONOMY FARM-SDF Investigator: PRASANTA C. BHOWMIK

Trt No.	Treatment Name	Rate	Rate Unit	ZEAMA SILAGE YIELD TONNES/A Sep-20-06 122 DA-A T7 2	ZEAMA GRAIN YIELD BU/A Sep-20-06 122 DA-A T8 2
01	UNTREATED CHECK			15.56 c	57.99 c
02	KIH-485	125	G A/HA	22.86 b	97.24 b
03	KIH-485	166	G A/HA	29.15 ab	134.27 ab
04	KIH-485	209	G A/HA	31.15 ab	143.96 ab
05	KIH-485	332	G A/HA	33.54 a	149.70 a
06	S-METOLACHLOR	1423	G A/HA	29.38 ab	128.35 ab
07	ACETOCHLOR	1736	G A/HA	31.20 ab	135.48 ab
08	ACETOCHLOR	2233	G A/HA	29.97 ab	134.02 ab
	LSD (P=.05)			6.393	31.074
	Standard Deviation			3.650	17.743
	CV			13.11	14.47
	Bartlett's X2			6.364	5.215
	P(Bartlett's X2)			0.498	0.634

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

WEED INDEX

TURFGRASS

FIELD CORN