

North Carolina State University

Virginia Buttonweed Control in Bermudagrass Turf

Trial ID: 03-D21
Location: Reedy Creek GC

Study Dir.: Travis Gannon
Investigator: Fred Yelverton

APPLICATION EQUIPMENT

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

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Virginia Buttonweed Control in Bermudagrass Turf

Trial ID: 03-D21
Location: Reedy Creek GC

Study Dir.: Travis Gannon
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Weed Code											DIQVI	DIQVI	DIQVI	DIQVI
Crop Code											CONTROL	CONTROL	CONTROL	CONTROL
Rating Data Type											%	%	%	%
Rating Unit											6-19-03	6-26-03	7-2-03	7-9-03
Rating Date											9 DA-A	16 DA-A	22 DA-A	29 DA-A
Trt-Eval Interval														
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume				
1	Flazasulfuron X-77	25	DG L	1.5 0.25	oz/a % v/v			JUNE 10 A JUNE 10 A			17.5 de	22.5 f-i	2.5 ef	0.0 g
2	Flazasulfuron X-77	25	DG L	2.25 0.25	oz/a % v/v			JUNE 10 A JUNE 10 A			21.3 de	20.0 ghi	33.8 cd	27.5 efg
3	Flazasulfuron X-77	25	DG L	3 0.25	oz/a % v/v			JUNE 10 A JUNE 10 A			25.0 de	30.0 d-h	30.0 c-f	52.5 b-f
4	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	1.5 1.5 0.25	oz/a % v/v % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			27.5 cde	35.0 d-h	18.8 def	41.3 d-g
5	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	2.25 2.25 0.25	oz/a % v/v % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			11.3 ef	11.3 hi	5.0 def	17.5 fg
6	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	3 0.25 3 0.25	oz/a % v/v oz/a % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			27.5 cde	26.3 e-h	8.8 def	38.8 d-g
7	Trimec Classic	3.32	L	3.5	pt/a			JUNE 10 A			30.0 cd	53.8 cd	68.8 ab	63.8 a-e
8	Millenium Ultra	3.75	EC	2.5	pt/a			JUNE 10 A			73.8 a	88.8 ab	90.0 a	94.5 ab
9	Image X-77	70	DG L	0.5 0.25	lb ai/a % v/v			JUNE 10 A JUNE 10 A			31.3 cd	43.8 c-g	33.8 cd	35.0 d-g
10	Monument X-77	75	WG L	12.5 0.25	g ai/a % v/v			JUNE 10 A JUNE 10 A			26.3 de	51.3 cde	56.3 bc	51.3 c-f
11	Confront	3	L	1	pt/a			JUNE 10 A			55.0 b	65.0 bc	70.0 ab	88.5 abc
12	Confront	3	L	2	pt/a			JUNE 10 A			83.8 a	95.0 a	93.8 a	99.0 a
13	Revolver		L	0.6	oz/1000 ft2			JUNE 10 A			25.0 de	38.8 d-g	52.5 bc	73.8 a-d
14	Speed Zone	2.2	L	4	pt/a			JUNE 10 A			43.8 bc	67.5 bc	72.5 ab	85.0 abc
15	TranXit X-77	25	DF L	1 0.25	oz/a % v/v			JUNE 10 A JUNE 10 A			26.3 de	47.5 c-f	31.3 cde	22.5 efg
16	Nontreated										0.0 f	0.0 i	0.0 f	0.0 g
LSD (P=.05)											16.89	26.15	31.13	42.12
Standard Deviation											11.82	18.30	21.78	29.47
CV											36.02	42.05	52.21	59.64
Grand Mean											32.81	43.52	41.72	49.42
Bartlett's X2											30.342	10.846	35.808	24.983
P(Bartlett's X2)											0.004*	0.624	0.001*	0.015*
Replicate F											3.200	8.107	1.670	1.142
Replicate Prob(F)											0.0321	0.0002	0.1869	0.3423
Treatment F											13.495	8.300	8.127	4.786
Treatment Prob(F)											0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Trial ID: 03-D21
Location: Reedy Creek GC

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Weed Code										DIQVI	DIQVI	DIQVI	DIQVI	
Crop Code										CONTROL	CONTROL	CONTROL	CONTROL	
Rating Data Type										%	%	%	%	
Rating Unit										7-22-03	8-5-03	8-20-03	9-4-03	
Rating Date										42 DA-A	56 DA-A	71 DA-A	86 DA-A	
Trt-Eval Interval														
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume				
1	Flazasulfuron X-77	25	DG L	1.5 0.25	oz/a % v/v			JUNE 10 A JUNE 10 A			0.0 g	18.8 cde	0.0 h	0.0 f
2	Flazasulfuron X-77	25	DG L	2.25 0.25	oz/a % v/v			JUNE 10 A JUNE 10 A			32.5 d-g	41.3 cd	0.0 h	21.3 ef
3	Flazasulfuron X-77	25	DG L	3 0.25	oz/a % v/v			JUNE 10 A JUNE 10 A			31.3 d-g	51.3 bc	65.0 abc	56.3 b-e
4	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	1.5 1.5 0.25	oz/a % v/v % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			60.0 bcd	40.0 cd	58.8 bcd	56.3 b-e
5	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	2.25 2.25 0.25	oz/a % v/v % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			50.0 c-f	25.0 cde	17.5 fgh	15.0 ef
6	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	3 0.25 3 0.25	oz/a % v/v oz/a % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			62.5 bcd	31.3 cde	63.8 abc	50.0 cde
7	Trimec Classic	3.32	L	3.5	pt/a			JUNE 10 A			48.8 c-f	38.8 cd	45.0 c-g	45.0 cde
8	Millenium Ultra	3.75	EC	2.5	pt/a			JUNE 10 A			93.8 ab	82.5 ab	91.0 ab	96.3 ab
9	Image X-77	70	DG L	0.5 0.25	lb ai/a % v/v			JUNE 10 A JUNE 10 A			17.5 fg	25.0 cde	22.5 e-h	32.5 def
10	Monument X-77	75	WG L	12.5 0.25	g ai/a % v/v			JUNE 10 A JUNE 10 A			23.8 efg	27.5 cde	12.5 gh	15.0 ef
11	Confront	3	L	1	pt/a			JUNE 10 A			73.8 abc	50.0 bc	53.8 cde	77.5 abc
12	Confront	3	L	2	pt/a			JUNE 10 A			97.5 a	96.3 a	95.8 a	98.8 a
13	Revolver		L	0.6	oz/1000 ft2			JUNE 10 A			10.0 g	12.5 de	23.8 d-h	30.0 ef
14	Speed Zone	2.2	L	4	pt/a			JUNE 10 A			52.5 cde	48.8 bcd	52.5 c-f	72.5 a-d
15	TranXit X-77	25	DF L	1 0.25	oz/a % v/v			JUNE 10 A JUNE 10 A			18.8 efg	31.3 cde	22.5 e-h	35.0 def
16	Nontreated										0.0 g	0.0 e	0.0 h	0.0 f
LSD (P=.05)											33.88	37.16	35.85	42.45
Standard Deviation											23.71	26.00	25.09	29.70
CV											56.41	67.1	64.3	67.77
Grand Mean											42.03	38.75	39.02	43.83
Bartlett's X2											23.278	15.215	19.67	24.286
P(Bartlett's X2)											0.038*	0.364	0.074	0.029*
Replicate F											2.130	7.299	1.976	0.592
Replicate Prob(F)											0.1097	0.0004	0.1310	0.6235
Treatment F											6.624	3.479	6.162	4.376
Treatment Prob(F)											0.0001	0.0006	0.0001	0.0001

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Virginia Buttonweed Control in Bermudagrass Turf

Trial ID: 03-D21
Location: Reedy Creek GC

Study Dir.: Travis Gannon
Investigator: Fred Yelverton

Weed Code										CYND	CYND	CYND	CYND	CYND	
Crop Code										PHYTO	PHYTO	PHYTO	PHYTO	PHYTO	
Rating Data Type										%	%	%	%	%	
Rating Unit															
Rating Date										6-19-03	6-26-03	7-2-03	7-9-03	7-22-03	
Trt-Eval Interval										9 DA-A	16 DA-A	22 DA-A	29 DA-A	42 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume					
1	Flazasulfuron X-77	25	DG L	1.5	oz/a % v/v			JUNE 10 A JUNE 10 A			0.0 c	0.0 e	0.0 c	0.0 a	0.0 a
2	Flazasulfuron X-77	25	DG L	2.25	oz/a % v/v			JUNE 10 A JUNE 10 A			0.0 c	0.0 e	0.0 c	0.0 a	0.0 a
3	Flazasulfuron X-77	25	DG L	3	oz/a % v/v			JUNE 10 A JUNE 10 A			0.0 c	0.0 e	0.0 c	0.0 a	0.0 a
4	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	1.5 1.5	oz/a % v/v oz/a % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			0.0 c	0.0 e	0.0 c	0.0 a	0.0 a
5	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	2.25 2.25	oz/a % v/v oz/a % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			0.0 c	2.5 e	0.0 c	0.0 a	0.0 a
6	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	3 0.25	oz/a % v/v oz/a % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			0.0 c	2.5 e	0.0 c	0.0 a	0.0 a
7	Trimec Classic	3.32	L	3.5	pt/a			JUNE 10 A			2.5 c	13.8 d	0.0 c	0.0 a	0.0 a
8	Millenium Ultra	3.75	EC	2.5	pt/a			JUNE 10 A			0.0 c	18.8 cd	17.5 b	0.0 a	0.0 a
9	Image X-77	70	DG L	0.5	lb ai/a % v/v			JUNE 10 A JUNE 10 A			3.8 c	0.0 e	0.0 c	0.0 a	0.0 a
10	Monument X-77	75	WG L	12.5	g ai/a % v/v			JUNE 10 A JUNE 10 A			0.0 c	0.0 e	0.0 c	0.0 a	0.0 a
11	Confront	3	L	1	pt/a			JUNE 10 A			22.5 b	26.3 b	13.8 b	0.0 a	0.0 a
12	Confront	3	L	2	pt/a			JUNE 10 A			45.0 a	52.5 a	30.0 a	0.0 a	0.0 a
13	Revolver		L	0.6	oz/1000 ft2			JUNE 10 A			0.0 c	0.0 e	0.0 c	0.0 a	0.0 a
14	Speed Zone	2.2	L	4	pt/a			JUNE 10 A			5.0 c	21.3 bc	5.0 c	0.0 a	0.0 a
15	TranXit X-77	25	DF L	1	oz/a % v/v			JUNE 10 A JUNE 10 A			0.0 c	0.0 e	0.0 c	0.0 a	0.0 a
16	Nontreated										0.0 c	0.0 e	0.0 c	0.0 a	0.0 a
LSD (P=.05)											6.43	6.24	8.48	0.00	0.00
Standard Deviation											4.50	4.37	5.94	0.00	0.00
CV											91.35	50.81	143.39	0.0	0.0
Grand Mean											4.92	8.59	4.14	0.0	0.0
Bartlett's X2											1.376	3.466	1.937	0.0	0.0
P(Bartlett's X2)											0.848	0.749	0.586	.	.
Replicate F											0.483	0.738	0.543	0.000	0.000
Replicate Prob(F)											0.6957	0.5351	0.6554	1.0000	1.0000
Treatment F											28.876	45.721	8.669	0.000	0.000
Treatment Prob(F)											0.0001	0.0001	0.0001	1.0000	1.0000

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Virginia Buttonweed Control in Bermudagrass Turf

Trial ID: 03-D21
Location: Reedy Creek GC

Study Dir.: Travis Gannon
Investigator: Fred Yelverton

											KYLLINGA	KYLLINGA	KYLLINGA	KYLLINGA
											CONTROL	CONTROL	CONTROL	CONTROL
											%	%	%	%
											6-19-03	6-26-03	7-2-03	7-9-03
											9 DA-A	16 DA-A	22 DA-A	29 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume				
1	Flazasulfuron X-77	25	DG L	1.5	oz/a % v/v			JUNE 10 A			85.0 a	100.0 a	100.0 a	100.0 a
2	Flazasulfuron X-77	25	DG L	2.25	oz/a % v/v			JUNE 10 A			62.5 ab	92.5 b	100.0 a	100.0 a
3	Flazasulfuron X-77	25	DG L	3	oz/a % v/v			JUNE 10 A			60.0 abc	100.0 a	100.0 a	100.0 a
4	Flazasulfuron X-77	25	DG L	1.5	oz/a % v/v			JUNE 10 A			47.5 bc	100.0 a	100.0 a	100.0 a
	Flazasulfuron X-77	25	DG L	1.5	oz/a % v/v			JULY 9 B						
5	Flazasulfuron X-77	25	DG L	2.25	oz/a % v/v			JUNE 10 A			18.3 de	93.3 b	96.7 b	100.0 a
	Flazasulfuron X-77	25	DG L	2.25	oz/a % v/v			JULY 9 B						
6	Flazasulfuron X-77	25	DG L	3	oz/a % v/v			JUNE 10 A			85.0 a	85.0 c	90.0 c	95.0 a
	Flazasulfuron X-77	25	DG L	3	oz/a % v/v			JULY 9 B						
7	Trimec Classic	3.32	L	3.5	pt/a			JUNE 10 A			0.0 e	0.0 d	0.0 d	35.0 b
8	Millenium Ultra	3.75	EC	2.5	pt/a			JUNE 10 A			0.0 e	0.0 d	0.0 d	0.0 c
9	Image X-77	70	DG L	0.5	lb ai/a % v/v			JUNE 10 A						
10	Monument X-77	75	WG L	12.5	g ai/a % v/v			JUNE 10 A			33.3 cd	98.3 a	100.0 a	98.3 a
11	Confront	3	L	1	pt/a			JUNE 10 A			0.0 e	0.0 d	0.0 d	0.0 c
12	Confront	3	L	2	pt/a			JUNE 10 A			0.0 e	0.0 d	0.0 d	0.0 c
13	Revolver		L	0.6	oz/1000 ft2			JUNE 10 A						
14	Speed Zone	2.2	L	4	pt/a			JUNE 10 A			0.0 e	0.0 d	0.0 d	10.0 c
15	TranXit X-77	25	DF L	1	oz/a % v/v			JUNE 10 A			0.0 e	0.0 d	0.0 d	35.0 b
16	Nontreated										0.0 e	0.0 d	0.0 d	0.0 c
LSD (P=.05)											26.87	4.96	2.85	17.58
Standard Deviation											18.01	3.32	1.91	11.92
CV											64.38	6.95	3.89	21.57
Grand Mean											27.98	47.8	49.05	55.24
Bartlett's X2											1.396	2.277	0.0	10.668
P(Bartlett's X2)											0.845	0.32	.	0.031*
Replicate F											1.740	0.249	0.435	0.766
Replicate Prob(F)											0.1967	0.8609	0.7305	0.5267
Treatment F											13.945	897.257	2852.705	61.803
Treatment Prob(F)											0.0001	0.0001	0.0001	0.0001

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Trial ID: 03-D21
Location: Reedy Creek GC

Study Dir.: Travis Gannon
Investigator: Fred Yelverton

Weed Code										KYLLINGA	KYLLINGA	KYLLINGA	
Crop Code										CONTROL	CONTROL	CONTROL	
Rating Data Type										%	%	%	
Rating Unit										7-22-03	8-5-03	9-4-03	
Rating Date										42 DA-A	56 DA-A	86 DA-A	
Trt-Eval Interval													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume			
1	Flazasulfuron X-77	25	DG L	1.5	oz/a % v/v			JUNE 10 A JUNE 10 A			100.0 a	92.5 b	100.0 a
2	Flazasulfuron X-77	25	DG L	2.25	oz/a % v/v			JUNE 10 A JUNE 10 A			100.0 a	100.0 a	100.0 a
3	Flazasulfuron X-77	25	DG L	3	oz/a % v/v			JUNE 10 A JUNE 10 A			100.0 a	100.0 a	100.0 a
4	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	1.5	oz/a % v/v oz/a % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			100.0 a	95.0 ab	100.0 a
5	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	2.25	oz/a % v/v oz/a % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			100.0 a	100.0 a	100.0 a
6	Flazasulfuron X-77 Flazasulfuron X-77	25	DG L DG L	3	oz/a % v/v oz/a % v/v			JUNE 10 A JUNE 10 A JULY 9 B JULY 9 B			100.0 a	100.0 a	100.0 a
7	Trimec Classic	3.32	L	3.5	pt/a			JUNE 10 A			17.5 b	10.0 c	15.0 b
8	Millenium Ultra	3.75	EC	2.5	pt/a			JUNE 10 A			0.0 c	0.0 d	0.0 c
9	Image X-77	70	DG L	0.5	lb ai/a % v/v			JUNE 10 A JUNE 10 A					
10	Monument X-77	75	WG L	12.5	g ai/a % v/v			JUNE 10 A JUNE 10 A			100.0 a	100.0 a	100.0 a
11	Confront	3	L	1	pt/a			JUNE 10 A			0.0 c	0.0 d	0.0 c
12	Confront	3	L	2	pt/a			JUNE 10 A			0.0 c	0.0 d	0.0 c
13	Revolver		L	0.6	oz/1000 ft2			JUNE 10 A					
14	Speed Zone	2.2	L	4	pt/a			JUNE 10 A			0.0 c	0.0 d	0.0 c
15	TranXit X-77	25	DF L	1	oz/a % v/v			JUNE 10 A JUNE 10 A			0.0 c	10.0 c	0.0 c
16	Nontreated										0.0 c	0.0 d	0.0 c
LSD (P=.05)										1.12	7.22	6.74	
Standard Deviation										0.76	4.90	4.57	
CV										1.49	9.69	8.95	
Grand Mean										51.25	50.54	51.07	
Bartlett's X2										0.0	0.513	0.0	
P(Bartlett's X2)										.	0.916	.	
Replicate F										0.513	1.155	0.513	
Replicate Prob(F)										0.6781	0.3516	0.6781	
Treatment F										17779.170	411.064	496.437	
Treatment Prob(F)										0.0001	0.0001	0.0001	

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Trial Comments

6-10-03 - Trial initiated. Trial included skipped plots, reference map completed.

7-2-03 - Trial evaluated for VA buttonweed control and bermudagrass injury. Some kyllinga was also scattered throughout the plot area and was evaluated in those plots. Sequential applications were not able to be applied due to heavy downpours of rain, will apply next week.

7-9-03 - Sequential treatments were applied and trial was evaluated for VA buttonweed control and bermudagrass injury as well as kyllinga control in select plots. Kyllinga was a mixture of green kyllinga (*kyllinga brevifolia*), low spikesedge (*kyllinga pumila*), and annual sedge (*Cyperus compressus*).

7-22-03 - Trial evaluated for VA buttonweed control and kyllinga control. Plot numbers 405, 406, 409, 414, 415, and 416 were also providing control of dogfennel.