Herbicides on buffalograss during the transition from dormancy

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Site and Design					
Plot Width, Unit:	5 FT				
Plot Length, Unit:	5 FT				
Plot Area, Unit:	25 FT2				
Replications:	3				
Randomized Complete Block (RCB)					
Application Description	dormant	dormant	10-15% green	50-60% green	70-85% green
	A	B	C	D	E
Application Date:	4/2/2013	4/16/2013	5/1/2013	5/14/2013	6/3/2013
Air Temperature, Unit:	40 F	38 F	46 F	68 F	76 F
% Relative Humidity:	39	51	78	89	71
Soil Temperature, Unit:	41 F	46 F	56 F	61 F	66 F

This study was conducted at the Agricultural Research and Development Center outside Mead, NE in 2013.

The purpose of this trial was to evaluate herbicides when applied at various times throughout the transition of buffalograss from winter dormancy. The area consited of 10+ year old cody buffalograss maintained at 3.5". Treatments were started on fully dormant buffalograss on 2 April concluding on 3 June when buffalograss was 70-85% green-up. Herbicides were applied to 5' by 5' plots in 2 gals water/1000 sq ft with a CO2 backpack sprayer using a 3 nozzle boom with 8002vs tips at 30 PSI. Green-up was rated on a scale of 1-9 with 1= brown (dormant) turf and 9 = 100% green turf. Phytotoxicity was rated on a scale of 1-9 with 1=dead turf 7 or above = acceptable damage 9= no damage.

Results: Throughout this study the only significant damage observed was on the 3 June rating from the 14 May application (Table 1). Applications of 2,4-D or Speedzone resulted in lower visual greenup compared to the untreated check plots (Table1). Speedzone also resulted in a phytotoxicity rating of 6.7 which is below the acceptable level. 2,4-D also resulted in some phyto compared to the untreated check plots but at an acceptable level of damage.

Conclusion: With one year of data results indicate that most herbicides used in this trial were safe to apply during greenup with the exc eption of Speedzone and 2,4-D applied at 50-60% green-up. Further testing will occur in 2014 and 15 to further understand the effect of herbicides on buffalograss green-up.

Table 1. Visual green-up or phytotoxicity to cody buffalograss following various herbicide applications at different stages of buffalograss green-up

				0 % green-up	10-15 % green-up	50-60 % green-up	70-85% green-up	70-85% green-	100% green-up	100% green-up
Description				Visual Green-up	Visual Green-up	Visual Green-up	Visual Green-up	phyto	phyto	phyto
Rating Date				4/15/2013	5/1/2013	5/22/2013	6/3/2013	6/3/2013	6/13/2013	6/20/2013
Rating Type				Visual	Visual	Visual	Visual	phyto	phyto	phyto
Rating Unit				1-9	1-9	1-9	1-9	1-9	1-9	1-9
Trt No.	Treatment Name		Rate	3	4	5	6	7	8	9
1	April 1	Untreated Check		1 a	2 a	5.7 a	7.7 a	9 a	9 a	9 a
2	April 1	Quinclorac	64 floz/A	1 a	2.3 a	5.7 a	7.7 a	9 a	9 a	9 a
3	April 1	Quicksilver	2.1 floz/A	1 a	2 a	5.7 a	7.7 a	9 a	9 a	9 a
4	April 1	2 4-D	64 floz/A	1 a	2 a	6 a	8 a	9 a	9 a	9 a
5	April 1	Trimec Classic	64 floz/A	1 a	2 a	6 a	7.7 a	9 a	9 a	9 a
6	April 1	Confront	24 floz/A	1 a	2 a	5.3 a	7.7 a	9 a	9 a	9 a
7	April 1	Onetime	64 floz/A	1 a	2 a	6 a	8 a	9 a	9 a	9 a
8	April 1	Speedzone	64 floz/A	1 a	2 a	5.3 a	7.3 ab	9 a	9 a	9 a
9	April 15	Untreated Check		1 a	2 a	5.7 a	8 a	9 a	9 a	9 a
10	April 15	Quinclorac	64 floz/A	1 a	2 a	5.7 a	8 a	9 a	9 a	9 a
11	April 15	Quicksilver	2.1 floz/A	1 a	2.3 a	6 a	8 a	9 a	9 a	9 a
12	April 15	2 4-D	64 floz/A	1 a	2 a	5.7 a	8 a	9 a	9 a	9 a
13	April 15	Trimec Classic	64 floz/A	1 a	2 a	5.3 a	7.7 a	9 a	9 a	9 a
14	April 15	Confront	24 floz/A	1 a	2 a	5.3 a	8 a	9 a	9 a	9 a
15	April 15	Onetime	64 floz/A	1 a	2.3 a	5 a	7.3 ab	9 a	9 a	9 a
16	April 15	Speedzone	64 floz/A	1 a	2 a	5 a	7.3 ab	9 a	9 a	9 a
17	May 1	Untreated Check		1 a	2 a	5.7 a	7.7 a	9 a	9 a	9 a
18	May 1	Quinclorac	64 floz/A	1 a	2.3 a	5.3 a	7.7 a	9 a	9 a	9 a
19	May 1	Quicksilver	2.1 floz/A	1 a	2 a	5.3 a	7.3 ab	9 a	9 a	9 a
20	May 1	2 4-D	64 floz/A	1 a	2 a	5.3 a	7.7 a	9 a	9 a	9 a
21	May 1	Trimec Classic	64 floz/A	1 a	2 a	5 a	7.3 ab	9 a	9 a	9 a
22	May 1	Confront	24 floz/A	1 a	2 a	5.3 a	7.3 ab	9 a	9 a	9 a
23	May 1	Onetime	64 floz/A	1 a	2 a	5.3 a	7.7 a	9 a	9 a	9 a
24	May 1	Speedzone	64 floz/A	1 a	2 a	5.3 a	7.7 a	9 a	9 a	9 a
25	May 15	Untreated Check		1 a	2.3 a	5.7 a	8 a	9 a	9 a	9 a
26	May 15	Quinclorac	64 floz/A	1 a	2 a	5.3 a	8 a	9 a	9 a	9 a
27	May 15	Quicksilver	2.1 floz/A	1 a	2 a	6 a	8 a	9 a	9 a	9 a
28	May 15	2 4-D	64 floz/A	1 a	2 a	5.3 a	6.7 bc	8.3 b	9 a	9 a
29	May 15	Trimec Classic	64 floz/A	1 a	2 a	5.7 a	8 a	9 a	9 a	9 a
30	May 15	Confront	24 floz/A	1 a	2 a	5.7 a	7.3 ab	9 a	9 a	9 a
31	May 15	Onetime	64 floz/A	1 a	2 a	6 a	8 a	9 a	9 a	9 a
32	May 15	Speedzone	64 floz/A	1 a	2 a	5 a	6 c	6.7 c	8 a	9 a
33	June 1	Untreated Check		1 a	2 a	5.7 a	8 a	9 a	9 a	9 a
34	June 1	Quinclorac	64 floz/A	1 a	2.3 a	5.7 a	8 a	9 a	9 a	9 a
35	June 1	Quicksilver	2.1 floz/A	1 a	2 a	6 a	7.7 a	9 a	9 a	9 a
36	June 1	2 4-D	64 floz/A	1 a	2 a	5.3 a	7.3 ab	9 a	9 a	9 a
37	June 1	Trimec Classic	64 floz/A	1 a	2 a	6 a	8 a	9 a	9 a	9 a
38	June 1	Confront	24 floz/A	1 a	2 a	5.3 a	7.7 a	9 a	9 a	9 a
39	June 1	Onetime	64 floz/A	1 a	2 a	5.7 a	7.7 a	9 a	9 a	9 a
40	June 1	Speedzone	64 floz/A	1 a	2 a	5.7 a	8 a	9 a	9 a	9 a
LSD (P=.05)				0	0.37	0.87	0.71	0.21	0	0
Standard Deviation				0	0.23	0.53	0.44	0.13	0	0
Treatment Prob(F)				1	0.7078	0.5006	0.0002	0.0001	1	1

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.