

TURFGRASS RESEARCH 2014



SRP1107
JULY 2014



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'Cody' Buffalograss Tolerance to Combination Postemergent Broadleaf-Weed Herbicides¹

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Summary. Plots treated with all evaluated herbicides recovered to an acceptable level 28 days after application.

Rationale. Options for sedge, broadleaf, and grass weed control in buffalograss [*Buchloe dactyloides* (Nutt.) Engelm.] are limited, and applications of traditional herbicides previously have resulted in unacceptable buffalograss injury.

Objectives. Summarize herbicide tolerance of 'Cody' Buffalograss initiated in the summer of 2013.

Study Description. Experiments were conducted in 2013 at the John C. Pair Horticulture Center in Haysville, KS. 'Cody' buffalograss was maintained at 7.6 cm and irrigated as needed to prevent turfgrass decline throughout the experiment. Not all herbicides used in this study are labeled for use on buffalograss. Herbicide rates were either the maximum labeled rate or the maximum labeled rate for other warm-season turfgrasses. Herbicide treatments included the following.

- **Celsius:** thiencazzone (0.03 kg/ha) + iodosulfuron (0.007 kg/ha) + dicamba (0.2 kg/ha);
- **Katana:** flazasulfuron (0.09 kg/ha);

¹ This research was sponsored in part by a grant from the Kansas Turfgrass Foundation.

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- **Q₄Plus:** quinclorac (0.87 kg/ha) + sulfentrazone (0.07 kg/ha) + 2,4-D (1.0 kg/ha) + dicamba (0.1 kg/ha);
- **SpeedZone:** carfentrazone (0.03 kg/ha) + 2,4-D (1.0 kg/ha) + Mecoprop (0.32 kg/ha) + dicamba (0.1 kg/ha);
- **Surge:** sulfentrazone (0.03 kg/ha) + 2,4-D (0.75 kg/ha) + Mecoprop (0.27 kg/ha) + dicamba (0.1 kg/ha);
- **Trimec Classic:** 2,4-D (1.0 kg/ha) + MCPA (0.3 kg/ha) + dicamba (0.1 kg/ha);
- **T-Zone:** triclopyr (0.17 kg/ha) + sulfentrazone (0.02 kg/ha) + 2,4-D (0.6 kg/ha) + dicamba (0.07 kg/ha);
- **EndRun:** quinclorac (0.8 kg/ha) [Drive XLR8], MCPA (1.1 kg/ha) + fluroxypyr (0.11 kg/ha) + triclopyr (0.11 kg/ha) [Battleship III], 2,4-D (0.9 kg/ha) + MCPA (0.25 kg/ha) + dicamba (0.08 kg/ha);
- **Dismiss:** sulfentrazone (0.4 kg/ha) + quinclorac (1.2 kg/ha) [Solitare], sulfentrazone (0.4 kg/ha);
- **Blindside:** carfentrazone (0.03 kg/ha) [QuickSilver], sulfentrazone (0.4 kg/ha) + metsulfuron (0.04 kg/ha); and
- **SquareOne:** carfentrazone (0.05 kg/ha)+ quinclorac (0.85 kg/ha).

Plots were treated with herbicides on July 1, 2013. Experimental design was a randomized complete block with four replications and individual plot size of 1.5 × 1.5 m. Herbicides were applied in 374 L/ha of water at 275 kPa with a CO₂-pressurized boom sprayer with XR8004VS flat-fan nozzles. Buffalograss phytotoxicity (0 to 100), turfgrass color (1 to 9), quality (1 to 9), and normalized digital vegetation index (NDVI) (0 to 1) were collected. All data were analyzed using SAS (SAS Institute, Inc., Cary, NC), and means were separated according to Fisher's Protected LSD at $\alpha \leq 0.05$ significance level.

Results. No buffalograss injury was observed 7 days after treatment (DAT) with Katana or QuickSilver (Table 1). Slight buffalograss phytotoxicity (0 to 10%) was observed 7 DAT on research plots treated with Celsius, Q₄Plus, Surge, Drive XLR8, Solitare, Dismiss, Blindside, and SquareOne. Applications of SpeedZone, Trimec Classic, T-Zone, Battleship, and EndRun resulted in >14% buffalograss phytotoxicity. By 28 DAT, all herbicide treatments excluding SpeedZone (3.8%), T-Zone (2.5%), and Katana (1.3%), resulted in no buffalograss phytotoxicity.



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Table 1. ‘Cody’ Buffalograss phytotoxicity from various postemergent combination herbicides in Haysville, KS¹

Herbicide treatment	Percentage phytotoxicity ²	
	July 8	August 8
Celsius	3.8 d ³	0 c
Katana	0 d	1.3 bc
Q ₄ Plus	3.8 d	0 c
SpeedZone	15 ab	3.8 a
Surge	7.5 bcd	0 c
Trimec Classic	15 ab	0 c
T-Zone	13.8 abc	2.5 ab
Drive XLR8 + MSO ⁴	3.8 d	0 c
Battleship	18.8 a	0 c
EndRun	15 ab	0 c
Solitare	6.3 cd	0 c
Dismiss	3.8 d	0 c
QuickSilver	0 d	0 c
Blindside	2.5 d	0 c
SquareOne	2.5 d	0 c

¹ Applications were applied on July 1, 2013.

² Percentage phytotoxicity was determined by visually estimating the amount of the total ground cover in each plot that had chlorotic vegetation on a 0 to 100% scale, where 0% = no phytotoxicity.

³ Within columns, means with followed by the same letter are not significantly different according to Fisher’s Protected LSD ($P \leq 0.05$).

⁴ Methylated seed oil (MSO) was added to treatment according to the label at 1.5 pt/a rate.



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Figure 1. 'Cody' Buffalograss research trial plot in Haysville, KS, on July 8, 2013.



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