

# TURFGRASS RESEARCH 2015



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## Evaluation of Colorants on 'Sharpshooter' and 'Cody' Buffalograss

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**Summary.** Turf colorants effectively enhanced green color of dormant buffalograss. Using a higher application rate or adding a midwinter application helped longevity of color. Colorants increased canopy temperatures more consistently than soil temperatures, which may encourage earlier spring greenup.

**Rationale.** Buffalograss, which is native to North America's Great Plains, is well adapted for use in lawns, golf courses, parks, cemeteries, athletic fields, roadsides, and other low-maintenance areas in the transition zone. It can tolerate a wide range of soil types and has low requirements for irrigation, mowing, fertilizer, and pesticides. However, some turf managers in the transition zone avoid its use due to the extended period of brown color during winter dormancy. Although colorants are used routinely in the Southern United States, information is lacking on the use of colorants on buffalograss in the transition zone, where a longer winter dormancy period occurs.

**Objectives.** To determine effects of colorants, application volumes, and number of applications on 'Sharpshooter' and 'Cody' buffalograss in the transition zone.

**Study Description.** Field studies were conducted at the Rocky Ford Turfgrass Research Center in Manhattan, Kansas, and John C. Pair Horticultural Center in Haysville, Kansas, from October 2013 to May 2014 on 'Sharpshooter' and 'Cody' buffalograss, respectively, maintained at lawn/golf course rough height (2.5-in.). Thirteen treatments, including an untreated (control), consisted of the colorants Green Lawngr, Endurant, and Wintergreen Plus applied once in October, at 100 or

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160 gallons/acre or at the same rates in October and January (Manhattan) or February (Haysville), 16 weeks after the initial application. Turf color was visually rated on a biweekly/monthly schedule, and spring soil and canopy temperatures were monitored biweekly starting in March. Data were subjected to a three-fold nested analysis of variance, and Fisher's protected LSD ( $P \leq 0.05$ ) was used to detect differences.

**Results.** Results from the two locations were similar. Data from Rocky Ford are presented in Table 1. A single application of each colorant at 100 gallons/acre on October 10 resulted in acceptable color for at least 8 weeks (December 6). Single applications at 160 gallons/acre resulted in acceptable color for at least 12 weeks (January 5). Supplementing the autumn application with a sequential application on January 25 resulted in acceptable turf color throughout the remainder of winter dormancy with all colorants regardless of application volume. Green Lawngr and Endurant provided a dark green turf color, whereas color after Wintergreen Plus application was more blue-green (Fig. 1). All three colorants at both application volumes and both application timings resulted in higher spring canopy temperatures than untreated buffalograss on some spring evaluation dates, which may serve to accelerate spring greenup.



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**Table 1. Effect of colorant, application volume, and application timing on color of ‘Sharpshooter’ buffalograss at the Rocky Ford Turfgrass Research Center, Manhattan, Kansas, in 2013–2014.**

| Treatment               | Application date <sup>‡</sup> | Turf color <sup>†</sup> |        |        |                     |        |        |
|-------------------------|-------------------------------|-------------------------|--------|--------|---------------------|--------|--------|
|                         |                               | Oct 10                  | Dec 6  | Jan 5  | Jan 27              | Mar 11 | Apr 25 |
|                         |                               | 0 WAT <sup>§</sup>      | 8 WAT  | 12 WAT | 16 WAT              | 22 WAT | 28 WAT |
| <b>Green Lawngr</b>     |                               |                         |        |        |                     |        |        |
| 100 GPA                 | 10 Oct.                       | 8.5 a <sup>¶</sup>      | 6.9 c  | 5.1 b  | 3.3 e <sup>††</sup> | 2.3 e  | 2.8 c  |
|                         | 10 Oct. + 25 Jan.             | -- <sup>#</sup>         | --     | --     | 7.5 b               | 6.8 d  | 6.0 b  |
| 160 GPA                 | 10 Oct.                       | 8.6 a                   | 7.8 ab | 6.3 a  | 4.0 de              | 2.5 e  | 3.0 c  |
|                         | 10 Oct. + 25 Jan.             | --                      | --     | --     | 9.0 a               | 8.8 a  | 7.8 a  |
| <b>Endurant</b>         |                               |                         |        |        |                     |        |        |
| 100 GPA                 | 10 Oct.                       | 8.8 a                   | 7.0 bc | 5.0 b  | 3.5 de              | 2.3 e  | 2.3 cd |
|                         | 10 Oct. + 25 Jan.             | --                      | --     | --     | 8.5 a               | 7.5 cd | 6.8 ab |
| 160 GPA                 | 10 Oct.                       | 8.9 a                   | 8.5 a  | 6.3 a  | 4.0 de              | 3.0 e  | 2.8 c  |
|                         | 10 Oct. + 25 Jan.             | --                      | --     | --     | 9.0 a               | 9.0 a  | 7.0 ab |
| <b>Wintergreen Plus</b> |                               |                         |        |        |                     |        |        |
| 100 GPA                 | 10 Oct.                       | 7.8 b                   | 6.8 c  | 4.5 b  | 4.3 cd              | 2.5 e  | 3.0 c  |
|                         | 10 Oct. + 25 Jan.             | --                      | --     | --     | 8.3 ab              | 7.8 bc | 6.0 b  |
| 160 GPA                 | 10 Oct.                       | 8.9 a                   | 8.1 a  | 6.3 a  | 5.0 c               | 3.0 e  | 2.5 cd |
|                         | 10 Oct. + 25 Jan.             | --                      | --     | --     | 9.0 a               | 8.5 ab | 6.5 b  |
| <b>Untreated</b>        |                               | 2.0 c                   | 1.0 d  | 1.0 c  | 1.0 f               | 1.0 f  | 1.5 d  |

<sup>†</sup> Turf color was rated visually on a 1 to 9 scale where 1 = straw brown; 6 = acceptable green color (light green); and 9 = dark green.

<sup>‡</sup> Colorants were applied at a dilution of 1:6 (colorant:water) using a three-nozzle, CO<sub>2</sub>-pressurized sprayer with 8002VS nozzles at 20 psi.

<sup>§</sup> Weeks After Treatment (weeks after 1st colorant application)

<sup>¶</sup> Means in a column followed by the same letter are not significantly different according Fisher’s protected least significant difference test ( $P \leq 0.05$ ).

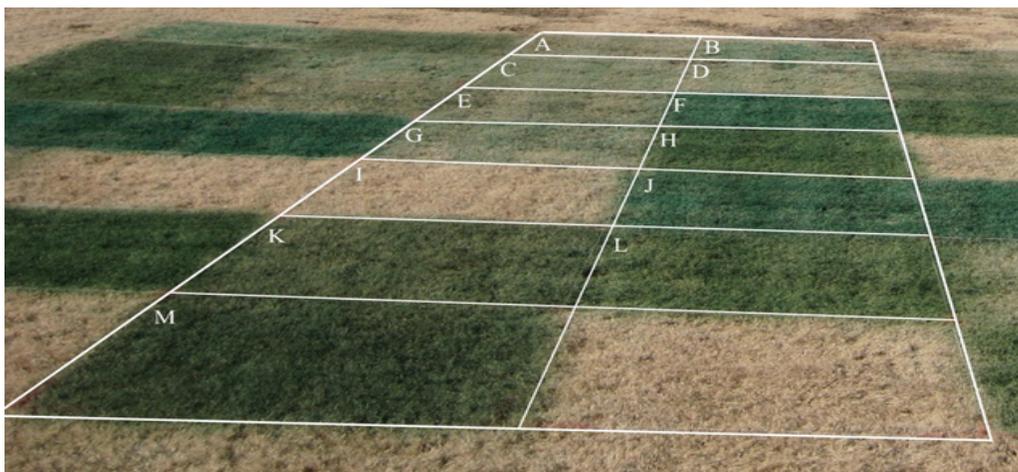
<sup>#</sup> No significant difference ( $P \geq 0.05$ ) for application timing for date. Therefore, application volume means are based upon  $n = 8$  for 100 and 160 GPA for the October 10 application until the January 27 rating date.

<sup>††</sup> Means for application timing effect on colorant and application volume based upon  $n = 4$  from January 27 to April 25.



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**Figure 1. Study area four weeks after the second application treatments on ‘Sharpshooter’ buffalograss at the Rocky Ford Research Center in Manhattan, Kansas, on February 21, 2014, (20 WAT). White box: A) Green Lawngr (100 gallons/acre – 1 application); B) Wintergreen Plus (160 gallons/acre – 1 application); C) Endurant (160 gallons/acre – 1 application); D) Endurant (100 gallons/acre – 1 application); E) Green Lawngr (160 gallons/acre – 1 application); F) Wintergreen Plus (160 gallons/acre – 2 applications); G) Wintergreen Plus (100 gallons/acre – 1 application); H) Endurant (160 gallons/acre – 2 applications); I) Untreated; J) Wintergreen Plus (100 gallons/acre – 2 applications); K) Green Lawngr (100 gallons/acre – 2 applications); L) Endurant (100 gallons/acre – 2 applications); M) Green Lawngr (160 gallons/acre – 2 applications).**



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