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# Turfgrass Proceedings

## *The New Jersey Turfgrass Association*

In Cooperation with
Rutgers Center for Turfgrass Science
Rutgers Cooperative Extension

# 2021 RUTGERS TURFGRASS PROCEEDINGS

**of the**

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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey in cooperation with the New Jersey Turfgrass Association. The purpose of this document is to provide a forum for the dissemination of information and the exchange of ideas and knowledge. The proceedings provide turfgrass managers, research scientists, extension specialists, and industry personnel with opportunities to communicate with co-workers. Through this forum, these professionals also reach a more general audience, which includes the public.

This publication includes lecture notes of papers presented at the 2021 GREEN EXPO Turf and Landscape Conference. Publication of these lectures provides a readily available source of information covering a wide range of topics and includes technical and popular presentations of importance to the turfgrass industry.

This proceedings also includes research papers that contain original research findings and reviews of selected subjects in turfgrass science. These papers are presented primarily to facilitate the timely dissemination of original turfgrass research for use by the turfgrass industry.

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Deborah Spinella, Proceedings Layout Editor
Dr. James A. Murphy, Coordinator

# PERFORMANCE OF THE 2017 NTEP KENTUCKY BLUEGRASS TRIAL AT RUTGERS HORT. FARM NO. 2 DURING 2021

**Bradley S. Park and James A. Murphy[1]**

## INTRODUCTION

Since 2018, a combination of the Rutgers Wear Simulator (RWS; Bonos et al., 2001) and Cady Traffic Simulator (CTS; Henderson et al., 2005) have been operated along a strip across all entries of the 2017 National Turfgrass Evaluation Program (NTEP) Kentucky bluegrass (*Poa pratensis* L.) Test at Rutgers University. Half of each plot have not received traffic enabling non-trafficked evaluations of each entry since the establishment of the trial.

This Proceedings article reports on the response of entries to traffic stress in the 2017 NTEP Kentucky bluegrass Test during 2021. Kentucky bluegrass performance in the absence of traffic is also reported.

## MATERIALS AND METHODS

### Evaluation Trial

The 89 entries of the 2017 NTEP Kentucky bluegrass Test were seeded at 2.2 lb of seed per 1000 ft$^2$ into 8- × 6-ft plots on 18 September 2017. The trial is grown on a well-drained loam (sand=44%; silt=41%; clay=15%) at Rutgers Hort. Farm No. 2 in North Brunswick, NJ. An unknown Kentucky bluegrass entry was also included in the evaluation. All entries were replicated three times.

Soil test results (June 2020) indicated that the soil pH was 5.5 in the 0- to 1-inch depth zone of the thatch-mat layer; soil test (Mehlich-3) phosphorus (P) and potassium (K) were 135 and 538 lb per acre, respectively. The soil pH was 6.1 at the 1- to 7-inch soil depth zone and soil P and K were 247 and 243 lb per acre, respectively. Calcitic lime (20 lb per 1000 ft$^2$) was applied during 2020 to neutralize soil acidity.

A total of 4.2 lb of nitrogen (N) per 1000 ft$^2$ was applied to the trial in 2021: 0.3, 0.6, 0.5, 0.7, 0.5, 0.5, 0.6, and 0.5 lb of N per 1000 ft$^2$ on 16 March, 13 April, 13 May, 17 June, 19 August, 9 September, 22 October, and 18 November 2021, respectively.

The test was mowed 2 to 3 times per week with a reel mower (1.5-inch). Evapotranspiration data were used to determine irrigation quantity and avoid excessive wetness as well as severe drought stress symptoms on the Kentucky bluegrass.

### Pest Management During 2021

Ethofumesate (Prograss EC; Bayer CropScience, Cary, NC) was applied during late autumn 2020 and early winter 2021 to suppress annual bluegrass (*Poa annua* L.) Dithiopyr (Dimension 2EW; Corteva Agriscience, Wilmington, DE) and imidacloprid (Merit 75WP; Bayer CropScience, Cary, NC) were applied for preemergence crabgrass (*Digitaria* spp.) and preventative white grub were control, respectively, during 2021. Turfgrass diseases were not controlled preventatively or curatively during 2021.

### Traffic Stress

Traffic was applied as a strip across approximately ½ of each Kentucky bluegrass plot; the other ½ of each plot did not receive traffic (no traffic). Traffic periods in previous years included autumn 2018 (Park and Murphy, 2019) and summer and autumn 2019 (Park and Murphy, 2020) and summer and autumn 2020 (Park and Murphy, 2021). Traffic has been applied across the same strip during each season.

Traffic was applied as two passes per week with each machine [RWS and CTS] for a total of four machine passes per week. Thus, a total of 72 machine passes were made along the traffic strip from 7 May to 30 August 2021. The RWS was operated at a ground speed of 2.5 miles per hour (mph); the paddles were set to rotate at 250 rpm. The CTS was operated at

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a speed of 1.0 mph in the forward direction. Each subsequent pass with a traffic machine was made in the opposite direction of the previous pass.

**Evaluation of Traffic Effects**

Before any traffic was applied in spring 2021, Kentucky bluegrass entry green-up was visually evaluated in both trafficked and non-trafficked strips on 9 April 2021 using a 1 to 9 scale, where 9 equaled the best green-up.

Kentucky bluegrass entries in both trafficked and non-trafficked strips were evaluated after 28, 56, and 72 traffic passes on 14 June, 3 August, and 30 August 2021, respectively. Plots were evaluated for uniformity of turf cover using a 1 to 9 scale where 9 equaled the most uniform turf cover. The fullness of turf canopy (FTC) of plots was rated on a 0 to 100% scale where 100% equaled a full canopy.

A Canon PowerShot G16 (Canon USA, Inc., Lake Success, NY) digital camera was positioned to capture images of plots within an enclosure equipped with artificial lighting. Individual digital image size was 3000 × 4000 pixels and camera settings included a shutter speed of 1/40 s, aperture of F2.8, ISO of 100 and a focal length of 8 mm. SigmaScan Pro (v. 5.0, SPSS, Inc., Chicago, IL) was used to analyze digital images for green cover (0 to 100% scale; 100%=complete green cover). Green pixels were defined as a hue range of 50 to 107 and a saturation range of 0 to 100.

Dollar spot (caused by *Clarireedia jacksonii*) and stem rust (caused by *Puccinia graminis*) were visually rated in trafficked and non-trafficked Kentucky bluegrass plots on 28 September and 15 October 2021, respectively, using a 1 to 9 scale where 9 equaled the least disease.

Data were analyzed using a 2 × 90 factorial of traffic and entries arranged in a strip-plot design with three blocks. Horizontal plot-strips were the level of traffic (no traffic and traffic). Vertical plots were the 90 Kentucky bluegrass entries. Data were subjected to analysis of variance and means were separated using the Fisher's protected least significant difference (LSD) test at $p \leq 0.05$.

**Evaluation of Non-trafficked Plots**

Visual turf quality in the absence of traffic (i.e., overall appearance, turf color, uniformity, density, mowing quality, reduced rate of vertical growth, leaf texture, and freedom from insect and/or disease damage) was rated from April through October 2021 using a 1 to 9 scale where 9 equaled the best turf quality. Genetic color and wilt stress were visually evaluated on 1 July and 13 August 2021, respectively. A 1 to 9 scale was used to assess these parameters where 9 equaled the darkest green color and the least wilt stress.

These data were analyzed as a single factor randomized complete block design and means were separated using the Fisher's protected least significant difference (LSD) test at $p \leq 0.05$.

## RESULTS

**Kentucky Bluegrass Cover Responses to Traffic**

Spring green-up responses. Generally, Kentucky bluegrass entries trafficked in the previous autumn exhibited better green-up compared to the non-trafficked conditions on 9 April 2021; however, ANOVA detected a significant Traffic x Entry interaction (Table 1).

Fifty entries had better green-up under traffic compared to no traffic (Table 2). Barvette HGT, Barserati (BAR PP 110358), and A11-40 had the best spring green-up regardless of the level of traffic; whereas, BAR PP 7309V, Finish Line (NAI-14-178), Syrah (LTP-11-41), A99-2897, A16-17, New Moon (PST-K15-177), Kenblue, Electric (PST-K11-118), and A11-38 had the best green-up but only within the previously trafficked strip.

Response to traffic after 28 machine passes. Traffic reduced the uniformity of turf cover, FTC, and green cover of Kentucky bluegrass after 28 machine passes on 15 June 2021; a significant Traffic x Entry interaction was detected for each of these parameters. (Table 1).

Regardless of the level of traffic, Kentucky bluegrass entries with the best uniformity of turf cover and FTC after 28 machine passes were Barvette HGT, BAR PP 7K426, and PST-K15-172 (Table 2). Entries with the poorest uniformity of turf cover and lowest FTC after 28 machine passes were NAI-14-122, DLFPS-340/3444, Barserati (BAR PP 110358), Dublin (PST-K15-157), PPG-KB 1320, Skye, Blue Knight, Orion (PST-K13-143), Starr (GO-2628), Pivot, RAD-1776, A06-8, DLFPS-340/3364, A16-1, Amaze (NAI-14-133), Aviator II (NAI-15-84), Heart-

land (NAI-14-187), NAI-14-132, NAI-15-80, NK-1, DLFPS-340/3553.

Entries with the greatest green cover after 28 traffic passes were BAR PP 7K426, Prosperity, DLFPS-340/3494, PPG-KB 1131, PST-K15-172, PST-11-7, A16-17, A11-26, Finish Line (NAI-14-178), DLFPS-340/3500, DLFPS-340/3550, DLFPS-340/3552, BAR PP 7309V, United (NAI-13-14), PST-K15-167, A13-1, BAP PP 79366, Blue Devil, Barvette HGT, DLFPS-340/3556, and After Midnight (Table 2). Cultivars and experimental selections with the lowest green cover after traffic were Heartland (NAI-14-187), AKB3241, Starr (GO-2628), BAR PP 7236V, A16-1, NK-1, DLFPS-340/3553, Skye, and NAI-15-80. Many of these entries exhibited a minimal response to 28 traffic passes compared to the non-trafficked portion of the entry (no statistical difference; Table 2).

Response to traffic after 56 machine passes. Traffic further reduced uniformity of turf cover, FTC, and green cover of Kentucky bluegrass after 56 machine passes on 5 August 2021; a significant Traffic x Entry interaction was detected for each of these parameters. (Table 3).

Regardless of the level of traffic, entries with the greatest uniformity of turf cover and FTC after 56 passes of traffic were Barvette HGT, PST-K15-172, PPG-KB 1131, BAR PP 7K426, and DLFPS-340/3494 (Table 4). Cultivars and experimental selections with the lowest uniformity of turf cover and FTC on 5 August 2021 were J-2726, DLFPS-340/3548, Heartland (NAI-14-187), DLFPS-340/3364, PPG-KB 1320, Pivot, DLFPS-340/3446, AKB3241, Aviator II (NAI-15-84), BAR PP 7236V, RAD-1776, NK-1, A16-7, A06-8, DLFPS-340/3444, DLFPS-340/3553, A16-1, Skye, NAI-15-80, and Dublin (PST-K15-157).

Entries with the greatest green cover after 56 passes of traffic on 5 August 2021 were PPG-KB 1131, DLFPS-340/3494, PST-11-7, DLFPS-340/3550, PST-K15-172, PST-K15-167, A16-17, and NuRush (J-3510); there were 26 entries within the group with the lowest green cover (Table 4).

Response to traffic after 72 machine passes. Continuation of traffic further reduced uniformity of turf cover, FTC, and green cover of Kentucky bluegrass after 72 machine passes; a significant Traffic x Entry interaction was detected for each of these parameters on this rating date (30 August 2021) (Table 5).

Kentucky bluegrass entries with the best uniformity of turf cover and greatest FTC and green cover after 72 traffic passes were DLFPS-340/3494, Barvette HGT, PST-K15-172, DLFPS-340/3550, DLFPS-340/3552, DLFPS-340/3500, PPG-KB 1131, BAR PP 7K426, Finish Line (NAI-14-178), and PST-K15-167 (Table 6).

Entries with the poorest uniformity of turf cover and least FTC and green cover after 72 passes of traffic on 30 August 2021 were A16-2, Babe, Blue Knight, NAI-14-132, Syrah (LTP-11-41), Twilight (NAI-13-132), J-2726, PPG-KB 1304, DLFPS-340/3548, DLFPS-340/3444, Jersey (NAI-A16-3), DLFPS-340/3364, Paloma (PST-K13-139), AKB3128, Heartland (NAI-14-187), Shamrock, KH3492, A16-7, Starr (GO-2628), RAD-1776, J-1319, BAR PP 7236V, NK-1, DLFPS-340/3446, PPG-KB 1320, Amaze (NAI-14-133), Pivot, DLFPS-340/3553, AKB3241, A06-8, Skye, NAI-15-80, Aviator II (NAI-15-84), A16-1, and Dublin (PST-K15-157) (Table 6).

Disease incidence responses to traffic. Dollar spot response varied among Kentucky bluegrass entries on 28 September 2021 and this response depended on the level of traffic (Table 5). Stem rust evaluated on 15 October 2021 was greater on Kentucky bluegrass that was trafficked and the ANOVA indicated that the entry effect on stem rust response depended on the level of traffic.

Twenty-one entries had greater dollar spot damage on non-trafficked plots compared to trafficked plots on 28 September 2021; these entries were Blue Knight, After Midnight, DLFPS-340/3549, Barvette HGT, Kenblue, Electric (PST-K11-118), DLFPS-340/3494, PST-K13-141, Selway, BAR PP 7309V, BAR PP 7236V, BAR PP 71213, RAD 553, Yellowstone (A12-7), PST-11-7, BAR PP 79494, Starr (GO-2628), Barserati (BAR PP 110358), J-1138, Jersey (NAI-A16-3), and A11-38 (Table 7).

There were 67 Kentucky bluegrass entries among the group with the least dollar spot under non-trafficked conditions on 28 September 2021 (Table 7). Within the non-trafficked strip, cultivars and experimental selections with most severe dollar spot damage were Electric (PST-K11-118), DLFPS-340/3494, RAD 553, After Midnight, A11-38, Blue Knight, Barvette HGT, and DLFPS-340/3549.

There were 41 entries that had more severe stem rust when trafficked compared to the non-trafficked portion of the entry on 15 October 2021 (Table 7).

Within the trafficked strip, there were 56 cultivars and experimental selections among the goup with the least stem rust. Entries with the most severe stem rust in the trafficked strip were PST-T14-39, Orion (PST-K13-143), Prosperity, RAD 553, NAI-15-80, Finish Line (NAI-14-178), DLFPS-340/3446, Shamrock, After Midnight, PST-11-7, DLFPS-340/3553, A11-40, NuRush (J-3510), AKB3241, Pivot, Blue Knight, PPG-KB 1320, J-2726, and the unknown.

**Performance of Kentucky Bluegrass Without Traffic Stress**

Kentucky bluegrass entries with the best average turf quality during 2021 were PPG-KB 1131, Bombay (GO-22B23), New Moon (PST-K15-177), Blue Devil, Midnight, PST-11-7, A11-40, Starr (GO-2628), Blue Gem (NAI-13-9), Twilight (NAI-13-132), Cloud (GO-2425), After Midnight, Barserati (BAR PP 110358), NuRush (J-3510), PST-K15-172, J-1138, and DLFPS-340/3550 (Table 8). Entries that exhibited the poorest average turf quality during 2021 were DLFPS-340/3549, DLFPS-340/3444, Kenblue, Dublin (PST-K15-157), A11-38, DLFPS-340/3364. DLFPS-340/3556, RAD 553, Heartland (NAI-14-187), Comanche (NAI-14-176), DLFPS-340/3446, A16-17, NAI-14-122, NAI-14-132, Aviator II (NAI-15-84), MVS-130, BAR PP 71213, Yellowstone (A12-7), Blue Knight, Amaze (NAI-14-133), NAI-15-80, NK-1, and A16-1.

Entries with the best average turf quality during 2018-2021 were Bombay (GO-22B23), Starr (GO-2628), After Midnight, Cloud (GO-2425), PPG-KB 1131, and Jersey (NAI-A16-3) (Table 8). Other entries with very good average turf quality (≥ 7.0) during 2018-2021 were Blue Devil and PST-K15-172.

Entries with the poorest average turf quality during 2018-2021 were DLFPS-340/3364, NK-1, and NAI-15-80 (Table 8). Other Kentucky bluegrass cultivars and experimental selections that had poor (< 4.0) average turf quality during 2018-2021 were Kenblue, Dublin (PST-K15-157), Blue Knight, NAI-14-132, and Amaze (NAI-14-133).

Kentucky bluegrass cultivars and experimental selections that had the darkest green genetic color on 1 July 2021 were After Midnight, Prosperity, PPG-KB 1320, J-1319, Pivot, PPG-KB 1131, AKB3241, A12-34, DLFPS-340/3550, PST-T14-39, BAR PP 79494, DLFPS-340/3364, Starr (GO-2628), PST-K15-167, Blue Knight, NAI-14-128, A13-1, Amaze (NAI-14-133), NAI-14-132, J-2726, NAI-14-122, Heartland (NAI-14-187), and Comanche (NAI-14-176) (Table 8). Entries exhibiting the lightest green color were RAD 553, Barvette HGT, Electric (PST-K11-118), A11-40, KH3492, A16-2, A11-38, Barserati (BAR PP 110358), BAR PP 7236V, Kenblue, BAR PP 7K426, BAR PP 7309V, Babe, DLFPS-340/3549, A16-17, and BAR PP 71213.

There were 52 Kentucky bluegrass entries that exhibited the least wilt stress on 13 August 2021 (Table 8). Entries that expressed the most severe wilt stress were DLFPS-340/3556, AKB3241, Yellowstone (A12-7), BAP PP 79366, Amaze (NAI-14-133), NAI-14-132, A16-1, J-2726, NAI-14-122, Heartland (NAI-14-187), DLFPS-340/3500, MVS-130, DLFPS-340/3446, AKB3179, and Comanche (NAI-14-176).

## DISCUSSION

National Turfgrass Evaluation Program tests are an excellent resource for non-biased data concerning the performance of commercially available turfgrass cultivars and experimental selections. Traffic tolerance and turfgrass quality are important selection criteria for high traffic sports fields, general grounds and lawns, and sod production fields. These results are also important for the turfgrass seed industry; seed company can use these data while determining whether to commercialize experimental selections.

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Table 1. Spring green-up assessed prior to traffic during 2021 and uniformity of turf cover, fullness of turfgrass canopy, and green cover after 28 traffic machine passes as affected by traffic and Kentucky bluegrass entry.

| | | After 28 machine passes (15 June 2021)[1] | | |
|---|---|---|---|---|
| | Spring Green-up[2] Apr 9, 2021 | Uniformity of Turf Cover[3] | Fullness of Turfgrass Canopy[4] | Green Cover[5] |
| | 1 to 9 scale | | 0 to 100% scale | |
| Level of Traffic | | | | |
| No Traffic | 4.4 | 8.6 | 94 | 88 |
| Traffic | 5.4 | 3.6 | 40 | 59 |
| Source of Variation | | | | |
| Traffic | ** | *** | *** | ** |
| Entry | *** | *** | *** | *** |
| Traffic x Entry | *** | *** | *** | *** |
| CV (%) | 11.9 | 13.4 | 11.7 | 11.4 |

[1] Two passes wk$^{-1}$ with the Rutgers Wear Simulator and two passes wk$^{-1}$ with the Cady Traffic Simulator (28 machine passes) were made during 7 May to 14 June 2021.

[2] 9 = best spring green-up

[3] 9 = most dense, uniform turf cover

[4] 100% = full canopy

[5] 100% = complete green cover; measured by digital image analysis

**,*** Significant at the 0.01 and 0.001 probability level

Table 2. Spring green-up assessed prior to traffic during 2021 and uniformity of turf cover, fullness of turfgrass canopy, and green cover after 28 traffic machine passes as affected by the interaction of Kentucky bluegrass entry and traffic. (Includes all entries of the 2017 National Turfgrass Evaluation Program (NTEP) Kentucky Bluegrass Test.)

| | | | | After 28 machine passes (15 June 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring Green-up[2] 9 Apr. 2021 | | Uniformity of Turf Cover[3] | | Fullness of Turf Canopy[4] | | Green Cover[5] | |
| | Kentucky bluegrass entry | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 scale | | | | 0 to 100% scale | | | |
| 1 | DLFPS-340/3494 | 1.0 | 1.0 | 8.7 | 4.0 | 97 | 47 | 96 | 83 |
| 2 | Barvette HGT | 8.3 | 8.3 | 9.0 | 8.0 | 98 | 78 | 77 | 70 |
| 3 | PST-K15-172 | 6.3 | 6.7 | 9.0 | 6.7 | 100 | 65 | 87 | 80 |
| 4 | DLFPS-340/3550 | 5.0 | 5.3 | 8.7 | 5.0 | 93 | 58 | 93 | 74 |
| 5 | DLFPS-340/3552 | 5.0 | 6.0 | 8.7 | 6.0 | 93 | 58 | 83 | 73 |
| 6 | DLFPS-340/3500 | 2.3 | 3.0 | 8.7 | 4.0 | 98 | 48 | 95 | 74 |
| 7 | PPG-KB 1131 | 5.3 | 5.3 | 9.0 | 5.7 | 100 | 58 | 88 | 82 |
| 8 | BAR PP 7K426 | 5.3 | 6.0 | 9.0 | 7.3 | 100 | 70 | 85 | 84 |
| 9 | Finish Line (NAI-14-178) | 6.7 | 7.0 | 8.7 | 4.3 | 97 | 55 | 90 | 75 |
| 10 | PST-11-7 | 2.3 | 2.7 | 9.0 | 4.7 | 98 | 38 | 93 | 80 |
| 11 | BAR PP 7309V | 6.7 | 7.0 | 9.0 | 6.7 | 100 | 62 | 81 | 73 |
| 12 | PST-K15-167 | 3.0 | 4.0 | 8.7 | 4.7 | 93 | 50 | 85 | 72 |
| 13 | New Moon (PST-K15-177) | 6.0 | 7.0 | 9.0 | 4.7 | 98 | 48 | 90 | 64 |
| 14 | A16-17 | 6.3 | 7.0 | 8.0 | 4.7 | 78 | 50 | 89 | 76 |
| 15 | United (NAI-13-14) | 5.7 | 6.0 | 8.7 | 5.0 | 95 | 52 | 87 | 72 |
| 16 | Bombay (GO-22B23) | 3.3 | 5.0 | 9.0 | 4.0 | 100 | 47 | 91 | 61 |
| 17 | After Midnight | 5.3 | 5.3 | 9.0 | 4.0 | 95 | 47 | 90 | 70 |
| 18 | A13-1 | 4.3 | 4.3 | 8.0 | 3.3 | 93 | 43 | 94 | 71 |
| 19 | Blue Devil | 4.7 | 6.0 | 9.0 | 5.0 | 100 | 55 | 87 | 71 |
| 20 | DLFPS-340/3556 | 5.0 | 5.7 | 7.7 | 4.0 | 85 | 45 | 93 | 70 |

(Continued)

Table 2. Spring green-up assessed prior to traffic during 2021 and uniformity of turf cover, fullness of turfgrass canopy, and green cover after 28 traffic machine passes as affected by the interaction of Kentucky bluegrass entry and traffic. (Includes all entries of the 2017 National Turfgrass Evaluation Program (NTEP) Kentucky Bluegrass Test.)

| | | | | After 28 machine passes (15 June 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring Green-up[2] 9 Apr. 2021 | | Uniformity of Turf Cover[3] | | Fullness of Turf Canopy[4] | | Green Cover[5] | |
| | Kentucky bluegrass entry | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 scale | | | | 0 to 100% scale | | | |
| 21 | BAP PP 79366 | 2.0 | 3.0 | 8.7 | 3.7 | 88 | 42 | 95 | 71 |
| 22 | Blue Gem (NAI-13-9) | 5.3 | 6.0 | 9.0 | 5.0 | 98 | 52 | 87 | 68 |
| 23 | Unknown | 4.3 | 5.3 | 9.0 | 3.7 | 98 | 40 | 89 | 64 |
| 24 | BAR PP 71213 | 4.0 | 5.7 | 8.3 | 4.0 | 93 | 45 | 83 | 56 |
| 25 | Prosperity | 4.0 | 5.0 | 9.0 | 5.3 | 95 | 55 | 92 | 84 |
| 26 | Kenblue | 6.0 | 7.0 | 8.7 | 3.7 | 92 | 40 | 76 | 46 |
| 27 | NuRush (J-3510) | 5.0 | 6.0 | 9.0 | 4.7 | 100 | 43 | 85 | 68 |
| 28 | MVS-130 | 1.7 | 3.3 | 8.3 | 3.0 | 93 | 43 | 90 | 64 |
| 29 | Cloud (GO-2425) | 3.7 | 5.0 | 9.0 | 3.7 | 100 | 43 | 90 | 60 |
| 30 | RAD 553 | 3.3 | 5.3 | 8.0 | 3.7 | 95 | 40 | 85 | 46 |
| 31 | A15-6 | 6.3 | 6.7 | 8.0 | 3.7 | 88 | 37 | 87 | 64 |
| 32 | A99-2897 | 6.7 | 7.0 | 8.0 | 2.7 | 82 | 35 | 90 | 61 |
| 33 | A10-280 | 2.0 | 3.3 | 9.0 | 4.0 | 97 | 43 | 93 | 67 |
| 34 | Electric (PST-K11-118) | 6.0 | 7.0 | 8.3 | 3.7 | 93 | 38 | 88 | 65 |
| 35 | DLFPS-340/3455 | 3.3 | 4.0 | 9.0 | 4.3 | 97 | 50 | 84 | 65 |
| 36 | DLFPS-340/3549 | 5.0 | 5.7 | 8.7 | 4.0 | 98 | 43 | 84 | 52 |
| 37 | A11-26 | 2.7 | 3.3 | 8.7 | 4.7 | 92 | 52 | 92 | 75 |
| 38 | DLFPS-340/3551 | 6.0 | 6.7 | 8.3 | 4.0 | 87 | 40 | 91 | 64 |
| 39 | NAI-14-128 | 2.3 | 4.3 | 8.0 | 3.0 | 83 | 33 | 91 | 63 |
| 40 | Comanche (NAI-14-176) | 2.0 | 4.0 | 8.0 | 2.7 | 93 | 35 | 88 | 63 |

(Continued)

Table 2. Spring green-up assessed prior to traffic during 2021 and uniformity of turf cover, fullness of turfgrass canopy, and green cover after 28 traffic machine passes as affected by the interaction of Kentucky bluegrass entry and traffic. (Includes all entries of the 2017 National Turfgrass Evaluation Program (NTEP) Kentucky Bluegrass Test.)

| | | | | After 28 machine passes (15 June 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring Green-up[2] 9 Apr. 2021 | | Uniformity of Turf Cover[3] | | Fullness of Turf Canopy[4] | | Green Cover[5] | |
| | Kentucky bluegrass entry | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 scale | | | | 0 to 100% scale | | | |
| 41 | Midnight | 5.0 | 6.3 | 9.0 | 4.3 | 100 | 47 | 87 | 62 |
| 42 | Yellowstone (A12-7) | 4.0 | 5.3 | 7.7 | 2.7 | 80 | 37 | 88 | 55 |
| 43 | DLFPS-340/3438 | 6.0 | 6.3 | 7.7 | 3.7 | 83 | 35 | 85 | 60 |
| 44 | A11-38 | 5.0 | 7.0 | 7.3 | 3.3 | 82 | 32 | 89 | 55 |
| 45 | J-1138 | 5.7 | 6.0 | 9.0 | 5.0 | 100 | 52 | 88 | 69 |
| 46 | NAI-14-122 | 2.0 | 4.7 | 8.7 | 2.3 | 90 | 33 | 91 | 60 |
| 47 | PST-T14-39 | 3.3 | 5.0 | 8.3 | 2.7 | 95 | 40 | 90 | 58 |
| 48 | A16-2 | 5.3 | 6.0 | 9.0 | 4.0 | 100 | 43 | 86 | 55 |
| 49 | BAR PP 79494 | 4.7 | 5.7 | 9.0 | 3.7 | 95 | 43 | 88 | 65 |
| 50 | PST-K13-141 | 6.3 | 6.7 | 8.7 | 5.3 | 98 | 52 | 89 | 69 |
| 51 | Selway | 3.7 | 5.7 | 9.0 | 3.3 | 100 | 32 | 91 | 56 |
| 52 | AKB3179 | 3.0 | 4.0 | 9.0 | 4.0 | 100 | 43 | 87 | 56 |
| 53 | Babe | 5.0 | 5.7 | 9.0 | 3.7 | 100 | 45 | 88 | 60 |
| 54 | A12-34 | 6.3 | 6.3 | 8.3 | 3.3 | 90 | 28 | 89 | 58 |
| 55 | Blue Knight | 2.0 | 4.7 | 7.0 | 2.3 | 80 | 28 | 89 | 47 |
| 56 | A11-40 | 7.0 | 7.3 | 9.0 | 5.3 | 100 | 53 | 90 | 63 |
| 57 | Barserati (BAR PP 110358) | 7.3 | 7.3 | 9.0 | 2.3 | 100 | 30 | 90 | 59 |
| 58 | Orion (PST-K13-143) | 5.3 | 6.3 | 9.0 | 2.3 | 98 | 27 | 88 | 51 |
| 59 | NAI-14-132 | 1.3 | 5.0 | 7.3 | 1.3 | 87 | 25 | 88 | 47 |
| 60 | Syrah (LTP-11-41) | 6.7 | 7.0 | 9.0 | 4.3 | 100 | 43 | 86 | 57 |

(Continued)

Table 2. Spring green-up assessed prior to traffic during 2021 and uniformity of turf cover, fullness of turfgrass canopy, and green cover after 28 traffic machine passes as affected by the interaction of Kentucky bluegrass entry and traffic. (Includes all entries of the 2017 National Turfgrass Evaluation Program (NTEP) Kentucky Bluegrass Test.)

| | | | | After 28 machine passes (15 June 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring Green-up[2] 9 Apr. 2021 | | Uniformity of Turf Cover[3] | | Fullness of Turf Canopy[4] | | Green Cover[5] | |
| | Kentucky bluegrass entry | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 scale | | | | 0 to 100% scale | | | |
| 61 | Twilight (NAI-13-132) | 5.0 | 6.0 | 9.0 | 3.7 | 98 | 35 | 87 | 59 |
| 62 | J-2726 | 1.7 | 2.7 | 8.3 | 3.3 | 92 | 32 | 90 | 59 |
| 63 | PPG-KB 1304 | 4.3 | 5.7 | 8.3 | 2.7 | 90 | 30 | 82 | 51 |
| 64 | DLFPS-340/3548 | 3.3 | 5.0 | 8.7 | 3.3 | 95 | 33 | 74 | 44 |
| 65 | DLFPS-340/3444 | 4.0 | 5.0 | 8.7 | 2.3 | 95 | 32 | 84 | 47 |
| 66 | Jersey (NAI-A16-3) | 5.3 | 6.0 | 9.0 | 4.3 | 98 | 43 | 89 | 62 |
| 67 | DLFPS-340/3364 | 3.0 | 4.0 | 8.0 | 2.0 | 83 | 27 | 91 | 54 |
| 68 | Paloma (PST-K13-139) | 5.7 | 6.3 | 9.0 | 3.7 | 98 | 40 | 85 | 59 |
| 69 | AKB3128 | 3.7 | 5.7 | 8.3 | 3.3 | 93 | 30 | 89 | 51 |
| 70 | Heartland (NAI-14-187) | 2.0 | 4.7 | 8.0 | 1.7 | 83 | 25 | 89 | 42 |
| 71 | Shamrock | 5.0 | 5.7 | 8.7 | 3.0 | 97 | 35 | 85 | 50 |
| 72 | KH3492 | 4.7 | 5.7 | 9.0 | 3.3 | 97 | 37 | 88 | 53 |
| 73 | A16-7 | 5.3 | 6.0 | 9.0 | 3.7 | 93 | 33 | 91 | 59 |
| 74 | RAD-1776 | 1.3 | 4.7 | 9.0 | 2.0 | 95 | 28 | 86 | 47 |
| 75 | Starr (GO-2628) | 3.3 | 5.3 | 9.0 | 2.0 | 100 | 30 | 89 | 41 |
| 76 | J-1319 | 1.7 | 3.0 | 8.7 | 3.0 | 95 | 37 | 95 | 54 |
| 77 | BAR PP 7236V | 6.3 | 6.3 | 9.0 | 2.7 | 97 | 30 | 81 | 39 |
| 78 | NK-1 | 4.0 | 5.0 | 7.7 | 1.3 | 85 | 20 | 86 | 37 |
| 79 | DLFPS-340/3446 | 5.0 | 5.7 | 8.0 | 3.0 | 90 | 40 | 90 | 59 |
| 80 | PPG-KB 1320 | 2.3 | 5.3 | 8.3 | 2.3 | 92 | 30 | 90 | 54 |

(Continued)

Table 2. Spring green-up assessed prior to traffic during 2021 and uniformity of turf cover, fullness of turfgrass canopy, and green cover after 28 traffic machine passes as affected by the interaction of Kentucky bluegrass entry and traffic. (Includes all entries of the 2017 National Turfgrass Evaluation Program (NTEP) Kentucky Bluegrass Test.)

| | | | | After 28 machine passes (15 June 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Spring Green-up[2] 9 Apr. 2021 | | Uniformity of Turf Cover[3] | | Fullness of Turf Canopy[4] | | Green Cover[5] | |
| | Kentucky bluegrass entry | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 scale | | | | 0 to 100% scale | | | |
| 81 | Amaze (NAI-14-133) | 2.0 | 4.0 | 7.7 | 1.7 | 78 | 27 | 92 | 50 |
| 82 | Pivot | 3.0 | 4.3 | 9.0 | 2.0 | 95 | 30 | 90 | 45 |
| 83 | DLFPS-340/3553 | 6.3 | 6.3 | 9.0 | 1.0 | 98 | 20 | 88 | 35 |
| 84 | AKB3241 | 1.7 | 3.3 | 9.0 | 2.7 | 98 | 30 | 92 | 42 |
| 85 | A06-8 | 6.3 | 6.3 | 8.3 | 2.0 | 88 | 27 | 90 | 47 |
| 86 | Skye | 2.7 | 4.7 | 9.0 | 2.3 | 100 | 28 | 87 | 34 |
| 87 | NAI-15-80 | 6.0 | 6.0 | 8.3 | 1.3 | 97 | 22 | 91 | 29 |
| 88 | Aviator II (NAI-15-84) | 3.3 | 4.7 | 8.0 | 1.7 | 90 | 25 | 89 | 45 |
| 89 | A16-1 | 2.7 | 4.7 | 7.7 | 2.0 | 92 | 25 | 82 | 38 |
| 90 | Dublin (PST-K15-157) | 5.0 | 6.0 | 8.3 | 2.3 | 93 | 30 | 91 | 45 |
| | Columns (down) LSD at 5% = | 1.5 | | 1.5 | | 15 | | 14 | |
| | Rows (across) LSD at 5% = | 1.0 | | 1.4 | | 13 | | 15 | |

[1]Two passes wk$^{-1}$ with the Rutgers Wear Simulator and two passes wk$^{-1}$ with the Cady Traffic Simulator (28 machine passes) were made during 7 May to 14 June 2021.

[2]9 = best spring green-up

[3]9 = most dense, uniform turf cover

[4]100% = full canopy

[5]100% = complete green cover; measured by digital image analysis

Table 3. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 56 traffic machine passes as affected by traffic and Kentucky bluegrass entry.

| | ------- After 56 machine passes (5 Aug. 2021)[1] ------- | | |
|---|---|---|---|
| | Uniformity of Turf Cover[2] | Fullness of Turfgrass Canopy[3] | Green Cover[4] |
| | ------- 1 to 9 scale ------- | ---------- 0 to 100% scale ---------- | |
| Level of Traffic | | | |
| No Traffic | 8.7 | 95 | 77 |
| Traffic | 3.3 | 37 | 39 |
| Source of Variation | | | |
| Traffic | *** | *** | * |
| Entry | *** | *** | *** |
| Traffic x Entry | *** | *** | *** |
| CV (%) | 13.5 | 12.0 | 13.7 |

[1] Two passes wk$^{-1}$ with the Rutgers Wear Simulator and two passes wk$^{-1}$ with the Cady Traffic Simulator (56 machine passes) were made during 7 May to 3 August 2021.

[2] 9 = most dense, uniform turf cover

[3] 100% = full canopy

[4] 100% = complete green cover; measured by digital image analysis

**,*** Significant at the 0.01 and 0.001 probability level

Table 4. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 56 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 56 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 1 | DLFPS-340/3494 | 9.0 | 6.3 | 98 | 60 | 88 | 69 |
| 2 | Barvette HGT | 9.0 | 7.0 | 100 | 73 | 74 | 43 |
| 3 | PST-K15-172 | 9.0 | 7.0 | 100 | 72 | 82 | 64 |
| 4 | DLFPS-340/3550 | 9.0 | 5.7 | 93 | 57 | 87 | 68 |
| 5 | DLFPS-340/3552 | 9.0 | 5.3 | 95 | 58 | 87 | 55 |
| 6 | DLFPS-340/3500 | 9.0 | 5.0 | 95 | 53 | 77 | 55 |
| 7 | PPG-KB 1131 | 9.0 | 6.0 | 100 | 63 | 92 | 73 |
| 8 | BAR PP 7K426 | 9.0 | 5.7 | 100 | 63 | 83 | 54 |
| 9 | Finish Line (NAI-14-178) | 9.0 | 5.0 | 98 | 53 | 81 | 52 |
| 10 | PST-11-7 | 9.0 | 4.7 | 98 | 48 | 84 | 69 |
| 11 | BAR PP 7309V | 9.0 | 5.0 | 95 | 58 | 75 | 49 |
| 12 | PST-K15-167 | 9.0 | 5.0 | 98 | 55 | 78 | 58 |
| 13 | New Moon (PST-K15-177) | 9.0 | 5.0 | 100 | 47 | 84 | 53 |
| 14 | A16-17 | 8.0 | 4.7 | 90 | 53 | 82 | 58 |
| 15 | United (NAI-13-14) | 8.7 | 4.7 | 93 | 48 | 80 | 53 |
| 16 | Bombay (GO-22B23) | 9.0 | 3.0 | 100 | 35 | 89 | 47 |
| 17 | After Midnight | 9.0 | 3.7 | 97 | 43 | 84 | 46 |
| 18 | A13-1 | 8.3 | 4.3 | 92 | 45 | 80 | 55 |
| 19 | Blue Devil | 9.0 | 5.0 | 97 | 55 | 88 | 55 |
| 20 | DLFPS-340/3556 | 8.7 | 3.7 | 87 | 42 | 79 | 40 |



(Continued)

Table 4. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 56 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 56 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 21 | BAP PP 79366 | 8.3 | 3.7 | 92 | 43 | 71 | 44 |
| 22 | Blue Gem (NAI-13-9) | 9.0 | 4.0 | 95 | 43 | 88 | 49 |
| 23 | Unknown | 8.7 | 3.0 | 98 | 37 | 82 | 50 |
| 24 | BAR PP 71213 | 8.7 | 3.3 | 97 | 40 | 64 | 32 |
| 25 | Prosperity | 9.0 | 4.7 | 98 | 48 | 72 | 54 |
| 26 | Kenblue | 8.7 | 3.3 | 97 | 43 | 74 | 36 |
| 27 | NuRush (J-3510) | 9.0 | 4.0 | 100 | 47 | 87 | 57 |
| 28 | MVS-130 | 8.7 | 3.3 | 93 | 45 | 51 | 37 |
| 29 | Cloud (GO-2425) | 9.0 | 3.7 | 100 | 35 | 83 | 40 |
| 30 | RAD 553 | 8.3 | 3.7 | 97 | 40 | 78 | 38 |
| 31 | A15-6 | 7.7 | 3.0 | 90 | 37 | 85 | 40 |
| 32 | A99-2897 | 8.0 | 3.7 | 88 | 35 | 85 | 39 |
| 33 | A10-280 | 9.0 | 3.0 | 95 | 37 | 83 | 39 |
| 34 | Electric (PST-K11-118) | 8.7 | 3.3 | 97 | 40 | 80 | 47 |
| 35 | DLFPS-340/3455 | 8.3 | 2.7 | 92 | 37 | 80 | 43 |
| 36 | DLFPS-340/3549 | 9.0 | 3.3 | 98 | 37 | 73 | 33 |
| 37 | A11-26 | 8.0 | 3.3 | 88 | 37 | 60 | 42 |
| 38 | DLFPS-340/3551 | 8.3 | 3.3 | 88 | 42 | 84 | 43 |
| 39 | NAI-14-128 | 8.7 | 3.3 | 95 | 35 | 65 | 35 |
| 40 | Comanche (NAI-14-176) | 9.0 | 3.3 | 95 | 38 | 57 | 33 |



(Continued)

Table 4. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 56 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 56 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 41 | Midnight | 9.0 | 4.0 | 97 | 43 | 88 | 45 |
| 42 | Yellowstone (A12-7) | 7.7 | 3.0 | 87 | 40 | 66 | 35 |
| 43 | DLFPS-340/3438 | 8.3 | 3.3 | 88 | 38 | 77 | 37 |
| 44 | A11-38 | 8.7 | 3.3 | 95 | 38 | 81 | 36 |
| 45 | J-1138 | 9.0 | 4.0 | 97 | 38 | 84 | 44 |
| 46 | NAI-14-122 | 8.7 | 3.0 | 95 | 37 | 64 | 35 |
| 47 | PST-T14-39 | 8.7 | 3.3 | 95 | 35 | 84 | 40 |
| 48 | A16-2 | 9.0 | 3.3 | 98 | 38 | 76 | 31 |
| 49 | BAR PP 79494 | 9.0 | 3.7 | 93 | 35 | 84 | 42 |
| 50 | PST-K13-141 | 8.7 | 3.3 | 95 | 40 | 79 | 34 |
| 51 | Selway | 9.0 | 2.7 | 100 | 32 | 87 | 43 |
| 52 | AKB3179 | 9.0 | 3.0 | 97 | 37 | 65 | 32 |
| 53 | Babe | 9.0 | 3.3 | 100 | 35 | 70 | 39 |
| 54 | A12-34 | 8.3 | 3.0 | 90 | 32 | 88 | 43 |
| 55 | Blue Knight | 8.3 | 2.7 | 88 | 33 | 76 | 35 |
| 56 | A11-40 | 9.0 | 4.0 | 100 | 43 | 79 | 34 |
| 57 | Barserati (BAR PP 110358) | 9.0 | 2.7 | 100 | 28 | 88 | 48 |
| 58 | Orion (PST-K13-143) | 8.7 | 2.7 | 97 | 28 | 73 | 31 |
| 59 | NAI-14-132 | 8.7 | 3.3 | 95 | 32 | 60 | 33 |
| 60 | Syrah (LTP-11-41) | 9.0 | 3.3 | 100 | 37 | 70 | 27 |



(Continued)

Table 4. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 56 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 56 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 61 | Twilight (NAI-13-132) | 9.0 | 3.0 | 98 | 32 | 88 | 43 |
| 62 | J-2726 | 8.3 | 2.3 | 90 | 28 | 73 | 40 |
| 63 | PPG-KB 1304 | 8.0 | 2.7 | 90 | 28 | 89 | 37 |
| 64 | DLFPS-340/3548 | 9.0 | 2.3 | 97 | 28 | 76 | 35 |
| 65 | DLFPS-340/3444 | 8.7 | 1.7 | 92 | 20 | 70 | 30 |
| 66 | Jersey (NAI-A16-3) | 9.0 | 3.7 | 100 | 33 | 78 | 34 |
| 67 | DLFPS-340/3364 | 8.0 | 2.3 | 90 | 25 | 77 | 36 |
| 68 | Paloma (PST-K13-139) | 9.0 | 2.3 | 100 | 30 | 74 | 28 |
| 69 | AKB3128 | 9.0 | 3.0 | 98 | 25 | 72 | 27 |
| 70 | Heartland (NAI-14-187) | 9.0 | 2.3 | 95 | 27 | 58 | 24 |
| 71 | Shamrock | 9.0 | 2.7 | 98 | 30 | 64 | 32 |
| 72 | KH3492 | 9.0 | 2.3 | 97 | 33 | 75 | 33 |
| 73 | A16-7 | 8.7 | 1.7 | 90 | 25 | 83 | 32 |
| 74 | RAD-1776 | 8.3 | 2.0 | 92 | 23 | 63 | 30 |
| 75 | Starr (GO-2628) | 9.0 | 1.7 | 100 | 42 | 83 | 27 |
| 76 | J-1319 | 9.0 | 2.7 | 100 | 28 | 80 | 38 |
| 77 | BAR PP 7236V | 9.0 | 2.0 | 100 | 25 | 72 | 23 |
| 78 | NK-1 | 7.7 | 2.0 | 83 | 22 | 78 | 22 |
| 79 | DLFPS-340/3446 | 8.3 | 2.3 | 92 | 23 | 66 | 29 |
| 80 | PPG-KB 1320 | 9.0 | 2.3 | 100 | 25 | 84 | 35 |



(Continued)

Table 4. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 56 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 56 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 81 | Amaze (NAI-14-133) | 8.3 | 2.7 | 93 | 27 | 68 | 25 |
| 82 | Pivot | 9.0 | 2.3 | 97 | 25 | 78 | 27 |
| 83 | DLFPS-340/3553 | 9.0 | 1.7 | 95 | 20 | 81 | 25 |
| 84 | AKB3241 | 8.0 | 2.0 | 95 | 28 | 73 | 22 |
| 85 | A06-8 | 8.7 | 1.7 | 95 | 23 | 80 | 27 |
| 86 | Skye | 9.0 | 1.3 | 98 | 20 | 76 | 18 |
| 87 | NAI-15-80 | 8.3 | 1.0 | 93 | 15 | 74 | 19 |
| 88 | Aviator II (NAI-15-84) | 8.0 | 2.0 | 90 | 25 | 79 | 30 |
| 89 | A16-1 | 8.3 | 1.3 | 90 | 20 | 56 | 19 |
| 90 | Dublin (PST-K15-157) | 8.7 | 1.0 | 98 | 15 | 80 | 16 |
| | Columns (down) LSD at 5% = | 1.4 | | 13 | | 16 | |
| | Rows (across) LSD at 5% = | 1.3 | | 14 | | 19 | |

[1]Two passes wk$^{-1}$ with the Rutgers Wear Simulator and two passes wk$^{-1}$ with the Cady Traffic Simulator (56 machine passes) were made during 7 May to 3 August 2021.

[2]9 = most dense, uniform turf cover

[3]100% = full canopy

[4]100% = complete green cover; measured by digital image analysis

Table 5. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 72 traffic machine passes and dollar spot and stem rust incidence as affected by traffic and Kentucky bluegrass entry.

| | After 72 machine passes (30 Aug. 2021)[1] | | | | |
|---|---|---|---|---|---|
| | Uniformity of Turf Cover[2] | Fullness of Turgrass Canopy[3] | Green Cover[4] | Dollar Spot[5] 28 Sep. 2021 | Stem Rust[5] 15 Oct. 2021 |
| | --- 1 to 9 scale --- | ---------- 0 to 100% scale ---------- | | ---------- 1 to 9 scale ---------- | |
| Level of Traffic | | | | | |
| No Traffic | 8.4 | 92 | 66 | 7.8 | 8.7 |
| Traffic | 2.7 | 31 | 31 | 8.9 | 6.0 |
| Source of Variation | | | | | |
| Traffic | *** | ** | * | NS | * |
| Entry | *** | *** | *** | *** | *** |
| Traffic x Entry | *** | *** | *** | ** | *** |
| CV (%) | 16.7 | 13.1 | 22.3 | 12.7 | 16.0 |

[1]Two passes wk-1 with the Rutgers Wear Simulator and two passes wk$^{-1}$ with the Cady Traffic Simulator (72 machine passes) were made during 7 May to 30 August 2021.

[2]9 = most dense, uniform turf cover

[3]100% = full canopy

[4]100% = complete green cover; measured by digital image analysis

[5]9 = least disease

NS,*,**,*** Nonsignificant and significant at the 0.05, 0.01, and 0.001 probability level

Table 6. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 72 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 72 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 1 | DLFPS-340/3494 | 9.0 | 6.3 | 98 | 65 | 86 | 67 |
| 2 | Barvette HGT | 9.0 | 6.3 | 98 | 65 | 56 | 49 |
| 3 | PST-K15-172 | 9.0 | 6.3 | 100 | 62 | 58 | 55 |
| 4 | DLFPS-340/3550 | 8.7 | 5.3 | 93 | 60 | 91 | 68 |
| 5 | DLFPS-340/3552 | 8.7 | 5.3 | 93 | 53 | 80 | 57 |
| 6 | DLFPS-340/3500 | 8.0 | 5.0 | 92 | 60 | 68 | 60 |
| 7 | PPG-KB 1131 | 9.0 | 5.0 | 98 | 55 | 84 | 57 |
| 8 | BAR PP 7K426 | 8.7 | 5.0 | 95 | 50 | 80 | 53 |
| 9 | Finish Line (NAI-14-178) | 9.0 | 4.7 | 98 | 55 | 88 | 52 |
| 10 | PST-11-7 | 9.0 | 4.7 | 97 | 48 | 81 | 59 |
| 11 | BAR PP 7309V | 8.7 | 4.7 | 93 | 47 | 65 | 46 |
| 12 | PST-K15-167 | 8.3 | 4.3 | 98 | 50 | 64 | 54 |
| 13 | New Moon (PST-K15-177) | 9.0 | 4.3 | 98 | 48 | 76 | 40 |
| 14 | A16-17 | 8.3 | 4.3 | 93 | 47 | 82 | 52 |
| 15 | United (NAI-13-14) | 8.3 | 4.3 | 92 | 43 | 80 | 42 |
| 16 | Bombay (GO-22B23) | 9.0 | 3.7 | 100 | 32 | 80 | 38 |
| 17 | After Midnight | 9.0 | 3.3 | 100 | 40 | 67 | 39 |
| 18 | A13-1 | 7.7 | 3.3 | 83 | 38 | 72 | 45 |
| 19 | Blue Devil | 9.0 | 3.3 | 97 | 38 | 83 | 42 |
| 20 | DLFPS-340/3556 | 7.3 | 3.3 | 73 | 38 | 57 | 32 |

(Continued)

Table 6. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 72 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 72 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 21 | BAP PP 79366 | 7.7 | 3.3 | 90 | 37 | 59 | 40 |
| 22 | Blue Gem (NAI-13-9) | 9.0 | 3.3 | 97 | 33 | 89 | 35 |
| 23 | Unknown | 8.7 | 3.3 | 95 | 32 | 74 | 42 |
| 24 | BAR PP 71213 | 8.7 | 3.3 | 90 | 32 | 58 | 27 |
| 25 | Prosperity | 8.7 | 3.0 | 95 | 43 | 46 | 33 |
| 26 | Kenblue | 9.0 | 3.0 | 95 | 37 | 75 | 37 |
| 27 | NuRush (J-3510) | 9.0 | 3.0 | 100 | 33 | 83 | 41 |
| 28 | MVS-130 | 8.3 | 3.0 | 87 | 33 | 36 | 30 |
| 29 | Cloud (GO-2425) | 8.7 | 3.0 | 98 | 32 | 58 | 30 |
| 30 | RAD 553 | 8.3 | 2.7 | 93 | 33 | 77 | 37 |
| 31 | A15-6 | 8.0 | 2.7 | 85 | 33 | 74 | 36 |
| 32 | A99-2897 | 7.3 | 2.7 | 82 | 33 | 77 | 34 |
| 33 | A10-280 | 9.0 | 2.7 | 95 | 33 | 79 | 30 |
| 34 | Electric (PST-K11-118) | 8.7 | 2.7 | 98 | 32 | 75 | 36 |
| 35 | DLFPS-340/3455 | 8.3 | 2.7 | 90 | 30 | 77 | 40 |
| 36 | DLFPS-340/3549 | 9.0 | 2.7 | 95 | 30 | 53 | 31 |
| 37 | A11-26 | 8.0 | 2.7 | 90 | 30 | 57 | 31 |
| 38 | DLFPS-340/3551 | 7.7 | 2.7 | 82 | 30 | 79 | 31 |
| 39 | NAI-14-128 | 8.3 | 2.7 | 93 | 30 | 55 | 29 |
| 40 | Comanche (NAI-14-176) | 8.0 | 2.7 | 85 | 30 | 34 | 29 |

(Continued)

Table 6. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 72 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 72 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 41 | Midnight | 9.0 | 2.7 | 95 | 30 | 82 | 27 |
| 42 | Yellowstone (A12-7) | 8.0 | 2.7 | 87 | 30 | 48 | 27 |
| 43 | DLFPS-340/3438 | 8.0 | 2.7 | 87 | 30 | 60 | 24 |
| 44 | A11-38 | 9.0 | 2.7 | 97 | 28 | 69 | 33 |
| 45 | J-1138 | 9.0 | 2.7 | 97 | 28 | 86 | 30 |
| 46 | NAI-14-122 | 8.0 | 2.7 | 90 | 28 | 43 | 29 |
| 47 | PST-T14-39 | 8.3 | 2.7 | 93 | 22 | 68 | 32 |
| 48 | A16-2 | 9.0 | 2.7 | 100 | 20 | 63 | 18 |
| 49 | BAR PP 79494 | 9.0 | 2.3 | 92 | 32 | 84 | 33 |
| 50 | PST-K13-141 | 8.7 | 2.3 | 93 | 32 | 72 | 21 |
| 51 | Selway | 9.0 | 2.3 | 100 | 28 | 79 | 39 |
| 52 | AKB3179 | 8.3 | 2.3 | 92 | 28 | 24 | 25 |
| 53 | Babe | 9.0 | 2.3 | 98 | 27 | 58 | 26 |
| 54 | A12-34 | 8.0 | 2.3 | 83 | 25 | 78 | 34 |
| 55 | Blue Knight | 8.0 | 2.3 | 83 | 25 | 68 | 27 |
| 56 | A11-40 | 8.7 | 2.0 | 98 | 28 | 63 | 23 |
| 57 | Barserati (BAR PP 110358) | 9.0 | 2.0 | 95 | 27 | 88 | 39 |
| 58 | Orion (PST-K13-143) | 9.0 | 2.0 | 98 | 27 | 75 | 32 |
| 59 | NAI-14-132 | 8.7 | 2.0 | 90 | 25 | 45 | 25 |
| 60 | Syrah (LTP-11-41) | 8.0 | 2.0 | 90 | 25 | 35 | 19 |



(Continued)

Table 6. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 72 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 72 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 61 | Twilight (NAI-13-132) | 9.0 | 2.0 | 93 | 23 | 86 | 29 |
| 62 | J-2726 | 8.0 | 2.0 | 90 | 23 | 36 | 21 |
| 63 | PPG-KB 1304 | 8.7 | 1.7 | 93 | 23 | 87 | 28 |
| 64 | DLFPS-340/3548 | 9.0 | 1.7 | 97 | 23 | 62 | 23 |
| 65 | DLFPS-340/3444 | 7.7 | 1.7 | 85 | 22 | 61 | 26 |
| 66 | Jersey (NAI-A16-3) | 9.0 | 1.7 | 100 | 22 | 56 | 25 |
| 67 | DLFPS-340/3364 | 7.7 | 1.7 | 78 | 22 | 62 | 24 |
| 68 | Paloma (PST-K13-139) | 9.0 | 1.7 | 97 | 22 | 75 | 21 |
| 69 | AKB3128 | 8.3 | 1.7 | 92 | 22 | 68 | 20 |
| 70 | Heartland (NAI-14-187) | 8.3 | 1.7 | 90 | 22 | 37 | 17 |
| 71 | Shamrock | 8.3 | 1.7 | 92 | 20 | 49 | 22 |
| 72 | KH3492 | 9.0 | 1.7 | 100 | 20 | 68 | 19 |
| 73 | A16-7 | 8.0 | 1.7 | 78 | 18 | 79 | 22 |
| 74 | RAD-1776 | 8.3 | 1.7 | 90 | 18 | 51 | 18 |
| 75 | Starr (GO-2628) | 9.0 | 1.7 | 100 | 18 | 68 | 18 |
| 76 | J-1319 | 8.7 | 1.7 | 88 | 15 | 64 | 22 |
| 77 | BAR PP 7236V | 9.0 | 1.3 | 98 | 25 | 78 | 17 |
| 78 | NK-1 | 6.3 | 1.3 | 77 | 23 | 68 | 20 |
| 79 | DLFPS-340/3446 | 7.3 | 1.3 | 80 | 18 | 54 | 16 |
| 80 | PPG-KB 1320 | 9.0 | 1.3 | 100 | 17 | 62 | 19 |



(Continued)

Table 6. Uniformity of turf cover, fullness of turfgrass canopy, and green cover after 72 traffic machine passes as affected by the interaction of traffic and Kentucky bluegrass entry.

| | | After 72 machine passes (5 Aug. 2021)[1] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Uniformity of Turf Cover[1] | | Fullness of Turfgrass Canopy[2] | | Green Cover[3] | |
| | Kentucky bluegrass entry | No Traffic | Traffic[4] | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 Scale | | 0 to 100% Scale | | | |
| 81 | Amaze (NAI-14-133) | 7.0 | 1.3 | 82 | 15 | 41 | 16 |
| 82 | Pivot | 9.0 | 1.3 | 100 | 13 | 60 | 11 |
| 83 | DLFPS-340/3553 | 8.7 | 1.0 | 93 | 20 | 68 | 20 |
| 84 | AKB3241 | 7.7 | 1.0 | 87 | 20 | 58 | 16 |
| 85 | A06-8 | 8.3 | 1.0 | 92 | 18 | 78 | 17 |
| 86 | Skye | 9.0 | 1.0 | 98 | 18 | 62 | 13 |
| 87 | NAI-15-80 | 7.0 | 1.0 | 75 | 17 | 57 | 17 |
| 88 | Aviator II (NAI-15-84) | 7.3 | 1.0 | 80 | 13 | 60 | 17 |
| 89 | A16-1 | 6.7 | 1.0 | 77 | 13 | 44 | 11 |
| 90 | Dublin (PST-K15-157) | 8.3 | 1.0 | 92 | 12 | 51 | 8 |
| | Columns (down) LSD at 5% = | 2.0 | | 15 | | 21 | |
| | Rows (across) LSD at 5% = | 2.1 | | 15 | | 22 | |

[1]Two passes wk-1 with the Rutgers Wear Simulator and two passes wk$^{-1}$ with the Cady Traffic Simulator (72 machine passes) were made during 7 May to 30 August 2021.

[2]9 = most dense, uniform turf cover

[3]100% = full canopy

[4]100% = complete green cover; measured by digital image analysis

Table 7. Dollar spot and stem rust susceptibility of Kentucky bluegrass as affected by the interaction of traffic and Kentucky bluegrass entry.

| | Kentucky bluegrass entry | Dollar Spot[1] (28 Sep. 2021) | | Stem Rust[1] (15 Oct. 2021) | |
|---|---|---|---|---|---|
| | | No Traffic | Traffic | No Traffic | Traffic |
| | | 1 to 9 scale | | | |
| 1 | DLFPS-340/3494 | 5.7 | 8.7 | 8.7 | 6.0 |
| 2 | Barvette HGT | 4.3 | 7.7 | 9.0 | 8.7 |
| 3 | PST-K15-172 | 7.7 | 9.0 | 8.7 | 8.3 |
| 4 | DLFPS-340/3550 | 8.7 | 9.0 | 9.0 | 6.0 |
| 5 | DLFPS-340/3552 | 9.0 | 9.0 | 8.3 | 6.7 |
| 6 | DLFPS-340/3500 | 6.0 | 7.3 | 9.0 | 9.0 |
| 7 | PPG-KB 1131 | 8.0 | 9.0 | 9.0 | 8.7 |
| 8 | BAR PP 7K426 | 8.7 | 9.0 | 9.0 | 6.7 |
| 9 | Finish Line (NAI-14-178) | 7.3 | 8.0 | 9.0 | 3.7 |
| 10 | PST-11-7 | 7.0 | 9.0 | 8.7 | 3.0 |
| 11 | BAR PP 7309V | 6.3 | 9.0 | 8.7 | 8.0 |
| 12 | PST-K15-167 | 8.0 | 9.0 | 8.7 | 4.7 |
| 13 | New Moon (PST-K15-177) | 8.0 | 9.0 | 8.3 | 7.7 |
| 14 | A16-17 | 7.3 | 8.7 | 9.0 | 9.0 |
| 15 | United (NAI-13-14) | 8.0 | 9.0 | 9.0 | 8.3 |
| 16 | Bombay (GO-22B23) | 8.0 | 9.0 | 9.0 | 7.7 |
| 17 | After Midnight | 5.0 | 9.0 | 9.0 | 3.3 |
| 18 | A13-1 | 8.7 | 9.0 | 9.0 | 8.7 |
| 19 | Blue Devil | 7.7 | 9.0 | 9.0 | 7.0 |
| 20 | DLFPS-340/3556 | 8.3 | 9.0 | 9.0 | 8.3 |
| 21 | BAP PP 79366 | 6.7 | 7.3 | 9.0 | 8.0 |
| 22 | Blue Gem (NAI-13-9) | 8.3 | 9.0 | 9.0 | 8.7 |
| 23 | Unknown | 9.0 | 9.0 | 7.7 | 1.0 |
| 24 | BAR PP 71213 | 6.3 | 9.0 | 8.7 | 8.3 |
| 25 | Prosperity | 7.3 | 9.0 | 9.0 | 4.0 |
| 26 | Kenblue | 6.0 | 9.0 | 8.7 | 4.7 |
| 27 | NuRush (J-3510) | 7.3 | 9.0 | 9.0 | 2.3 |
| 28 | MVS-130 | 9.0 | 9.0 | 8.3 | 6.0 |
| 29 | Cloud (GO-2425) | 8.3 | 9.0 | 9.0 | 7.7 |
| 30 | RAD 553 | 5.3 | 8.0 | 8.7 | 4.0 |
| 31 | A15-6 | 8.3 | 9.0 | 9.0 | 5.0 |
| 32 | A99-2897 | 9.0 | 9.0 | 9.0 | 6.0 |
| 33 | A10-280 | 8.7 | 9.0 | 9.0 | 9.0 |
| 34 | Electric (PST-K11-118) | 5.7 | 8.7 | 9.0 | 4.7 |
| 35 | DLFPS-340/3455 | 8.3 | 9.0 | 9.0 | 4.7 |

(Continued)

Table 7. Dollar spot and stem rust susceptibility of Kentucky bluegrass as affected by the interaction of traffic and Kentucky bluegrass entry.

| | Kentucky bluegrass entry | Dollar Spot[1] (28 Sep. 2021) No Traffic | Dollar Spot[1] (28 Sep. 2021) Traffic | Stem Rust[1] (15 Oct. 2021) No Traffic | Stem Rust[1] (15 Oct. 2021) Traffic |
|---|---|---|---|---|---|
| | | 1 to 9 scale | | | |
| 36 | DLFPS-340/3549 | 4.0 | 8.0 | 8.7 | 7.0 |
| 37 | A11-26 | 8.0 | 9.0 | 9.0 | 7.7 |
| 38 | DLFPS-340/3551 | 9.0 | 9.0 | 9.0 | 6.0 |
| 39 | NAI-14-128 | 9.0 | 9.0 | 8.7 | 6.0 |
| 40 | Comanche (NAI-14-176) | 9.0 | 9.0 | 8.7 | 5.0 |
| 41 | Midnight | 8.3 | 9.0 | 9.0 | 8.0 |
| 42 | Yellowstone (A12-7) | 6.3 | 8.3 | 8.3 | 5.3 |
| 43 | DLFPS-340/3438 | 9.0 | 9.0 | 8.3 | 5.3 |
| 44 | A11-38 | 5.0 | 7.0 | 9.0 | 5.3 |
| 45 | J-1138 | 7.0 | 9.0 | 9.0 | 8.7 |
| 46 | NAI-14-122 | 9.0 | 9.0 | 8.3 | 7.7 |
| 47 | PST-T14-39 | 8.7 | 9.0 | 8.7 | 4.3 |
| 48 | A16-2 | 8.7 | 9.0 | 8.7 | 8.7 |
| 49 | BAR PP 79494 | 7.0 | 9.0 | 9.0 | 7.0 |
| 50 | PST-K13-141 | 6.3 | 9.0 | 9.0 | 7.0 |
| 51 | Selway | 6.3 | 9.0 | 8.3 | 6.7 |
| 52 | AKB3179 | 9.0 | 9.0 | 9.0 | 7.7 |
| 53 | Babe | 8.7 | 9.0 | 8.3 | 5.0 |
| 54 | A12-34 | 9.0 | 9.0 | 8.7 | 6.0 |
| 55 | Blue Knight | 4.3 | 8.7 | 8.3 | 1.7 |
| 56 | A11-40 | 9.0 | 9.0 | 9.0 | 2.3 |
| 57 | Barserati (BAR PP 110358) | 7.0 | 9.0 | 8.7 | 7.3 |
| 58 | Orion (PST-K13-143) | 8.3 | 9.0 | 8.0 | 4.0 |
| 59 | NAI-14-132 | 9.0 | 9.0 | 8.3 | 6.7 |
| 60 | Syrah (LTP-11-41) | 9.0 | 9.0 | 8.7 | 7.0 |
| 61 | Twilight (NAI-13-132) | 8.3 | 9.0 | 9.0 | 7.0 |
| 62 | J-2726 | 7.3 | 9.0 | 9.0 | 1.3 |
| 63 | PPG-KB 1304 | 8.7 | 9.0 | 8.7 | 7.3 |
| 64 | DLFPS-340/3548 | 9.0 | 9.0 | 8.0 | 7.3 |
| 65 | DLFPS-340/3444 | 8.7 | 9.0 | 8.0 | 4.7 |
| 66 | Jersey (NAI-A16-3) | 7.0 | 9.0 | 9.0 | 8.7 |
| 67 | DLFPS-340/3364 | 8.3 | 9.0 | 9.0 | 5.0 |
| 68 | Paloma (PST-K13-139) | 7.3 | 9.0 | 9.0 | 8.7 |
| 69 | AKB3128 | 9.0 | 9.0 | 9.0 | 7.0 |
| 70 | Heartland (NAI-14-187) | 9.0 | 9.0 | 8.0 | 5.3 |

(Continued)

Table 7. Dollar spot and stem rust susceptibility of Kentucky bluegrass as affected by the interaction of traffic and Kentucky bluegrass entry.

| | Kentucky bluegrass entry | Dollar Spot[1] (28 Sep. 2021) No Traffic | Dollar Spot[1] (28 Sep. 2021) Traffic | Stem Rust[1] (15 Oct. 2021) No Traffic | Stem Rust[1] (15 Oct. 2021) Traffic |
|---|---|---|---|---|---|
| | | 1 to 9 scale | | | |
| 71 | Shamrock | 9.0 | 9.0 | 8.0 | 3.3 |
| 72 | KH3492 | 7.7 | 9.0 | 9.0 | 6.7 |
| 73 | A16-7 | 8.3 | 9.0 | 9.0 | 6.7 |
| 74 | RAD-1776 | 8.7 | 9.0 | 8.7 | 6.7 |
| 75 | Starr (GO-2628) | 7.0 | 9.0 | 8.7 | 6.7 |
| 76 | J-1319 | 8.7 | 9.0 | 9.0 | 6.7 |
| 77 | BAR PP 7236V | 6.3 | 9.0 | 8.7 | 8.0 |
| 78 | NK-1 | 9.0 | 9.0 | 8.7 | 5.3 |
| 79 | DLFPS-340/3446 | 9.0 | 9.0 | 9.0 | 3.3 |
| 80 | PPG-KB 1320 | 7.7 | 9.0 | 5.3 | 1.3 |
| 81 | Amaze (NAI-14-133) | 8.7 | 9.0 | 8.0 | 5.7 |
| 82 | Pivot | 8.7 | 9.0 | 7.7 | 2.0 |
| 83 | DLFPS-340/3553 | 7.3 | 9.0 | 8.7 | 2.7 |
| 84 | AKB3241 | 9.0 | 9.0 | 9.0 | 2.0 |
| 85 | A06-8 | 8.7 | 9.0 | 9.0 | 6.7 |
| 86 | Skye | 7.3 | 9.0 | 9.0 | 6.0 |
| 87 | NAI-15-80 | 8.7 | 8.7 | 8.3 | 3.7 |
| 88 | Aviator II (NAI-15-84) | 9.0 | 9.0 | 8.3 | 7.0 |
| 89 | A16-1 | 8.7 | 9.0 | 8.7 | 4.7 |
| 90 | Dublin (PST-K15-157) | 9.0 | 9.0 | 9.0 | 6.7 |
| | Columns (down) LSD at 5% = | | 1.9 | | 3.5 |
| | Rows (across) LSD at 5% = | | 1.9 | | 2.5 |

[1]9 = least disease

[2]Two passes wk-1 with the Rutgers Wear Simulator and two passes wk-1 with the Cady Traffic Simulator (72 machine passes) were made during 7 May to 30 August 2021.

Table 8. Performance of Kentucky bluegrass entries without traffic; includes all entries of the 2017 NTEP Kentucky Bluegrass Test.

| | Kentucky bluegrass entry | Turfgrass Quality[1] 2018-21 Avg. | 2018 Avg. | 2019 Avg. | 2020 Avg. | 2021 Avg. | Color[2] 1 July 2021 | Wilt stress[3] 13 Aug. 2021 |
|---|---|---|---|---|---|---|---|---|
| | | 1 to 9 scale | | | | | | |
| 1 | Bombay (GO-22B23) | 8.1 | 8.6 | 8.1 | 7.8 | 7.8 | 6.3 | 8.7 |
| 2 | Starr (GO-2628) | 7.6 | 8.3 | 7.8 | 7.5 | 7.0 | 7.7 | 6.7 |
| 3 | After Midnight | 7.4 | 7.8 | 8.0 | 7.0 | 6.9 | 9.0 | 6.0 |
| 4 | Cloud (GO-2425) | 7.3 | 8.1 | 7.5 | 6.9 | 7.0 | 6.3 | 6.7 |
| 5 | PPG-KB 1131 | 7.3 | 7.6 | 6.8 | 6.8 | 7.9 | 8.3 | 7.7 |
| 6 | Jersey (NAI-A16-3) | 7.2 | 8.6 | 8.1 | 6.0 | 6.0 | 3.3 | 6.7 |
| 7 | Blue Devil | 7.1 | 7.3 | 6.7 | 6.8 | 7.4 | 6.3 | 7.7 |
| 8 | PST-K15-172 | 7.0 | 7.6 | 7.2 | 6.7 | 6.6 | 6.3 | 6.7 |
| 9 | A11-40 | 6.8 | 6.6 | 6.4 | 7.2 | 7.1 | 2.7 | 6.7 |
| 10 | New Moon (PST-K15-177) | 6.8 | 6.9 | 6.7 | 6.3 | 7.4 | 7.0 | 6.0 |
| 11 | Skye | 6.8 | 7.1 | 6.7 | 7.3 | 6.1 | 6.7 | 7.3 |
| 12 | NuRush (J-3510) | 6.8 | 7.6 | 6.4 | 6.5 | 6.6 | 6.3 | 8.3 |
| 13 | Twilight (NAI-13-132) | 6.8 | 7.5 | 6.1 | 6.4 | 7.0 | 7.0 | 8.0 |
| 14 | Midnight | 6.7 | 6.9 | 6.2 | 6.6 | 7.3 | 6.7 | 8.0 |
| 15 | Blue Gem (NAI-13-9) | 6.7 | 6.8 | 6.2 | 6.8 | 7.0 | 7.3 | 9.0 |
| 16 | J-1138 | 6.7 | 8.1 | 6.0 | 6.2 | 6.5 | 7.0 | 8.7 |
| 17 | Barserati (BAR PP 110358) | 6.7 | 7.2 | 6.5 | 6.2 | 6.9 | 2.3 | 9.0 |
| 18 | PST-11-7 | 6.6 | 7.4 | 6.4 | 5.5 | 7.1 | 7.0 | 7.3 |
| 19 | A16-2 | 6.6 | 6.8 | 6.6 | 6.5 | 6.3 | 2.7 | 5.7 |
| 20 | Prosperity | 6.5 | 7.8 | 7.0 | 5.1 | 6.0 | 9.0 | 5.3 |

(Continued)

Table 8. Performance of Kentucky bluegrass entries without traffic; includes all entries of the 2017 NTEP Kentucky Bluegrass Test.

| | Kentucky bluegrass entry | Turfgrass Quality[1] 2018-21 Avg. | Turfgrass Quality[1] 2018 Avg. | Turfgrass Quality[1] 2019 Avg. | Turfgrass Quality[1] 2020 Avg. | Turfgrass Quality[1] 2021 Avg. | Color[2] 1 July 2021 | Wilt stress[3] 13 Aug. 2021 |
|---|---|---|---|---|---|---|---|---|
| | | 1 to 9 scale | | | | | | |
| 21 | Electric (PST-K11-118) | 6.4 | 7.5 | 7.2 | 5.2 | 5.6 | 2.7 | 8.0 |
| 22 | A11-26 | 6.4 | 8.4 | 7.4 | 5.1 | 4.6 | 7.3 | 4.0 |
| 23 | KH3492 | 6.3 | 7.7 | 7.3 | 4.7 | 5.4 | 2.7 | 6.0 |
| 24 | BAR PP 79494 | 6.2 | 7.5 | 5.8 | 5.8 | 5.9 | 7.7 | 7.7 |
| 25 | PST-K15-167 | 6.2 | 7.7 | 6.6 | 5.4 | 5.2 | 7.7 | 5.7 |
| 26 | AKB3179 | 6.2 | 6.6 | 6.0 | 7.0 | 5.1 | 4.3 | 1.3 |
| 27 | DLFPS-340/3550 | 6.2 | 6.7 | 5.7 | 5.9 | 6.4 | 8.0 | 8.0 |
| 28 | United (NAI-13-14) | 6.2 | 7.3 | 5.4 | 5.6 | 6.3 | 7.0 | 7.3 |
| 29 | Selway | 6.1 | 6.6 | 6.1 | 5.4 | 6.3 | 7.0 | 8.0 |
| 30 | Barvette HGT | 6.1 | 7.1 | 6.1 | 5.9 | 5.2 | 2.7 | 8.3 |
| 31 | Orion (PST-K13-143) | 6.0 | 7.6 | 5.9 | 5.0 | 5.6 | 4.0 | 6.7 |
| 32 | J-2726 | 6.0 | 7.9 | 7.1 | 4.6 | 4.5 | 7.7 | 2.0 |
| 33 | Syrah (LTP-11-41) | 6.0 | 6.8 | 5.6 | 6.0 | 5.6 | 4.3 | 5.0 |
| 34 | Babe | 5.9 | 7.1 | 6.3 | 4.9 | 5.5 | 2.0 | 4.7 |
| 35 | BAR PP 7236V | 5.9 | 7.1 | 5.7 | 5.3 | 5.6 | 2.3 | 8.0 |
| 36 | Pivot | 5.9 | 6.4 | 4.8 | 6.1 | 6.1 | 8.3 | 8.3 |
| 37 | J-1319 | 5.9 | 7.0 | 5.5 | 5.5 | 5.5 | 8.7 | 5.0 |
| 38 | Finish Line (NAI-14-178) | 5.8 | 7.0 | 7.0 | 3.9 | 5.4 | 3.7 | 8.3 |
| 39 | DLFPS-340/3552 | 5.8 | 6.6 | 5.1 | 6.0 | 5.4 | 6.7 | 9.0 |
| 40 | PPG-KB 1304 | 5.8 | 6.9 | 5.9 | 5.2 | 5.1 | 6.7 | 8.7 |

(Continued)

Table 8. Performance of Kentucky bluegrass entries without traffic; includes all entries of the 2017 NTEP Kentucky Bluegrass Test.

| | Kentucky bluegrass entry | Turfgrass Quality[1] 2018-21 Avg. | 2018 Avg. | 2019 Avg. | 2020 Avg. | 2021 Avg. | Color[2] 1 July 2021 | Wilt stress[3] 13 Aug. 2021 |
|---|---|---|---|---|---|---|---|---|
| | | 1 to 9 scale | | | | | | |
| 41 | PPG-KB 1320 | 5.7 | 6.4 | 6.2 | 4.9 | 5.4 | 9.0 | 5.0 |
| 42 | DLFPS-340/3500 | 5.7 | 6.6 | 6.0 | 5.4 | 5.0 | 7.3 | 2.0 |
| 43 | BAR PP 7K426 | 5.7 | 6.3 | 5.2 | 5.3 | 5.8 | 2.0 | 8.7 |
| 44 | AKB3128 | 5.7 | 6.9 | 5.2 | 5.6 | 5.0 | 7.0 | 5.0 |
| 45 | Shamrock | 5.6 | 6.6 | 6.0 | 4.8 | 5.0 | 3.7 | 4.3 |
| 46 | DLFPS-340/3553 | 5.6 | 6.8 | 4.9 | 5.6 | 5.0 | 3.3 | 7.7 |
| 47 | DLFPS-340/3494 | 5.5 | 7.0 | 5.2 | 3.9 | 6.0 | 6.3 | 8.3 |
| 48 | AKB3241 | 5.5 | 6.1 | 5.0 | 6.0 | 4.8 | 8.3 | 3.0 |
| 49 | DLFPS-340/3549 | 5.4 | 7.3 | 6.7 | 3.8 | 4.0 | 2.0 | 4.0 |
| 50 | PST-T14-39 | 5.4 | 6.8 | 6.6 | 3.3 | 5.0 | 8.0 | 4.7 |
| 51 | Paloma (PST-K13-139) | 5.3 | 7.2 | 5.9 | 3.2 | 4.9 | 4.3 | 7.7 |
| 52 | BAR PP 71213 | 5.3 | 7.6 | 6.7 | 3.6 | 3.2 | 1.3 | 7.0 |
| 53 | Unknown | 5.2 | 5.4 | 5.1 | 4.4 | 5.9 | 5.3 | 6.0 |
| 54 | DLFPS-340/3548 | 5.2 | 6.7 | 5.8 | 3.2 | 5.0 | 7.0 | 5.0 |
| 55 | DLFPS-340/3551 | 5.1 | 6.1 | 4.6 | 5.0 | 4.8 | 7.0 | 8.7 |
| 56 | BAP PP 79366 | 5.1 | 7.0 | 5.2 | 4.0 | 4.1 | 7.0 | 3.0 |
| 57 | DLFPS-340/3444 | 5.1 | 6.1 | 5.7 | 4.8 | 3.8 | 3.3 | 5.7 |
| 58 | DLFPS-340/3455 | 5.1 | 5.4 | 5.6 | 5.0 | 4.4 | 4.0 | 8.0 |
| 59 | BAR PP 7309V | 5.1 | 5.6 | 4.8 | 5.4 | 4.5 | 2.0 | 8.0 |
| 60 | DLFPS-340/3556 | 5.1 | 6.8 | 5.4 | 4.5 | 3.6 | 7.3 | 3.3 |

(Continued)

Table 8. Performance of Kentucky bluegrass entries without traffic; includes all entries of the 2017 NTEP Kentucky Bluegrass Test.

| | Kentucky bluegrass entry | Turfgrass Quality[1] 2018-21 Avg. | 2018 Avg. | 2019 Avg. | 2020 Avg. | 2021 Avg. | Color[2] 1 July 2021 | Wilt stress[3] 13 Aug. 2021 |
|---|---|---|---|---|---|---|---|---|
| | | 1 to 9 scale | | | | | | |
| 61 | A06-8 | 5.1 | 5.7 | 5.2 | 4.6 | 4.7 | 7.0 | 7.7 |
| 62 | A11-38 | 5.0 | 7.2 | 6.7 | 2.4 | 3.7 | 2.7 | 5.0 |
| 63 | Yellowstone (A12-7) | 4.9 | 6.4 | 6.9 | 3.1 | 3.2 | 5.7 | 3.0 |
| 64 | A15-6 | 4.8 | 5.7 | 4.6 | 4.4 | 4.4 | 7.0 | 8.3 |
| 65 | A16-17 | 4.8 | 6.2 | 6.2 | 3.2 | 3.4 | 1.3 | 8.3 |
| 66 | PST-K13-141 | 4.7 | 4.9 | 4.2 | 4.8 | 4.7 | 4.3 | 7.7 |
| 67 | RAD-1776 | 4.6 | 5.6 | 4.6 | 4.1 | 4.2 | 5.3 | 5.0 |
| 68 | DLFPS-340/3438 | 4.6 | 5.7 | 4.4 | 4.4 | 4.1 | 7.0 | 8.7 |
| 69 | A99-2897 | 4.6 | 5.9 | 3.8 | 4.3 | 4.4 | 7.3 | 9.0 |
| 70 | A10-280 | 4.6 | 4.9 | 4.1 | 4.1 | 5.3 | 7.3 | 8.0 |
| 71 | A16-7 | 4.5 | 4.7 | 4.2 | 4.7 | 4.6 | 6.0 | 8.0 |
| 72 | A12-34 | 4.5 | 5.2 | 4.2 | 4.2 | 4.2 | 8.0 | 8.7 |
| 73 | A13-1 | 4.4 | 5.7 | 3.8 | 4.0 | 4.2 | 7.7 | 4.3 |
| 74 | NAI-14-128 | 4.4 | 5.1 | 5.0 | 3.5 | 4.1 | 7.7 | 5.0 |
| 75 | A16-1 | 4.4 | 6.1 | 5.5 | 3.5 | 2.5 | 3.7 | 2.3 |
| 76 | DLFPS-340/3446 | 4.3 | 5.4 | 4.3 | 4.0 | 3.4 | 6.0 | 1.7 |
| 77 | MVS-130 | 4.3 | 4.8 | 5.0 | 3.9 | 3.2 | 6.7 | 2.0 |
| 78 | RAD 553 | 4.1 | 6.0 | 4.3 | 2.6 | 3.6 | 2.7 | 8.3 |
| 79 | NAI-14-122 | 4.1 | 4.6 | 5.0 | 3.2 | 3.4 | 7.7 | 2.0 |
| 80 | Heartland (NAI-14-187) | 4.0 | 4.6 | 4.9 | 3.2 | 3.5 | 7.7 | 2.0 |

(Continued)

Table 8. Performance of Kentucky bluegrass entries without traffic; includes all entries of the 2017 NTEP Kentucky Bluegrass Test.

| | Kentucky bluegrass entry | Turfgrass Quality[1] 2018-21 Avg. | Turfgrass Quality[1] 2018 Avg. | Turfgrass Quality[1] 2019 Avg. | Turfgrass Quality[1] 2020 Avg. | Turfgrass Quality[1] 2021 Avg. | Color[2] 1 July 2021 | Wilt stress[3] 13 Aug. 2021 |
|---|---|---|---|---|---|---|---|---|
| | | 1 to 9 scale | | | | | | |
| 81 | Aviator II (NAI-15-84) | 4.0 | 4.7 | 4.2 | 4.0 | 3.2 | 7.0 | 7.0 |
| 82 | Comanche (NAI-14-176) | 4.0 | 4.6 | 4.6 | 3.4 | 3.4 | 7.7 | 1.3 |
| 83 | Kenblue | 3.9 | 4.0 | 4.3 | 3.4 | 3.8 | 2.3 | 7.7 |
| 84 | Dublin (PST-K15-157) | 3.8 | 4.7 | 3.8 | 3.0 | 3.7 | 5.7 | 7.0 |
| 85 | Blue Knight | 3.6 | 5.2 | 4.1 | 2.2 | 3.0 | 7.7 | 5.0 |
| 86 | NAI-14-132 | 3.6 | 4.6 | 3.9 | 2.6 | 3.3 | 7.7 | 2.7 |
| 87 | Amaze (NAI-14-133) | 3.6 | 4.1 | 4.0 | 3.1 | 3.0 | 7.7 | 3.0 |
| 88 | DLFPS-340/3364 | 3.2 | 3.1 | 2.7 | 3.2 | 3.7 | 7.7 | 7.3 |
| 89 | NK-1 | 2.8 | 4.1 | 2.0 | 2.6 | 2.6 | 5.7 | 8.7 |
| 90 | NAI-15-80 | 2.6 | 3.1 | 2.0 | 2.7 | 2.7 | 3.7 | 7.3 |
| | LSD at 5% = | 0.9 | 0.9 | 1.2 | 1.3 | 1.5 | 1.5 | 2.3 |
| | CV (%) = | 10.1 | 9.1 | 13.1 | 17.0 | 18.5 | 15.5 | 22.5 |

[1]9 = best quality
[2]9 = earliest spring green-up
[3]9 = least seedheads