



RUTGERS

New Jersey Agricultural
Experiment Station

2020

Turfgrass Proceedings

The New Jersey Turfgrass Association

In Cooperation with
Rutgers Center for Turfgrass Science
Rutgers Cooperative Extension

2020 RUTGERS TURFGRASS PROCEEDINGS

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 proceedings 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.

Special thanks are given to those who have submitted papers for this proceedings, to the New Jersey Turfgrass Association for financial assistance, and to Anne Diglio and Barbara Fitzgerald for administrative support.

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

PERFORMANCE OF KENTUCKY BLUEGRASS CULTIVARS AND SELECTIONS IN NEW JERSEY TURF TRIALS, 2020

Olivia K. Wright, Ronald F. Bara, Phillip L. Vines, Stacy A. Bonos, Ryan M. Daddio, Dirk A. Smith, Eric N. Weibel, James A. Murphy, and William A. Meyer¹

INTRODUCTION

Kentucky Bluegrass (*Poa pratensis* L.) is a popular cool-season turfgrass that is largely used across the northern United States and Canada. This grass grows extensive and persistent rhizomes, which is an important characteristic in turf. The rhizomes allow for rapid spreading after establishment and will help with recovery from any stress or damage, making it an ideal turf for athletic fields. This species does have some limitations including disease susceptibility issues and poor drought tolerance (Casler and Duncan, 2003).

Kentucky bluegrass reproduces through an asexual process called apomixis. Sexual reproduction can occur in this species, but is normally selected against during the breeding process. Being highly apomictic is a desirable trait and will yield the most uniform cultivars as well as fix hybrid vigor. Though apomixis has many benefits, it makes it challenging for breeders to obtain hybrids and maintain a high level of apomixis in the new hybrids.

Texas bluegrass (*Poa arachnifera* L.) is a species native to the southwest region of the United States is much more tolerant to drought and heat stress. This species is dioecious, meaning it has male and female flowers on separate plants. Crosses using Texas bluegrass females with Kentucky bluegrass males have been done to try and improve the tolerance of heat and drought stresses in Kentucky bluegrass cultivars.

Collections from around the world are obtained and used to increase the genetic diversity of the germplasm of the Kentucky bluegrass at the New Jersey Agricultural Experiment Station. These col-

lections are important to use in breeding to increase the resistance to disease, pests, and other abiotic factors in new cultivars. They can also be used to improve cultivars for a changing climate.

NTEP focuses on the cooperation with institutions nationwide to evaluate turfgrass cultivars and selections in a wide range of locations. Proceedings from all trials conducted by NTEP can be found at <http://www.ntep.org>.

PROCEDURES

Five Kentucky bluegrass trials were seeded from 2017 to 2019. These trials were located at the Rutgers Plant Biology and Pathology Research and Extension Farm at Adelphia, NJ (Tables 1-5). These trials were planted by sowing a maximum of 0.53 oz of seed in 3 x 5 ft plots (2.2 lbs of seed per 1000 ft²). The trials were all arranged in a randomized complete block design with three replications. Tenacity (Mesotrione) was applied at the time of seeding and four weeks after emergence at 5 oz per 1000 ft² for control of annual bluegrass and other weeds. Annual nitrogen (19-0-9) rates as well as the mowing heights for each trial are presented in table 6. Nitrogen rates were not constant for all the fields to manage diseases or foster recovery from various stresses as well as to conduct low maintenance trials (Table 1). Single nitrogen application rates never exceeded 0.75 lb N/1000 ft². Mowing heights were maintained as outlined in table 6 by using rotary mowers.

Monthly ratings are taken to assess the overall quality, which is a visual assessment given based on color, uniformity, density, texture, and disease or insect damage. Data for all trials were statistically analyzed using analysis of variance, and means were

¹Field Researcher IV, Laboratory Researcher II, Assistant Research Professor, Research Professor, Field Researcher IV, Principal Laboratory Technician, Field Researcher III, Extension Specialist in Turfgrass Management, and Research Professor, respectively. New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ 08901-8520.

separated using Fisher's protected least significant difference (LSD) means separation test. Results in Tables 1-5 are presented with selections grouped according to species and ranked according to the best overall turf performance (single to multiple-year quality average). Additional ratings are included when there were clear differences within the trials. While previous ratings are included in the tables, only the additional ratings for the year under review will be discussed.

RESULTS

Turf Quality

Turf quality is an overall comprehensive measure of the performance of the entries. This assessment is based on traits of the turf including color, density, texture, and presence of abiotic or biotic stresses at the time of the rating. Entries with the highest rating under standard management include Bolt, A11-40, PPG-KB 1304, A11-26, and A16-228 (Tables 1-5). Entries with the lowest quality rating include Blue Ghost, PPG-KB 1320, Blue Star, and Geronimo (Tables 1-5).

Low Maintenance

The identification of turfgrass that perform well under low maintenance has become more important as there are increasing restrictions on water and fertilizer use in both home lawns and professional-maintained turf. Performance in low input management conditions will become more valuable as the restrictions become greater. Low maintenance turf trials are cut at a higher mowing height and receive less fertilizer with no excess water inputs outside of establishment. The highest rated entries include Bolt, Touche, and Pick 033 (Table 1). The lowest rated entries include PST-TX8-56, New Moon, and Blue Ghost (Table 1).

Establishment

Establishment is an important trait for consumers, sod-growers, and other turf managers. Kentucky bluegrass is one of the slowest cool-season grasses to mature. This trait can be influenced by different factors including genetics, seed quality, environment, management practices, and after-ripening dormancy. Age of seed, storage conditions, and environmental conditions at the time of seeding are also characteristics that affect establishment and seedling vigor. Entries that were quicker to establish include A14-422,

A16-528, A18-767, A18-774, J09-3287, and A17-899 (Table 5). Entries that were slower to establish include Midnight II, Zinfandel, A19-296, PST-K19-200, and Geronimo (Table 5).

Spring Green-up

This trait varies amongst Kentucky bluegrass genotypes. An increase in leaf elongation occurs in response to increases in temperature and photoperiod (Parsons and Robson, 1980). Selections that green up earlier in the spring are more adapted to this region and therefore more sensitive to these conditions. Selections that are more adapted to higher latitudes need more dramatic changes in temperature and photoperiod before they will green-up. Entries that were early to green-up include Morocco, and KB16OT-1 (Table 4), while entries that were later to green-up include Beyond, Twilight, A14-420, Blue Velvet, Rugby II, United, and Everest (Table 4). Many cultivars in the Midnight type classification group exhibit slow green up in the spring (Honig et al., 2018).

Stem Rust

Stem rust, caused by fungus *Puccinia graminis*, is a serious and potentially devastating disease on Kentucky bluegrass. When infected, the turf will turn a light-yellow color and will grow brick-red pustules on the leaf blades. When allowed to persist, the powdery-red pustules can grow and get worse leaving heavily infected plants to appear blackened later in season (Leonard and Szabo, 2005). The red spores are released when they are disturbed and can be transferred on to materials like shoes, bags, and pants, which makes this disease even more problematic. Entries that had the least amount of stem rust include Martha, A14-3 (Table 1), PPG-KB 1304, A11-26, A-16-17 (Table 3), Heidi, Rhythm, KB13OT-4 (Table 4), T15-46, A16-228, A16-231, A14-422, and MVS-280 (Table 5); entries with the highest amount of stem rust include PST-K17-189AD, A14-281 (Table 1), PST-11-7 (Table 3), Prosperity (Table 3 and 4), NA14-126, New Moon (Table 3), PST-K17-188AD, NAI-14-128, Amaze, and Bluecoat (Table 5).

Summer Patch

Summer patch is a root disease caused by *Magnaportheopsis poae* and can be a devastating disease to Kentucky bluegrass, leaving large areas of dead turf that are slow to recover. The disease results in a characteristic known as a frog's eye pattern, where there is a blighted patch around a center region

of healthy turf. Symptoms of this disease appear rapidly when the turf is exposed to stress factors like heat. Entries with the least summer patch at the time of rating include PPG-KB-1304, A11-26, A-16-17, and Baserati (Table 3); entries that had the most summer patch at the time of rating include PPG-KB-1320, A11-38, A16-1, and RAD-1776 (Table 3).

Stemminess

Stemminess refer to the visual presence of seed heads, the reproductive organs of turfgrasses, in turf plots. These appear in the spring and are necessary to produce seed to be sold to the consumer. Although these can be mowed, this is an undesirable trait in turfgrass stands because they are visible in some cases even after mowing, can become discolored, and result in poor texture and color to the turf. Entries with the least amount of visible seed heads includes A11-40, Zinfandel (Table 2), A09-305, and Twilight (Table 4). Entries with the highest amount of visible seed heads includes MVS-130, Yellowstone (Table 2), A15-1088, and RAD-3813 (Table 4).

SUMMARY

Kentucky bluegrass is grown for a variety of uses in a range of soil, environmental, and management conditions. For this reason, there is a demand for cultivars to produce a durable, high quality turf for a variety of uses and under an assortment of conditions. Due to the extensive rhizome system that it grows, Kentucky bluegrass can recover from stressful conditions, but there is still a need to prevent initial damage to the turfgrass. For cultivars to perform well across a variety of environments, better resistance to important diseases, pests, and abiotic stresses is necessary.

ACKNOWLEDGMENTS

New Jersey Agricultural Experiment Station Publication No. E-12180-02-11. This work was supported by the New Jersey Agricultural Experiment Station, State, and Hatch Act Funds, the Rutgers Center for Turfgrass Science, other grants, and gifts. Additional support was received from the United States Golf Association, the National Turfgrass Evaluation Program, and the New Jersey Turfgrass Association.

REFERENCES

- Casler, M. D. and Duncan, R. R. (Eds.). 2003. Turfgrass Biology, Genetics, and Breeding. John Wiley & Sons, Inc. 27-38.
- Honig, J.A. V. Averello, C. Kubik, J. Vaiciunas, B. S. Bushman, S. A. Bonos, and W. A. Meyer. 2018. An update on the classification of Kentucky bluegrass (*Poa pratensis* L.) cultivars and accessions based on microsatellite (SSR) markers. *Crop Science* 58 (4): 1776-1787. doi:10.2135/cropsci2017.11.0689.
- Leonard, K. J., Szabo, L. J. 2005. Stem rust of small grains and grasses caused by *Puccinia graminis*. *Molecular Plant Pathology* (2005), 6(2), 99-111.
- Parsons, A. J., and M. J. Robson. 1980. Seasonal changes in physiology of S24 perennial ryegrass (*Lolium perenne* L.). 1. Responses of leaf extension to temperature during transition from vegetative to reproductive growth. *Ann. Bot.* 46:435-444.

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	Stress ⁷ 11 Jul. 2018	Stress ⁸ 6 Sep. 2018
1 Bolt	6.3	6.4	6.5	6.0	7.7	4.7	5.7	4.3	4.0	3.7	8.3	8.0	6.7	6.0
2 Touche	6.2	5.7	6.5	6.5	5.3	4.7	7.0	2.7	4.3	3.3	7.3	7.7	6.0	6.0
3 PICK 033	6.1	6.2	6.3	5.9	7.7	3.3	6.0	7.3	4.3	4.7	7.7	7.3	5.3	4.7
4 H03-556	5.8	6.3	6.7	4.4	7.3	3.7	4.0	5.3	6.3	6.0	9.0	9.0	8.0	7.0
5 A11-40	5.7	5.8	5.7	5.7	5.7	5.3	5.3	5.3	5.7	3.3	8.0	8.3	5.7	6.0
6 PST-K17-191	5.7	5.8	5.4	6.0	6.3	3.7	6.3	5.3	4.7	5.7	7.7	5.0	5.7	4.0
7 A09-305	5.6	6.0	5.6	5.2	6.7	3.0	6.3	5.7	4.0	2.7	4.7	8.3	8.0	4.0
8 PST-K17-184	5.6	5.3	5.8	5.6	6.7	4.0	5.0	5.7	3.3	3.3	4.3	3.3	5.7	5.3
9 A14-677	5.5	6.4	5.4	4.7	7.3	6.7	2.0	5.0	6.0	5.3	9.0	9.0	6.3	3.7
10 NAI 15-105	5.5	5.1	5.9	5.5	3.7	4.3	6.0	3.3	4.3	4.0	7.7	4.7	5.7	3.3
11 A11-71	5.4	5.7	5.1	5.3	5.7	4.3	4.0	4.0	4.7	4.3	7.0	4.3	6.7	3.7
12 A11-26	5.4	5.5	5.3	5.3	5.7	3.3	6.3	5.0	4.3	3.0	6.3	4.3	7.0	5.3
13 Heidi	5.4	5.9	5.8	4.4	7.7	3.0	3.0	7.7	4.3	5.0	7.7	8.3	4.3	5.0
14 Blue Note	5.4	5.0	5.5	5.6	5.7	3.7	6.3	3.3	4.3	5.7	5.0	4.7	4.7	4.0
15 Julia	5.4	4.9	5.6	5.6	5.7	7.3	3.0	2.3	7.3	8.3	8.7	6.0	5.7	3.3
16 Martha	5.3	5.5	5.5	5.0	6.7	4.3	9.0	5.7	5.0	3.7	5.7	5.7	6.3	4.7
17 PPG-KB 1147	5.3	5.9	4.6	5.3	3.0	6.3	5.3	2.3	4.0	3.0	7.3	4.7	6.3	6.0
18 A14-422	5.2	6.3	4.6	4.9	8.0	7.7	6.7	6.3	6.7	5.3	9.0	9.0	5.3	4.7
19 A15-10	5.2	4.9	5.2	5.6	6.0	3.0	4.7	3.7	4.3	5.3	5.7	3.0	4.7	3.7
20 PST-105-191	5.2	5.6	5.9	4.2	4.7	3.3	5.0	4.7	4.0	3.3	5.3	4.0	6.7	3.7

50

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	---Green-up ⁶ ----	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	Stress ⁷ 11 Jul. 2018
21 BAR PP 71654	5.2	5.0	5.1	5.6	6.3	3.3	4.7	6.0	3.3	4.0	6.3	7.7	4.3	3.7
22 A15-470	5.2	5.0	5.1	5.5	8.3	5.0	5.7	5.0	3.7	6.0	7.3	6.3	6.0	2.3
23 Sombrero	5.2	4.7	5.4	5.3	8.3	4.0	3.3	5.0	4.3	4.7	6.3	4.0	4.7	3.0
24 NAI-15-90	5.2	5.4	5.3	4.7	3.0	6.7	4.3	2.0	4.3	2.3	5.7	2.7	6.3	7.0
25 SPF 30	5.1	5.7	5.1	4.6	8.0	3.3	7.0	7.7	4.0	3.3	8.7	4.3	5.7	3.3
26 NAI-15-89	5.1	5.5	5.4	4.5	6.0	2.7	5.3	4.7	3.7	4.0	7.3	2.7	4.7	3.7
27 A14-299	5.1	4.8	5.5	5.1	7.7	1.7	2.7	4.3	3.7	3.3	7.0	4.3	4.0	3.7
28 A17-3	5.1	5.8	5.2	4.3	7.3	5.3	3.3	6.7	6.0	5.0	8.0	5.7	5.7	4.0
29 A09-793	5.1	6.2	4.8	4.4	7.0	7.3	5.7	6.0	4.7	3.7	8.0	6.0	6.7	5.0
30 Yellowstone	5.1	5.4	4.6	5.2	5.7	3.7	6.0	6.0	3.3	3.3	6.7	4.0	4.3	4.7
31 Babe	5.1	5.2	4.8	5.3	7.0	2.7	6.0	5.0	4.0	5.3	6.3	2.7	5.0	3.3
32 Dauntless	5.1	4.8	5.1	5.3	6.7	3.0	5.0	5.3	3.7	5.7	6.3	2.7	4.3	2.7
33 A14-258	5.0	5.5	4.9	4.7	7.0	3.0	4.3	5.3	4.0	4.0	7.7	5.0	6.0	4.0
34 Hampton	5.0	5.5	5.4	4.1	6.0	4.7	2.0	7.3	3.7	6.0	6.3	7.7	4.0	4.3
35 A14-334	5.0	4.9	5.0	4.9	5.3	5.3	6.0	3.7	3.3	4.7	7.7	4.0	4.0	2.0
36 PST-K13-141	4.9	5.4	4.6	4.8	6.3	3.3	6.3	6.0	5.3	4.3	5.7	3.7	6.7	3.7
37 Jersey	4.9	5.7	4.3	4.7	7.0	5.0	5.7	4.7	4.7	4.7	5.7	3.7	5.7	3.0
38 A17-8	4.9	5.5	4.5	4.6	4.7	3.7	3.7	8.0	5.3	4.0	8.7	4.3	5.0	4.7
39 Blue Star	4.9	4.7	5.0	4.9	7.0	2.0	4.0	5.0	3.7	5.3	5.3	4.0	4.0	3.7
40 Electric	4.9	4.8	4.8	5.1	5.0	4.7	5.0	3.7	5.0	6.0	4.3	3.3	5.3	3.3

51

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	11 Jul. 2018	6 Sep. 2018
41 P-105	4.9	5.2	4.6	4.9	9.0	4.7	2.0	7.3	5.0	5.3	9.0	7.0	5.3	3.7
42 SRX 5321	4.9	4.6	5.0	5.0	6.7	3.7	4.3	4.7	4.3	3.7	6.3	6.3	4.7	3.7
43 NAI-15-106	4.9	5.4	5.0	4.3	5.3	4.7	4.0	3.3	5.7	4.3	7.3	3.7	6.3	5.7
44 A05-361	4.9	5.6	4.9	4.1	6.3	4.0	4.3	7.7	4.3	5.7	7.7	6.3	6.0	4.3
45 A17-5	4.8	5.1	4.9	4.5	4.7	5.0	6.7	3.3	4.3	4.7	5.7	2.7	4.0	4.3
46 A04-340	4.8	5.4	5.1	4.0	5.7	4.3	8.3	6.0	3.7	3.7	6.3	5.3	5.3	3.7
47 Shannon	4.8	4.7	4.7	5.0	7.0	3.3	5.7	4.7	4.7	4.7	5.7	3.0	4.7	3.3
48 A16-2	4.8	4.7	4.7	5.0	6.0	3.0	4.3	3.3	4.3	5.0	4.7	3.3	4.3	2.7
49 A04-383	4.8	5.8	4.5	4.1	7.0	7.7	3.3	6.0	7.0	3.3	8.0	7.0	5.3	3.7
50 PST-T14-40	4.8	5.5	5.2	3.6	7.3	3.3	3.7	5.3	4.3	3.3	7.3	3.7	6.3	4.7
51 A12-28	4.8	4.5	4.6	5.2	5.0	2.7	6.3	4.3	4.3	5.0	6.0	2.0	4.7	3.0
52 PST-T14-39	4.8	5.0	4.7	4.6	4.0	5.3	5.3	2.7	3.3	5.3	5.7	1.7	4.3	2.3
53 A11-358	4.7	5.0	5.1	4.1	3.3	6.7	6.7	2.7	7.3	6.0	8.7	9.0	7.0	3.3
54 Aries	4.7	4.5	4.6	5.0	7.7	2.3	5.3	5.0	3.7	5.0	5.3	3.0	4.0	2.3
55 A14-220	4.7	5.2	4.3	4.7	7.0	2.3	3.3	6.7	4.0	2.7	6.7	4.0	6.3	4.7
56 Cocktail	4.7	5.7	4.7	3.7	5.0	2.3	3.3	3.7	3.3	2.3	7.3	4.7	4.7	3.0
57 Volt	4.7	4.6	4.8	4.6	7.7	3.7	6.3	6.3	4.0	5.7	6.3	4.0	4.7	2.7
58 Isabel	4.7	4.9	4.6	4.5	7.3	2.3	3.0	5.7	4.0	5.7	5.3	3.0	4.0	4.0
59 PPG-KB 1317	4.7	5.8	4.3	3.8	5.3	6.3	7.3	3.3	6.3	3.3	6.0	1.3	7.7	6.7
60 SRX 466	4.6	5.3	4.6	4.0	9.0	4.0	4.7	8.7	4.0	5.0	8.0	7.3	4.7	3.0

52

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	Stress ⁷ 11 Jul. 2018	Stress ⁸ 6 Sep. 2018
61 Syrah	4.6	5.2	4.4	4.4	7.7	3.3	4.7	8.0	4.7	4.3	7.7	5.7	6.3	5.3
62 A15-8	4.6	5.7	3.7	4.4	4.7	7.0	4.0	3.0	4.0	3.0	7.3	7.7	6.0	5.3
63 A06-671	4.6	4.9	4.4	4.6	6.7	3.7	5.3	5.0	4.0	4.0	7.0	4.3	5.0	2.7
64 Jumpstart	4.6	5.5	4.8	3.5	6.0	4.7	2.3	4.7	4.3	4.3	8.0	5.7	5.3	3.0
65 PST-K17-187	4.6	4.7	4.8	4.4	3.7	4.3	3.7	3.7	4.0	3.7	5.0	2.0	4.3	4.0
66 A12-287	4.6	6.1	4.3	3.4	7.3	5.7	3.7	6.0	6.7	4.3	9.0	9.0	5.7	5.0
67 PST-K15-158	4.6	4.4	4.6	4.8	3.7	5.0	5.0	3.0	5.0	3.3	6.0	1.3	6.3	5.3
68 A09-794	4.6	5.7	3.9	4.1	5.7	7.7	5.0	4.0	5.0	2.3	6.0	4.7	6.0	5.7
69 A05-295	4.6	4.9	4.9	4.0	5.3	4.3	2.7	6.3	4.0	4.3	6.3	7.0	3.7	4.3
70 PST-K17-186	4.6	5.3	4.3	4.1	4.7	6.0	5.7	3.3	4.7	4.0	7.7	6.0	5.7	3.3
71 SRX 2758	4.6	5.4	4.6	3.7	7.7	3.3	3.0	7.3	3.3	5.0	7.0	7.0	5.3	3.0
72 Hampton	4.6	4.3	4.9	4.4	7.7	5.3	2.3	7.7	6.7	7.7	9.0	6.7	4.7	4.3
73 PST-K17-190AD	4.6	5.9	3.9	3.8	6.7	3.7	5.3	4.7	4.3	4.7	6.0	1.0	6.7	5.0
74 PST-T15-42	4.5	4.8	4.2	4.7	5.0	4.3	2.7	4.0	4.7	5.7	8.0	2.7	5.7	3.3
75 A09-789	4.5	5.7	4.1	3.8	5.7	7.3	5.7	3.3	3.7	4.0	7.7	5.0	6.0	4.7
76 Fullback	4.5	3.5	4.9	5.1	5.0	4.7	4.7	3.3	5.3	5.7	8.0	3.7	4.7	3.3
77 Tattoo	4.5	5.6	4.6	3.4	4.0	4.3	7.3	3.7	4.3	3.7	6.0	7.0	6.3	4.0
78 Legend	4.5	5.0	4.4	4.2	6.3	3.3	7.7	4.0	4.7	4.3	4.3	7.0	5.7	4.0
79 A09-258	4.5	5.7	4.3	3.4	8.7	3.0	1.3	9.0	6.7	6.3	9.0	9.0	4.7	2.3
80 A16-4	4.5	4.7	4.5	4.2	7.7	3.0	5.0	6.3	4.3	5.0	5.7	3.3	5.0	2.7

53

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	11 Jul. 2018	6 Sep. 2018
81 A13-3	4.5	5.1	4.0	4.3	5.0	2.7	6.0	6.0	4.3	3.7	6.7	7.3	5.3	5.7
82 A14-306	4.5	5.5	3.7	4.2	6.3	4.3	4.0	6.0	4.0	4.3	7.7	2.0	5.0	3.0
83 PST-T17-47	4.5	4.5	4.7	4.2	5.0	2.7	4.3	5.0	4.0	4.3	5.7	4.7	3.3	2.0
84 A05-351	4.4	4.6	4.8	3.9	6.0	4.7	6.7	4.7	3.7	3.0	6.7	5.0	4.7	2.7
85 RAD-553	4.4	5.6	4.2	3.5	6.0	8.3	5.7	4.3	4.7	2.3	8.3	8.3	6.7	5.7
86 Selway	4.4	4.7	4.6	4.1	5.7	5.3	3.3	3.3	5.0	4.3	6.7	6.3	5.0	4.7
87 A04-66	4.4	4.9	4.6	3.8	6.3	4.0	4.0	8.0	4.0	4.7	7.7	6.7	4.3	3.7
88 PST-T15-44	4.4	4.5	4.4	4.4	4.3	4.7	3.0	3.7	4.3	5.3	6.7	3.0	4.3	3.3
89 RAD-3764	4.4	4.2	4.6	4.4	7.3	2.7	4.7	6.0	4.7	4.7	6.7	3.0	3.7	2.3
90 Jackrabbit	4.4	4.7	4.5	4.0	7.0	3.7	2.3	4.3	5.3	5.0	7.7	4.3	4.7	3.3
91 PPG-KB 1532	4.4	5.2	4.4	3.5	3.7	5.7	7.3	2.3	6.3	3.7	4.7	1.3	6.7	5.0
92 PST-K17-185	4.4	4.8	4.3	3.9	6.0	3.7	5.7	4.3	3.3	4.3	4.7	5.0	5.3	3.3
93 A15-7	4.4	4.9	3.8	4.3	4.7	6.3	3.7	3.3	5.0	5.3	7.7	6.7	6.3	4.0
94 A15-1091	4.3	4.0	4.9	4.1	7.7	2.7	3.3	8.7	6.7	8.0	9.0	6.7	4.0	5.7
95 PST-105-69	4.3	5.0	3.8	4.2	5.7	3.3	3.0	3.3	3.7	3.3	8.3	2.0	4.0	2.0
96 A14-307	4.3	4.6	4.1	4.2	6.3	4.0	4.0	6.0	3.0	4.7	8.0	3.7	3.7	2.0
97 A13-695	4.3	4.3	4.3	4.3	4.7	3.3	2.0	4.0	5.3	6.7	9.0	5.3	5.0	2.0
98 A11-49	4.3	4.6	4.2	4.1	6.3	3.3	8.0	6.0	3.3	3.3	7.7	4.7	4.0	3.3
99 A10-280	4.3	4.3	4.1	4.4	2.3	7.3	6.0	3.7	6.7	4.7	7.3	2.7	7.0	2.7
100 A14-439	4.3	4.3	4.2	4.3	6.3	2.7	3.3	4.3	4.3	3.7	6.0	1.7	4.0	2.0

54

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	Green-up ⁶ 19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	Stress ⁷ 11 Jul. 2018	Stress ⁸ 6 Sep. 2018
101 PPG-KB 1539	4.3	4.9	3.8	4.0	4.7	3.7	6.3	5.0	3.7	3.3	5.7	7.0	6.0	4.3
102 Lunar	4.3	4.3	3.7	4.7	6.3	3.7	5.3	5.0	3.7	4.3	4.7	1.7	4.7	3.0
103 PST-K17-192	4.2	4.0	4.5	4.2	5.7	3.3	5.3	4.7	2.7	4.7	7.0	1.7	4.7	4.0
104 A12-298	4.2	4.7	3.9	4.1	6.3	5.0	8.0	3.3	4.0	3.3	4.3	3.3	4.7	2.3
105 KenBlue	4.2	5.5	4.2	2.9	7.3	6.0	2.0	4.3	7.3	4.7	9.0	9.0	6.7	4.7
106 Diva	4.2	4.3	4.1	4.2	7.7	4.3	3.3	6.3	5.3	6.7	7.3	5.0	4.7	3.7
107 Orion	4.2	3.4	4.3	4.9	3.3	2.7	4.7	3.0	4.0	4.7	6.5	1.0	4.7	2.7
108 RAD-2375	4.2	5.4	4.3	2.9	5.0	3.7	3.3	3.0	6.7	4.7	9.0	8.7	5.3	3.7
109 PST-K15-163A	4.2	4.6	3.9	4.0	4.0	4.7	3.3	3.0	3.7	3.7	6.3	1.7	5.3	2.7
110 Crest 5K-12	4.2	4.6	3.9	4.0	4.7	4.7	4.3	4.0	4.7	5.7	6.0	1.7	4.0	2.3
111 Fielder	4.2	4.5	3.7	4.2	6.3	2.3	3.3	5.0	4.0	4.7	5.7	1.3	4.0	2.0
112 Slingshot	4.2	4.4	3.6	4.5	5.3	3.7	5.0	3.7	4.0	4.0	4.7	2.7	3.0	2.7
113 A03TB-663	4.2	3.7	4.5	4.3	2.0	7.3	2.3	3.0	5.3	5.3	6.3	4.0	4.7	4.0
114 A14-330	4.2	4.1	4.0	4.4	2.7	5.0	4.0	2.0	4.5	3.7	6.3	1.3	4.3	2.3
115 A16-21	4.2	4.5	4.4	3.5	5.7	7.0	2.7	2.7	4.7	6.7	8.3	7.0	6.0	4.7
116 NAI-15-112	4.1	5.2	3.8	3.4	6.3	3.3	3.7	5.3	4.0	4.0	6.3	6.3	6.0	3.0
117 A17-7	4.1	3.9	4.2	4.2	5.0	3.7	4.3	4.3	4.3	5.7	6.3	1.7	4.0	1.7
118 Fullback	4.1	4.4	3.8	4.1	6.0	2.7	2.7	4.0	4.7	4.3	5.7	5.0	4.3	3.0
119 NAI-15-97	4.1	5.1	3.9	3.3	6.3	3.3	3.7	4.7	4.3	4.3	6.7	7.0	5.0	2.7
120 A16-10	4.1	4.4	3.7	4.2	7.0	2.0	4.7	5.7	4.0	6.3	5.7	1.7	4.0	2.0

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	11 Jul. 2018	6 Sep. 2018
121 Mystere H2O	4.1	4.3	4.2	3.8	5.0	3.7	7.3	5.7	4.3	4.0	4.3	3.7	4.3	2.3
122 Rockstar	4.1	3.8	4.4	4.0	4.7	3.7	3.3	4.3	4.3	6.3	7.0	2.3	4.3	2.7
123 PST-K15-166	4.1	4.6	3.9	3.7	3.0	7.7	5.0	3.0	5.0	5.0	2.7	1.3	5.3	3.3
124 NAI-BRX-17	4.1	3.9	4.0	4.3	2.3	6.0	4.3	2.0	2.0	2.3	3.7	1.7	3.3	3.7
125 A17-1	4.0	4.3	3.7	4.1	5.0	6.3	7.3	3.3	5.0	3.3	5.0	5.3	6.0	4.0
126 Arcadia	4.0	4.7	4.3	3.1	7.7	1.7	4.7	6.3	4.0	3.3	6.3	6.7	4.3	3.3
127 Blue Velvet	4.0	4.7	4.1	3.3	6.0	2.7	5.7	6.3	3.7	2.7	8.0	8.0	3.7	3.7
128 Milagro	4.0	4.2	3.8	4.1	6.3	3.3	2.0	6.7	3.7	4.3	5.7	1.3	4.0	2.7
129 Granite	4.0	4.8	4.0	3.2	8.3	1.7	5.0	8.7	3.7	3.0	8.0	7.3	4.0	2.7
130 PST-K13-140	4.0	4.2	3.8	4.0	5.3	2.0	3.7	5.0	3.7	5.3	6.0	1.7	3.0	3.0
131 Rhapsody	4.0	4.7	3.6	3.7	4.0	4.7	6.3	2.7	5.0	2.7	5.7	5.0	4.7	4.7
132 A15-9	4.0	4.4	3.9	3.7	5.7	2.7	7.3	5.7	3.0	4.3	7.3	8.0	4.3	3.7
133 A11-778	4.0	4.9	3.9	3.1	6.3	7.3	5.3	2.7	5.3	4.3	9.0	8.7	5.7	4.0
134 A14-373	4.0	4.3	3.9	3.7	8.0	1.7	3.3	6.7	3.0	5.3	5.3	4.3	4.0	2.3
135 A99-2123	4.0	4.1	3.5	4.3	6.3	2.0	5.3	6.3	3.7	3.7	5.7	3.3	5.0	3.3
136 Keeneland	4.0	5.1	3.6	3.1	6.0	3.3	4.7	6.0	4.0	4.3	6.3	6.0	6.0	3.3
137 RAD-3428	3.9	4.5	3.7	3.7	2.3	6.7	6.7	1.7	5.0	5.7	4.0	3.3	4.0	2.3
138 PST-K17-182	3.9	4.8	3.7	3.3	4.0	5.7	6.0	3.0	4.0	4.3	3.7	2.3	6.0	3.7
139 A14-3	3.9	4.2	3.3	4.2	7.3	3.7	9.0	4.0	4.0	3.7	2.7	2.7	5.3	4.0
140 PST-K15-172	3.9	4.4	3.5	3.8	2.7	5.3	6.3	2.0	4.3	2.3	4.0	1.0	4.7	3.7

56

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	Stress ⁷ 11 Jul. 2018	Stress ⁸ 6 Sep. 2018
141 A16-19	3.9	4.9	3.7	3.0	7.7	2.3	3.0	5.7	4.0	6.7	3.3	2.0	4.0	2.3
142 GO-MOR	3.9	4.5	4.3	2.8	6.3	2.7	5.0	3.7	4.3	5.7	8.0	7.7	5.7	4.7
143 Armada	3.9	4.2	3.6	3.8	5.3	3.0	5.0	4.3	3.3	4.3	4.7	2.7	3.7	2.3
144 STR 2553	3.9	4.5	3.5	3.6	7.3	4.3	6.3	4.7	4.7	3.7	3.7	3.7	5.0	3.3
145 A14-365	3.9	3.5	3.6	4.4	5.3	1.3	7.0	5.3	2.3	3.0	6.7	2.3	3.0	2.3
146 PPG-KB 1316	3.8	4.6	3.7	3.2	5.3	5.0	7.7	2.7	4.0	3.3	6.0	6.3	5.0	3.7
147 A12-33	3.8	4.1	3.9	3.6	6.0	3.7	7.7	4.3	3.7	3.7	6.7	7.0	4.0	3.0
148 A12-8	3.8	4.1	3.2	4.2	2.7	5.3	7.0	2.3	4.3	3.0	5.0	1.0	5.3	4.0
149 PST-K13-39	3.8	4.5	3.3	3.6	2.0	6.7	6.0	1.3	5.3	3.3	5.3	1.7	4.7	4.3
150 RAD-2437	3.8	5.1	3.5	2.8	5.0	6.7	3.7	4.3	4.7	4.7	6.7	7.7	6.0	2.7
151 NAI-13-34	3.8	4.3	4.0	3.1	4.7	3.3	5.7	4.3	4.0	4.0	7.0	7.3	3.0	3.3
152 Rubix	3.8	3.3	4.1	3.9	5.0	2.3	4.0	2.7	3.0	5.7	6.3	4.7	3.3	2.0
153 Powerplay	3.8	4.6	3.3	3.4	7.0	3.7	5.0	5.3	3.3	3.7	4.0	3.0	4.0	4.3
154 A14-15	3.8	4.4	3.7	3.2	6.3	3.0	5.0	6.0	3.3	4.0	6.7	3.3	5.0	3.3
155 A17-4	3.7	4.2	3.7	3.2	6.3	8.3	1.0	3.0	5.3	4.0	6.3	5.0	4.7	4.3
156 BAR PP7158V	3.7	4.5	4.0	2.7	6.3	3.3	1.7	6.0	4.0	3.7	8.0	3.3	5.0	2.7
157 A06-26	3.7	3.7	3.5	4.0	5.3	3.0	7.0	5.0	4.0	3.3	4.3	4.3	4.7	3.3
158 Prafin/Bluedevil	3.7	4.7	3.3	3.1	6.7	2.7	4.0	6.3	3.3	3.3	6.0	7.0	4.7	3.0
159 NAI-14-127	3.7	4.3	3.0	3.8	5.3	4.3	3.0	5.7	2.3	2.0	5.7	1.0	4.0	3.0
160 Explorer	3.7	4.5	3.6	2.9	6.3	3.0	5.7	7.3	3.3	3.7	7.3	8.0	3.7	3.3

57

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	Stress ⁷ 11 Jul. 2018	Stress ⁸ 6 Sep. 2018
161 Spitfire	3.7	3.8	3.5	3.7	7.0	4.3	4.3	4.7	4.3	5.3	6.0	3.3	4.3	2.0
162 Aviator II	3.7	4.5	3.8	2.7	5.0	4.0	1.3	4.3	4.7	3.7	4.3	3.3	4.7	5.7
163 A14-258	3.7	4.9	3.5	2.6	7.0	2.7	3.7	4.7	5.3	3.0	8.3	3.7	4.7	3.3
164 Wildhorse	3.7	3.8	3.4	3.8	5.3	2.0	3.0	3.3	3.3	5.0	5.7	2.3	3.0	2.3
165 A15-481	3.7	4.4	3.6	3.0	6.3	7.3	1.7	3.3	4.7	5.3	7.7	2.7	4.7	2.3
166 Kelly	3.6	3.1	3.6	4.1	9.0	1.0	3.7	7.0	1.7	5.0	7.0	1.0	3.0	1.7
167 A14-362	3.6	3.8	3.2	3.9	5.3	2.3	5.0	4.3	2.0	3.0	5.3	2.3	3.7	2.7
168 A16-1	3.6	3.9	3.7	3.3	5.7	3.0	3.7	4.3	3.7	5.7	6.3	2.0	4.0	2.0
169 Quantum Leap	3.6	4.2	3.3	3.4	7.3	2.0	2.7	6.0	3.3	3.3	7.7	5.7	3.7	3.0
170 A17-6	3.6	4.2	3.9	2.8	4.3	5.0	5.0	4.7	5.0	5.7	4.3	1.0	5.0	2.7
171 Comet	3.6	3.9	3.4	3.6	4.7	4.0	5.7	3.3	4.7	4.7	4.7	2.0	3.7	3.7
172 SR 2100	3.6	3.7	3.3	3.8	6.0	4.0	6.0	4.0	3.0	4.3	5.0	3.0	4.3	3.7
173 Bluebank	3.6	4.3	3.4	3.1	7.3	1.7	4.3	6.3	3.0	3.3	6.3	6.7	3.7	3.0
174 A06-8	3.6	4.0	3.6	3.2	4.0	5.3	7.0	3.0	4.7	4.7	4.3	2.3	4.3	3.3
175 Noble	3.6	3.9	3.5	3.4	7.7	2.7	3.7	6.0	4.0	5.7	5.0	5.3	4.7	2.7
176 A05-347	3.6	4.0	3.6	3.2	5.0	4.0	7.0	4.3	4.3	3.7	5.7	7.3	4.3	3.3
177 Gaelic	3.6	3.5	3.2	4.0	5.0	3.0	2.0	3.7	4.0	6.3	5.7	2.7	3.7	1.7
178 NAI-15-60	3.6	3.2	3.6	3.9	4.3	5.0	1.3	3.0	4.7	6.3	5.3	3.3	4.0	4.7
179 A16-8	3.5	4.5	3.4	2.7	4.3	4.7	5.7	5.7	4.0	2.7	7.7	3.0	6.0	4.3
180 Bluecoat	3.5	4.5	2.8	3.3	7.3	3.3	3.7	7.3	2.0	2.7	7.3	2.3	4.7	3.3

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	---Green-up ⁶ ----	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	11 Jul. 2018
181 PST-T15-43	3.5	3.4	3.5	3.6	3.3	6.3	3.0	1.7	3.0	4.7	5.0	1.3	2.7	2.3
182 PST-T17-48	3.5	4.6	3.0	3.0	4.3	4.0	2.0	4.7	5.0	4.0	4.3	2.0	4.0	3.7
183 PST-K17-193	3.5	3.7	2.8	4.0	2.0	6.0	3.0	4.7	5.0	4.0	6.3	6.3	4.0	2.3
184 Prafin	3.5	4.1	3.1	3.3	7.3	2.0	3.0	7.0	4.0	4.3	6.0	5.7	3.0	2.0
185 A15-6	3.5	4.0	3.0	3.4	5.3	3.3	6.7	3.0	4.7	4.3	4.7	4.7	4.7	3.7
186 Amaze	3.5	4.2	2.8	3.5	4.3	3.7	3.0	6.0	2.0	2.0	6.3	1.7	4.0	3.3
187 PST-K15-160	3.5	3.2	3.3	3.9	3.0	4.7	4.0	2.0	4.3	5.7	6.7	2.0	4.0	2.7
188 NAI-11-644	3.5	3.8	3.5	3.1	3.3	4.7	4.3	4.3	3.0	4.7	3.3	1.7	3.7	3.3
189 Harmonie	3.5	3.4	3.3	3.7	4.7	3.3	3.7	4.0	4.0	3.7	7.7	4.3	4.0	2.7
190 PST-K10-110	3.5	3.8	3.2	3.3	5.3	4.3	2.3	5.0	4.3	4.0	4.0	4.7	3.7	2.7
191 PST-K15-169	3.4	4.0	3.0	3.3	6.0	2.7	5.0	6.7	3.3	2.7	5.0	1.7	2.7	2.7
192 A16-20	3.4	4.7	3.4	2.3	9.0	6.3	4.7	8.7	6.3	6.7	9.0	9.0	6.0	3.7
193 PPG-KB 1524	3.4	4.2	3.3	2.8	6.3	4.3	3.7	3.0	5.0	5.3	4.0	1.7	5.3	3.0
194 A17-9	3.4	4.6	3.2	2.4	4.0	4.3	3.7	4.7	3.0	1.3	4.3	2.7	5.3	4.7
195 Aramintha	3.4	3.9	3.1	3.2	5.3	3.3	3.7	3.0	4.3	4.3	4.3	2.3	4.0	2.7
196 PST-T17-51	3.4	3.8	3.4	3.0	3.3	3.7	3.3	2.3	2.5	4.7	3.3	1.7	2.7	1.7
197 A17-2	3.4	4.1	3.1	2.9	4.3	4.7	3.7	3.3	4.7	3.3	5.7	6.3	4.0	2.7
198 Rhythm	3.4	4.1	3.2	2.8	7.0	2.3	3.7	4.7	3.0	3.7	6.0	3.3	3.0	2.3
199 A16-11	3.3	3.6	3.4	3.1	6.3	2.0	5.0	4.3	4.0	5.3	6.0	2.0	3.0	1.7
200 NAI 14-132	3.3	4.4	2.4	3.2	3.7	4.0	2.7	5.0	2.0	1.7	7.0	2.0	4.3	2.7

59

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20	2018	2019	2020	ment ²	3 Nov.	24 Sep.	Damage ⁴	---Green-up ⁶ ---		21 May	Stress ⁷	Stress ⁸	
	Avg.	Avg.	Avg.	Avg.	6 Oct. 2017	2017	2020	2017	19 Apr.	18 Apr.	30 May 2018	2019	11 Jul. 2018	6 Sep. 2018
201 NAI 14-128	3.3	4.1	2.6	3.3	4.0	3.7	3.0	5.7	2.0	1.7	6.3	1.7	3.3	3.0
202 PST-K17-189AD	3.3	4.0	3.0	3.0	6.3	2.3	1.0	7.3	2.3	5.0	5.7	2.0	3.0	2.7
203 NAI 14-126	3.3	3.8	2.6	3.5	2.3	4.7	4.7	5.0	2.7	2.3	6.3	2.0	3.0	2.7
204 NAI 14-122	3.3	4.1	2.6	3.1	3.7	3.7	3.0	5.7	2.3	2.7	6.3	2.3	4.0	3.0
205 Comanche	3.3	4.1	2.8	3.0	3.0	3.7	3.0	4.0	2.7	2.3	5.7	1.0	4.3	3.0
206 Ginney II	3.3	3.9	3.4	2.5	7.0	2.3	5.0	7.7	2.7	3.3	7.0	7.7	3.0	3.0
207 NAI-15-108	3.3	3.1	3.6	3.3	3.7	5.3	3.0	3.0	4.0	4.3	6.0	2.3	3.3	2.7
208 Crest	3.3	3.0	3.3	3.5	5.7	2.3	5.3	4.0	2.7	4.0	5.7	1.0	2.7	1.7
209 Arrowhead	3.3	3.7	3.2	3.0	6.7	1.0	1.3	6.3	3.3	5.7	4.3	2.0	2.7	3.0
210 A16-5	3.3	3.8	3.2	2.7	4.3	5.7	6.3	3.3	5.0	5.7	7.3	3.3	5.0	2.3
211 Heartland	3.2	4.0	2.6	3.1	2.7	4.0	2.0	4.7	2.7	2.3	6.0	1.3	3.7	3.7
212 Touchdown	3.2	3.6	2.8	3.2	8.0	5.3	2.3	4.0	6.0	6.7	9.0	7.0	4.7	1.7
213 PST-K17-183	3.2	3.7	3.3	2.8	3.0	4.7	1.3	4.0	5.0	4.0	3.3	3.7	4.7	2.3
214 PST-K17-188AD	3.2	4.3	2.7	2.7	6.3	3.0	1.3	6.3	3.3	5.7	5.0	1.0	4.7	3.0
215 PST-T14-37	3.2	4.4	3.1	2.2	5.7	2.7	3.7	7.0	3.3	4.3	6.0	3.3	2.7	2.7
216 PST-K16-178	3.2	4.1	2.8	2.6	7.3	3.3	5.0	7.3	3.3	3.7	2.7	1.0	4.3	2.0
217 RAD-3763	3.2	3.7	3.4	2.5	5.3	3.0	3.7	5.0	3.7	4.7	8.0	6.3	4.0	2.0
218 A15-5	3.2	4.3	2.9	2.3	4.7	6.7	5.3	3.0	5.7	4.3	3.7	3.3	5.0	3.3
219 Mercury	3.2	4.1	2.9	2.6	3.3	8.3	7.0	2.0	5.0	5.0	3.7	1.0	4.3	3.3
220 Zedor	3.2	3.0	3.2	3.3	2.7	5.3	5.0	4.3	3.0	4.0	5.0	2.7	3.3	1.3

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	11 Jul. 2018	6 Sep. 2018
221 PST-T17-50	3.2	3.3	2.7	3.4	3.7	3.7	2.7	3.0	3.0	2.7	3.7	3.0	3.3	2.7
222 Prosperity	3.1	3.7	3.5	2.3	8.0	2.0	2.7	8.0	3.3	5.3	6.7	7.0	4.0	2.7
223 A15-21	3.1	4.1	2.9	2.4	7.3	3.7	5.0	6.3	3.3	4.0	8.0	5.3	4.7	3.3
224 PST-11-7	3.1	4.0	2.9	2.5	6.3	2.7	2.3	6.0	2.7	5.3	6.7	1.7	3.7	2.0
225 Bandera	3.1	3.4	2.8	3.1	6.0	1.3	4.3	6.3	2.3	4.0	6.0	3.0	2.7	2.3
226 MacMillan	3.1	3.9	2.7	2.6	5.3	7.7	5.7	3.3	4.3	5.3	3.7	1.0	4.0	2.7
227 PST-K17-194	3.1	3.7	2.8	2.7	4.0	4.3	5.3	3.3	4.3	4.0	6.7	3.0	4.3	2.3
228 Finish Line	3.0	2.3	3.8	2.9	1.3	6.5	4.3	1.3	4.0	6.7	6.3	7.3	1.7	1.0
229 PST-K15-173	3.0	2.6	2.8	3.5	2.0	4.5	6.0	2.0	3.0	4.0	5.0	1.7	2.3	2.3
230 Geisha	2.9	2.9	3.0	2.9	7.0	1.3	4.7	6.3	1.7	5.0	7.0	3.0	2.3	1.3
231 Rubicon	2.9	2.6	3.2	2.9	2.0	5.0	4.3	2.0	3.5	6.0	6.5	5.0	2.7	2.3
232 BlackJack	2.9	3.5	2.7	2.5	2.7	5.0	4.7	3.3	5.0	5.3	6.7	1.7	4.0	2.3
233 A14-281	2.9	3.9	2.6	2.0	3.3	8.0	1.0	2.3	4.0	5.3	7.3	2.7	4.7	2.7
234 PST-K15-167	2.8	3.5	2.4	2.5	4.7	1.7	3.0	4.0	2.3	2.7	4.7	1.0	3.0	2.7
235 PST-T17-49	2.8	3.6	2.3	2.4	3.3	4.7	3.3	3.7	3.7	4.0	2.7	2.0	3.0	3.0
236 PST-K17-196	2.8	3.3	2.6	2.4	4.7	3.5	4.3	5.0	3.3	3.3	5.0	4.0	3.7	2.0
237 PST-K16-180	2.5	2.7	2.4	2.4	3.7	4.7	4.3	4.0	3.0	5.7	4.7	4.3	3.0	1.7
238 PST-K16-179	2.5	3.3	2.3	1.8	4.3	4.0	3.3	4.3	4.0	5.0	5.0	4.3	4.0	1.7
239 Corsair	2.4	2.4	2.4	2.3	3.7	2.7	2.0	5.3	3.0	5.3	5.3	2.3	2.3	1.7
240 PST-TX8-56	2.2	2.1	2.1	2.4	3.3	4.0	2.7	3.3	3.0	6.0	6.0	6.7	2.3	1.0

(Continued)

Table 1. Performance of Kentucky bluegrass cultivars and selections in a low maintenance turf trial seeded in September 2017 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----				Establish-	----Stem Rust ³ ----		Tenacity	Spring		---Seed Heads ⁶ ---		Summer	Drought
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	ment ² 6 Oct. 2017	3 Nov. 2017	24 Sep. 2020	Damage ⁴ 16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	21 May 2019	Stress ⁷ 11 Jul. 2018	Stress ⁸ 6 Sep. 2018
241 New Moon	2.2	2.9	2.3	1.5	3.0	4.3	2.3	4.3	4.0	6.0	3.7	1.0	2.7	1.7
242 Blue Ghost	2.1	1.8	2.1	2.5	1.7	8.0	1.3	2.0	.	5.7	5.5	3.0	2.0	1.3
LSD at 5%=	0.7	0.9	0.9	1.1	1.5	1.7	2.1	1.6	1.3	1.5	1.5	1.5	1.6	1.5
CV=	11.3	12.5	13.5	17.7	16.9	25.8	29.5	21.9	19.1	21.6	15.1	23.0	22.4	27.6

- ¹Q=Best turf quality
- ²Q=Best establishment
- ³Q=Least stem rust
- ⁴Q=Least bleaching response
- ⁵Q=Best spring green-up
- ⁶Q=Least seed heads
- ⁷Q=Best quality under summer stress
- ⁸Q=Best quality under drought stress

Table 2. Performance of Kentucky bluegrass cultivars and selections organized by Alliance for Low Input Sustainable Turf (A-LIST), seeded in September 2017 at Adelphia, NJ.

Entry	Turf Quality ¹				Establish- ment ²	Stem Rust ³	Rust ⁴	Tenacity Damage ⁵	Spring Green-up ⁶		Seed Heads ⁷	Summer Stress ⁸	Drought Stress ⁹	% Ground Cover ¹⁰				Density ¹¹	Color ¹²	Stems ¹³	Digital % Ground Cover ¹⁴			
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	6 Oct. 2017	3 Nov. 2017	24 Sep. 2019	16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	11 Jul. 2018	6 Sep. 2018	2018 Avg.	29 May 2018	5 Sep. 2018	29 Oct. 2019	29 Oct. 2019	29 Oct. 2019	18 May 2020	28 Apr. 2020	9 Sep. 2020	22 Oct. 2020	2020 Avg.
1 A11-40	6.4	6.1	6.6	6.4	6.8	5.0	5.8	4.0	7.3	4.8	8.5	5.8	5.0	85.8	98.8	72.8	86.3	7.5	4.0	9.0	8.4	13.0	11.9	11.1
2 Martha	5.7	5.7	6.2	5.1	8.5	7.0	7.8	6.8	6.5	3.5	6.3	6.8	7.5	87.4	92.8	82.0	93.8	8.3	7.0	6.8	13.1	26.0	23.7	20.9
3 SR 2150	5.6	5.8	5.3	5.8	7.5	3.8	5.3	4.3	5.5	3.3	6.8	4.0	5.8	84.1	96.8	71.5	86.3	7.3	4.8	6.5	16.8	11.7	14.0	14.1
4 Syrah	5.5	5.4	5.3	5.9	9.0	4.3	3.3	7.8	7.3	5.5	8.8	6.8	6.0	81.9	98.8	65.0	80.0	5.5	6.0	4.8	11.8	15.2	17.6	14.9
5 Yellowstone	5.3	6.0	5.0	4.9	5.8	3.8	4.8	4.3	6.0	2.3	5.5	5.8	4.0	78.1	98.0	58.3	86.3	6.8	5.0	1.5	17.5	13.3	13.3	14.7
6 Fullback	5.1	5.1	5.1	5.2	8.5	1.8	5.0	7.0	4.0	5.0	8.3	3.8	5.3	76.6	96.3	57.0	85.0	6.5	3.5	4.0	10.9	12.2	11.0	11.4
7 Keeneland	5.0	6.0	4.7	4.4	7.0	4.0	6.5	5.5	6.3	3.5	7.3	5.8	4.8	83.0	98.8	67.3	86.3	6.3	6.5	5.0	13.8	19.6	17.4	16.9
8 SRX 2758	4.7	5.8	4.6	3.8	9.0	3.3	3.0	7.5	7.0	4.5	8.0	5.5	4.8	83.3	97.5	69.0	90.0	7.5	6.3	8.3	14.3	18.9	19.4	17.6
9 Jackrabbit	4.6	5.3	4.5	4.1	8.3	4.3	1.3	4.5	7.0	6.0	7.8	5.3	4.5	80.3	95.3	65.3	80.0	6.5	7.3	3.5	13.7	18.3	13.5	15.2
10 SRX 466	4.6	5.1	4.7	4.0	8.5	3.5	2.0	7.0	7.3	6.5	8.8	4.5	5.0	79.5	94.0	65.0	83.8	5.5	6.0	7.8	14.9	18.7	18.2	17.3
11 Legend	4.6	5.1	4.3	4.3	7.0	3.5	5.0	2.8	6.0	4.3	5.3	5.0	5.5	80.3	95.0	65.5	82.5	6.0	7.8	6.5	23.4	30.9	25.5	26.6
12 A11-38	4.5	4.4	4.5	4.8	5.5	4.0	3.0	2.5	4.8	5.0	6.8	4.5	3.3	77.3	95.3	59.3	80.0	5.0	5.0	7.3	11.3	11.5	12.0	11.6
13 PPG-KB 1131	4.5	5.4	4.4	3.8	7.8	2.0	4.5	5.3	3.5	2.5	8.0	4.3	5.3	80.4	92.3	68.5	86.3	7.0	7.3	8.0	22.1	27.9	26.1	25.4
14 Champagne	4.5	4.1	4.5	5.0	4.0	4.5	3.8	2.3	5.8	5.0	6.3	4.8	2.5	75.5	94.0	57.0	87.5	5.8	5.0	3.8	8.5	10.1	10.9	9.8
15 Zinfandel	4.4	4.7	4.4	4.1	5.0	5.3	6.0	3.5	5.3	4.3	7.5	4.5	7.0	84.8	92.0	77.5	87.5	6.3	7.5	8.8	24.0	34.1	27.3	28.5
16 United	4.3	5.1	4.3	3.7	8.3	3.8	6.0	3.5	5.5	3.3	6.5	5.5	3.5	79.9	92.3	67.5	90.0	7.5	7.0	8.5	21.7	28.1	25.4	25.1
17 Bluebank	4.1	4.9	3.8	3.5	8.5	2.3	4.0	6.0	3.3	2.8	7.5	4.3	4.5	79.0	91.8	66.3	83.8	6.0	7.8	6.0	19.6	24.0	22.4	22.0
18 MVS-130	3.8	4.1	2.9	4.5	3.8	5.5	3.3	4.5	4.0	1.5	5.8	3.8	3.0	71.4	84.8	58.0	83.8	6.0	8.0	1.0	24.7	21.0	19.5	21.7
19 Merlot	3.7	4.5	3.4	3.3	5.5	3.8	3.0	3.5	5.3	4.0	4.3	4.0	5.0	78.4	91.5	65.3	88.8	6.0	7.0	4.0	24.6	23.6	24.5	24.2
20 A12-34	3.6	4.1	3.2	3.4	4.3	5.5	4.3	2.8	4.5	3.3	4.5	4.0	4.5	76.8	92.0	61.5	80.0	5.5	8.0	6.8	24.4	25.1	23.9	24.4

Table 2. Performance of Kentucky bluegrass cultivars and selections organized by Alliance for Low Input Sustainable Turf (A-LIST), seeded in September 2017 at Adelphia, NJ.

Entry	Turf Quality ¹				Establishment ²	Stem Rust ³	Rust ⁴	Tenacity Damage ⁵	Spring Green-up ⁶		Seed Heads ⁷	Summer Stress ⁸	Drought Stress ⁹	% Ground Cover ¹⁰				Density ¹¹	Color ¹²	Stems ¹³	Digital % Ground Cover ¹⁴			
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	6 Oct. 2017	3 Nov. 2017	24 Sep. 2019	16 Oct. 2017	19 Apr. 2018	18 Apr. 2019	30 May 2018	11 Jul. 2018	6 Sep. 2018	2018 Avg.	29 May 2018	5 Sep. 2018	29 Oct. 2019	29 Oct. 2019	29 Oct. 2019	18 May 2020	28 Apr 2020	9 Sep 2020	22 Oct 2020	2020 Avg.
21 Hampton	3.5	4.0	3.6	2.9	7.5	2.8	3.3	5.5	5.8	6.0	8.5	3.8	3.5	78.5	95.5	61.5	85.0	6.3	6.8	2.8	11.7	13.6	14.0	13.1
22 Bordeaux	2.8	3.3	2.4	2.8	3.0	5.8	1.0	2.3	4.8	4.5	4.0	3.8	2.8	75.4	92.0	58.8	75.0	4.0	8.0	1.8	22.0	22.5	23.7	22.7
23 PPG-KB 1320	2.8	3.0	2.0	3.3	8.3	2.0	1.0	7.0	3.0	7.0	8.3	4.3	1.0	71.3	92.3	50.3	56.3	2.5	7.3	7.3	26.7	19.9	16.8	21.1
LSD at 5%= CV=	0.5 7.7	0.7 10.5	0.7 11.1	0.8 13.7	1.1 11.6	1.1 19.6	1.0 17.3	1.3 19.5	1.2 15.6	1.0 16.6	1.2 12.3	1.2 18.9	1.3 20.7	4.6 4.2	6.0 4.6	7.2 8.0	7.0 6.0	1.3 15.1	0.7 7.7	1.4 17.1	3.2 12.9	2.5 9.0	2.8 10.5	1.7 6.3

¹9=Best turf quality

²9=Best establishment

³9=Least stem rust

⁴9=Least stem rust, rust rating Sept 24,2019 was mainly stem with some crown+stripe rust

⁵9=Least bleaching response

⁶9=Earliest to green-up

⁷9=Least seed heads

⁸9=Least stress response

⁹9=Least stress response

¹⁰100=Complete turf cover

¹¹9=Most dense

¹²9=Darkest color

¹³9=Least stemminess

¹⁴100=Complete turf cover

Table 3. Performance of Kentucky bluegrass cultivars and selections organized by the National Turfgrass Evaluation Program, seeded in September 2017 at Adelphia, NJ.

Entry	Turf Quality ¹				Tenacity		Color ⁴					Summer Patch ⁵					% Cover ⁶			Spring Green-up ⁷	Density ⁸	Uniformity ⁹		Texture ¹⁰	Stem Rust ¹¹	
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	9 Oct. 2017	16 Oct. 2017	2018 Avg.	10 May 2018	9 Nov. 2018	2 May 2019	15 Oct. 2020	21 Aug. 2018	2019 Avg.	16 Aug. 2019	23 Sep. 2019	2 Oct. 2019	18 Sep. 2020	2 Oct. 2018	23 Sep. 2019	15 Oct. 2020	8 Apr. 2019	18 Oct. 2019	28 Oct. 2019	5 Nov. 2020	28 Oct. 2019	30 Sep. 2020
1 PPG-KB 1304	7.1	7.1	7.3	7.0	69.0	9.0	6.7	5.7	7.7	4.7	6.7	8.0	8.7	9.0	8.3	8.7	9.0	95.0	93.0	99.0	8.3	7.3	7.7	6.3	5.7	9.0
2 A11-26	6.9	6.6	7.3	6.7	78.3	7.0	7.3	7.7	7.0	7.3	4.0	7.0	8.1	8.7	7.7	8.0	9.0	95.0	90.0	99.0	4.3	8.3	8.3	8.0	7.3	9.0
3 A-16-17	6.9	6.5	7.1	7.1	65.0	1.0	4.2	4.3	4.0	3.0	3.0	7.3	8.8	9.0	8.7	8.7	9.0	96.0	97.7	99.0	5.7	8.3	9.0	8.7	6.7	9.0
4 Barserati	6.8	6.6	7.0	6.9	83.7	4.7	3.8	4.3	3.3	5.0	4.0	8.7	9.0	9.0	9.0	9.0	99.0	99.0	99.0	8.3	6.7	8.3	7.7	7.3	8.3	
5 Bombay	6.7	6.1	7.0	6.9	67.0	3.0	6.7	7.3	6.0	7.0	6.7	6.7	8.7	9.0	8.3	8.7	9.0	94.7	88.0	99.0	5.3	7.3	7.7	7.0	6.0	8.3
6 Cloud	6.7	6.6	6.6	6.8	65.0	3.3	7.2	7.7	6.7	6.7	5.3	6.7	8.7	8.7	8.7	8.7	9.0	97.7	96.3	99.0	5.0	6.0	6.7	6.7	5.3	8.0
7 A99-2897	6.6	6.5	6.8	6.7	79.0	6.0	8.3	8.0	8.7	8.3	7.7	8.0	8.9	9.0	8.7	9.0	9.0	97.7	93.3	97.7	5.7	6.7	8.0	7.0	5.7	8.0
8 Starr	6.6	6.4	6.9	6.6	73.0	4.0	7.2	7.3	7.0	7.0	5.7	8.0	8.1	9.0	7.3	8.0	9.0	97.7	85.0	96.3	4.3	6.7	7.7	7.0	6.7	7.3
9 A13-1	6.6	6.2	7.0	6.5	55.0	2.7	7.3	7.0	7.7	6.7	7.0	8.7	9.0	9.0	9.0	9.0	9.0	96.3	95.0	96.3	4.7	8.0	8.3	6.7	4.0	7.3
10 DLFPS-340/3556	6.5	6.7	6.1	6.7	68.0	5.0	6.8	8.0	5.7	7.3	6.0	7.3	8.1	9.0	7.3	8.0	9.0	93.3	75.0	97.7	3.3	5.7	7.0	6.0	5.0	8.3
11 BAR PP 79366	6.5	6.1	6.7	6.6	37.0	3.0	6.8	7.3	6.3	7.7	6.3	7.7	8.4	8.7	7.7	9.0	8.7	97.7	88.3	94.3	3.0	8.0	9.0	7.0	6.3	8.0
12 DLFPS-340/3553	6.4	6.3	6.6	6.3	64.3	8.7	6.3	6.0	6.7	5.7	5.7	7.0	7.9	8.3	7.3	8.0	8.3	85.0	88.3	94.7	7.7	6.7	8.0	5.7	6.0	7.0
13 NuRush	6.3	6.7	6.3	6.0	94.0	9.0	8.2	8.3	8.0	8.0	7.7	7.7	8.7	9.0	8.3	8.7	8.3	96.3	86.7	96.3	2.7	7.3	7.7	6.0	5.3	8.0
14 A04-383	6.3	6.6	6.2	6.0	97.3	9.0	3.3	4.0	2.7	3.0	2.3	8.7	8.7	9.0	8.3	8.7	9.0	99.0	91.7	97.7	6.0	8.3	9.0	8.0	6.0	3.7
15 DLFPS-340/3550	6.2	5.8	6.3	6.5	75.3	6.7	8.0	8.3	7.7	7.3	4.7	7.7	8.2	9.0	7.0	8.7	8.0	95.0	90.0	94.7	4.0	6.3	7.0	6.0	6.0	8.7
16 Skye	6.2	5.4	6.3	6.8	56.7	3.3	7.0	7.3	6.7	7.0	6.0	7.0	8.6	9.0	8.3	8.3	9.0	92.7	93.3	99.0	6.0	6.0	7.3	7.7	5.0	7.3
17 DLFPS-340/3500	6.2	5.9	6.3	6.3	28.3	2.7	7.2	7.7	6.7	7.0	5.0	7.7	8.4	9.0	7.7	8.7	9.0	99.0	88.3	99.0	3.0	8.0	7.7	7.0	6.0	8.0
18 J-1138	6.1	6.1	6.1	6.1	90.7	8.3	7.8	8.0	7.7	8.0	7.3	7.3	8.4	9.0	8.0	8.3	7.7	94.7	88.3	96.3	3.3	8.0	8.7	7.0	5.7	7.3
19 Syrah	6.1	5.8	5.6	6.7	81.0	8.7	6.7	6.0	7.3	4.7	7.0	6.0	6.3	7.0	6.0	6.0	8.0	83.3	81.7	99.0	6.0	6.0	7.3	7.3	7.3	8.7
20 A10-280	6.0	6.8	5.7	5.6	64.0	6.0	8.0	7.0	9.0	5.7	7.3	9.0	8.4	8.7	8.3	8.3	9.0	96.3	91.7	99.0	8.0	8.0	7.0	7.0	4.7	8.3

65

(Continued)

Table 3. Performance of Kentucky bluegrass cultivars and selections organized by the National Turfgrass Evaluation Program, seeded in September 2017 at Adelphia, NJ.

Entry	Turf Quality ¹				Tenacity		Color ⁴					Summer Patch ⁵					% Cover ⁶			Spring Green-up ⁷	Density ⁸	Uniformity ⁹		Texture ¹⁰	Stem Rust ¹¹		
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	% Est. ² 2017	Damage ³ 2017	2018 Avg.	10 May 2018	9 Nov. 2018	2 May 2019	15 Oct. 2020	21 Aug. 2018	2019 Avg.	16 Aug. 2019	23 Sep. 2019	2 Oct. 2019	18 Sep. 2020	2 Oct. 2018	23 Sep. 2019	15 Oct. 2020	8 Apr. 2019	18 Oct. 2019	28 Oct. 2019	5 Nov. 2020	28 Oct. 2019	30 Sep. 2020	
21	DLFPS-340/3552	6.0	5.6	5.8	6.6	66.0	3.0	6.2	6.3	6.0	7.0	6.3	7.3	8.3	8.3	8.0	8.7	8.3	94.7	93.0	97.7	4.0	8.0	8.7	6.7	6.3	8.7
22	PST-K15-172	5.9	5.8	5.9	6.1	75.7	4.3	6.7	7.7	5.7	5.3	4.0	7.7	8.9	9.0	9.0	8.7	9.0	96.3	99.0	97.7	3.7	7.3	8.3	6.3	5.3	7.0
23	Barvette HGT	5.9	6.4	5.6	5.9	83.7	7.0	3.5	3.0	4.0	2.3	2.0	8.0	8.9	9.0	8.7	9.0	9.0	99.0	97.7	99.0	8.0	8.0	8.7	7.3	7.7	7.0
24	AKB3128	5.9	5.9	5.7	6.0	85.0	5.7	6.8	6.0	7.7	7.0	8.0	6.3	7.9	9.0	6.7	8.0	9.0	95.0	85.0	96.3	5.7	6.3	7.0	6.3	6.0	6.7
25	BAR PP 7236V	5.8	5.9	5.8	5.7	84.0	3.3	3.5	3.7	3.3	2.7	4.3	9.0	7.8	8.3	7.0	8.0	8.7	97.7	83.3	95.0	6.7	7.3	7.3	7.0	6.3	5.0
26	DLFPS-340/3551	5.8	5.7	5.9	5.9	65.0	3.0	7.2	8.0	6.3	7.3	5.7	8.0	8.0	9.0	7.3	7.7	8.3	93.3	86.7	92.7	4.7	6.3	7.0	5.7	5.3	8.3
27	Blue Gem	5.7	5.6	5.9	5.7	88.0	9.0	7.5	7.7	7.3	9.0	8.0	6.3	8.0	9.0	7.3	7.7	7.7	91.7	88.3	91.0	2.7	7.0	8.0	5.7	6.0	7.0
28	Midnight	5.7	5.6	5.7	5.8	93.7	9.0	7.3	7.3	7.3	8.7	7.7	7.3	8.4	9.0	7.7	8.7	7.0	91.7	81.7	94.7	2.3	7.3	7.0	6.0	5.0	7.0
29	After Midnight	5.7	5.3	5.7	6.0	79.3	7.7	8.7	8.3	9.0	9.0	7.0	7.3	7.3	8.7	6.7	6.7	8.0	91.7	81.7	94.7	4.0	5.7	7.7	5.7	5.3	5.7
30	PPG-KB 1131	5.6	5.2	5.6	5.9	63.0	6.7	8.0	8.3	7.7	8.0	7.7	7.0	8.0	8.7	7.3	8.0	7.7	90.0	85.0	99.0	2.7	8.3	7.7	5.7	5.3	7.0
31	DLFPS-340/3438	5.5	5.2	5.6	5.9	61.0	3.0	7.3	7.3	7.3	6.7	7.3	6.7	7.8	8.7	7.0	7.7	6.7	85.0	86.7	88.3	5.3	5.7	7.3	6.3	5.7	5.3
32	Electric	5.5	5.3	5.7	5.5	65.0	5.3	3.5	3.3	3.7	4.7	2.3	7.0	5.8	7.0	5.0	5.3	7.0	93.3	76.7	93.0	6.3	6.3	5.7	6.3	5.7	7.3
33	United	5.5	5.6	5.6	5.2	87.3	8.3	7.5	7.7	7.3	9.0	8.3	7.0	7.8	8.3	7.3	7.7	7.7	93.0	83.3	93.0	2.7	6.3	7.3	6.0	4.7	7.0
34	BAR PP 71213	5.4	5.5	6.0	4.8	56.0	2.3	2.5	3.0	2.0	2.3	3.0	6.7	7.7	8.7	7.0	7.3	7.7	95.0	88.3	95.0	5.7	8.0	8.0	5.7	5.7	6.3
35	PST-K13-141	5.4	5.2	5.7	5.3	80.0	6.7	7.2	6.7	7.7	7.0	5.7	7.3	8.0	8.7	7.3	8.0	7.7	95.0	88.0	93.0	6.0	7.3	6.7	6.3	5.7	7.3
36	PST-T14-139	5.4	5.2	5.5	5.3	49.3	2.3	6.7	6.3	7.0	4.3	8.0	7.3	7.8	8.3	7.0	8.0	8.3	95.0	80.0	97.7	6.3	7.0	7.7	6.0	6.7	6.7
37	BAR PP 7K426	5.3	5.7	5.0	5.1	79.0	4.3	4.8	5.0	4.7	4.3	5.7	8.0	6.9	8.7	6.0	6.0	6.3	96.0	76.7	88.0	6.0	5.0	6.0	5.0	5.3	7.7
38	Twilight	5.2	5.7	5.0	5.0	87.0	8.7	8.5	8.7	8.3	8.7	8.0	6.7	6.6	7.7	6.0	6.0	6.3	88.3	81.7	81.7	2.0	5.7	5.7	5.3	5.3	5.3
39	NK-1	5.2	5.0	5.4	5.2	74.3	3.0	7.5	7.7	7.3	6.7	7.3	7.0	7.7	8.0	7.3	7.7	8.7	91.7	80.0	96.0	4.7	6.3	7.0	7.0	5.0	6.3
40	AKB3241	5.2	5.0	5.5	5.1	49.3	5.0	7.5	8.0	7.0	7.3	4.3	7.7	8.3	9.0	7.7	8.3	7.7	93.3	93.3	89.7	5.7	5.7	7.3	6.3	7.0	7.0

99

(Continued)

Table 3. Performance of Kentucky bluegrass cultivars and selections organized by the National Turfgrass Evaluation Program, seeded in September 2017 at Adelphia, NJ.

Entry	Turf Quality ¹				Tenacity		Color ⁴					Summer Patch ⁵					% Cover ⁶			Spring Green-up ⁷	Density ⁸	Uniformity ⁹		Texture ¹⁰	Stem Rust ¹¹	
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	9 Oct. 2017	16 Oct. 2017	2018 Avg.	10 May 2018	9 Nov. 2018	2 May 2019	15 Oct. 2020	21 Aug. 2018	2019 Avg.	16 Aug. 2019	23 Sep. 2019	2 Oct. 2019	18 Sep. 2020	2 Oct. 2018	23 Sep. 2019	15 Oct. 2020	8 Apr. 2019	18 Oct. 2019	28 Oct. 2019	5 Nov. 2020	28 Oct. 2019	30 Sep. 2020
41 BAR PP 79494	5.2	4.8	5.0	5.7	59.3	6.0	8.2	8.3	8.0	8.7	8.7	6.0	7.1	8.0	6.3	7.0	7.3	81.7	83.3	91.3	2.0	6.0	6.7	6.3	5.3	6.0
42 A11-40	5.1	5.6	4.5	5.3	79.7	5.3	5.0	4.0	6.0	3.7	4.0	5.0	5.0	5.7	5.0	4.3	6.0	68.3	73.3	89.7	7.3	4.0	6.0	6.0	5.7	6.3
43 Blue Devil	5.1	5.3	4.9	5.1	81.0	8.3	8.2	8.3	8.0	9.0	7.7	6.3	7.0	8.0	6.3	6.7	6.3	90.0	85.0	88.3	3.0	6.3	7.0	5.3	5.0	5.7
44 A06-8	5.0	5.8	4.7	4.5	61.7	3.0	6.7	6.7	6.7	7.0	6.7	7.0	5.3	6.3	5.0	4.7	5.7	86.7	66.7	73.3	5.7	4.3	5.7	5.3	5.0	6.3
45 A-15-6	5.0	4.1	5.1	5.8	38.7	3.0	8.0	8.0	8.0	8.0	5.7	5.3	6.9	7.0	6.3	7.3	8.3	88.3	83.3	96.3	5.3	5.0	7.3	5.7	5.0	7.0
46 Jersey	5.0	5.6	4.4	4.8	80.0	5.0	5.3	6.0	4.7	4.3	6.0	5.0	4.7	6.3	4.0	3.7	2.7	81.7	53.3	66.7	5.7	3.7	5.3	5.3	5.7	4.7
47 J-1319	4.9	5.7	4.3	4.9	87.7	8.0	9.0	9.0	9.0	9.0	9.0	5.3	5.6	7.3	5.0	4.3	5.3	80.0	73.3	80.0	4.0	3.7	5.7	5.0	3.7	6.0
48 J-2726	4.9	5.3	4.7	4.6	75.0	5.3	7.2	8.3	6.0	7.7	7.0	5.7	5.4	7.3	5.0	4.0	4.7	85.0	61.7	80.0	3.7	4.3	4.7	6.0	5.0	3.0
49 A-16-2	4.9	5.5	4.6	4.5	59.7	4.0	6.5	7.0	6.0	6.3	5.3	5.7	4.0	5.7	3.0	3.3	6.3	85.0	58.3	83.3	7.0	3.0	4.0	5.7	4.7	7.0
50 A12-34	4.8	4.7	4.3	5.6	33.7	2.7	8.5	9.0	8.0	9.0	7.7	6.0	7.4	8.3	7.0	7.0	8.7	88.3	85.0	93.0	4.7	6.0	5.3	6.7	5.3	7.0
51 BAR PP 7309V	4.8	5.2	4.8	4.4	67.3	2.7	4.8	5.0	4.7	4.7	5.7	6.3	5.4	6.3	5.0	5.0	5.7	88.3	75.0	75.0	5.3	4.7	6.3	6.0	5.0	6.7
52 AKB3179	4.8	5.6	4.4	4.4	71.3	6.7	6.8	8.0	5.7	7.3	7.0	5.7	5.2	6.0	5.0	4.7	4.3	80.0	70.0	71.7	3.7	4.7	6.0	5.7	6.7	5.0
53 Pivot	4.8	5.2	4.4	4.6	67.0	6.3	6.7	7.3	6.0	6.3	4.3	7.0	5.7	7.0	5.3	4.7	7.0	86.7	68.3	85.0	6.0	4.7	5.3	4.3	5.0	5.3
54 Amaze	4.8	4.6	4.7	4.9	50.7	4.3	8.0	7.7	8.3	8.0	7.0	5.7	5.4	6.3	5.3	4.7	5.0	73.3	76.7	76.7	4.0	5.3	5.7	5.0	5.7	4.7
55 KH3492	4.7	4.9	4.2	5.1	69.3	4.0	5.2	5.7	4.7	5.7	5.0	5.3	4.9	7.0	3.7	4.0	6.7	73.3	61.7	94.7	7.0	3.7	4.3	5.3	4.3	7.3
56 Yellowstone	4.7	5.6	5.1	3.5	51.0	4.3	7.0	7.0	7.0	5.3	6.3	6.0	5.3	7.0	4.3	4.7	4.0	88.3	65.0	56.7	4.3	4.3	5.7	4.3	4.7	4.0
57 DLFPS-340/3446	4.7	4.9	4.6	4.4	68.7	3.7	7.5	7.3	7.7	7.3	6.7	6.7	5.1	6.0	4.7	4.7	4.7	86.7	61.7	80.0	6.3	3.3	5.7	5.0	5.0	5.3
58 DLFPS-340/3455	4.5	5.3	4.4	3.9	80.7	5.3	5.0	4.0	6.0	3.0	7.3	6.3	3.9	5.0	3.3	3.3	3.3	83.3	56.7	55.0	6.0	3.7	4.3	3.7	5.0	5.7
59 A16-7	4.5	4.5	4.3	4.7	49.3	5.3	7.5	7.7	7.3	8.3	6.7	5.3	6.2	7.3	5.7	5.7	7.3	75.0	73.3	86.3	4.7	4.7	6.3	4.7	4.0	6.3
60 NAI-14-132	4.5	4.8	3.9	4.8	45.0	5.0	9.0	9.0	9.0	9.0	8.0	4.7	5.4	5.7	5.3	5.3	5.0	75.0	73.3	83.3	3.3	5.3	4.7	6.0	6.3	3.7

Table 3. Performance of Kentucky bluegrass cultivars and selections organized by the National Turfgrass Evaluation Program, seeded in September 2017 at Adelphia, NJ.

Entry	Turf Quality ¹				Tenacity		Color ⁴					Summer Patch ⁵					% Cover ⁶			Spring Green-up ⁷		Uniformity ⁸		Texture ¹⁰		Stem Rust ¹¹	
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	% Est. ² 2017	Damage ³ 2017	2018 Avg.	10 May 2018	9 Nov. 2018	2 May 2019	15 Oct. 2020	21 Aug. 2018	2019 Avg.	16 Aug. 2019	23 Sep. 2019	2 Oct. 2019	18 Sep. 2020	2 Oct. 2018	23 Sep. 2019	15 Oct. 2020	8 Apr. 2019	Density ⁸ 2019	28 Oct. 2019	5 Nov. 2020	28 Oct. 2019	30 Sep. 2020	2019
61	NAI-14-128	4.5	4.6	3.9	5.0	47.3	5.0	8.7	8.7	8.7	9.0	7.7	4.3	5.1	5.7	5.0	4.7	5.0	71.7	76.7	91.3	3.0	4.3	5.3	6.7	5.3	3.7
62	PST-K15-167	4.5	4.4	4.4	4.7	73.0	5.0	6.3	7.0	5.7	6.7	6.3	7.3	6.7	8.3	6.0	5.7	7.3	90.0	70.0	88.0	2.0	5.3	6.0	5.3	5.0	5.7
63	NAI-15-80	4.5	4.8	4.1	4.4	36.7	3.7	7.5	8.3	6.7	8.0	6.7	6.0	5.9	6.3	6.0	5.3	5.3	85.0	76.7	60.0	4.3	5.0	5.7	5.0	6.3	2.7
64	Finish Line	4.5	3.4	5.5	4.4	17.3	2.0	5.2	4.7	5.7	5.0	5.0	5.3	5.8	6.3	5.3	5.7	4.7	86.7	61.7	81.7	7.7	6.3	6.0	6.3	7.7	5.0
65	Selway	4.4	3.9	4.4	5.1	62.3	2.3	4.3	4.7	4.0	4.0	3.3	4.7	5.8	6.3	5.3	5.7	9.0	78.3	71.7	96.3	6.7	5.3	6.0	7.0	6.3	6.0
66	Babe	4.4	4.6	4.2	4.3	78.3	6.0	5.3	4.7	6.0	5.7	5.0	5.7	4.6	6.3	4.0	3.3	4.3	78.3	63.3	70.0	6.3	2.7	5.0	5.3	5.0	4.0
67	DLFPS-340/3548	4.3	5.1	3.7	4.1	61.0	4.0	7.2	6.3	8.0	4.7	8.3	5.7	4.2	5.0	4.3	3.3	2.7	70.0	50.0	65.0	6.0	3.3	4.7	5.3	4.0	3.3
68	New Moon	4.3	5.2	4.7	2.9	54.3	5.3	8.7	8.7	8.7	9.0	7.7	6.3	4.8	6.0	4.3	4.0	4.0	91.7	50.0	55.0	4.0	5.0	5.3	4.0	5.7	2.7
69	MVS-130	4.2	4.5	4.2	4.1	35.0	5.0	8.7	8.7	8.7	9.0	8.3	5.7	4.0	5.0	3.3	3.7	4.7	85.0	60.0	71.7	3.0	4.3	4.3	5.3	6.3	3.0
70	Dublin	4.2	5.1	3.9	3.8	72.7	6.0	8.0	7.3	8.7	7.0	9.0	5.7	4.1	5.0	4.0	3.3	3.7	78.3	56.7	73.3	6.7	4.0	4.7	5.7	7.0	4.0
71	PST-11-7	4.2	5.0	4.6	3.1	70.0	7.7	5.7	7.0	4.3	7.3	4.7	6.3	5.2	6.7	4.3	4.7	4.3	86.7	18.3	16.7	6.3	4.0	4.3	3.7	4.7	1.0
72	RAD 553	4.2	4.7	3.8	4.1	78.0	3.3	4.7	5.0	4.3	3.3	3.3	6.3	4.9	5.7	4.3	4.7	7.3	83.3	60.0	90.0	5.3	4.7	4.3	6.0	4.7	7.7
73	Heartland	4.1	4.2	3.5	4.5	29.3	5.0	8.8	9.0	8.7	8.3	8.7	4.3	4.9	5.3	5.0	4.3	4.0	66.7	71.7	94.7	3.0	4.7	4.7	7.3	5.0	4.7
74	Prosperity	4.0	4.6	3.3	3.9	93.3	8.7	7.7	8.3	7.0	9.0	6.0	4.7	4.0	5.3	3.3	3.3	6.0	68.3	38.3	75.0	5.0	3.7	3.0	5.3	5.3	3.7
75	Comanche	3.9	4.3	3.1	4.4	39.3	5.0	8.7	8.3	9.0	9.0	8.7	4.0	3.9	4.0	4.0	3.7	4.7	61.7	65.0	86.7	3.7	4.0	4.7	5.7	5.0	4.7
76	DLFPS-340/3549	3.9	4.3	3.4	4.1	45.3	3.0	4.8	5.0	4.7	6.3	5.0	4.7	3.9	4.7	3.7	3.3	3.3	71.7	50.0	65.0	6.0	3.0	4.3	5.7	5.3	3.0
77	NAI-14-122	3.9	4.1	3.3	4.2	39.3	5.0	8.3	8.7	8.0	9.0	7.7	4.7	4.3	5.0	4.3	3.7	4.3	68.3	68.3	85.0	3.3	4.3	5.7	5.7	6.0	2.0
78	Orion	3.8	3.7	3.7	4.0	54.3	3.0	5.5	5.0	6.0	5.0	5.3	5.3	3.6	4.7	3.3	2.7	4.7	80.0	51.7	76.7	5.0	2.7	3.3	4.7	4.7	4.7
79	Shamrock	3.6	4.6	3.1	3.0	73.7	5.7	6.3	7.0	5.7	7.0	5.3	4.0	2.1	3.7	1.7	1.0	2.7	70.0	23.3	58.3	6.7	1.3	2.0	4.3	3.0	3.7
80	RAD-1776	3.5	3.9	3.4	3.3	61.7	2.0	4.7	4.3	5.0	4.7	7.3	5.0	3.1	4.7	2.7	2.0	2.0	71.7	36.7	51.7	7.3	2.3	3.7	4.7	4.7	3.3

(Continued)

Table 3. Performance of Kentucky bluegrass cultivars and selections organized by the National Turfgrass Evaluation Program, seeded in September 2017 at Adelphia, NJ.

Entry	Turf Quality ¹				Tenacity		Color ⁴					Summer Patch ⁵					% Cover ⁶			Spring Green-up ⁷	Density ⁸	Uniformity ⁹			Texture ¹⁰	Stem Rust ¹¹
	2018-20 Avg.	2018 Avg.	2019 Avg.	2020 Avg.	9 Oct. 2017	16 Oct. 2017	2018 Avg.	10 May 2018	9 Nov. 2018	2 May 2019	15 Oct. 2020	21 Aug. 2018	2019 Avg.	16 Aug. 2019	23 Sep. 2019	2 Oct. 2019	18 Sep. 2020	2 Oct. 2018	23 Sep. 2019	15 Oct. 2020	8 Apr. 2019	18 Oct. 2019	28 Oct. 2019	5 Nov. 2020	28 Oct. 2019	30 Sep. 2020
81 DLFPS-340/3364	3.5	2.6	3.8	4.2	12.0	3.7	8.0	8.3	7.7	8.7	7.0	6.0	6.3	7.3	5.7	6.0	6.0	85.0	65.0	85.0	5.0	5.0	6.3	5.0	4.3	6.3
82 A11-38	3.5	4.3	3.3	3.0	54.3	2.7	5.0	5.0	5.0	4.0	3.3	5.3	2.7	4.0	2.3	1.7	1.3	75.0	31.7	43.3	5.3	1.7	3.3	2.7	4.3	3.0
83 DLFPS-340/3494	3.3	5.7	2.4	1.6	62.7	4.7	6.2	8.3	4.0	6.0	6.3	7.3	1.4	1.7	1.3	1.3	4.7	97.7	30.0	43.3	2.3	1.7	2.7	4.0	3.3	3.0
84 Aviator II	3.2	4.2	2.2	3.1	65.0	5.0	8.0	7.7	8.3	8.7	7.0	4.3	1.8	2.3	1.7	1.3	2.7	51.7	31.7	35.0	5.7	2.0	4.0	5.0	2.3	2.7
85 A16-1	3.0	4.0	2.5	2.4	62.3	4.0	6.0	6.7	5.3	6.0	6.0	3.3	1.3	2.0	1.0	1.0	2.0	65.0	16.7	50.0	6.0	1.0	2.3	5.0	3.0	4.0
86 DLFPS-340/3444	2.9	3.6	2.2	3.0	64.0	4.0	5.3	6.0	4.7	5.0	1.7	4.0	1.7	2.3	1.7	1.0	4.3	61.7	26.7	63.3	6.3	1.0	1.0	5.3	3.7	5.3
87 Paloma	2.7	3.9	2.0	2.2	41.0	2.3	7.5	7.0	8.0	6.3	6.7	3.7	1.6	2.0	1.7	1.0	2.3	45.0	21.7	66.7	5.3	1.7	2.3	5.0	4.7	5.0
88 Kenblue	2.6	2.7	2.1	3.0	93.7	5.7	2.7	2.7	2.7	3.0	2.3	2.0	2.4	2.3	2.3	2.7	6.7	33.3	30.0	86.7	8.3	2.7	1.0	5.0	3.7	6.3
89 Blue Knight	2.4	2.2	2.0	3.0	51.7	4.0	6.5	7.3	6.0	7.3	5.3	3.0	2.4	3.0	2.3	2.0	4.0	40.0	38.3	65.0	3.0	1.7	1.7	4.3	3.0	4.0
90 PPG-KB 1320	1.8	2.9	1.0	1.3	66.7	8.3	7.0	8.7	5.0	8.5	5.7	1.7	1.0	1.0	1.0	1.0	1.0	23.3	15.0	36.7	5.0	1.0	1.5	2.0	3.0	2.0
LSD @ 5%=	0.6	0.7	1.0	0.9	14.5	1.4	1.2	1.5	1.6	1.2	1.8	1.4	1.6	1.7	1.9	1.8	2.1	13.4	18.2	16.7	1.4	1.8	1.6	1.4	1.5	2.7
CV=	8.1	8.7	12.8	11.4	13.8	16.9	11.2	13.7	14.8	11.7	18.7	13.5	16.4	14.9	20.3	19.5	20.3	9.9	15.9	12.6	16.7	21.8	17.0	15.3	14.0	28.4

¹9= Best turf quality
²100= Complete turf establishment
³9= Least bleaching response
⁴9= Darkest color
⁵9= Least Summer patch
⁶100= Complete turf cover
⁷9= Earliest to green-up
⁸9= Most dense turf
⁹9= Most uniform turf
¹⁰9= Finest texture
¹¹9= Least Stem rust

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020
1 A11-26	6.4	6.7	6.1	6.3	4.3	7.3	6.3	7.7
2 A09-305	6.3	6.4	6.2	7.0	5.3	9.0	5.3	6.7
3 Twilight	6.2	6.9	5.4	7.7	2.7	9.0	6.7	4.3
4 Heidi	6.1	5.9	6.2	5.0	3.3	6.0	8.0	8.3
5 Bolt	6.1	6.4	5.7	4.0	5.7	6.7	6.3	5.7
6 A18-9	6.0	6.3	5.6	8.3	3.7	5.7	8.3	6.3
7 A12-38	6.0	6.8	5.1	5.7	5.3	7.7	8.7	5.7
8 KB16OT-3	5.9	6.1	5.7	6.7	5.0	6.3	7.7	5.7
9 Touche	5.9	6.3	5.4	4.0	4.3	6.3	4.0	4.7
10 A14-420	5.9	6.0	5.7	5.0	2.7	8.0	6.0	7.0
11 PST-K17-191	5.9	6.1	5.6	4.7	6.0	4.7	8.3	5.0
12 Skye	5.8	6.0	5.7	6.0	5.7	8.3	8.3	4.0
13 A18-7	5.8	6.2	5.4	7.7	4.0	9.0	8.0	6.0
14 RAD-3240	5.8	6.4	5.3	6.3	5.0	6.3	6.3	3.3
15 KB13OT-12	5.8	6.2	5.3	7.3	3.0	9.0	7.7	6.3
16 Blue Bank	5.8	6.3	5.3	7.0	3.3	8.7	7.0	3.7
17 PST-K17-182	5.8	5.8	5.7	5.3	6.3	5.3	7.7	6.0
18 Zinfandel	5.8	6.0	5.5	5.3	4.0	9.0	9.0	6.7
19 Granite	5.8	6.9	4.6	6.0	3.0	8.3	8.3	3.7
20 A16-10	5.7	5.6	5.8	4.3	6.7	5.0	8.0	6.0

70

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
21	Midnight	5.7	6.5	4.9	6.0	3.0	8.7	7.7	6.0
22	Blue Velvet	5.7	6.4	5.0	3.3	2.7	9.0	7.7	5.3
23	Legend	5.7	5.8	5.5	3.3	3.7	8.0	9.0	7.3
24	Dauntless Select	5.7	5.8	5.5	4.7	5.3	5.7	7.0	5.3
25	A16-2	5.6	5.9	5.3	5.3	6.3	7.7	6.7	5.0
26	Pulsar	5.6	6.4	4.8	7.0	3.0	9.0	7.0	4.7
27	A12-30	5.6	6.4	4.8	4.3	4.3	4.3	7.0	5.3
28	J-299	5.6	5.8	5.5	6.7	3.7	7.3	8.0	6.7
29	Jersey	5.6	6.0	5.2	6.0	6.0	5.0	4.7	4.3
30	Rugby II	5.6	6.1	5.1	6.7	2.7	9.0	7.0	6.0
31	United	5.6	6.2	4.9	7.0	2.7	9.0	7.7	4.0
32	Martha	5.6	5.6	5.5	3.7	4.7	6.7	7.3	6.3
33	A16-12	5.5	5.5	5.6	5.3	5.7	4.7	8.0	7.0
34	Avalanche	5.5	5.8	5.2	6.3	5.0	8.7	4.3	5.7
35	A16-538	5.5	5.9	5.2	5.3	4.3	8.7	7.0	6.0
36	PST-K18-199	5.5	5.7	5.3	4.5	6.0	4.5	4.5	4.5
37	A18-5	5.5	6.1	4.9	6.0	5.7	6.7	3.3	6.3
38	A18-6	5.5	5.5	5.4	6.7	3.7	3.3	8.3	6.7
39	J-2495	5.5	5.8	5.1	5.3	4.3	8.7	7.0	4.3
40	Explorer	5.5	6.1	4.8	4.7	3.0	7.0	8.3	5.3

71

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
41	A12-267	5.5	5.6	5.3	5.7	5.7	7.0	7.7	5.7
42	Blue Note	5.4	5.2	5.6	4.7	6.0	6.7	7.7	5.3
43	Keeneland	5.4	5.7	5.2	6.3	3.7	8.3	7.7	5.3
44	A17-835	5.4	5.9	5.0	8.0	7.0	8.3	5.3	3.0
45	Tirem	5.4	5.9	4.9	6.7	5.0	1.0	8.7	8.0
46	Prosperity	5.4	5.8	5.0	6.3	4.7	7.7	5.3	1.0
47	10-2233	5.4	6.1	4.7	6.0	3.3	8.3	8.0	5.7
48	A09-794	5.4	5.7	5.0	5.7	4.0	3.0	3.7	4.7
49	A16-540	5.3	5.8	4.8	5.7	3.7	8.3	6.0	5.0
50	H03-556	5.3	5.2	5.4	4.7	7.3	8.7	7.0	5.7
51	Gaelic	5.3	5.5	5.1	6.3	6.3	6.7	6.3	3.7
52	Kelly	5.3	5.3	5.3	6.7	4.0	9.0	6.7	6.3
53	NAI-15-90	5.3	4.9	5.6	4.0	4.0	1.3	7.7	5.3
54	SPF 30	5.3	5.5	5.1	7.0	5.7	6.0	6.0	6.0
55	PST-K17-189AD	5.3	5.7	4.9	6.5	4.0	4.0	6.0	2.0
56	Hampton	5.3	5.7	4.8	4.7	4.3	7.0	7.3	4.7
57	Sombrero	5.3	5.4	5.1	5.3	5.0	4.7	6.0	6.7
58	A15-17	5.3	5.2	5.3	4.7	4.7	5.7	8.3	7.0
59	Green Star	5.3	5.6	4.9	5.7	5.7	7.0	7.7	1.7
60	KB13OT-19	5.3	5.5	5.0	6.0	4.7	7.0	7.0	3.0

72

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
61	PST-K8-76NO	5.3	5.8	4.7	3.7	5.3	6.7	2.0	4.7
62	Award	5.2	5.5	4.9	6.3	4.0	9.0	5.0	3.0
63	Rockstar	5.2	5.1	5.3	5.7	5.7	5.0	7.0	5.7
64	Paragon	5.2	5.5	4.9	5.3	5.0	5.7	7.7	5.3
65	Corsair	5.2	4.9	5.5	3.7	5.3	6.7	7.7	5.0
66	KB13OT-16	5.2	5.5	4.9	5.7	4.0	8.0	7.0	5.0
67	PST-K17-186	5.2	5.3	5.1	5.3	4.7	6.7	7.7	4.3
68	A16-8	5.2	5.5	4.9	4.7	4.7	3.0	7.0	6.3
69	Rhythm	5.2	5.2	5.2	4.7	4.0	7.3	8.0	8.3
70	Crest	5.2	5.3	5.0	5.0	4.3	5.3	8.0	6.3
71	A17-806	5.2	5.0	5.4	5.3	4.3	4.7	4.7	5.7
72	A17-814	5.2	5.7	4.6	7.3	5.7	2.3	7.3	6.3
73	Abbey	5.2	5.1	5.2	6.3	4.3	7.3	8.0	6.7
74	Babe	5.2	5.3	5.1	4.3	6.0	4.7	6.0	5.0
75	RAD-3909	5.2	5.3	5.0	5.3	4.3	2.0	7.7	7.0
76	Aries	5.2	5.1	5.2	3.3	6.0	4.7	7.7	5.0
77	NAI-15-89	5.2	5.4	4.9	7.0	4.3	4.3	7.0	6.7
78	A17-869	5.2	5.9	4.4	6.3	5.3	9.0	5.7	3.7
79	Champagne	5.1	5.6	4.7	5.7	4.7	3.3	4.3	5.3
80	Arcadia	5.1	5.6	4.7	4.7	3.3	8.0	5.7	4.0

73

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
81	A18-1	5.1	4.9	5.3	4.3	5.3	4.7	6.0	6.3
82	A18-11	5.1	5.6	4.6	4.7	4.7	1.0	8.7	7.3
83	Jumpstart	5.1	5.3	4.9	5.7	6.3	7.3	7.0	3.7
84	Moonshine	5.1	4.8	5.4	5.7	5.7	6.7	7.0	5.3
85	KB15OT-29	5.1	5.7	4.5	6.7	5.7	6.7	6.0	4.7
86	Limousine	5.1	5.4	4.8	4.7	6.0	5.7	3.3	4.0
87	Geisha	5.1	5.2	5.0	6.0	4.0	7.7	7.3	5.3
88	Beyond	5.1	5.3	4.9	6.7	2.3	8.3	6.7	4.0
89	Denali II	5.1	5.5	4.7	6.3	7.0	6.3	6.7	3.3
90	KB15OT-39	5.1	5.6	4.6	3.3	4.0	6.3	7.3	5.7
91	Powerplay	5.1	5.4	4.8	4.0	3.3	8.0	8.0	6.0
92	Shamrock	5.1	5.6	4.5	5.7	7.3	7.3	6.0	4.0
93	PST-K17-187	5.1	5.1	5.0	4.3	4.7	5.3	7.0	3.3
94	PST-T15-44	5.1	5.6	4.6	6.0	6.0	4.0	6.3	4.3
95	Bandera	5.1	5.3	4.8	4.0	3.7	5.3	6.3	6.0
96	A18-10	5.0	4.9	5.2	3.7	4.7	3.0	8.0	4.3
97	A09-789	5.0	5.5	4.5	6.3	5.0	3.0	1.7	4.0
98	A17-889	5.0	5.7	4.3	7.7	6.0	5.7	5.7	4.3
99	PST-11-7	5.0	5.1	5.0	4.0	4.7	3.7	6.7	4.0
100	KB13OT-4	5.0	4.8	5.2	5.7	6.0	6.7	8.0	8.3

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
101	Everest	5.0	5.3	4.7	6.3	2.7	9.0	8.0	6.0
102	PST-K13-141	5.0	4.8	5.3	4.0	4.7	4.0	6.3	6.3
103	NAI-11-644	5.0	5.6	4.4	4.7	4.7	7.0	2.3	4.0
104	NAI-17-2	5.0	5.2	4.8	6.3	6.7	4.7	8.3	6.3
105	SR 2100	5.0	5.1	4.8	4.3	3.0	7.0	6.7	5.0
106	PST-K17-196	5.0	5.2	4.8	3.3	4.0	2.0	6.7	6.3
107	Deep Blue	4.9	5.2	4.7	7.0	5.7	5.3	5.0	5.7
108	Baron	4.9	4.8	5.0	5.0	3.7	4.0	7.0	6.3
109	A18-8	4.9	4.9	4.9	4.7	3.7	8.3	8.3	5.3
110	Courtyard	4.9	5.3	4.6	5.7	4.3	6.3	6.7	4.3
111	Midnight II	4.9	4.8	5.1	4.7	3.7	7.7	8.0	5.3
112	Electric	4.9	4.7	5.1	4.3	4.7	6.3	7.3	6.0
113	J-924	4.9	5.3	4.5	5.3	6.3	7.0	5.3	3.0
114	Quantum Leap	4.9	5.5	4.3	4.7	3.0	8.7	8.0	5.0
115	Selway	4.9	4.9	4.8	5.0	6.3	3.7	5.3	4.0
116	A17-863	4.9	5.3	4.4	6.7	5.7	3.7	4.7	5.0
117	Wildhorse	4.8	4.5	5.2	5.0	6.0	5.7	7.0	6.0
118	A06-8	4.8	4.9	4.8	2.0	4.0	5.3	7.7	5.7
119	Arrowhead	4.8	4.7	4.9	5.0	5.7	5.3	6.0	2.3
120	NAI 14-133	4.8	5.6	4.1	2.7	4.3	1.3	8.7	1.7

75

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
121	Bewitched	4.8	4.7	4.9	5.3	6.7	5.0	5.3	3.7
122	Blueberry	4.8	4.6	5.0	5.0	5.7	5.7	7.3	5.7
123	PST-K15-167	4.8	5.3	4.3	3.7	3.7	2.0	8.0	6.0
124	Dauntless	4.8	4.6	4.9	2.7	5.7	5.3	6.3	4.7
125	Nugget (B)	4.8	5.4	4.2	4.7	3.7	7.7	3.7	1.3
126	Lunar	4.8	4.9	4.6	5.7	4.7	2.0	8.7	6.0
127	Jackrabbit	4.8	5.2	4.4	5.0	5.0	5.0	7.0	3.7
128	PST-K17-185	4.8	4.6	5.0	4.7	4.0	5.0	7.3	6.3
129	NAI-15-80	4.8	4.6	4.9	4.0	4.7	3.7	8.0	3.0
130	NAI-17-13	4.8	5.1	4.4	6.3	6.7	4.7	7.3	4.7
131	NAI-17-49	4.8	4.9	4.6	5.3	3.0	7.7	7.0	3.3
132	PST-K17-193	4.8	4.9	4.6	3.3	4.3	6.0	5.7	2.3
133	KB15OT-24	4.7	4.9	4.5	5.3	4.3	2.0	6.7	3.3
134	A18-207	4.7	3.8	5.6	2.0	5.3	5.0	8.3	7.3
135	Diva	4.7	4.7	4.7	6.3	5.7	6.0	6.3	5.3
136	A09-793	4.7	4.9	4.5	4.7	5.0	3.0	2.3	5.3
137	A18-204	4.7	4.7	4.7	3.7	4.3	1.3	7.3	4.0
138	GO-SWM	4.7	4.9	4.4	6.0	5.3	2.7	7.7	1.3
139	P-105	4.7	4.7	4.6	5.7	5.3	4.7	6.0	5.3
140	Noble	4.7	5.1	4.2	6.0	4.0	6.3	8.7	3.3

76

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020
141	Rhapsody	4.7	4.2	5.1	4.0	5.0	7.0	6.7
142	Rubix	4.6	3.9	5.3	1.3	6.3	7.7	4.0
143	A98-363	4.6	4.5	4.7	3.3	4.3	3.0	4.7
144	PST-TX8-56	4.6	5.6	3.6	5.7	5.0	7.0	3.7
145	Aviator II	4.6	4.7	4.4	5.3	3.7	5.3	8.7
146	PST-K17-183	4.6	4.6	4.6	2.7	4.0	6.0	7.0
147	A14-439	4.6	4.5	4.6	5.0	6.3	4.7	8.0
148	Fielder	4.6	4.7	4.5	5.0	6.0	6.3	5.7
149	PST-K16-178	4.6	5.0	4.1	6.7	4.7	2.7	5.7
150	NAI 14-128	4.5	5.1	4.0	2.7	4.3	1.0	8.0
151	A14-31	4.5	4.9	4.1	3.7	3.3	2.7	7.3
152	Bluecoat	4.5	4.9	4.1	4.7	4.3	1.7	7.3
153	RAD-3285	4.5	4.6	4.4	4.7	4.0	2.0	8.7
154	A16-824	4.5	4.6	4.4	6.7	6.7	8.7	7.7
155	PST-K16-179	4.5	4.8	4.2	3.7	5.3	3.7	7.3
156	PST-K17-188AD	4.5	4.9	4.1	5.3	5.0	2.7	4.7
157	J-920	4.5	4.5	4.5	5.0	6.0	6.0	7.0
158	PST-K15-169	4.5	4.7	4.2	3.7	3.0	3.7	6.3
159	PST-T17-47	4.5	4.3	4.6	3.3	6.0	4.7	6.3
160	ARC	4.4	4.1	4.7	3.7	5.7	5.0	5.3

77

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
161	Comet	4.4	4.2	4.7	3.7	3.7	2.7	8.0	4.7
162	PST-T17-49	4.4	4.9	4.0	5.3	4.3	1.7	4.3	2.3
163	Fahrenheit	4.4	5.1	3.7	4.7	4.0	5.7	4.0	2.0
164	RAD-3956	4.4	4.8	4.0	4.0	6.0	4.0	4.3	3.7
165	KB11OT-47	4.4	4.0	4.9	2.3	4.7	3.7	5.0	4.7
166	PST-T15-43	4.4	4.2	4.6	2.3	3.7	4.3	6.3	5.7
167	NAI 14-122	4.4	4.7	4.1	2.0	3.7	1.7	8.7	1.7
168	Milagro	4.4	4.7	4.1	5.0	4.7	1.0	6.3	1.0
169	A18-12	4.4	4.1	4.7	5.0	6.0	2.7	7.3	4.7
170	A17-878	4.4	4.6	4.2	7.0	5.7	4.7	3.7	3.3
171	A18-3	4.4	4.5	4.2	3.7	6.3	4.7	7.3	5.0
172	A14-423	4.4	4.5	4.3	5.7	6.7	3.7	5.0	5.3
173	A18-14	4.3	4.1	4.6	2.3	5.3	1.3	6.7	6.0
174	Heartland	4.3	5.0	3.6	2.3	4.7	1.0	7.0	1.0
175	NAI-14-132	4.3	4.8	3.8	3.0	4.7	1.3	9.0	1.3
176	NAI 14-176	4.3	5.0	3.6	3.3	4.0	1.0	8.0	1.0
177	Bordeaux	4.3	4.4	4.3	5.7	4.7	5.0	6.7	5.0
178	Kenblue	4.3	4.3	4.3	5.7	7.7	3.3	8.7	5.7
179	PST-K17-192	4.3	4.5	4.1	4.0	4.7	4.0	6.7	3.3
180	PST-K17-194	4.3	4.2	4.4	4.3	5.0	3.0	7.0	5.7

78

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
181	Endurance	4.3	3.6	4.9	2.7	4.7	6.0	8.7	6.0
182	Finish Line	4.3	3.6	5.0	1.3	6.3	6.0	6.3	5.0
183	Touchdown	4.3	4.2	4.3	6.0	7.3	4.3	5.3	4.0
184	New Moon	4.3	4.3	4.2	3.0	3.7	4.0	6.3	1.0
185	A17-853	4.2	4.5	3.9	4.7	5.0	5.3	4.7	3.7
186	A18-206	4.2	4.2	4.3	3.3	5.3	2.7	5.3	4.3
187	PST-K15-173	4.2	4.0	4.4	1.7	4.7	3.3	7.3	5.7
188	NAI-13-131	4.2	3.9	4.5	4.0	4.3	4.3	8.3	6.3
189	NAI-14-127	4.2	4.6	3.8	3.3	4.0	1.7	6.3	1.3
190	A16-806	4.2	4.4	4.0	5.3	5.7	4.3	5.7	4.3
191	A12-34	4.2	4.4	3.9	4.0	4.0	7.0	7.7	3.7
192	A18-208	4.2	3.6	4.7	2.3	5.0	5.3	7.7	5.7
193	Morocco	4.1	4.7	3.5	7.0	8.7	7.3	4.3	3.3
194	RAD-3988	4.1	3.8	4.4	4.7	6.3	3.0	8.3	4.0
195	PST-K15-163A	4.1	4.2	4.0	4.3	5.0	3.0	5.3	2.3
196	A18-13	4.1	3.3	4.9	1.7	6.0	4.0	8.7	6.0
197	A14-426	4.1	4.6	3.6	5.3	4.3	3.3	4.7	2.0
198	KB16OT-1	4.1	4.0	4.1	6.7	8.0	6.3	6.3	2.0
199	NAI-15-111	4.1	4.0	4.1	3.0	5.7	4.0	5.7	2.0
200	NAI-15-112	4.1	4.3	3.9	5.0	5.7	4.7	4.0	2.3

79

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
201	Rubicon	4.1	3.6	4.5	2.3	5.0	6.3	5.3	3.7
202	PST-K16-180	4.1	3.8	4.3	2.3	4.0	3.3	6.7	5.7
203	NAI-14-126	4.0	4.3	3.7	1.7	5.3	1.3	7.7	1.7
204	A13-679	4.0	3.8	4.3	4.0	5.3	4.0	5.3	4.0
205	A18-2	4.0	3.9	4.2	3.7	7.0	5.7	7.3	5.3
206	MacMillan	4.0	4.1	3.9	2.7	4.7	1.0	7.7	5.3
207	A17-849	4.0	4.6	3.4	4.7	5.3	6.7	3.3	2.3
208	NAI-12-41	4.0	3.7	4.3	2.7	5.0	4.7	6.7	4.0
209	A12-300	4.0	3.7	4.3	3.3	6.0	2.3	5.0	3.0
210	PST-105-69	4.0	4.1	3.9	3.7	5.7	3.0	6.0	3.3
211	RAD-2375	4.0	4.4	3.6	5.3	7.7	7.0	4.3	2.7
212	PST-K15-158	4.0	3.8	4.2	2.3	5.0	2.3	7.0	5.7
213	PST-K17-190AD	4.0	4.1	3.8	5.3	5.3	1.7	5.0	2.7
214	PST-K15-160	3.9	3.8	4.0	2.7	4.3	4.0	7.7	4.7
215	Paloma	3.9	3.5	4.3	2.7	5.0	3.3	5.7	4.3
216	Shannon	3.9	3.9	3.8	1.7	4.7	3.3	8.0	3.7
217	A18-209	3.8	3.5	4.1	3.7	3.7	4.3	7.7	6.0
218	PST-K15-172	3.8	3.6	3.9	1.3	3.7	1.7	6.7	5.0
219	PST-K18-197	3.7	3.7	3.8	3.3	4.3	3.3	5.7	3.0
220	Volt	3.6	2.9	4.4	1.7	5.3	2.7	6.7	5.7

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem	
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020	
221	PST-K18-198	3.6	3.8	3.5	4.3	5.7	3.0	7.0	1.3
222	A18-4	3.6	3.4	3.8	2.0	4.0	5.7	7.3	3.7
223	RAD-3651	3.6	3.5	3.7	3.0	4.0	2.3	5.3	2.3
224	A16-5	3.6	3.6	3.6	2.3	4.7	1.7	6.3	3.3
225	A15-2	3.6	2.8	4.3	1.0	5.7	1.3	6.7	5.3
226	Mercury	3.6	3.4	3.8	1.3	4.3	1.0	8.7	6.0
227	A18-205	3.5	3.6	3.4	2.0	4.0	1.7	6.7	3.7
228	NAI-17-90	3.5	3.0	4.0	2.3	3.7	3.0	7.0	4.7
229	RAD-3832	3.5	3.7	3.3	4.3	5.3	2.0	7.3	1.7
230	RAD-3813	3.5	3.5	3.4	2.7	5.7	1.0	8.7	5.3
231	NAI-17-88	3.5	3.0	3.9	2.3	4.3	3.3	5.3	4.0
232	Blackjack	3.4	3.2	3.6	2.0	5.0	2.7	6.3	2.7
233	PST-T17-50	3.4	2.8	4.0	2.0	5.3	4.3	5.3	3.0
234	PST-T14-39	3.3	2.7	3.9	1.0	6.3	1.7	8.0	5.0
235	A15-1088	3.3	3.2	3.3	1.3	5.7	1.0	6.3	3.0
236	NAI-17-89	3.2	3.0	3.5	2.3	4.7	2.3	7.0	3.0
237	KB16OT-2	3.2	2.5	3.8	1.0	5.3	2.7	8.0	5.0
238	NAI-13-79	3.0	2.5	3.6	1.0	5.3	3.7	6.3	5.0
239	Blue Ghost	3.0	1.8	4.1	1.0	5.3	1.3	6.3	3.3
240	Prafin	2.3	1.4	3.1	1.0	5.0	3.3	6.3	4.7

81

(Continued)

Table 4. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2018 at Adelphia, NJ.

Entry	-----Turf Quality ¹ -----			Establish-	Spring	Stemmi-	Dollar	Stem
	2019-2020 Avg.	2019 Avg.	2020 Avg.	ment ² 4 Apr. 2019	Green-up ³ 8 Apr 2020	ness ⁴ 18 May 2020	Spot ⁵ 4 Sep. 2020	Rust ⁶ 24 Sep. 2020
241 Bluestar	2.1	1.4	2.8	1.0	5.3	1.7	7.0	4.7
LSD @ 5%=	0.7	1.0	0.8	1.8	1.4	1.9	2.7	2.4
CV=	9.8	13.3	10.3	24.7	17.6	23.7	25.1	33.9

¹9=Best turf quality
²9=Best establishment
³9=Earliest Spring Green-up
⁴9=Least Stemminess
⁵9=Least Dollar Spot
⁶9=Least Stem Rust

Table 5. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2019 at Adelphia, NJ.

Entry	Turf Quality ¹ Avg. 2020	Establishment ² 22 Apr. 2020	Stem Rust ³ 24 Sep. 2020	
1	A16-228	6.8	6.0	8.7
2	T15-46	6.7	4.3	9.0
3	A19-08	6.6	8.0	7.3
4	A16-231	6.5	5.3	8.7
5	NAI-13-29	6.5	7.3	7.3
6	A05TB-258	6.2	3.7	7.7
7	A17-1	6.1	6.7	8.3
8	Desert Moon	6.1	6.0	7.0
9	A11-26	6.0	6.0	8.3
10	A14-422	6.0	9.0	8.7
11	A16-17	6.0	7.0	6.7
12	SRX 5321 (SR 2150)	6.0	6.3	7.3
13	MVS-280	6.0	4.7	8.7
14	A14-26	6.0	6.7	5.3
15	NAI-17-51	5.9	7.3	7.0
16	PST-K19-208	5.9	6.3	5.7
17	A19-05	5.9	4.0	7.0
18	NAI-17-37	5.9	7.7	6.3
19	Bolt	5.8	5.3	8.3
20	Midnight	5.8	6.7	6.3
21	A16-807	5.8	8.7	7.7
22	A12-38	5.8	8.3	6.0
23	NAI-17-43	5.8	7.3	6.0
24	Tirem	5.8	6.3	7.3
25	Hampton	5.8	7.7	6.7
26	A16-816	5.8	8.7	8.0
27	A19-16	5.7	8.0	5.3
28	A19-47	5.7	7.0	7.7
29	NAI-17-40	5.7	6.3	6.3
30	T14-37	5.7	7.7	5.0
31	Electric	5.7	7.0	6.3
32	PST-K17-191	5.7	6.7	7.7
33	A19-18	5.7	7.0	6.7
34	A18-11	5.7	7.0	7.0
35	A14-334	5.7	7.0	6.0

(Continued)

Table 5. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2019 at Adelphia, NJ.

Entry	Turf Quality ¹ Avg. 2020	Establishment ² 22 Apr. 2020	Stem Rust ³ 24 Sep. 2020	
36	PST-K18-199	5.7	5.3	7.0
37	Right	5.6	5.3	5.7
38	Granite	5.6	8.7	6.3
39	A19-299	5.6	6.3	6.3
40	A16-14	5.6	7.0	8.3
41	PST-K17-187	5.6	5.3	5.3
42	United	5.6	7.7	5.0
43	A19-01	5.6	6.3	7.7
44	NAI-17-49	5.6	7.3	6.7
45	T15-47	5.6	5.7	6.3
46	J-299	5.5	8.7	5.7
47	A09-793	5.5	5.0	8.0
48	A13-1	5.5	4.0	7.3
49	A19-17	5.5	7.7	7.0
50	A17-5	5.5	7.3	7.0
51	A98-363	5.5	7.0	6.0
52	NAI-17-46	5.5	7.3	6.7
53	Finish Line	5.5	4.7	5.7
54	Heidi	5.5	4.7	4.7
55	A19-03	5.5	5.3	6.7
56	A19-11	5.5	5.3	6.0
57	J00-1249	5.5	8.7	6.3
58	A09-305	5.5	4.7	8.3
59	A09-794	5.5	6.0	8.3
60	NAI-17-48	5.5	7.7	6.3
61	Champagne	5.5	7.3	6.3
62	A19-295	5.5	4.3	7.7
63	A15-486	5.4	8.3	6.3
64	J00-1138	5.4	8.3	5.3
65	NAI-17-42	5.4	7.3	6.7
66	NAI-17-53	5.4	8.0	6.3
67	A12-37	5.4	8.3	5.3
68	J09-2797	5.4	6.3	5.3
69	NAI-17-54	5.4	6.3	7.3
70	NAI-17-87	5.4	4.0	7.3

(Continued)

Table 5. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2019 at Adelphia, NJ.

Entry	Turf Quality ¹ Avg. 2020	Establishment ² 22 Apr. 2020	Stem Rust ³ 24 Sep. 2020	
71	Prafin	5.4	8.0	4.7
72	Blue Velvet	5.4	6.7	6.3
73	A18-5	5.4	8.0	7.0
74	Syrah	5.4	8.3	6.7
75	J10-2233	5.3	8.0	6.0
76	PST-K13-141	5.3	7.3	7.0
77	PST-K15-172	5.3	6.3	5.7
78	Geisha	5.3	8.7	4.7
79	A19-10	5.3	7.0	7.0
80	A12-298	5.3	8.3	6.0
81	A19-50	5.3	6.0	6.7
82	A09-789	5.3	5.0	7.3
83	A15-17	5.3	6.7	7.7
84	A17-802	5.3	5.0	7.7
85	A19-19	5.3	6.7	5.3
86	A14-677	5.3	8.3	5.0
87	365SS	5.3	7.0	7.7
88	RAD-4279	5.3	3.7	6.3
89	RAD-4285	5.3	5.0	5.7
90	NAI-17-44	5.3	7.0	6.7
91	Legend	5.2	6.0	6.7
92	NAI-17-12	5.2	7.7	6.7
93	NAI-17-41	5.2	7.0	5.3
94	PST-K17-182	5.2	3.7	6.0
95	PST-K19-201	5.2	5.3	5.7
96	Kelly	5.2	8.3	6.3
97	NAI-17-92	5.2	3.7	7.3
98	Bluebank	5.2	8.3	4.3
99	A15-480	5.2	8.7	6.0
100	A06-08	5.2	6.0	7.0
101	NAI-14-77	5.2	1.7	5.0
102	Arcadia	5.2	7.7	5.7
103	A19-04	5.1	8.3	5.7
104	J05-1331	5.1	6.7	4.7
105	A17-8	5.1	5.0	5.3

(Continued)

Table 5. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2019 at Adelphia, NJ.

Entry	Turf Quality ¹ Avg. 2020	Establishment ² 22 Apr. 2020	Stem Rust ³ 24 Sep. 2020	
106	Bluenote	5.1	7.0	5.3
107	NAI-17-38	5.1	7.3	5.3
108	NAI-17-47	5.1	7.7	6.7
109	Sonora	5.1	5.3	6.7
110	Ginney II	5.1	8.3	5.3
111	J00-3301	5.1	8.3	4.7
112	NAI-17-39	5.1	6.7	4.3
113	NAI-17-50	5.1	7.0	6.0
114	PST-K19-206	5.1	5.0	6.3
115	A19-298	5.1	3.7	7.7
116	J00-2830	5.1	8.0	3.0
117	NAI-17-45	5.1	6.7	6.3
118	PST-K17-193	5.1	4.7	5.3
119	A19-14	5.0	6.3	3.0
120	A18-6	5.0	6.3	6.0
121	PST-K15-167	5.0	6.3	4.7
122	Quantum Leap	5.0	7.7	6.7
123	Rhythm	5.0	7.7	5.3
124	A19-12	5.0	6.3	5.3
125	A19-48	5.0	6.3	7.7
126	NAI-17-58	5.0	8.0	7.0
127	Jersey	5.0	6.3	4.3
128	Aviator II	5.0	8.3	4.0
129	SR 2100	5.0	7.3	5.0
130	A16-253	5.0	7.7	3.3
131	Yellowstone BS	5.0	4.7	6.0
132	J08-2163	5.0	5.3	6.0
133	J11-2184	5.0	8.7	6.7
134	NuGlade	5.0	7.3	4.3
135	NAI-17-4	5.0	7.7	5.0
136	Blue Devil	5.0	7.7	4.7
137	Blue Gem	5.0	7.3	5.7
138	Twilight	5.0	7.7	3.7
139	Fielder	5.0	7.0	5.3
140	PST-K16-178	4.9	7.7	5.7

(Continued)

Table 5. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2019 at Adelphia, NJ.

Entry	Turf Quality ¹ Avg. 2020	Establishment ² 22 Apr. 2020	Stem Rust ³ 24 Sep. 2020	
141	Lunar	4.9	6.7	7.0
142	SPF 30	4.9	8.7	6.0
143	Sombrero	4.9	8.0	4.7
144	RAD-4405	4.9	4.7	5.3
145	NAI-17-8	4.9	8.3	7.0
146	Prosperity	4.9	8.3	1.7
147	A19-02	4.9	4.7	7.3
148	A19-13	4.9	7.3	3.3
149	A17-878	4.9	6.7	5.3
150	NAI-17-17	4.9	2.0	6.3
151	A16-3	4.9	6.3	3.7
152	PST-K15-169	4.9	5.7	3.0
153	PST-K17-190AD	4.9	7.3	4.3
154	PST-K19-202	4.9	5.3	4.0
155	A19-07	4.8	8.0	3.7
156	A14-299	4.8	8.0	5.3
157	A15-484	4.8	7.3	7.0
158	A16-12	4.8	8.0	6.0
159	Bewitched	4.8	6.3	4.7
160	Comet	4.8	5.7	4.7
161	A12-49	4.8	8.0	3.0
162	A19-49	4.8	5.7	7.3
163	Rubicon	4.8	5.3	4.7
164	A17-4	4.8	7.7	2.3
165	J03-1231	4.8	8.3	4.3
166	A17-9	4.8	5.0	5.7
167	RAD-3710	4.8	6.3	3.3
168	T14-39	4.8	4.3	4.7
169	T14-40	4.8	8.0	5.0
170	A19-297	4.8	8.3	4.3
171	J98-2605	4.7	6.7	4.0
172	H03-556	4.7	6.7	5.3
173	A17-833	4.7	8.7	4.3
174	NAI-17-30	4.7	2.0	5.7
175	Zip	4.7	7.3	3.3

(Continued)

Table 5. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2019 at Adelphia, NJ.

Entry	Turf Quality ¹ Avg. 2020	Establishment ² 22 Apr. 2020	Stem Rust ³ 24 Sep. 2020	
176	J09-2761	4.7	8.3	2.0
177	Award	4.7	7.0	5.3
178	My Holiday Lawn	4.7	7.3	3.7
179	NAI-17-3	4.7	8.7	5.0
180	NAI-17-55	4.7	8.3	6.0
181	Dauntless Select	4.7	6.7	6.0
182	Jumpstart	4.7	7.0	4.3
183	A17-799	4.7	8.0	3.7
184	A17-869	4.7	7.7	5.7
185	RAD-4272	4.7	4.7	6.3
186	PST-K17-188AD	4.7	7.0	1.3
187	New Moon	4.7	3.7	3.3
188	J04-1094	4.6	5.0	4.7
189	NAI-15-84	4.6	7.0	3.3
190	Endurance	4.6	6.0	4.7
191	Full Moon	4.6	4.3	5.3
192	NAI-14-132	4.6	6.7	2.0
193	A10-838	4.6	3.7	5.7
194	NAI-17-10	4.6	8.3	5.0
195	K8-76NO	4.6	2.7	4.7
196	Midnight II	4.6	1.0	6.0
197	Diva	4.6	7.7	5.7
198	A16-800	4.6	5.3	5.3
199	NAI-17-6	4.6	8.3	6.0
200	Corsair	4.6	6.0	5.3
201	Dauntless	4.6	5.7	5.7
202	Pivot	4.6	7.3	3.7
203	Volt	4.5	5.0	6.0
204	Bandera	4.5	7.0	5.0
205	A19-20	4.5	2.0	5.0
206	A13-695	4.5	7.7	3.7
207	A16-212	4.5	7.3	3.3
208	J11-2132	4.5	8.3	3.0
209	Limousine	4.5	4.0	3.3
210	PST-K15-163A	4.5	7.0	3.0

(Continued)

Table 5. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2019 at Adelphia, NJ.

Entry	Turf Quality ¹ Avg. 2020	Establishment ² 22 Apr. 2020	Stem Rust ³ 24 Sep. 2020	
211	A15-10	4.5	6.0	5.0
212	J00-2934	4.5	8.0	6.7
213	PST-K16-179	4.5	6.3	5.3
214	PST-K17-192	4.5	6.3	5.0
215	PST-K19-204	4.5	3.3	5.7
216	NAI-14-122	4.5	7.0	2.0
217	Arc	4.5	6.0	4.0
218	Armada	4.5	5.7	4.7
219	Spitfire	4.5	7.3	3.7
220	A15-474	4.4	6.3	5.3
221	A18-767	4.4	9.0	4.7
222	PST-K17-189AD	4.4	6.3	2.0
223	PST-K19-203	4.4	5.0	3.0
224	Aries	4.4	7.7	5.7
225	NAI-14-126	4.4	5.0	2.7
226	Jackrabbit	4.4	6.7	4.0
227	A17-6	4.4	5.0	4.3
228	RAD-4333	4.4	4.3	2.0
229	NAI-17-2	4.4	7.3	6.3
230	NAI-17-97	4.4	3.3	5.3
231	PST-K18-197	4.4	5.7	3.0
232	A19-21	4.4	7.0	4.0
233	RAD-4242	4.4	5.3	4.0
234	PST-K17-196	4.4	5.0	6.0
235	NAI-14-128	4.4	6.7	1.3
236	Bordeaux	4.4	6.7	4.3
237	Arrowhead	4.3	6.7	2.3
238	Amaze	4.3	7.3	1.3
239	A14-439	4.3	6.0	4.3
240	A18-774	4.3	9.0	4.0
241	After Midnight	4.3	8.3	2.7
242	J-924	4.3	5.0	4.0
243	NAI-17-93	4.3	2.7	4.7
244	Shamrock	4.3	7.0	5.0
245	Comanche	4.3	7.7	2.0

(Continued)

Table 5. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2019 at Adelphia, NJ.

Entry	Turf Quality ¹ Avg. 2020	Establishment ² 22 Apr. 2020	Stem Rust ³ 24 Sep. 2020	
246	A19-09	4.3	6.3	6.7
247	RAD-4277	4.3	6.7	4.0
248	Waterworks	4.3	8.7	5.7
249	Rubix	4.3	6.0	4.7
250	A19-300	4.3	1.7	7.3
251	T15-49	4.2	5.3	5.7
252	Properity	4.2	8.7	1.3
253	Morocco	4.2	7.0	3.3
254	J09-3287	4.2	9.0	4.7
255	J-920	4.2	6.3	4.3
256	A17-889	4.2	9.0	4.0
257	Bluecoat	4.2	7.7	1.3
258	Rockstar	4.2	6.7	4.7
259	A19-15	4.1	5.7	5.7
260	J00-3510	4.1	8.7	3.7
261	RAD-4227	4.1	3.7	5.0
262	Heartland	4.1	7.3	1.7
263	Shannon	4.1	8.3	6.7
264	NAI-17-74	4.1	1.7	6.3
265	PST-K17-194	4.1	4.7	5.7
266	Wild Horse	4.1	6.7	4.3
267	Noble	4.1	8.7	3.0
268	79111	4.0	2.3	5.7
269	T15-43	4.0	4.0	6.3
270	Gaelic	4.0	5.7	5.3
271	Milagro	4.0	8.3	1.7
272	NAI-17-36	4.0	3.3	4.7
273	Mercury	4.0	7.7	3.0
274	NAI-17-9	3.9	5.3	4.0
275	A16-528	3.9	9.0	4.0
276	PST-K19-207	3.9	4.3	2.7
277	Blackjack	3.9	7.0	2.3
278	Fahrenheit 90	3.8	8.3	1.7
279	NAI-17-26	3.8	4.7	6.0
280	RAD-4207	3.8	5.3	2.3

(Continued)

Table 5. Performance of Kentucky bluegrass cultivars and selections in a high maintenance turf trial seeded in September 2019 at Adelphia, NJ.

Entry	Turf Quality ¹ Avg. 2020	Establishment ² 22 Apr. 2020	Stem Rust ³ 24 Sep. 2020
281 TX8-56	3.8	8.0	3.7
282 A19-06	3.6	6.3	1.3
283 A17-7	3.6	5.0	5.0
284 PST-K19-200	3.6	1.0	5.7
285 PST-K18-198	3.5	7.0	2.7
286 J09-2676	3.5	5.7	3.3
287 RAD-4303	3.5	3.3	1.7
288 NAI-17-18	3.5	5.3	4.3
289 Zinfandel	3.4	1.0	5.7
290 NAI-17-90	2.4	4.7	2.7
291 A19-296	2.1	1.0	2.3
292 Geronimo	1.5	1.0	2.0
LSD @ 5%=	0.8	1.3	1.8
CV=	10.7	12.2	21.6

¹9 = Best Turf Quality

²9 = Best Establishment

³9 = Least Stem Rust

Table 6: Yearly nitrogen (N) and mowing height (Ht) on Kentucky bluegrass tests established at Adelphia, NJ.

Turf Trial	-----2017-----		-----2018-----		-----2019-----		-----2020-----	
	N ¹	Ht ²	N	Ht	N	Ht	N	Ht
Table 1 (2017)	1.25	2.5	1.25	2.5	1	2.5	0.75	2.5
Table 2 (2017)	1.25	2.5	1.25	2.5	1	2.5	0.75	2.5
Table 3 (2017)	2.05	1.5	4.25	1.5	3	1.5	2.25	1.5
Table 4 (2018)	–	–	2.15	1.5	3.75	1.5	3.75	1.5
Table 5 (2019)	–	–	–	–	–	–	3.75	1.5

¹Annual N applied (lbs/1000 ft²)

²Mowing height in inches