Kentucky Bluegrass Cultivar Performance

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Kentucky bluegrass has an incredible range of genetic diversity. I like to call it the *Canus lupus familiaris* (the latin name of the domestic dog) of grasses. We have bluegrass cultivars that are dark green and ones that are light greens, cultivars that start growing in April, and others that take until late May to wake up. We have cultivars that get hammered by rust, and some that don't. Some cultivars can handle being mowed at one inch, others would fade away quickly under that type of management. The Arkansas research group found some bluegrasses last only three weeks without water, while others can maintain green cover for more than five weeks. While other cool season grass species have decent genetic variability (ryegrass, tall fescue, bentgrass, etc), I relate that amount of variability to what you see in cats, sure the breeds look different, but the differences aren't as large as what you see between a Great Dane and a Pomeranian.

Figure 1. This picture from a Kentucky bluegrass NTEP trial the O.J. Noer Facility in early spring captures the tremendous genetic diversity of Kentucky bluegrass cultivars.

You are probably familiar with the National Turfgrass Evaluation Program (NTEP), which is the main way data is generated about grass cultivars across the US. We've had at multiple NTEP trials at the OJ Noer Facility every year since the Noer was built in the mid-1990s. You can visit NTEP.org to check out the performance of cultivars at locations all over the US. But when you do that, you'll quickly find that the NTEP program is filled with mostly experimental cultivars which make the data not very useful for consumers. Instead of evaluating what's on the market, it prioritizes new cultivar development. To fill that void, industry and university representatives formed the Alliance for Low Input Sustainable Turf (A-LIST for short). A-LIST focuses on evaluation (and eventually labelling) of grass cultivars that exhibit the best qualities like high visual quality under lower input situation. The current list of A-LIST cultivars is shown in Table 1.

Table 1. The current A-LIST of Kentucky Bluegrass Cultivars as of Spring 2018. To receive A-LIST approval, a cultivar must have acceptable turfgrass quality and be in the top statistical group for drought tolerance for two years at two or more locations. It also must be evaluated in an NTEP trial.

A-LIST Approved Cultivar	**Company**
Mercury	DLF Seeds and Science
SR 2284	DLF Seeds and Science
Shiraz	Lebanon Turf
Zinfandel	Lebanon Turf
Blue Note	Mountain View Seeds
Legend	Mountain View Seeds
Hampton	Landmark
Fullback	Landmark

We were exited to install our first A-LIST trial at the O.J. Noer in fall of 2017 to complement the NTEP data that we've been generating over the years. We planted twenty-three Kentucky bluegrass cultivars from four different seed companies on Sept 12, 2017 (Table 2). (One criticism of A-LIST is that they have not achieved participation from all the turfgrass breeders yet.) We evaluated these grasses for establishment speed, green color, and visual quality using standard methods that are published on the A-LIST website. The grasses were mowed as needed at 2.25 inches, irrigated, and fertilized at approximately 2 lbs N/1000 square feet per year. We were not able to evaluate dry down and drought tolerance with this trial.

Table 2. The Kentucky bluegrass varieties being evaluated for A-LIST approval at the OJ Noer.

Company	**#**	**Variety**
Lebanon	1	Bordeaux
Lebanon	2	Zinfandel
Lebanon	3	Champagne

Lebanon	4	Merlot
Lebanon	5	LTP-11-41
Landmark	6	Hampton
Landmark	7	Bluebank
Landmark	8	Fullback
Landmark	9	A12-7
Landmark	10	NAI-13-14
Landmark	11	A11-40
Mountain View Seeds	12	A12-34
Mountain View Seeds	13	A11-38
Mountain View Seeds	14	MVS-130
Mountain View Seeds	15	PPG-KB 1320
Mountain View Seeds	16	LEGEND
Mountain View Seeds	17	PPG-KB 1131
DLF Seeds	18	SRX 2758
DLF Seeds	19	SR 2150 (SRX 5321)
DLF Seeds	20	Jackrabbit
DLF Seeds	21	SRX 466
DLF Seeds	22	Keenland
DLF Seeds	23	Martha (A06-46)

The data we are reporting here are from year 1, the establishment year. Multiple years of data are preferable over single years (and multiple years are required for A-LIST approval), but the establishment success is usually indicative of good performance. I will just report the grasses that had the top performance (indicated by having an “a” in the statistical analysis, of “g” in the case of rust) for quality (Table 3), color/NDRE (Table 4), green cover (Table 5), and rust resistance (Table 6).

In our trial four of the twenty-three grasses were previously accepted for A-LIST approval based on good performance in other trials. These grasses also rose to the top in our trial. In fact, all four made the top statistical group for quality, percent green cover, and rust resistance. The only group that they did not all show up was color/NDRE, which was a very exclusive group of only three grasses.

In our first year of data, the top performers that have not yet been A-LIST approved appear to be Merlot, MVS-130, and NAI-13-14. These grasses showed up in the top statistical group in at least three of the four categories we have evaluated so far. Keep in mind that part of A-LIST approval is drought tolerance, which we did not evaluate. Based on the preliminary results of this trial, and in no particular order, Fullback, Merlot, MVS-130, Hampton, Legend, Zinfandel, and NAI-13-14 appear to be the best choices of the grasses evaluated for roughs and green banks, etc. in Wisconsin. If you have a bluegrass renovation project next summer, swing by the O.J. Noer for a personal tour and discussion.

Table 3. Top performers in visual quality.

Grass	Visual Quality (1-9)
Fullback*	6.07 a
Merlot	5.95 ab
MVS-130	5.89 abc
Hampton*	5.86 abc
Legend*	5.84 abc
A11-40	5.70 abcd
NAI-13-14	5.66 abcde
Zinfandel*	5.66 abcde
A12-7	5.59 abcdef

* previously A-LIST approved

Table 4. Top performers in color and vegetation health (estimated from NDRE).

Grass	NDRE Value (0-1, 1=best)
MVS-130	0.381 a
Merlot	0.376 ab
Zinfandel*	0.369 abc

* previously A-LIST approved

Table 5. Top performers in percent green cover (establishment rating).

Grass	Mean % Green Cover
Fullback*	70.5 a
PPG-KB 1131	68.1 ab
Merlot	66.9 abc
Martha	66.2 abcd
Zinfandel*	66.0 abcd
A11-40	66.0 abcd
Hampton*	65.9 abcd
Bluebank	65.8 abcd
Legend*	65.6 abcd
A11-38	65.4 abcd
A12-7	65.0 abcde
NAI-13-14	64.4 abcde
Jackrabbit	63.8 abcde
Keenland	63.1 abcde
SRX 466	62.7 abcde
A12-34	61.3 abcde
LTP-11-41	61.0 abcde
SR 2150	60.8 abcde

* previously A-LIST approved

Table 6. Top performers in rust resistance (lower is less rust)

Grass	Rust Rating (1-9, 9=all rust)
Zinfandel*	1.8 g
Merlot	1.8 g
SR 2150	2.0 fg
NAI-13-14	2.0 fg
A12-34	2.5 efg
Legend*	2.5 efg
Fullback*	2.5 efg
MVS-130	2.8 efg
Bluebank	2.8 efg
A11-38	3.0 defg
Hampton*	3.0 defg
PPG-KB 1131	3.0 defg

* previously A-LIST approved