National Perennial Ryegrass Test — 4th-year report

Name	AR1	GA1	IA1	IL1	IL2	IN1	KS1	KY1	MD1	ME1	MI1	MO1	MO3	NE1	NJ1	NJ2	OH1	OK1	PA1	QE1	RI1	UB1	UB2	VA1	WA1	WA3	WI1	Mean
* Palmer III	5.0	3.5	6.7	5.5	5.6	7.1	6.1	7.6	6.1	8.4	6.0	3.9	7.3	7.4	6.1	5.3	8.1	5.5	7.0	6.9	7.1	5.5	5.8	5.6	7.0	6.3	6.2	**6.2**
* Secretariat	6.8	3.5	6.9	6.5	6.0	6.9	5.9	7.8	6.0	7.8	5.0	4.7	6.4	7.3	5.8	5.4	8.2	5.4	7.3	6.6	6.7	6.2	5.9	5.2	6.4	5.8	5.8	**6.2**
* Brightstar II	6.4	3.4	6.1	5.2	5.1	7.3	6.2	8.1	6.2	7.1	4.8	5.0	7.3	6.3	6.3	6.1	8.0	6.4	7.1	6.6	5.3	5.4	6.7	5.2	7.7	6.3	5.7	**6.2**
* Calypso II	5.6	3.4	6.6	5.6	6.6	7.1	5.9	7.2	6.1	7.3	5.5	4.5	7.0	7.2	6.3	5.0	8.0	6.2	7.7	6.0	6.5	6.0	6.7	4.9	6.7	6.1	5.4	**6.2**
* Monterey	4.1	3.5	6.5	5.6	5.3	7.3	6.1	7.3	5.9	7.5	6.0	4.8	6.3	7.1	5.9	5.6	8.2	4.8	7.8	6.5	6.5	5.6	6.3	5.2	6.8	6.1	6.2	**6.1**
* Caddieshack	6.2	3.3	6.5	5.1	5.9	7.0	6.1	7.5	5.9	7.5	5.0	4.5	6.9	7.0	5.6	5.2	8.0	6.4	6.9	6.3	6.1	6.5	6.7	5.0	6.1	5.3	6.0	**6.1**
* Panther	4.5	3.1	6.4	6.1	5.1	7.0	5.9	7.7	5.9	7.3	5.3	4.6	7.0	7.1	6.6	5.8	8.0	5.8	6.9	6.4	6.5	5.4	6.3	4.9	6.3	6.1	5.9	**6.1**
*Accent	6.6	3.2	6.3	5.4	6.1	7.0	5.9	7.0	6.2	7.7	4.5	5.0	6.3	7.4	5.2	4.8	8.0	7.2	6.8	6.0	6.3	5.8	6.6	5.0	6.1	5.5	5.8	**6.1**
* Prelude III	6.8	3.3	5.8	5.0	6.0	6.8	6.3	8.1	6.0	8.5	4.5	4.6	7.4	6.5	6.1	5.1	7.8	6.0	6.0	6.4	5.8	5.6	5.4	5.7	6.7	5.2	5.7	**6.0**
ISI-MHB	4.8	3.4	6.6	5.2	4.8	6.9	5.8	7.7	5.9	7.8	5.9	4.5	6.7	7.4	5.3	5.0	8.1	6.3	6.8	6.8	6.3	5.5	6.0	5.1	6.4	6.3	5.9	**6.0**
* Premiere II	6.0	3.3	6.9	5.0	4.8	7.2	5.9	8.4	5.8	7.7	3.9	4.4	7.0	6.9	6.1	5.5	7.7	5.5	6.8	6.6	6.4	5.2	6.7	5.3	6.2	6.1	5.5	**6.0**
* Prizm	5.0	3.4	6.6	4.8	6.0	6.8	6.4	7.4	6.1	7.0	5.6	4.9	7.0	7.2	5.0	4.9	8.2	6.0	7.3	6.4	5.9	5.4	6.3	5.1	6.3	6.1	5.7	**6.0**
* Pennant II	7.0	3.4	6.4	5.4	6.2	6.9	5.2	8.3	5.8	7.4	4.0	4.7	6.7	7.5	5.7	5.1	7.8	5.5	6.9	6.7	4.8	5.4	6.3	4.8	7.1	5.9	5.2	**6.0**
* Manhattan 3	4.6	3.4	6.8	5.1	4.8	7.0	5.9	8.0	5.9	7.4	4.8	4.8	6.2	7.1	6.0	4.5	8.3	6.5	7.2	6.2	6.1	5.4	6.4	5.4	7.1	5.0	5.7	**6.0**
* Top Hat	6.2	3.3	6.4	5.7	5.1	7.0	6.2	8.1	5.8	8.3	5.1	4.5	5.9	7.2	5.2	4.7	8.0	6.7	6.8	5.9	5.7	5.1	5.9	5.1	6.1	5.8	5.9	**6.0**
LRF-94-C8	6.5	2.9	5.8	5.0	6.0	7.0	6.0	8.3	5.3	8.1	4.6	4.3	7.4	6.7	5.8	4.5	7.9	6.1	6.8	6.3	5.0	4.9	6.0	5.6	7.3	5.6	5.9	**6.0**
* Catalina	6.6	3.3	6.2	5.6	5.3	6.8	5.3	7.7	5.9	7.3	4.4	4.8	6.4	7.1	6.1	5.1	8.1	5.5	7.1	6.3	6.3	5.3	6.6	5.1	6.3	5.3	5.5	**6.0**
* Passport	5.7	3.0	6.6	5.5	4.3	7.0	5.4	7.7	5.8	6.2	6.0	4.3	6.6	7.5	5.0	4.4	8.4	5.7	7.6	6.6	6.9	5.3	6.3	5.4	6.4	5.6	5.9	**6.0**
MB 44	7.3	3.4	6.4	5.0	5.4	6.7	5.0	8.0	5.9	6.6	4.1	5.0	5.7	7.5	5.3	4.7	7.8	6.2	7.0	6.6	5.8	5.6	5.6	5.2	8.0	5.3	5.9	**6.0**
* Line Drive	5.2	3.9	6.7	5.3	5.4	7.1	5.7	7.8	6.0	6.4	3.2	4.4	7.3	7.3	6.1	5.3	8.0	6.4	6.9	6.3	6.5	5.0	5.3	5.4	7.0	5.4	5.7	**6.0**
* Esquire	5.7	3.3	6.2	4.7	5.0	6.7	5.7	7.8	6.0	7.3	5.7	4.9	6.5	7.4	5.8	5.2	7.7	7.1	6.7	6.3	6.4	5.5	6.0	5.3	5.8	5.2	5.3	**6.0**
LSD Value	**1.8**	**0.4**	**0.7**	**0.9**	**1.4**	**0.5**	**1.1**	**0.5**	**0.6**	**1.7**	**2.1**	**0.8**	**1.0**	**0.6**	**0.8**	**1.2**	**1.0**	**1.4**	**1.0**	**1.0**	**0.6**	**1.3**	**0.9**	**0.5**	**0.7**	**0.6**	**0.6**	**0.2**

* — Commercially available in the U.S. in 1998.

Field test sites, followed by soil texture, soil pH, pounds of nitrogen applied per 1,000 square feet, mowing height in inches and irrigation practiced:

AR1 — Fayetteville, Ark., silt loam and silt, 6.1-6.5, 3.1-4.0, 1.6-2.0, to prevent stress.

GA1 — Griffin, Ga., sandy clay loam, 5.6-6.0, 3.1-4.0, 2.1-2.5, to prevent stress.

IA1 — Ames, Iowa, sandy clay loam, 7.1-7.5, 2.1-3.0, 2.1-2.5, to prevent stress.

IL1 — Urbana, Ill., silt loam and silt, 6.1-6.5, 3.1-4.0, 2.1-2.5, to prevent stress.

IL2 — Carbondale, Ill., silty clay loam, 6.1-6.5, 3.1-4.0, 1.1-1.5, to prevent dormancy.

IN1 — West Lafayette, Ind., silt loam and silt, 6.6-7.0, 3.1-4.0, 0.6-1.0, to prevent stress.

KS1 — Manhattan, Kan., silt loam and silt, 6.6-7.0, 3.1-4.0, 0.6-1.0, to prevent stress.

KY1 — Lexington, Ky., silt loam and silt, 6.1-6.5, 3.1-4.0, 1.1-1.5, only during severe stress.

MD1 — Silver Spring, Md., sandy loam, 6.1-6.5, 3.1-4.0, 0.0-0.5, to prevent stress.

ME1 — Orono, Maine, N/A.

MI1 — East Lansing, Mich., sandy loam, 7.1-7.5, 1.1-2.0, 3.1-3.5, to prevent stress.

MO1 — Columbia, Mo., silt clay loam, 6.1-6.5, 3.1-4.0, 1.1-1.5, to prevent dormancy.

MO3 — St. Louis, Mo., silty clay loam, 6.6-7.0, 4.1-5.0, 2.6-3.0, to prevent dormancy.

NE1 — Lincoln, Neb., silty clay loam, 7.1-7.5, 5.1-6.0, 0.0-0.5, to prevent stress.

NJ1 — North Brunswick, N.J., sandy loam, 6.1-6.5, 3.1-4.0, 1.1-1.5, to prevent stress.

NJ2 — Adelphia, N.J., sandy loam, 6.1-6.5, 3.1-4.0, 1.6-2.0, to prevent stress.

OH1 — Columbus, Ohio, silty clay loam, 6.6-7.0, 2.1-3.0, 1.1-1.5, to prevent stress.

OK1 — Stillwater, Okla., silty clay loam, 6.6-7.0, 3.1-4.0, 2.1-2.5, to prevent stress.

PA1 — University Park, Pa., silt loam and silt, 6.6-7.0, 1.1-2.0, 1.1-1.5, to prevent stress.

QE1 — Quebec, Canada, loamy sand, 7.1-7.5, 0.0-1.0, 2.6-3.0, no irrigation.

RI1 — Kingston, R.I., silt loam and silt, 6.1-6.5, 3.1-4.0, 1.1-1.5, to prevent stress.

UB1 — Beltsville, Md., (high mowing), silt loam and silt, 5.6-6.0, 3.1-4.0, 1.1-1.5, to prevent dormancy.

UB2 — Beltsville, Md., (low mowing), 6.1-6.5, 3.1-4.0, 0.0-0.5, to prevent stress.

VA1 — Blacksburg, Va., silt loam and silt, 6.1-6.5, 5.1-6.0, 2.1-2.5, only during severe stress.

WA1 — Pullman, Wash., silt loam and silt, 6.1-6.5, 3.1-4.0, 1.6-2.0, to prevent stress.

WA3 — Puyallup, Wash., sandy loam, 5.6-6.0, 4.1-5.0, 1.1-1.5, to prevent stress.

WI1 — Madison, Wis., silt loam and silt, 7.1-7.5, 3.1-4.0, 2.6-3.0, to prevent stress.

Weeds

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their mills. In turn, a bag of *Poa*-free seed is going to be at a premium.

"There are a number of things growers can do to get weeds out of the seeds," said Dave Holman, general manger at Advanta Seeds. "It starts in the fields with picking fields clean and following that up with chemical control. But that's where the problem has been this year, agronomic practices haven't worked."

"Without burning you can't property get rid of that existing seed bank contaminates," said Larry Falk, an agronomist with Corvallis-based Seed Research of Oregon (SRO). "This year, there's nothing more we can do."

In wet and soggy conditions, growers said, the life of an herbicide is shortened considerably and chemical applications become useless.

"There's a developed resistance to the chemicals we've traditionally used," said Jacklin. "Plants have not been given the full doses, so a weed survives and genetically manipulates to resist that kind of hit next time."

"With the loss of field burning there are very narrow windows of opportunity for effective chemical control programs," said Bill Rose, president of Hubbard-based Tee-2-Green/Turf Seed Inc. "You only have about three days to get it on and if you miss that you have a pretty big problem."

According to SRO's Falk, Oregon seed farmers are simply going to have change field practices and experiment with new chemistry in order to react to the problem — that is if Mother Nature fails to cooperate.

"You're going over hundreds of acres going over millions of plants and you have a few that are becoming resistant," said Falk. "This happens when you go with one mode of action."

In the meantime, seed cleaning, both in the fields and in the mills, is going full force.

"Poa can be cleaned from the seed when it's conditioned if they have the right equipment and they go slow enough," said Steve Tubbs, president and owner of Tangent-based Turf Merchants Inc. "Many farmers have been updating equipment and buying machines that can pull the *Poa* out if they miss it in the fields."

But according to Adriel Garay, director of Oregon State University's seed lab, seed cleaning is not only a slow process but there are considerable limitations.

"Farmers can always separate," said Garay, "but the technology is only good if there is a size difference in the seeds. A lot of seeds we produce are quite similar, so there is no way to separate it."

"With perennial ryegrass and tall fescue you're dealing with seed-size difference," said Jacklin, "so at certain levels a cleaner can get the contaminates out in the mill. With the smaller seeded crops, like Kentucky bluegrass, you loose the size advantage and you can't get it out in cleaning line as easily."

Overall, the situation has put a considerable amount of pressure on growers, causing seed marketers to take precautionary, sometimes costly steps.

"While we're running all of our tests, the lots that come through that are *Poa annua* and *Poa trivialis* free are going to be labeled as such," said Skip Lynch, Seed Research of Oregon's technical agronomist. "It's a significant effort and a long way to go to get to a product a customer wants."

Growers urge superintendents to examine seed analysis tags carefully before making purchases this year. "Poa is noxious," said Falk, "so it has to be listed on the tag. The rough stock is not, so it does not have be listed on the tag, but will be listed under weeds. If a tag shows weeds superintendents really should inquire as to what they are."

As for an projected end to this problem, SRO's Falk believes that a few days in the low 20s next winter would be a good start.

"This was brought on by mother nature and its going to take mother nature to alleviate the problem," said Falk.