Endophytes a critical find for research
Nature more important in face of environmental constraints, says USDA official

BY MARK LESLIE

As research redoubles to develop turfgrasses that are resistant to every malady and attack from nature, the use of a natural fungus will play a significant role, according to the national director of the U.S. Department of Agriculture’s National Turfgrass Evaluation Program.

Speaking from his Beltsville, Md., office, Kevin Morris said “use of endophytes will be more and more prevalent in developing varieties of grass.”

An endophyte is a fungus that lives within plants and gives them natural resistance to disease and insect damage. A natural fungus will play a significant role, Morris predicted, in the development of new turfgrasses.

“With the use of pesticides being restricted, this is going to be a bigger and bigger factor,” Morris said.

“There are quite a number of perennial ryegrass varieties that have high levels of endophyte in the seed. It was first found in perennial ryegrass and has been bred into several perennial ryegrass varieties.”

Now, breeders are searching for endophytes in other species.

Morris said it has been discovered in fine leaf and tall fescues, leading to work to incorporate it into those species.

“It’s not as prevalent as it is in ryegrass right now, but it will be down the road. Hopefully we’ll find one for Kentucky bluegrass — and maybe bentgrass, eventually,” he said.

Asked for a timeframe for the public to expect new endophyte-laden varieties on the market, Morris said: “If they find an endophyte somewhere in Kentucky bluegrass it will be five or six years before it will be readily available to buy.”

Markets

Meanwhile, turfgrass companies in the Northwest are making progress in research into ways to cope with a possible future ban on field-burning.

Doyle Jacklin, vice president of marketing for Jacklin Seed Co. of Post Falls, Idaho, reported that “some varieties of seed are being developed that aren’t affected as much as current varieties by absence of burning.”

The seed industry contends that field-burning doubles or triples seed yield. Jacklin Seed has confirmed those claims on a 0.4-acre test site, but in the meantime has also found some new varieties that call for special attention.

“On a commercial level we’re seeing dramatic reductions in many varieties, doubled production of others, and just increased yield of some,” Jacklin said.

Nature more important

Speaking from his Beltsville, Md., office, Morris predicted that perennial ryegrass cultivation will be important in face of environmental constraints.

“As research redoubles to develop fine leaf and tall fescues, leading to work to incorporate endophyte in the seed. It was first found in perennial ryegrass and has been bred into several perennial ryegrass varieties.”

Zoysia sod

Morris said improved Zoysias are being developed for other qualities, such as shade tolerance.

Stone said Zoysia’s advantages are balanced somewhat by its susceptibility to brown patch in early spring and grass that do it more damage than Bermuda.

That yet apparently depends little.

“1. Amazed people are going that route (sodding fairways), especially using Zoysia. Zoysia is the most expensive to produce,” Morris said.

She said in the Southeast Bermuda grass sod costs 14 to 18 cents per square foot, whereas Zoysia sod costs 20 to 30 cents. Mel Lavery, director of private real estate at Hallsboro Farms Country Club in Leawood, Kan., the course was sodded at a cost of more than $6 million.

While “a fair amount” of the rough was sodded with bluegrass, 40 acres of Zoysia sod was laid, including all the fairways and some collars.

“Kenya is in the transitional zone and I don’t know anyone else in the transitional zone who did not use Zoysia,” Lavery explained of the decision to use Zoysia.

“Will the increased demand mean sod farm acreage can be saved?

The capability, according to Fender, who said most Zoysia farms also produce other types of turfgrass.

“‘Casey will be set up, but there are a few that, by luck or happenstance, aren’t affected so much as current varieties by absence of burning,” said Jacklin.

The new seed will be bagged in September.

“Prices are off a little bit on the ryegrasses and bluegrasses, but not on the bentgrasses,” Jacklin said.

“They’ll be doing a lot of seeding this fall with bent grasses, fine fescues and so on are all proprietary varieties,” Jacklin said.

“Some are a little bit on the ryegrasses and bluegrasses, but not on the bentgrass and tall fescues.”

“Proprietaries will hold their prices. Then you’ll have a decrease in grass and in the common varieties,” Patterson said.

“Some 5- to 10-percent price reduction in some proprietaries, but overall they won’t go down much in price. Top quality proprietary varieties probably sold out earlier this year.”

Hays said many companies that are growing expensive, proprietary crops “have had some failures and they need an average year to get their money back.”

Robinson said his 40 distributors have pulled all his company’s proprietary this year.

“Ryegrasses, bluegrasses, tall fescues, bluegrasses, fine fescues and so on are all sold out,” he said, explaining that that seed is still available in the distribution chain.

“Since the seed company’s customers had the chance to sell to the public. Robinson said. “A lot of companies are coming out with pretty cheap prices, so obviously they have seed to sell.”

Kevin Morris, the national director of the U.S. Department of Agriculture’s National Turfgrass Evaluation Program, predicted the golf industry’s increased demand for bentgrasses will mean supply problems.

“There’s more bentgrass on the market now but supplies are still tight on them. They don’t have the production, especially on the new varieties, to keep up with the demand,” he said.

Morris predicted that perennial ryegrass supplies will be good, as will Kentucky bluegrass, “except some of the proprietary varieties.”

Company officials agree the marketplace is short of bentgrasses, fine fescues, and bluegrasses, but not on the bentgrasses.

“We’re finding that the new varieties in the North are having problems. It’s hot and humid weather, they’re getting a lot of disease and a lot of kill on grass, and they will be the one variety that is really hard to get next year,” Morris said.

The new seed will be bagged in September and October.

Marketing techniques

The marketing of seed has evolved into a more sophisticated creature.

Many companies that do business the old-fashioned way, putting acreage in and then going out and selling it. But that philosophy is going more and more to the wayside,” Patterson said.

While the prices for common turf seed plummet with over-supply, Patterson said, “The mentality has been to hold prices on proprietary varieties. There’s more to it than just growing costs. You’ve got royalties, administration fees, advertising, a lot of costs that they didn’t used to consider.”

“Instead of being a little smarter about our marketing product. Fifteen years ago I can’t say we (in the seed industry) were the smartest marketing people in the world.”

Seed outlook

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ability in drought periods than other grasses and give it a competitive edge, said Willard Fender, vice president of Marketing Group member for information and university test results.

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