

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 certain surface insects.

"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 endophyte 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: "In practical terms, if they find an endophyte somewhere in Kentucky bluegrass it will be five or six

years before it will be readily available to buy."

Burn research

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 40-acre test site, but in the meantime has also found some new varieties that call for special attention.

"We found that burning tripled production of many varieties, doubled production of others, and just increased yield of some,"

Jacklin said. "But there are a few that, by luck or happenstance, aren't affected so much.

"We have selected those with a good response and will proceed in developing them, even though they might not be as good a seed as others."

Seed yield under a no-burn situation "is a key consideration in developing new varieties," Jacklin said.

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Zoysia sod

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ability in drought periods than other grasses like fescues and bentgrasses."

Morrow 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 grubs that do it more damage than Bermuda.

Yet that apparently detracts little.

"I'm amazed people are going that route (sodding fairways), especially using Zoysias, because Zoysia is generally the most expensive to produce," Morrow said.

She said in the Southeast Bermudagrass sod costs 14 to 18 cents per square foot, whereas Zoysia sod costs 20 to 30 cents.

Mel Lavery, director of private real estate for Hallmark Cards, said at Hallbrook 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.

"Kansas is in the transitional zone and I don't know anyone else in the transition zone who did not use Zoysia," Lavery explained of the decision to use Zoysia.

Will the increased demand mean sod farms will increase their acreage of Zoysia?

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

Asked if Pursley would do so, Morrow said: "I imagine, yes, if the demand is there. We have the capability."

Fifty of Pursley's 1,500 acres of sod are now in Zoysia. Other farms have as much as 200 or 300 acres of Zoysia.

A drawback for producers is that Zoysia can't be harvested as often as some other warm-season grasses, Fender said.

Morrow said a farm in the Sunbelt might get one harvest per year of Zoysia, while sod grown in the North probably would

Seed outlook

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said: "The crops look tremendous this year, because of good growing weather... Every crop is great, even wheat."

But Hays and others tempered the optimism, saying the heavy supply will mean lower prices for most grasses except the high-quality, proprietary varieties that golf courses buy.

Seed Research of Oregon's president, Mike Robinson, said the 1990 season industrywide is mixed.

"The volume of seeds will be excellent," he said, "but there's probably more seed available than will be needed. We're in an over-supply situation in general. Some of the older varieties are more readily available than the newer varieties."

"Prices are off 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 huge gap between them and the common varieties," Patterson said. "You'll see a 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 bought all his company's proprietaries 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.

But that's not the case at all companies, 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, said 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."

Marketing techniques said changing

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

"We are marketers. We sell our seed first, then contract for the acreage we need," said Scott Patterson, vice president in charge of turf seed at Peterson Seed Co. in Savage, Minn.

Referring to a "carry-over" supply of turf seed from last year's crop that is pushing down prices, Patterson said the seed industry would not get caught with an over-supply if all the companies did business in this manner.

"There is still a lot of 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 they didn't used to consider."

"We've gotten 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."

Company officials agree the marketplace has a "carry-over" of seed. Because of wet springs in the Midwest, Northeast and Mid-Atlantic states, homeowners and others didn't plant as much seed as normal. In Texas, Arkansas and other regions that were flooded last spring, the growing season is past for most of the public.

But golf course superintendents must carry on.

"We envision that especially in the golf course trade, sales should be excellent this fall," Robinson said. "Golf courses are not so seasonal. The ones in the South are going to overseed no matter what. In the North it's more of a homeowner market. If the weather is bad and housing starts are down, that's reflected in the marketplace."

"We're finding that a lot of golf courses in the North are having problems. It's hot and humid weather, they're getting a lot of diseases and a lot of kill on grass, and they will be doing a lot of seeding this fall with perennial ryegrasses and bentgrasses."

Heavy rains could harm the harvest, which started a little late, but otherwise the harvesting should carry on through July.

The new seed will be bagged in September and October.