

Roundup Ready control area aims to prevent contamination

By ANDREW OVERBECK

MADRAS, Ore. —The Scotts Co., Monsanto and the Oregon Department of Agriculture (ODA) have established an 11,000-acre control area for the production of Roundup Ready creeping bentgrass to protect against the danger of cross-pollination with conventional creeping bentgrass.

Four hundred acres of the genetically altered turfgrass will be planted this fall in Jefferson County, which is more than 110 miles away from the country's primary bentgrass production region in Oregon's Willamette Valley.

"We feel really good about the safeguards that have been put in place that will protect conventional production," said ODA spokesman Bruce Pokarney. "The whole point was to

tighten down any possibility of cross pollination of conventional bentgrass, which is grown exclusively, at this time, more than 100 miles away on the other side of a major mountain range."

Dr. Kevin Turner, director of seed research and production for the Scotts Co. will oversee the control area.

"We started working with the state of

Oregon 14 months ago, making presentations on this technology and our projects," he said. "One of the things that came out was the concern over outcrossing into other species and *agrostis* varieties. However, studies show that the levels of out-

CONTROL AREA GUIDELINES

- Conventional bentgrass cannot be grown less than a quarter mile from the Roundup Ready creeping bentgrass.
- All field borders, roadside ditches and banks of waterways will be hand-weeded for 165 feet on the outside of the bentgrass fields to prevent outcrossing.
- A seed-cleaning plant will be located within the area.
- The plant will only clean Roundup Ready creeping bentgrass.
- Seed will be harvested with a dedicated combine.
- Seed will be put into sealed containers for transport from the field to the cleaning plant.
- Processed seed will not leave control area except in sealed commercial containers.
- The seed will be distributed directly to golf courses from the control area.
- Straw containing the seed will be burned.
- Any leftover stands of turf will be watered to promote growth and then killed with a herbicide and shallow tilled.
- The next crop planted in the field will have to be one that can be sprayed with a herbicide that is effective on Roundup Ready creeping bentgrass.
- Fields will be rotated every three to four years.

crossing are very, very low."

As a result of the concerns, however, Turner worked with the ODA to create the control area guidelines to insure against any contamination (see box).

"We will have dedicated seed cleaning plants and equipment, and will monitor the production fields," Turner said. "We have a multi-faceted plan to manage the

fields and prevent outcrossing."

As a further control measure, growers will have 10 percent of their pay held in an interest-bearing escrow account until May 31 following their last harvest to guarantee that the crop has been properly removed and planted in the prescribed manner.

"The stewardship program is much more demanding than any program I know of anywhere," said Ron Olson, the managing director of grower cooperative New Era Seed that has been set up to produce seed in the control area. "The performance bond is a good thing because it makes growers comply with all the stewardship requirements and quality specifications that need to be addressed."

OBJECTIONS OVER SAFETY

Bill Rose, president of Tee-2-Green and primary detractor of the Roundup Ready control area, is still not satisfied with the stewardship measures.

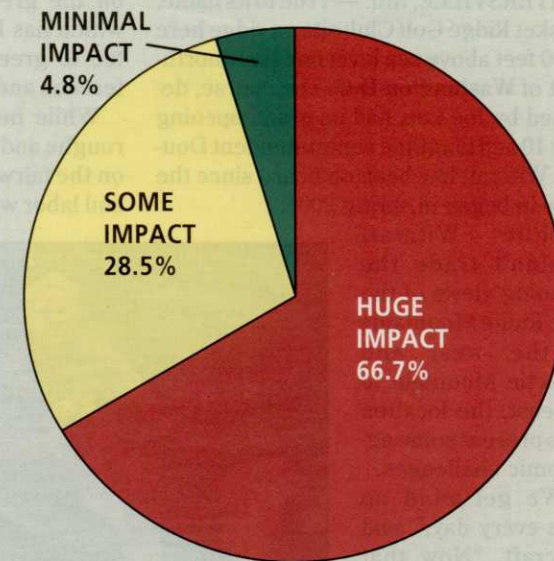
"I can easily predict disaster for open pollination," Rose said. "As a result of this control area I expect to see genetically-altered turfgrass banned in the United States. My goal is to try to not get it banned."

While he views the ODA's decision to allow the control area as a setback, Rose is still pressing forward with his own plan

to develop herbicide resistant turfgrass that is male sterile. Rose said sterility could be demonstrated as early as the end of this summer. From there, commercial production of the seed could occur within three years. ■

GOLF COURSE NEWS NEWS POLL

WHAT IMPACT WILL GENETICALLY MODIFIED TURFGRASS HAVE ON THE EASE OF GOLF COURSE MAINTENANCE?



❖ Genetically modified turfgrasses will be just one more tool available to superintendents, especially with golf course superintendents being asked to take on more and more off-course responsibilities.

— Frank A. Rendulic, CGCS, Kittyhawk Golf Club

❖ I think we must be very careful in doing this and not jump the gun before all research and potential for a negative impact is determined.

— Larry Livingston, superintendent, Camp Creek Golf Club

❖ Disease will not be eradicated so the super's job won't change fundamentally. Turf quality on mid- to low-end courses will improve. A good super is too busy now (and if he or she is not, their crew is too large), and will have no trouble finding other things to do in their pursuit of quality within budgets.

— Tom Isaak, president, CourseCo Inc.

GMO turf moving closer to reality

Continued from page 1

being produced with Roundup Ready technology," said Dr. Kevin Turner, director of seed research and production for Scotts. "It seemed like the most appropriate first project. The next step was deciding which species should be our target. Helping golf course superintendents take care of *Poa annua* in bentgrass was the obvious project to work on."

Developing Roundup Ready creeping bentgrass, however, was relatively easy because it involved altering just one gene. Inserting drought tolerance or disease resistance will be more complicated and expensive because it will likely involve altering multiple genes.

"Biotechnology is in the Model-T phase," said Harriman. "The Roundup Ready gene can be proved very quickly, but developing disease resistance is much harder and will take longer."

Looking to the future, Harriman said developing disease, insect and drought resistant turfgrass is the ultimate goal.

"If we think about the stresses that lead to decline and how we can change that, the possibilities from a performance and aesthetic standpoint and a cost reduction

standpoint are impressive," he said.

While the goal of Roundup Ready creeping bentgrass and other genetically altered varieties are to make the superintendent's job easier, it will not replace agronomic knowledge.

"With Roundup Ready, superintendents are going to have an opportunity to focus on taking care of the grass that they predominantly want," Harriman said. "They can improve the overall health of the course because they are not sacrificing bentgrass conditions for *Poa annua*. In theory they also will use less water, insecticides and fungicides."

ROUNDUP READY DEMAND

Scotts will begin planting 400 acres of Roundup Ready creeping bentgrass in Jefferson County Oregon (see story above) this fall and will be ready to harvest its first crop of seed in July 2003. Turner expects the fields to yield 200,000 pounds of seed, but Scotts will not be able to sell the product until it is approved by the United States Department of Agriculture's Animal Plant Health Inspection Service. The company expects a final decision on the application by late 2003 or early 2004.

Once approved, Roundup Ready creeping bentgrass will first be available as a fairway turfgrass variety. Data is still being collected on its ability to function on greens, but a greens-specific variety will be released in the next two to three years, said Harriman. The fairway variety can be sprayed with Roundup at 32-ounce per acre rates.

Wayne Horman, director of seed sales and marketing, estimates the initial market for Roundup Ready creeping bentgrass at 2,000 to 3,000 courses.

"Of the 11,000 cool-season courses in the country, approximately 27 percent have bentgrass fairways," he said. "Bentgrass greens represent 80 percent of the courses. While taking greens out of play to convert them is not the easiest thing to do, fairway conversions and even ryegrass fairway conversions to eliminate gray leaf spot concerns are the target markets."

While the market for Roundup Ready creeping bentgrass rather small, Scotts is treating it as an important first step on the road to other genetically altered varieties.

"Will this technology pay for itself? We are hopeful," Harriman said. "Do we know for sure? Not even close. But Scotts is confident that this will be an important first product with hopefully more to come." ■

IGM lawsuit

Continued from page 3

In the Battleground lawsuit, IGM has filed suit against the club for payment of \$300,000 in maintenance fees that it has yet to receive.

Club officials and lawyers for both sides declined to comment, but that case is headed for mediation and could be decided as early as the end of August.

As for the other New Jersey contracts IGM lost last year, maintenance at Glenwood CC in Old Bridge was taken over by Environmental Golf, and maintenance at Bear Brook GC in Newton was brought back in house by new owners Gale and Kitson.

"No one likes to lose anything," Zakany said. "But when someone under bids you trying to get business, or someone sells a course, or someone owes you a substantial amount of money, those are difficult business decisions. But they have to be made in terms of what's best for the company."

"Emerson was the only course we lost because of maintenance conditions," he added. "I am sure it will be resolved when it comes out and we'll be fine." ■