

Battling *Poa annua* by complete renovation

Dave Portz, Superintendent at Brookside County Club in Mecungie, Pennsylvania, has had to cope with and manage the 100 percent *Poa annua* fairways he inherited in 1973. Two years ago he began experimenting with partial renovation of his most troublesome fairways and greens. This year he renovated the entire course. "Technically, my job is to maintain the golf course," Portz says, "but we're also faced with the problem of maintaining the course to the membership's specifications.

That meant cutting the turf to a height that was better for play, but not for the health of the turf. The end result was an infestation of *Poa annua*. "When the height of bluegrass comes down, so does the health of the grass," he explains, "and like most superintendents, when the grass began to show signs of stress, I would water. But, too much watering weakens the plant and encourages the poa which begins to flourish and spread and flower and spread even more."

While annual bluegrass may look ideal for golf courses, Portz learned that cutting too close and over-watering creates a cycle that is next to impossible to stop once it begins. You can live with poa," continues Portz, "you just have to keep it soaking wet, and spray continuously for diseases to prevent weakening of the plant. The time and labor is phenomenal."

Preparing for a change

So after battling poa for seven years, he began to look for alternatives. "I had looked into every possible renovation technique but none seemed effective enough," says Portz. "We had almost a 100 percent infestation of poa, and since total eradication is impossible, I wanted to initiate a program that would give me a more than adequate population change.

Even before Portz began thinking in terms of an actual poa control program, he began preparing for the day that he could broach the subject with the Board of Directors. Five years ago, he began working on reducing his thatch accumulation, knowing that it tied up nutrients, insecticides, and fungicides. It is also very difficult to keep moist.

"What we did was verticut and aerify to bring the thatch layer down,"

explains Portz who initiated the process routinely year after year until he felt the course was ready for renovation. "Removing the thatch was our top priority," he recalls, "because there wasn't any way that we could prepare a new seedbed with a high or deep thatch layer to contend with."

Crawling comes before walking

Two years ago, with most of his thatch layer removed, Portz decided to experiment with Roundup. After much consideration, the tenth fairway was chosen. A 14-foot test strip was sprayed and the rest of the fairway remained untreated as a check strip for the experiment. "We sprayed it, overseeded it, aerified it, and waited," explains Portz. "The results were just beautiful."

After his success on the 10th fairway, Portz decided to try the treatment on his chipping green. As with most experiments, there is always the chance that something can go wrong. "I had the feeling that all would go well," says Portz, "but just to make sure we decided to treat the chipping green since it is an out of play area."

As expected, it went off without a hitch. In fact, the results of these two small-scale efforts convinced him to experiment further and propose an entire renovation of one fairway. "Because we only did a 14-foot strip on the 10th, we couldn't manage it properly, and we ended up with a poa problem again," he continues. "But, despite the problems associated with 'double' management, the director of greens was so impressed with the results that we decided to go ahead and do a whole fairway in 1978.

"The Board of Directors decided

unanimously to renovate the 13th fairway since it was the most troublesome and had held up the least well during the summer months," he explains. "We didn't get total kill of the fairway, but we were experimenting with rates and used too low of a rate to kill some of the bent grass that was in the fairway. However, we did have a good change in population and that's what we were looking for.

"Proceeding with the 13th renovation, we left a 50-foot check strip of poa in front of the green to draw a comparison as the season progressed," recalls Portz. "The check strip was under the same management program as the new fairway and as the summer progressed, the check strip gradually went out as poa will do if not managed properly. The balance of the fairway remained in good condition."

Saving labor and water

While the membership was somewhat uncertain about undertaking a major renovation, the 13th fairway provided a vision of what they could expect in the future. And, as if that wasn't enough, Portz added some astonishing cost saving statistics. "During the summer of 1978, we had 36 waterings plus syringe time on all of the fairways except number 13, where we only watered three times with no syringe time. So right there, on just one fairway, we had a huge savings in both water and labor.

"Coupled with the economy and the rising cost of fertilizer, chemicals and labor, the cost savings and a visual demonstration of encouraging results enabled me to talk with my membership realistically about con-

The new growth on 13 contrasts drastically with other fairways after treatment.



sidering a complete renovation. I was convinced that a renovation program with Roundup would make me happy, would work, and would be ideal for their golfing needs," he continues.

"We crawled on the tenth fairway, walked on the thirteenth, and then we ran. At the 1979 annual meeting, the entire renovation was okayed."

Spring vs. Fall

The decision to launch a full scale renovation was only the beginning for Dave Portz and his crew of six full-time employees. Since they got the go-ahead, they have faced countless other decisions whose full impact remains unknown to this day. For the most part, Portz is optimistic about the choices he made.

"Obviously, the method of renovation a superintendent chooses depends on two things: the level of infestation on the course; and the membership — the kind of conditions they want and how quickly they want it," he explains. "In our case, where we have a strong membership, we needed to choose a method that would eliminate the poa without closing the course to play. If we had chosen to

plow the course under, we would have had to close the course. But through the use of Roundup, we were able to eliminate our existing annual bluegrass and still provide a playing surface for the membership, even, if it was dead grass. The only restriction we enforced was that golf carts were not permitted on the fairways during seed germination, and we also had to close for two half days when we sprayed the front and back nine holes."

Because Portz chose a rather unprecedented method of renovation, all his decisions were based on knowledge about Brookside he acquired during his seven years as superintendent and the education he received at Penn State along with consultation with technical reps. In view of the fact that most annual bluegrass in southeastern Pennsylvania germinates in the fall, Portz chose to renovate the Brookside course during the spring. "We felt that a spring renovation would help reduce competition from poa seedlings," he explains.

Complete renovation

Because mother nature was working against Portz this spring, he held

off with the renovation as long as he could in hopes that the cool, wet weather would clear. But, as March turned into mid-April, he could wait no longer and proceeded with the process as scheduled. Portz, always a fanatic about keeping records, kept a daily log of weather conditions, soil temperatures, and maintenance activities.

Portz and his crew sprayed the Roundup on April 19 and 20, nine holes each day. They waited a week and then seeded, using a Rogers 548 seeder. The seeding process took four days. Prior to this, they had made a half rate application of Scott's starter fertilizer.

The mechanical process, although time-consuming and exacting, flowed just as planned. "We cleaned up the thatch and debris from seeding as soon as it occurred and on May 2 we spiked and broadcast-seeded the fairways," says Portz. "We used a Ryan Renovaire and put slicing blades on it, doubled them up, and welded them together at the tip so we could get better penetration and a wider groove in the fairway. Then we simply broadcast our ryegrass and the balance of



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the bluegrass."

Rather than seeding in the commonly-used square patterns, Portz chose a diamond shape instead. "The diamond shape pattern was easier for us to use," he recalls, "because it speeds up recovery. The narrow slits at the end of the pattern heal faster than a square trying to come in on all four sides."

After they had rolled the fairways, trying to close up the slices, they waited until germination before continuing with a fertilizer application. "We did not fertilize at the time we seeded because we had already made an application of starter fertilizer in April," he continues. In addition to rolling the fairways, seeding was followed by periodic waterings to keep the seeds moist.

While everything was going according to plan, mother nature again made her presence known with fluctuating temperatures and heavy rains. "Even though we did have some problems with the weather, and our recovery period was delayed, I don't think it hurt the program," he claims.

It was during this time that Portz also made a preemergent application of Tupersan for crabgrass control. "We felt this application was necessary since crabgrass germinates primarily during the time we were renovating, and we were helping make the seeds more viable by disturbing the soil. However, pre-emergent crabgrass control is a regular part of our maintenance program, so we did not include this application in our total renovation costs," he continues.

A better course at a cheap price

"We were not going after a total 100 percent change, but only a change in population. Initially, we had hoped for a 80-20 split, 80 percent ryegrass/bluegrass combination, and 20 percent *Poa annua*. That would have been fantastic," says Portz, "but as it stand now, we are nearing a 70-30 split. And, we'll be more than happy with it."

The change in population isn't the only thing making Portz and the membership of Brookside happy. "For the past seven years it has cost \$10,000 to \$12,000 to maintain the poa infested fairways. Now, after we renovated the course for \$300 an acre (not including labor), I estimate the maintenance costs will be as low as \$6,000 to \$8,000 a year. That's a savings of more than one third."

And while labor costs will continue to go up, Portz contends that additional savings will come from less

water consumption and fewer fertilizer and fungicide applications. "As of now, we have a new management program," says Portz. "We will be managing for bluegrass, not for poa, and as such we will be using less water, and fungicides, and thereby reducing overall management costs."

The key to success

"Water management is the key to success," he concludes. "I'm just going to shut it off and let the new bluegrass

stress. Any poa remaining or returning after the renovation will be reduced or eliminated through proper water management. Now I've got the poa to a population level where I can live with it and work around it without having it interfere with the maintenance and care of my ryegrass and bluegrass. My priorities are finally in the right place." □

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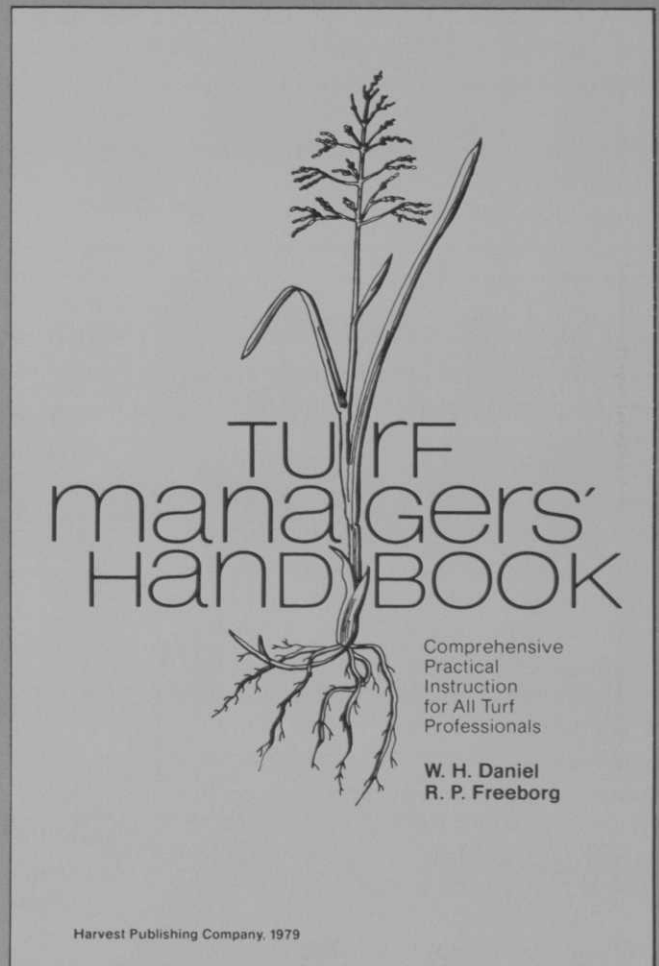
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