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Converting *Poa annua* with a pythium twist

Three years ago Jim Young, Superintendent of the prestigious Cherry Hills Country Club in suburban Denver, had a population of about 80 percent *Poa annua* on his course. He has now converted many of the fairways to rye and bluegrass, and plans to continue his unique program until he can manage the entire course for rye and bluegrass.

In addition to good timing and careful management, Young's success has had an element of luck. "In 1977, prior to the U.S. Open in '78, we were asked to sand the landing areas to keep from having muddy balls during the tournament. I decided to take that one step farther, reasoning that if I was going to topdress with sand I nor-

mally would have already completed some other preparations."

In a move that sounds more like greens management, Young decided to aerate first. After the aerating he overseeded with rye and bluegrass, and only then did he apply the sand topdressing.

Results were somewhat amazing, he reports. When the tournament was played not only the mud problem has been solved, but a very substantial amount of the *Poa annua* had yielded to the more desirable rye and bluegrass.

The initial experiment was such a success that Young went to bat with his board of directors for approval to seriously begin a program to convert



Top, Irrigation specialist Rick Robins (right) and club member Charles Hawley examine the new ryegrass and bluegrass during Spring greenup. Middle-right, and bottom, Young points out the ryegrass that is actively growing from the coring holes while the rest has been hit by pythium. Middle-left, Young feels the 2-inch spacing of tines on the Greensaire is crucial to his success.



the entire course.

This year he used his new process on six fairways. The key to his particular method involves aeration and very careful timing. In early April of this year, shortly after the last Spring snowstorm, Young proceeded to core the selected fairways. Using several Greensaires in a kind of train he was able to get deep penetration at key 2-inch intervals. The next step was sweeping up and removing the cores.

Overseeding was accomplished with a mixture of Derby, Citation and Pennfine ryegrass (4 lb./1,000) and Fylking bluegrass (1 lb./1,000). Only after the aeration and seeding did he apply the 100 percent sand topdressing. He then came back with utility vehicles and drag mats to make sure the sand worked in.

Because he started in early April he was counting on a four-week interval to get germination of the grasses before the ground temperature got above 70 degrees and the *Poa annua*

started to grow.

Young's reason for using the three-step method was two-fold. He wanted to get oxygen and water to the root-zone. This would not only help strengthen the roots of existing grasses, but would tend to reduce the surface water conditions on which the poa thrives. But secondarily he was interested in establishing a seed bed in the coring holes so the new grass could take root at or below the root level of the still dormant poa.

This year's program on the six fairways worked as well or better than any previous attempts, and Young only regrets that he did not have the time or resources to do the entire course. (His budget was burdened this year with an extensive irrigation project).

At Midsummer he was reporting a poa population of less than 20 percent in the areas which were done two years ago, and less than 50 percent on the fairways he did just this Spring. He is fully confident that these figures will improve steadily with time and good management.

"In fact, we knew we had a healthy start this year when the young ryegrass withstood a serious pythium blight outbreak which occurred over the hot and humid weekend of July 13th.

Throughout the Midwest this year Pythium blight has been a nightmare for many superintendents, and stories abound about significant losses during the hot and humid weeks of the historic heat spell. Much has been written about the problem, and as recently as June, researchers from Pennsylvania State University were talking about methods of forecasting and preventing the problem. Conversations within the month with researchers at Penn State confirmed their belief that young ryegrass is particularly susceptible to the blight.

Jim Young has reason to believe that there may be some pieces of the pythium puzzle missing.

When the blight had run its course at Cherry Hill he discovered to his amazement that the areas which he had densely aerated, overseeded and topdressed with sand had come

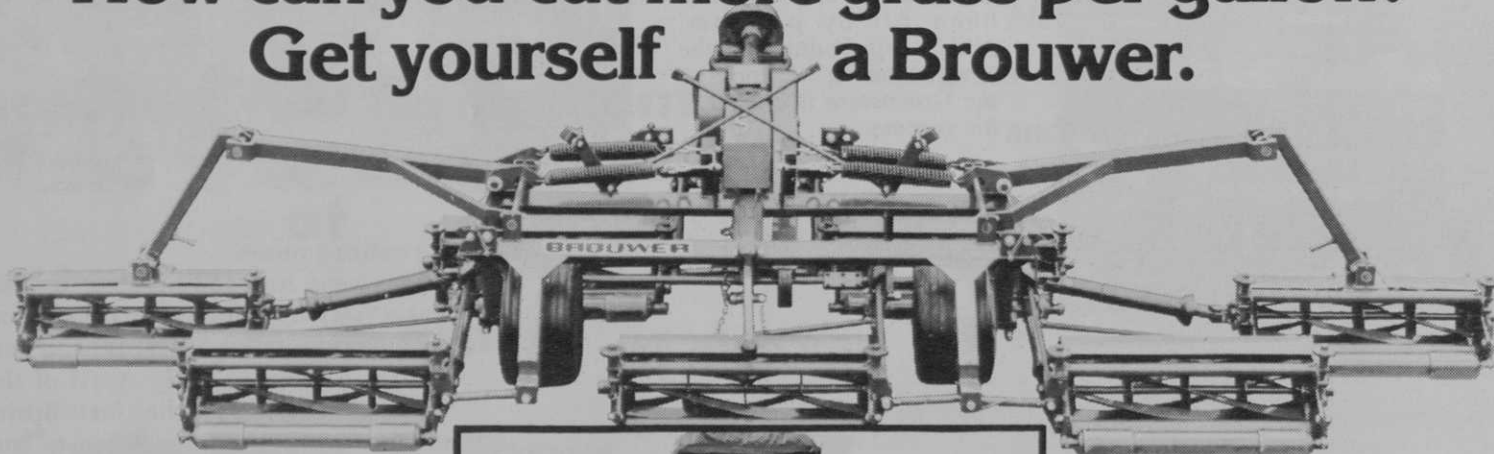
through blight rather well. In many specific areas on the course the brown, lifeless blight areas were dotted with clumps of healthy young ryegrass, growing from the core holes earlier this Spring. Areas which had been converted during a previous year were practically untouched by the blight.

"It has to be a combination of factors," he responds, "The aeration, sand and strong, deep young root systems somehow do not yield to the blight. In fact, I'm finding this ryegrass turf to be a lot more disease resistant in general." He quickly adds that the conversion process has enabled him to cut back significantly on watering. In many areas of the fairways he is down to three eight-minute sets per day.

Contacted subsequently, Penn State researchers conceded that the less frequent waterings, aeration and deep roots probably reduce the conditions which must be present for the pythium oospores to begin germinating.

Young and his general manager, George LaLanne readily agree that

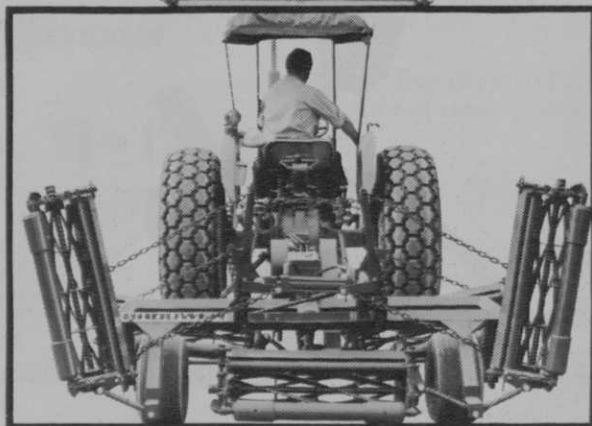
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more specific research needs to be done regarding their apparent success story. They say they are currently being contacted by other superintendents in the area who are interested in beginning the conversion process. Also, Young says national professional association types have become more than casually interested in looking more closely at some of the results in the Pythium mystery.

In the meantime, however, he is continuing his well-organized conversion and maintenance program. It has now been formalized into a five-year plan to convert the entire course to ryegrass and bluegrass, with the enthusiastic blessing of his board of directors.

Jim Young has no doubt that the program will become a significant economic benefit in the long run, and that it would also apply to many other courses in the United States. And he is even more pleased that it is being accomplished without undue inconvenience to his club members — ultimately the people for whom the entire experiment was designed. **GB**



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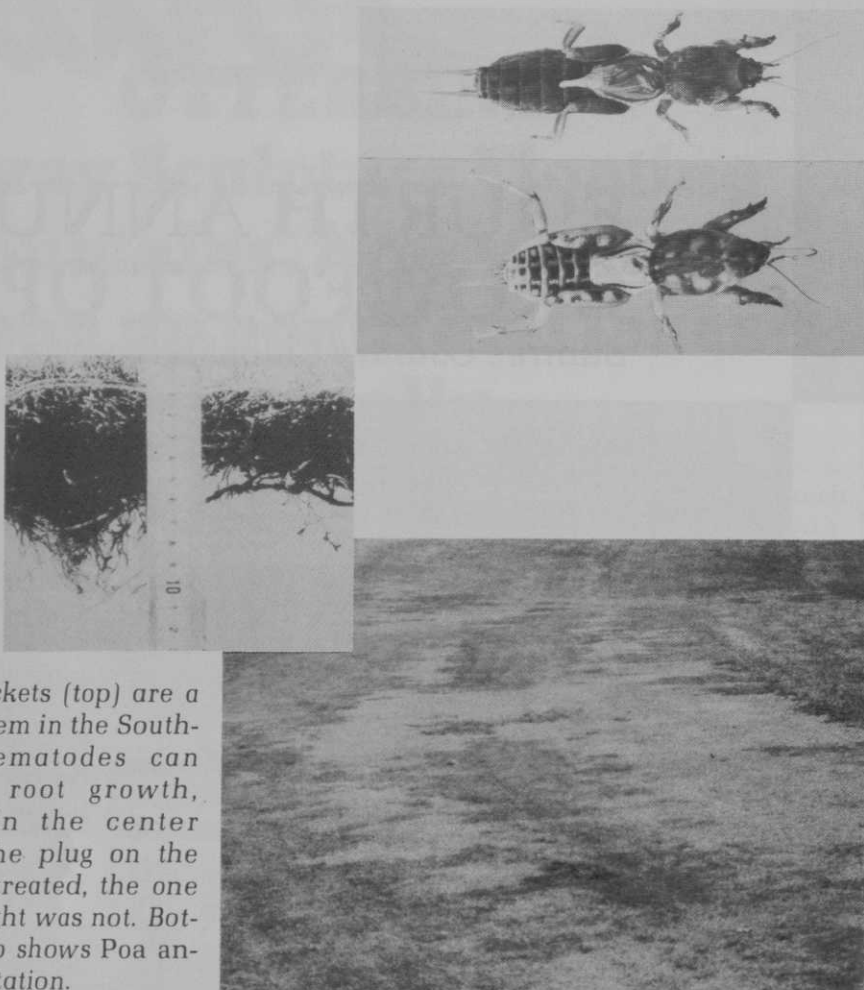
Awesome, if not fearsome, foursome. From left: C.W. 'Obie' Lawson, Woodbury Chemical Co., Stan Kleczynski, C-I-L Inc., Jim Brooks, Golf Business magazine, and Paul Deets, Woodbury Chemical Co.



Crowfoot Open Committee, left to right: Gary Morgan, Danny Aylwin, Co-chairman David Miller, Co-chairman Jim Ellison, John McKenzie and host Superintendent and committee member Tim Hiers.

USGA report: Southeastern Region

By Charles B. White, Agronomist,
USGA Green Section



Mole crickets (top) are a big problem in the Southeast. Nematodes can restrict root growth, shown in the center photo. The plug on the left was treated, the one on the right was not. Bottom photo shows *Poa annua* infestation.

The past year has been a most interesting one for golf course turf in the Southeast. Unfortunately, we have encountered a wide spectrum of problems, many of which have no simple solutions. Florida and coastline courses are coping with reduced water quality, increasing nematode and mole cricket populations. The Piedmont regions are constantly battling *Poa annua* and other weeds while the mountain courses wrestle with resistant strains of disease, *Poa annua* infestations and winter kill of bermudagrass.

One problem is shared by the entire Southeast however, and that is severe traffic! As the Southeast becomes more heavily populated each year, our golf course superintendents get further behind in the traffic war. With this in mind, let me make a plea to all golfers to please do their part in reducing wear. Keep golf carts on the paths as much as possible, and please do not follow the same routes on and off tees and greens. Worn areas have to be dealt with by all.

As I see it, golf course superinten-

dents face two major problems in the future — reduced water availability and severe restrictions on pesticide usage. The water limitations will require very careful water management, the use of effluent, and the development of turfgrasses with greater drought tolerances. Many courses in Florida and along the coast face heavy salt intrusion into their irrigation water. The salinity is not always correctable, but there are procedures one can take to reduce its detrimental effects.

Aeration with small tines and leaving the holes open help to move the salt through the rootzone by permitting greater water infiltration. The application of gypsum after aeration is beneficial in breaking up the salt radical and changing the salt molecules into a form which is more readily leached through the soil. When watering with salty water (usually 600 ppm or more), a different water management program must be initiated. One must apply more water than normal to keep the salt moving downward. Reduced amounts of water are moved

upward by capillary action which maintains a salty condition in the rootzone. This in turn causes reduced plant vigor.

The second significant problem of the future is the restrictions on pesticide materials. Already, courses in sandy regions are fighting mole crickets and nematodes with less effective materials. Concentrated efforts must be made to discover new products to better control these troublesome pests. The same is true with many diseases in the higher altitude areas of our region. Last year several courses encountered losses of grass due to fungicide-resistant diseases. This problem challenges the superintendent to be an effective chemical manager and maintain constant material rotations to prevent chemical resistance.

Better grooming of greens is another area to consider. Golf course greens are the primary playing areas on a course and, while only comprising about 2 percent of the entire course, account for one-half of the total strokes of a par round of golf. This fact, in my opinion, makes concentrated green management essential.

Grooming involves proper mowing operations obviously, but it also involves light and frequent vertical mowings and topdressings. These procedures can be done on a weekly basis in the spring and fall for bentgrass and the spring, summer and winter for overseeded bermudagrass greens.

The word "light" should be reemphasized so the vertical mowings and topdressings do not disrupt uniformity. Very light grooving encourages an upright growth habit thus minimizing grain. Follow-up with light topdressings smooths the surface and increases putting speed. These procedures are only effective when applied to a total grooming program of frequent mowing and brushing.

It goes without saying that mowing should always be done with sharp, well-adjusted mowers and brushing, like vertical mowing, only done during periods of active growth.

The golf course superintendents' profession requires as much dedication, concern, desire and hard work as any profession in our society. Superintendents deserve all the praise golfers can give them.