

stamping out POA: A SUCCESS STORY

by W.D. HAVEN

SUPERINTENDENT, GOLF AND GROUNDS
THE GREENBRIER WHITE SULPHUR SPRINGS, W. Va.

Anyone who has played golf on a course where the grass is more than half *Poa annua* knows how beautiful it can be one week and how ugly it can be the next. When the temperature rises and the *Poa* begins to die, there seems to be little that can be done to hold it. Some of Greenbrier's fairways were nearly 100 per cent *Poa*; none had less than 30 per cent. Over the years, we had

Just a few years ago Greenbrier's layout was over-run with *Poa*. But a well-planned and persistent program has reduced the *Poa* count on some fairways from 100 per cent to 5 per cent

The three-year-program called for calcium arsenate to weaken and eliminate the *Poa annua* while simultaneously seeding the kinds and varieties of grasses we wanted in place of the *Poa*.

We decided to reseed the tees and fairways with a mixture of the newest and latest varieties of Kentucky bluegrasses and the greens with Penncross bentgrass.

BEFORE:



tried every technique we knew to hold the *Poa* through the hot weather—cooling with water, spraying for disease, applying high phosphorous fertilizers, aerating and overseeding—but nothing we did worked. The seed we planted would not grow and successfully compete in the spring and fall. We even talked, but only talked, about plowing up the fairways and starting over.

Then, early in the golf season, on May 28, 1969, the 90 degree weather hit us and the *Poa* began dying fast. We had at least four more months of prime golf to go during which our three golf courses would be in dismal playing condition. We realized then that if our

courses were ever going to be first class, we had to get rid of the second class grass.

The disaster proved to be a blessing in disguise. Losing the *Poa* so early in the season gave us a unique opportunity to properly prepare to initiate whatever program we chose, at the right time, in early fall.

We began with a plan that included a definition of the problem, the material to be used, a description of the equipment we needed, timing of the treatments and some of the problems we were likely to encounter. The plan ran five pages and 1,700 words.

Greenbrier's management approved our plan. And we prepared to initiate it on August 1, 1969.

The first thing we did was buy three cutter seeders and a Gro-Lux fluorescent lamp, which was used to germinate the different grasses we planned to use in the presence of varying concentrations of calcium arsenate. The *Poa annua*, we found, was adversely affected by very low concentrations of calcium arsenate, whereas the Kentucky bluegrasses tolerated and grew vigorously in concentrations many times the amount that completely killed the *Poa annua* seed. Also, surprisingly, the bentgrasses tolerated even more calcium arsenate in the germinating process than the Kentucky bluegrasses.

On schedule, on August 1, we began cutting and seeding the fair-

ways. We set the seeders at about one-half inch because of thatch. But even at that depth the cutters did a lot of ripping and tearing on the humps and barely cut at all in some of the low spots. We seeded the bluegrasses at the rate of 40 to 50 pounds per acre. Our objective was to get the new grass established before the first application of calcium arsenate.

Because nothing was holding the thatch in place, it came up in strips at times and some soil was brought up in spots. In general, things seemed to be worse than before, from our golfers' viewpoint. However, the golfers kept playing and we kept cutting and working. It was like trying to carpet a ballroom while the guests were still dancing.

We prepared a small explanatory

It was made at the rate of 250 pounds per acre of 44 per cent granular. The new grass continued to germinate and grow. We applied another 250 pounds per acre in mid-October.

After the fairways were finished, we worked on the tees the same way, with the same applications of seed and calcium arsenate. On the greens, however, we decided to apply the calcium arsenate at much slower rates. In October and November, we aerated each green, top-dressed and seeded it with Penn-cross bentgrass at the rate of a half pound per 1,000 square feet. We then applied two pounds of 44 per cent granular calcium arsenate per 1,000 square feet and have continued that application each spring and fall on the greens.

fairway application rate. In some cases our tractor-drawn applicator had slowed down coming up on some approaches causing an over application of calcium arsenate.

Some of those approaches were 100 per cent *Poa*; we had eliminated most of it and they were very bare while the new grass was developing.

A small hand applicator was used to treat the missed strips and the bare approaches were reseeded several times.

As we got into the summer of 1970, we could see that we were gaining, but that we still had a long way to go. One surprise was the amount of bentgrass that began to appear as the *Poa* became weaker. We hadn't seeded it and we didn't know it was there. It was obvious

AFTER:



note, which we gave to each golfer as he went out to play. This helped him understand the reason for the conditions on the course and that we were not completely crazy. On August 19, we had cut and reseeded 53 fairways when hurricane Camille hit and dumped 3.08 inches of rain on us. Although we had put the seed down one-half inch, there was so much water movement it was apparent that some seed had washed away. We went over all the fairways again, using a broadcast type seeder at about 20 pounds an acre.

Two weeks later the new seed began to come up. We prepared to make our first application of calcium arsenate in mid-September.

We had considerable *Poa annua* in some greens and we didn't want to risk knocking it out too fast.

As the spring of 1970 came on, we could see that some of the new grass had been lost during the winter. This seemed to be true on the higher parts of the fairways and on some approaches.

The remaining *Poa annua* was off-color and lacked vigor. Some *Poa* had germinated in the cuts where the new grass had been lost during the winter. We could see also that we missed applying enough calcium arsenate in a strip about four to five feet wide on the approaches next to the green. This happened because we tried to avoid hitting the greens with the heavy

that we were going to have a bluegrass-bentgrass mix on all fairways.

We made our third application of calcium arsenate in mid-May, 1970, at the rate of 225 pounds per acre. As we approached midsummer, we could see where we were making progress, although to our golfers we still looked pretty poor. Some of the fairways that had been 30 to 40 per cent *Poa* were beginning to look very good, but the ones that had been all *Poa*, still had large areas where the *Poa* was gone and the new grass was sparse and immature.

The weather in September that year was a problem. Day after day it was foggy, hot and humid. Fusarium blight attacked the fair-

continued on page 51

ways that had made the most progress, and we lost about 15 to 20 per cent of the new grass. Although disappointing, it made us realize that we had to be prepared to protect our grass from unexpected diseases in the future.

In late September and October we recut and seeded again all tees and fairways. This time we added bentgrass to the mix on the theory that if we were going to have bentgrass anyway we might as well have some of the better kinds.

In mid-September we made another application of 225 pounds per acre of calcium arsenate. December that year was mild, and we made another application of 225 pounds per acre. We now had about 12 pounds of actual arsenate per 1,000 square feet.

We skipped the spring application of the arsenate because we had made one the previous December.

As the spring and summer, 1971, came in we could see visible progress. We still had problem spots

with some *Poa* and some thin areas where we had lost new grass, but we had far more of the permanent bluegrass and bentgrass than *Poa*. Even those who had been the most skeptical about the program could see the progress and began to realize it was only a matter of time until we reached our goal.

We made another application of calcium arsenate in the fall of 1971, which brought our total actual arsenate to 14 pounds per 1,000 square feet. We cut and seeded all the fairways again. The winter of 1971 and early 1972 was mild. The grass seemed to benefit from it.

We made another application of calcium arsenate in spring, 1972, bringing the total amount of actual arsenate to 16 pounds per 1,000 square feet.

By mid-July, just 12 days before the end of the three-year program, on August 1, 1972, we still had a few patches of *Poa* around some sprinkler heads, in a few low, poorly drained areas, and a little here and there around some greens. Tak-

ing into account all playing surfaces on tees and fairways, about 95 per cent of the *Poa* had been eliminated, and we had a full, uniform cover of permanent grass. Sixty to 70 per cent of the *Poa* had been eliminated from the greens.

The cost of calcium arsenate per acre was approximately \$370 for the three-year program. Other costs went for seed and labor. Because we used our regular crew, this really wasn't an additional labor expense.

Our golf courses are pretty, fun to play and more fun to take care of. We know there will be problems with bluegrass and bentgrass, such as leafspot, fusarium blight, striped smut, nematodes and others, but something can be done about those problems.

It's easy to get rid of *Poa annua*; the difficult part is bringing on the new grass, while golfers are playing on it—especially with golf cars—and when it's too wet or too dry. It can be done, however, and it's certainly worth the effort and the expense. □

Certain-teed makes the 2nd best irrigation system you can get.

First best, we'll admit, is a good soaking rain. But an underground system using Certain-teed PVC pipe comes in second to nothing else.

Economy. The overall installation cost is less. Lightweight PVC requires no special handling machinery. Joints are quickly and easily made. You get a choice of FLUID-TITE™ double-gasket joints, or deep-socket, solvent-weld joints. Fast installation saves money.

No maintenance worries. In the ground, PVC pipe is inert. It won't corrode, rot, or rust. Joints don't leak. And non-metallic PVC never needs protection against electrolytic action.

More water for less pressure. Smoothbore PVC is free of bumps

and other obstructions that could hinder water flow.

Pays for itself quickly. Because you spend less to install it, and practically nothing to maintain it. And you save because one man can easily handle a PVC system.

Get it all from your Certain-teed distributor. Including PVC fittings and all the expert supervision you need. If keeping the turf watered and green is your responsibility, specify Certain-teed PVC. You'll never have a big tournament called for lack of rain. For complete information, write: Certain-teed Pipe & Plastics Group, Valley Forge, Pa. 19481.

