

past 10 years of turfgrass research. During this decade, more than \$5 million was spent to fund more than 40 different projects to develop new grasses for golf that use less water and help lower maintenance costs, and to encourage a new generation of young scientists to become leaders in turfgrass research. The accomplishments of these projects are described throughout the report, and a list of these and other publications that have been generated by this research has been compiled. The graduate and post-

doctoral students who benefitted from grants provided through the USGA/GCSAA Turfgrass Research Program and the individuals, associations, and clubs who have contributed to the program also have been listed.

The 1992 Environmental Research Summary presents the second-year data from the 21 projects conducted in conjunction with the USGA's three-year, \$3.2 million Environmental Research Program. These studies are investigating the effects of golf course activities on the environment. A primary

focus is to determine what happens to pesticides and fertilizers when applied to golf course turf. Other aspects of the program involve the development of alternative (non-chemical) methods of pest control and the investigation of the effects of golf courses on people, wildlife, and other organisms.

The research summaries are available free of charge by contacting Mary Jane Kymer at the USGA Green Section (908-234-2300) or by writing to the USGA Green Section, P.O. Box 708, Far Hills, NJ 07931.

ALL THINGS CONSIDERED

Treat the Symptom . . . or Correct the Cause?

by JAMES FRANCES MOORE

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FIFTEEN YEARS AGO, I learned a valuable lesson from a man with almost no education who worked as a laborer on the course where I was superintendent. I was having a terrible time with skunks that seemed determined to excavate the landing areas of many of our fairways. What really aggravated me was their uncanny ability to understand which fairways showed up best through the windows of the dining room and wreak the most havoc where all could see.

To my wife's chagrin, I spent many nights cruising the course on a four-wheeler armed with shotgun and Q-beam. Everyone who drove into the club the next morning with windows open could tell if the previous night's hunt had been a success.

Papa had worked on this course for almost 30 years when I showed up as the new superintendent. I believe he was beyond surprise at the ideas and theories of new superintendents. Each morning following my "polecat round-trip," he would dutifully collect the carcasses and bury them without complaint. Had it not been for Papa's respect for my wife, he probably would never have said anything. But finally one morning Papa asked, "Mr. Jim, why don't you kill the bugs (grubs in our case) instead of worrying about the skunks?" Papa just delivered a good lesson in integrated pest management and humility all in one brief sentence.

As the years passed, I guess the lesson faded. Like a lot of superintendents, I struggled to keep up with the rapidly evol-

ving technological side of the profession. I tended to be the first to try every new chemical, and as was the case with the skunks, attacked weeds, insects, and disease organisms with a vengeance.

Last year I was taught the old lesson again, this time by a group of men on the other side of the world. For over two weeks I traveled with the agronomists of the New Zealand Turf Culture Institute. I watched these men deal with many of the same problems we encounter on our Turf Advisory Service visits here at home. (It seems that Green Committees are a global problem.) However, when it came to dealing with damage caused by non-human pests, I realized their approach was fundamentally different from my own. After diagnosis of the problem, their next step was to identify the conditions that caused the problem to occur rather than simply "writing a prescription" for the correct chemical to cure the symptoms.

Unfortunately, I visit many superintendents who would be more inclined to shoot the skunks rather than remove their food source. When faced with weak greens or unthrifty turf, they tend to look first for chemical fixes. For proof of this, just look at the barrage of new products on the market claiming to fix every soil problem and prevent every disease, all through the miracle of technology (while still being "natural" and "organic," of course). Don't get me wrong. I am not saying the use of chemicals to maintain good turf is improper. What I am saying is that it should not always be

our first option and never should be the only option we consider.

All of us must constantly remind ourselves of the basic and simple needs of turf before we begin our search for complicated, high-tech solutions. When faced with a turf problem, first ask yourself these questions:

- Is there enough light?
- Is there enough good soil?
- Is there enough water?
- Are there enough nutrients?
- Is there enough air movement?
- Is there too much traffic?

I know. These are the tired old axioms of plant management we first learned in Horticulture 101. They are neither complicated nor highly technical. We won't impress anyone with our agronomic expertise when we point out that one or many of these factors are lacking. Worst, people tend not to like the solutions to these problems. Have you tried to convince the average golfer to allow the removal of a few trees lately? Or how about keeping the carts on the paths?

While it's true that you might be able to make the weakened turf temporarily stronger by applying the right pesticide, you have only treated the symptom, not corrected the cause. While correcting the cause is almost always harder and admittedly sometimes impossible, we all need to at least make the effort. We owe it to our employers, our industry, and ourselves.