

CHEMICAL RENOVATION ON LARGE COLLEGE CAMPUS

When Charles Craig became the horticulturist for Mercer County Community College, Trenton, N.J., in 1976, he inherited 35 rolling acres of coarse grasses and broadleaf weeds. Fearing erosion problems and faced with a limited budget, Craig investigated "no-till" renovation, a new practice at the time.

Craig enlisted the help of Dr. Henry Indyk, extension specialist in turfgrass management at Cook College, Rutgers University. Together, Indyk and Craig planned and carried out a renovation program using Monsanto's Roundup. Their results were presented at the New Jersey Turfgrass Expo at Rutgers last fall.

While studying his alternatives, Craig received a quote from a local landscape contractor with the following rates: 35 cents per square yard for reseeding and mulching and 16 cents per square foot for sodding. These rates included all required tillage and fertilizer for both methods, plus initial watering. The cost for reseeding all 35 acres totalled \$59,290 and \$243,939 for sodding.

Indyk suggested chemical renovation. "I'd done a little plot work on chemical renovation and had followed the results of other tests. I'd seen enough to convince me that it could be the answer to Charlie's problems." A factor in the selection of Roundup was it was barely out of the experimental stage and Indyk saw the opportunity to try the product on a previously untried large-scale basis.

"When Indyk and I discussed the idea, we

agreed that if it failed, we'd probably have to hide under a rock," Craig recalls. "From early September, when all we had was acres of brown stubble, I felt like I was hanging by my thumbs. Explaining what was going on became almost a full-time job." By November the suspense was over and the need to explain ended.

Roundup offers control of existing vegetation without residual action in the soil. Applied on actively growing vegetation, the herbicide is absorbed through the leaves and translocated into the plant's root system, so it destroys the entire plant, including the reproductive root systems. Because there is no residual soil action, turfgrasses may be seeded a few days after the chemical's application.

The herbicide was custom applied on August



Charles Craig, (above) Mercer Community College Horticulturist.
Dr. Henry Indyk, (right) turf specialist at Cook College, Rutgers University.





Applicator prepares boom to spray Roundup on part of the 35 acres.

15. Weed and grass species present included bentgrass, orchardgrass, quackgrass, tall fescue, red and white clover, dandelions, plantain and nutsedge.

Control was complete. "The only places that required follow-up treatment were those spots the sprayer had missed," Indyk notes. Those missed areas were then spot-treated on August 22.

Seven days after the spot treatment, Craig's crew verticrooved the soil to a depth of ½ to 1 inch and seeded a recommended turfgrass mixture. They used a Jacobsen 548 Aeroblade and seeder, cross-seeding to obtain a faster knit.

The turfgrass mixture contained 35 percent Kentucky Bluegrass; 25 percent Baron Kentucky Bluegrass; 10 percent Majestic Kentucky Bluegrass; 10 percent Jamestown Chewings Fescue; 10 percent Diplomat Perennial Ryegrass and 10 percent Yorktown Perennial Ryegrass. Seeding rate was 2 to 2½ lbs. per 1,000 square feet.

Rolling or dragging with a mat can be beneficial after such a no-till seeding, Indyk points out. But in this instance he did not feel it was necessary.

"I was confident we had the Aeroblade properly adjusted and were getting good seed-soil contact," he explains.

If possible, such a new seeding should be kept moist with frequent irrigation, Indyk adds. Since light rain fell every week, Craig was relieved of that requirement.

After seeding, germination started in about five



An Aeroblade and cross-seeding were used prior to seeding to help obtain a faster knit.

days, but there was still the long wait to see whether the new seeding would take hold and cover the ground. Meanwhile, the students and faculty were arriving for the fall term and there were lots of questions about the condition of the turf. But by the end of October the new growth had taken hold and Craig and Indyk knew their experiment was successful.

Summing it up, Craig lists his main costs as \$5,950 for herbicide and grass seed. Other costs included custom application of the herbicide and labor and machinery costs for seeding performed by his own crew.

"It's difficult to compute the exact cost per acre," Craig says. "But it's safe to say that if this method had not been available, we simply could not have afforded to renovate those 35 acres with our limited funds and manpower."

The new seeding also received fertilizer, of course. But Craig points out that the fertilizer cost should not necessarily be considered as a renovation cost since he normally fertilizes turf at that time of year anyway.

A soil test had shown pH levels to be adequate and recommended an application of 600 lbs. per acre of 50 percent organic 10-6-4. Wet soil conditions prevented making the recommended pre-plant application, so Craig shifted to a post-emergence treatment. He reduced the amount to 400 lbs. to guard against burning of the young seedlings.

During the course of the renovation, Indyk and Craig concluded that the process offers some other advantages in addition to cost savings. "Since you don't have to till, the soil remains firm, making better conditions for subsequent machinery operations such as seeding," Indyk observes. "When you till, there is a certain period of time before the soil firms up. And killing the existing vegetation with a herbicide, rather than turning it under, automatically provides a mulch to protect the soil and creates better conditions for the seed to germinate."

"Avoiding plowing, disking and raking saves a lot of time and labor," Craig says. "And since you don't till, there are no rocks or buried weed seed brought to the surface. Also, with Roundup, you destroy the entire plant, including deep-growing roots and rhizomes that you can't get with a plow or rototiller."

Naturally, Craig and Indyk point out, areas of poor growing conditions caused by compaction, shade or inadequate drainage must be corrected before renovation is begun. On one old construction road where compaction was a problem, they plugged and added topsoil. In a low area, too deep to build up with topsoil, they used a posthole digger to drill vertical cores into the subsoil, which they then filled to ground level with 3/4-inch clean stone. With the problems corrected, renovation was successful in both places. **WTT**

IT'S WAR

The Ataenius Beetle attacks by night leaving golf courses battle scarred in their wake.

No turf or course is immune to assault and the right chemical to dispose of the Ataenius effectively and legally is still being researched.

The cost to a golf course chosen as an attack site can be phenomenal, the damage devastating. As in any declared war, emergency funds are urgently needed to destroy the threat once and for all.

"The situation is serious," says Dr. Fred V. Grau, president of the Musser Foundation, "and is bound to get worse."

With your help the battle can be won, hopefully before your turf becomes a victim of war.

Contributions to combat the Ataenius could save millions of dollars of unnecessary repair work.

To help in the fight, send your contributions to:

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Ben O. Warren
Treasurer, MITF
8400 W. 111th Street
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