

when it comes to insect control, and they provide different advantages and disadvantages.

Most biological control products (but not all) are going to require application to a specific insect life stage, maintenance of a certain environmental condition for a few days after application (i.e. frequent light irrigations), a little more patience in the time to control the pest and a little extra effort in the application.

Recent studies, including the research we have underway at North Carolina State University, (see the collaborative article by Sarah Thompson and myself on page 55) have helped us understand some of the problems associated with biological control.

Insects have some remarkable qualities that help them avoid the detrimental affects of exposure to these control agents. We will ultimately be able to use these control strategies more effectively as we understand more about these interactions with the pest and the biological control organism.

Resistant turf types: Several programs around the country have focused on the development of turfgrass cultivars that are resistant to certain pests, including insects. These include armyworms, chinch bugs, and mole crickets. In some cases, it has been through the use of endophyte-enhanced turfgrasses that toxins are provided to protect the plant primarily from surface feeding pests. In other cases, a level of protection is also provided against soil pests. This has been used in areas that grow cool-season turfgrass and is not available in warm-season turf types.

Other programs have sought to develop varieties that are either more tolerant to insect feeding, less preferred by the insects or offer some protection through a toxin or physical barrier. Check with local experts on what is available and adapted to your area.

Conclusions

When you consider the dramatic change in regulations and public perceptions that have occurred in the turfgrass industry the past few years, it's obvious that the rules for controlling turf pests have changed considerably — and they're not going back to where they were before.

One look at the changing situation in Canada with local legislation reducing or eliminating the option of using conventional pesticides on turfgrass for cosmetic purposes tells us that pest management in turf will be an ever-evolving process.

As pest control options change, it becomes increasingly important that superintendents' knowledge of pests (weeds, insects, diseases, nematodes) is up to date. Understanding pest biology and ecology has never been more important. As our control approaches get more sophisticated, our knowledge of the pests we battle must keep pace.

Increasing your knowledge base about pests will never

work against you. It can only help. It's sort of like what we tell our kids when they ask why they have to take certain classes that they see no use for in the future. We tell them, "Trust me, you'll be glad you took it. You'll need it someday."

The same is true for gaining a good understanding about all the pests you battle.

Brandenburg is a turfgrass entomologist at North Carolina State University.

TURFGRASS TRENDS

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Congratulations. You've finally landed your first assignment as a superintendent after spending all that time being someone else's grunt. With diploma in hand and experience under your belt, you stroll into the maintenance facility on your first day full of hope and fresh ideas. The crew gives you only a lukewarm welcome since you're the new guy and couldn't possibly know any more than they do.

Little by little, though, you break down their resistance and learn about the things that happened before you. You discover what worked and what didn't, and you plug those discoveries into a success formula of your own.

The ownership seems excited about having a new superintendent, and welcomes your enthusiasm and suggestions for improvement. After a tour around the course with the owner and pro, it's obvious that this little, old golf course has seen better days, and you are bound and determined to bring those days back. After all the years of neglect, raising the standard around here will be a piece of cake.

Wait a minute. Hold that thought right there. Are you thinking what I think you're thinking? Do you think you can just waltz in to this new position, lay down a few stripes, rake a few bunkers, make a few improvements and be the club hero?

Well, think again, my friend. I'm here to tell you that before you can go around raising club standards to your own levels, you had better be in fine tune with what standards the club can handle. It's one thing to come in and make improvements, elevating the quality of conditioning to acceptable levels. But it's another thing to go around raising standards without first giving it some serious consideration.

What you must realize is that you're raising the club's expectation of your performance by raising the standard of the club's condition and quality. Unfortunately, some clubs will not understand that there's a limit to the quality you can achieve with the resources your club is able (or willing) to provide.

After you've raised the bar as high as it can go, they will not understand that it's unfair of them to expect you to raise it even higher without first giving you more to work with.

Raising the Bar? Just be Careful

BY JIM BLACK



YOU'RE RAISING THE
CLUB'S EXPECTATION
OF YOUR
PERFORMANCE BY
RAISING THE
STANDARD OF THE
CLUB'S CONDITION
AND QUALITY

With that in mind, I'd like to offer new and future superintendents a few things to think about and help them determine the factors that make up the standards of the clubs they might be joining.

■ **Budget considerations.** You must realize there may not even be a set budget at some small clubs, which are more pay-as-you-go operations.

■ **Labor restrictions.** How big of a staff will you be allowed to work with and what is the quality of that staff? Will it be a 12-person crew comprised mostly of high-school kids making slightly above minimum wage who couldn't care less about what they're doing? Or will it be an eight-person crew with adults who pay attention, follow directions and have a conscious awareness about the paying customers?

■ **Equipment concerns.** How much can you realistically accomplish with the equipment you have, and what will the club allow as far as equipment upgrades?

■ **Member/customer expectations.** What is more important to your main clientele — green speed or green turf? If the word "Stimpmeter" is heard in many conversations, prepare yourself for mind-numbing comments like, "I don't see why our greens can't be as fast as Augusta's."

■ **Owners' expectations.** Learn as much as you can about your owner's knowledge of the golf business without being nosy about his business. Get a good feel about his level of respect for your position.

Unless you are in a position to make changes for the better, I suggest you keep your elevation-of-standards efforts in check — or you just may elevate yourself right out of a job.

Jim Black, a veteran public golf course superintendent, can be reached at greenkeeperjim@yahoo.com.

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Tom Ohlson, CGCS, Golf Course Superintendent, Fall River Country Club, Fall River, MA



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Rough

IN THE

Golfers' expectations for improved turf have extended to the rough. Mower manufacturers are responding to superintendents' needs with better machines

By Larry Aylward, Editor

Remember Doc Brown, the eccentric scientist who invented time travel in the film *Back to the Future*? Roger Kisch, superintendent of Southview Country Club in West St. Paul, Minn., doesn't look like the beedy-eyed and bushy-haired doctor, but he thinks a little like him.

Kisch, who celebrates his 39th anniversary at Southview this month, has always been an inventive superintendent. "Gadget" is his middle name. "I'm always looking for a better way to do things," he says.

Back in the mid-1980s, Kisch sought a better way to mow his course's rough. He invented a quirky-looking mowing system that combined three 21-inch rotary mowers. Kisch's system worked so well that National Mower, a St. Paul-based mower company, began manufacturing Kisch's invention last year. It's now called the I-Gang 3 tow-behind rotary mowing system.

Stan Kinkead, president of National Mower, says superintendents are impressed with the I-Gang 3's quality of cut. That's good because the rough is getting more attention these days because golfers expect wall-to-wall maintained turf. Like ivy unfurling rapidly up the side of a brick house, golfers' expectations have spread from the greens to the fairways to the roughs.

Todd Ford, superintendent of Lakes of the Four Seasons Country Club in Crown Point, Ind., notices the trend. "I've been at this club for a year and a half, and the roughs seem to be more important than anything," he says.

Like National Mower, the nation's other mower manufacturers are implementing improvements in their machines to keep up with the trends in the rough — from good-looking turf to quality of cut.



National Mower's Stan Kinkead and superintendent Roger Kisch show off the I-Gang 3 earlier this year at the GCSAA Show.

"There's no question that roughs are becoming an area where there's more demand for quality of cut," says Mike Koppen, group product manager for John Deere and Co. "If your roughs aren't up to par, you're probably going to get negative comments."

Jeff LeFever, The Toro Co.'s senior marketing manager for golf, likens what's going on in turf maintenance to a homeowner refurbishing his house.

"When you improve one room, the next room looks like it needs more work," he says. "We're seeing increased attention everywhere on the course, and roughs are every bit as much a part of that as the fairways and greens."

Better mowers

Southview Country Club, built in 1919, features a lot of undulations in the rough and areas near tees and greens. Kisch and his crew were forced to hand-mow the turf with 20-inch rotary mowers. "But we found we didn't like pushing those mowers up and down those hills," Kisch says.

That's when Kisch got to thinking like Doc Brown. His idea was to hitch three rotary mowers together and tow them behind a golf car or a four-wheeler to cut the rough. "It worked fairly well," he says.

Occasionally, a superintendent from another course would stop by Southview and see the course's nice-looking and

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NATIONAL MOWER

In The Rough

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unscalped bluegrass rough. "He'd ask, 'What did you use to cut around the greens?'" Kisch says.

Area superintendents began asking Kisch how they could get their hands on the three-mower contraption. Finally, Kisch told his friend Kinkead that other superintendents were interested in his mowing creation. That's when Kinkead decided to manufacture Kisch's invention — with a few modifications — resulting in the I-Gang 3.

"We took Roger's original design and beefed up everything," Kinkead says. "We made heavier decks and put a good set of wheels under them with double-bearings."

Kinkead also made the mower more user-friendly. The original design had three mowers with separate gas tanks and rope starts. National Mower's design has three mowers but only one gas tank and a remote starting system.

Kinkead says he was attracted by the simplicity of Kisch's creation, which didn't feature a super-sophisticated hydraulic drive or other fancy components.

"It only weighs 450 pounds, so it can be pulled with a lightweight piece of equipment," Kinkead says. "I thought it would be a good opportunity to present a lightweight machine for mowing around greens and tees."

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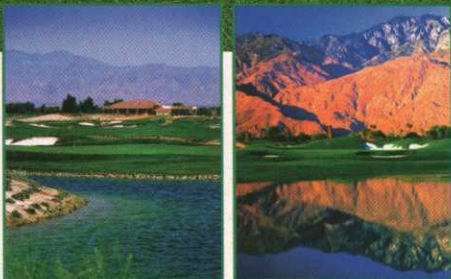


THE TORO CO.

Toro's Groundmaster mower is a popular rough mower. Jeff LeFever, Toro's senior marketing manager for golf, says superintendents want rough mowers that offer a consistent cut and are able follow the contour of the turf.

Princess 77 Provided Cimarrón Golf Course with the Cost Effective Solution for Their Renovation Project

Mario Aguiar, Golf Course Superintendent for Cimarrón Golf Course in Cathedral City, California kneels on a renovated fairway of Princess 77.



*Response of Bermudagrasses and Zoysiagrasses to Applied Water Using a Linear Gradient Irrigation Design, Sean Reynolds, 2000, Master's Thesis



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In The Rough

Continued from page 78

Kinkead also likes that the I-Gang 3 can mow over lumps and bumps with the consistency of a reel mower. While giving demonstrations of the mower this summer at various courses, Kinkead says he received funny looks from superintendents regarding the mower's peculiar design. "They just kind of smirk," Kinkead says. "But then they see what it can do."

With the I-Gang 3, which features a 56-inch-wide swath, superintendents can cut down on the time and labor it takes to walk mow the rough. Yet the rough still retains a walk-mown look, Kinkead says.

Toro, Deere and Jacobsen also offer rough mowers for improved quality of cut in the rough.

Toro offers its Groundsmaster 4500-D and 4700-D, which have five and seven free-floating Contour Plus rotary cutting decks that follow the contour of the turf.

Deere offers its 3245C Independent Rotary Deck Mower, which features five 21-inch rear-discharge independent rotary decks for a cutting width of 90 inches.

Jacobsen offers its redesigned AR-5 fine-cut rotary mower. The lift arms on the AR-5 were redesigned to keep the cutting decks in the same vertical plane continuously. This allows the decks to float straight up and down independently to deliver improved ground-following capability over irregular contours.

Ford says frequent rains lead to fast-growing turf, so he prefers using a rotary mower in the rough and on banks around greens and tees. Ford recently purchased the Jacobsen AR-5, which he says is productive and powerful in thick turf. Also, he likes that it stands up grass rather than pushing it down like reel mowers do with their rollers.

LeFever says there's been a shift from reel mowers to rotary mowers the past few years for productivity reasons. But he quickly notes that some superintendents have switched back to reel mowers for a better quality of cut. Opinions abound about whether rotary mowers leave more thatch and spongy textures in turf, LeFever points out.

"It's a horse race [to determine] whether superintendents are using a rotary or a reel in the rough," LeFever says. "It's up to the superintendent to determine what his goals are."

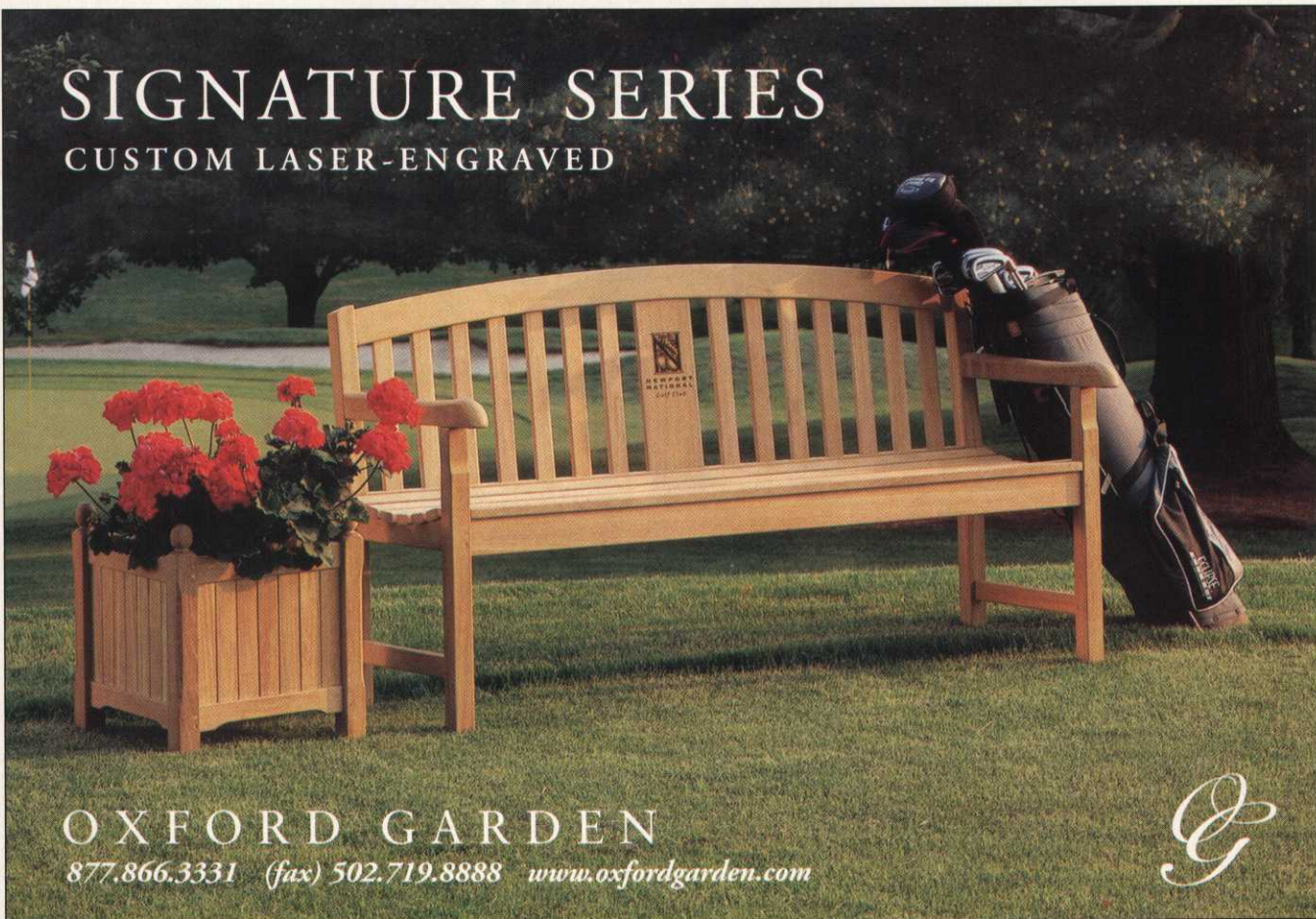
Manufacturers are also improving rough mowers' margins for trimming around trees and other hard-to-reach areas.

"You must have a good machine that operates well on hills," Koppen says. "Maneuverability is important because of trees and obstacles."

Koppen says superintendents also want rough mowers that are simple to maintain. That said, Koppen says more golf course maintenance departments are switching from reels to rotaries because of ease of maintenance. ■

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