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As life grows increasingly complex for mechanics, the old maintenance mantra will change. Where a guy in the shop once said, "Don't worry, we can fix that," his new slogan may be, "If it's broke, don't fix it."

Fairway mowers fall into the hard-to-repair category: As the machines become more advanced, a mechanic's job shifts focus to preventative maintenance.

Ron Amorelli, service manager at Golf Ventures in Lakeland, Fla., agrees troubleshooting has become more difficult.

"It's harder because of the evolution of the machine," he says. "It's gone from



Tangled Up in Fairway Mowers

In this high-tech age, it's complicated, but you can keep your equipment rolling down the fairway

By Bruce Allar

a mechanical machine to a hydraulic piece of equipment driven by electronics."

Golf Ventures sells Textron Turf Care And Specialty Products, including Jacobsen fairway units, and Amorelli cautions that certain repairs are best left undone at the course.

"Anytime you need to open up a hydraulic system, you need to contact a dealer because contamination can ruin it quicker than anything — and maintenance shops aren't the cleanest places," he advises. "Some mechanics can do it, but they're few and far between."

Let's face it: Most mechanics, who trained on gas rather than diesel engines

Fairway mowers, because of their complexity, force mechanics to focus on preventive maintenance to keep them cutting properly.

and are stumped by solenoid switches, are like doctors trying to diagnose on a hunch in the age of the MRI. They're often shooting in the dark.

And misdiagnoses can do even more harm to equipment. John Oldenburg, manager of technical services at Textron's home offices in Racine, Wis., says incorrect assessments can cost several hundred dollars in fruitless repairs. "Customers spend a lot of time changing parts needlessly," he adds.

The "reel" truth

So what to do? You have a trio of \$35,000 mowers, and you want to keep them churning down the fairways.

One answer might be to obsess over the cutting units. When they're not properly height-adjusted or when they aren't cutting well, golfers notice immediately. Brad Humphreys, assistant superintendent at Oxmoor CC in Louisville, Ky., removes all five reels from each fairway mower twice a year, replaces the bed-knives, sharpens the new ones and checks the bearings. Any drag in the bearings calls for a replacement.

He tries to avoid the common prac-

tice of backlapping with the reels still attached to the mower.

"I don't like to (backlap) because I don't feel like I'm doing a good job of getting the reel and bedknife adjustment on both sides," Humphreys says. "I like to take the reel off and put it on its side so I can look down at the face of the bedknife and the reel to get my true adjustment."

Even sharp reels and bedknives may remain out of adjustment because of previous encounters with rocks or a sprinkler head — or even from previous shop work.

To test for misalignment, Tim Cunningham, superintendent at The Country Club at Fox Meadow in Medina, Ohio, folds up a newspaper and runs it lengthwise along the bedknife. If it doesn't cut all the way across the newspaper, Cunningham rehones by backlapping.

"The reels tend to get cone-shaped," he says. "Backlapping brings them back into good cutting form."

To achieve all-important uniformity in cutting height among the reels, Oldenburg advises daily greasing and adjustment, plus regular bearings checks. Daily servicing is a dream for most, but reels not inspected regularly risk throwing off cutting adjustments.

Oldenburg also stresses blade sharpness. Many crews stretch the time between sharpenings and compensate by tightening down the reels closer to the knives, eventually pinching grass instead of cutting it. This also heats up the blades and the hydraulic system, shortening the life of components.

A hydraulic lift

Operators form the first line of defense against grass-killing hydraulic leaks.

"Some guys I've seen mow two or three fairways with a broken hydraulic hose until they're out of oil and it quits," Humphreys says. By then, pumps, transmissions, reel motors — and your reputation with the membership — may be on the line. "So I tell them when they see a hydraulic leak, stop the machine, wait and someone will call me," he says.

Humphreys instructs his workers to drive 5 mph to 6 mph and set the reel

speed at wide open to keep the hydraulic fluid coursing through the unit. He changes hydraulic fluid and filters every 200 hours, a full day of service. He greases every 40 hours (or once a week), replaces the oil and oil filter every 50 hours and the air filter anywhere from 20 hours to 150 hours.

"You can't blow the air filter out with an air hose because you're just digging that dust right back into that filter, and it's putting little holes in it," he notes. "It's going to eventually draw that dust through the filter into the engine."

Humphreys purchased an auto mechanic's hydraulic lift for less than \$4,000 and customized it in his shop for narrower wheel bases, saving himself several thousand dollars off the turf lifts that he priced at about \$10,000. He has also discovered

MOWER MAINTENANCE

Here are a few tips that will help you keep your fairway mowers running at peak performance:

1. Inspect the cutting units on a regular basis.
2. Sharpen dull blades to keep them cutting evenly.
3. Grease the arms to prevent the switches from getting out of adjustment.
4. Train your workers in all aspects of mowing.
5. Add a 12-volt test light and an ohmmeter to your toolbox.

during his two years at Oxmoor and previous service at Desert Mountain Properties in Scottsdale, Ariz., that some of the fluids and oils sold by manufacturers are "either regular Dexron transmission fluid or 10W30, 10W40 with pink dye in it." His solution: Buy 55-gallon drums of "spec" oil and save some money.

Train and test

As with all other aspects of equipment maintenance, training workers is vital. "Start with a good operator training pro-

gram and have an experienced individual work with new operators," Oldenburg suggests.

Teachers should demonstrate how to mow hillsides, around bunkers and in other problem areas. Consider partnering with other local courses to bring in an expert for a seminar. Above all, teach workers to be observant.

"I always say, 'Sight, sound and smell' — if any one of those is different, make note of it," Oldenburg says. "Also, define who is really responsible for daily maintenance — and make sure that person does it each day."

Humphreys upgraded his tracking system, putting it on a computer software program. He enters the hours a machine has been run and the program cues him when service is needed.

But in this computer age, it's often difficult to determine what you can repair yourself. Humphreys gets frustrated by "black box" problems on his mowers and the guesswork involved with the solenoid switches. (With certain newer models, mini-computers are being supplied by manufacturers that aid in troubleshooting, according to Cunningham: "Green means OK; red means trouble.")

"You'll see more diagnostic uses of [computers] rather than to power equipment," Amorelli says. "The environment is too harsh for a computer to function. It's not a spaceship."

He recommends two simple devices for the technologically challenged: a 12-volt test light and an ohmmeter. The test light indicates whether a circuit is grounded or has a hot wire, and the ohmmeter measures voltage. Most electronic hydraulic valves need 12 volts to turn. These electronic devices can pinpoint a problem area.

If you're like many superintendents and golf course mechanics, you're not armed with these tools. It's time you add them to your trade. ■

Bruce Allar, a freelance writer from Floyds Knobs, Ind., says that even Mr. Goodwrench would have a helluva time fixing a fairway mower.



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Turf tamers

Why use growth regulators?

Increasingly, the more cogent question is, "Why not?"

By Frank H. Andorka Jr., Associate Editor

Turf control used to be easy. Superintendents mowed fairways and greens to the length they wanted. When the grass grew, they simply mowed it again to the same length.

Lately, however, growth regulators have changed the way turf is managed. Now turf growth is handled chemically, and superintendents can be forgiven if they think they need a degree in organic chemistry to sort out the choices. With so many products on the market, choosing one is difficult. But experts say the best way to find an effective plant growth regulator is to look at the testing data — then figure which one will work best for your course through trial and error.

"It's a long way from a patch of turf at a university to what you'd actually use on a golf course," says John Chassard, superintendent at Lehigh CC in Allentown, Pa. "All those university tests can give you a base from which to work, but you really have to learn how to use them on your own golf course."

Dennis Shepard, director of Primo

growth regulator research for Greensboro, N.C.-based Novartis, agrees. Though the companies that produce the chemicals can provide a superintendent general guidelines for use, only experience tells superintendents exactly the right dose to use.

"No matter what we do in the lab, you're going to find differences in effectiveness depending on your region and how you're using it," Shepard says. "We're still learning, even though we've been manufacturing the products for years."

Growth regulators operate chemically on turf in one of two ways:

- Type I regulators inhibit cell division in the grass.
- Type II regulators stop the turf's production of gibberellic acid, an amino acid that causes grass cells to elongate.

The differences between the regulators don't stop there. In addition to controlling turf growth in different ways, growth regulators are also taken into the plant differently, Shepard says. In general, turf leaves

THE PRODUCTS

Plant growth regulators and the companies that make them:

Product	Company
Proxy	Rhone Poulenc
TGR	Scotts
Primo	Novartis
Cutless	Lesco
Embark	PBI/Gordon

SOURCE: DENNIS SHEPARD, NOVARTIS CORP.; KARL DANNENBERGER, THE OHIO STATE UNIVERSITY

PHOTO: MIKE KLEMM

ulators percolate through the soil and move through the roots. And if things weren't complicated enough, there is at least one exception to these rules: Novartis' Primo. It works like a Type II inhibitor by blocking a specific gibberellic acid, but it is taken in through the leaves.

"We're trying to get the whole classification system changed because the technology is changing so fast," Shepard says.

Novartis proposes changing the classifications to Class A, Class B, Class C and Class D, but those classifications have not become standard yet.

Karl Danneberger, professor in the Department of Horticulture & Crop Science at The Ohio State University, says growth regulators lower costs on two fronts. First, labor costs fall because greens and fairways need fewer mowings. Second, regulators reduce maintenance costs because fewer mowings cause less wear-and-tear on equipment.

When growth regulators first came on the market, knocks on them included reduced root growth, discoloration, thinning of the grass and lack of uniform response by the turf, Danneberger says. Those symptoms, however, have lessened in recent years as new products have come on the market. The advantages of regulators now outweigh the disadvantages, he says.

Andree-Anne Couillard, technical service manager for The Scotts Co., says growth regulators keep grass greener and increase its density, providing a better playing surface for the customer. Marysville, Ohio-based Scotts produces a series of growth regulation products under the TGR banner. TGR regulators move through a plant's roots to inhibit the production of gibberellic acid.

Growth regulators will not work as a panacea for all turf problems, Couillard stresses.

"You have to figure out what your goal is before you apply any of these products," Couillard says. "You also have to pay attention to the labels, and you want to be careful not to overregulate the plants."

Couillard says superintendents need to choose regulators on the basis of season, turf species, maintenance practices and soil type. "Those things will help you decide how much of a product to use, which product to use and when to use it," she adds.

Roy Mackintosh, superintendent at Twin Hills CC in Longmeadow, Mass., says his son introduced him to Primo four years ago and he has used it ever since. Growth regulators, in his experience, allow superintendents to cut grass at lower heights, while maintaining the overall health of the turf.

"It's all driven by golfer demand," says Mackintosh,

TIPS FOR GROWTH REGULATOR USE ON GREENS

1. Consider combining regulators with iron products.
2. Light, frequent rates often work best.
3. Don't lump all growth regulators together — know your specific product.
4. Test tank mixes on small areas first.
5. Keep the greens regulated on a consistent schedule.
6. Treat turf before summer stress sets in.
7. Consider tank mixing with a chelated manganese product as well.
8. Don't skip any applications.
9. Be cautious with fall applications because they will mask the work of fertilizers also applied during that time.
10. Never use a PGR with the sole intent of improving green speed.
11. Be aware that non-foliar PGRs produce a build-up in the soil that needs to be monitored.
12. Granular PGRs can be more forgiving.
13. Keep the mower heights consistent.

who became a superintendent in 1964. "The growth regulators allow you to give golfers the green speeds they demand. They also provide a better root system, better color and more dense turf."

Mackintosh says regulators also condition grass to withstand the stress it undergoes during the season.

"We had a period this year where we had 30 days of 90 degree or better temperatures," Mackintosh says. "Our grass held up well, and I have no doubt that it had a lot to do with the growth regulators."

Chassard has been using Scotts' TGR on his bentgrass fairways to limit the growth of poa annua. He said his turf held water better, and the TGR decreased the poa annua seedhead production at his course.

Danneberger says seedhead reduction was originally an unintended side effect of the growth regulators, but it's now a mainstay in all regulator products.

"It suppresses poa annua and allows for a purer turf to emerge," Danneberger says. "With all of the other advantages regulators offer, this helps make the case for regulators more complete."

Danneberger says research suggests that Embark by PBI Gordon produces the best seedhead suppression, but as with all research, it is not the final word on effectiveness. Trial and error will help superintendents hone their programs, he says.

Like Mackintosh, Chassard says regulators also help him maintain more consistent green speeds and produce smoother putting surfaces.

"There's nothing worse than having someone complain

Continued on page 58

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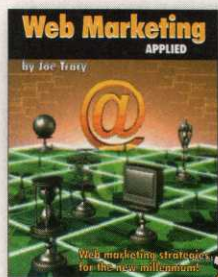
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Turf Tamers

Continued from page 57

that the greens were inconsistent," Chassard says. "The complaints dropped off once we started with the TGR."

It also cut his clippings intake in half, which allowed Chassard to cut back on labor costs and kept his machinery sound.

But Chassard does not use TGR exclusively and is looking at using Primo full-time next spring. For now, Chassard mixes low doses of TGR and Primo to work in tandem. While TGR has worked well, changing chemistries has convinced Chassard to alter his approach.

"The Primo allows me to control the application a little better because you don't have to water it in," Chassard says. "There are fewer factors that can mess up an application of Primo and having that control is worth it to me."

It is possible to overdo an application of growth regula-

IN CASE OF OVERDOSE . . .

Tips on how to deal with an accidental overapplication of plant growth regulators:

- Low-cut your grass and collect the clippings to head off foliar absorption of the regulator.
- Use a vacuum to pick up excess granular products.
- Aerate to head off the effects of a watered-in regulator.
- Overwater the grass to leach out products.
- Apply a product containing gibberellic acid as a last resort.

tors, however. Couillard says label instructions should always be adjusted to fit varying circumstances, but be prudent in regulators' use. In case of an accidental overdose, Couillard says superintendents can counteract effects.

"There's a lot of flexibility within the products on how they can be used," Couillard says. "Do your homework. These products can help you out."

Novartis' Shepard says growth regulators have come a long way from the early days of hit-or-miss success.

"We've gone from a situation where no one was sure whether they would even work or not to a situation where people are using them to improve their turf," Shepard says. "When superintendents look at them in the long run, the products pay for themselves."

As more products enter the market, Danneberger says superintendents can only benefit.

"As with any other product, increased specialization will give superintendents more choices to help them produce the best golf courses possible for their customers," Danneberger says. "Once superintendents customize their goals, they will be able to customize a program that will help serve those needs best. In the end, that's what will help make their jobs easier." ■

SOURCE: ANDREE-ANNE COUILLARD, THE SCOTT'S CO.

Golfdom

January 2000

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| 02 <input type="radio"/> 20 Semi-Private | 08 <input type="radio"/> 70 Golf Course Developer |
| 03 <input type="radio"/> 30 Private | 10 <input type="radio"/> 90 Golf Course Builder |
| 04 <input type="radio"/> 40 Resort | 11 <input type="radio"/> 105 University/College |
| 05 <input type="radio"/> 50 City/State/Municipal | 12 <input type="radio"/> 100 Others Allied to the Field |
| 06 <input type="radio"/> 55 Other Golf Courses
(please specify) _____ | (please specify) _____ |

2. Which of the following best describes your title? (fill in ONE only)

- | | |
|--|--|
| 13 <input type="radio"/> 10 Golf Course Superintendent | 20 <input type="radio"/> 45 Club President |
| 14 <input type="radio"/> 15 Assistant Superintendent | 21 <input type="radio"/> 75 Builders/Developers |
| 16 <input type="radio"/> 25 Owner/CEO | 22 <input type="radio"/> 55 Architect/Engineer |
| 17 <input type="radio"/> 30 General Manager | 23 <input type="radio"/> 60 Research Professional |
| 18 <input type="radio"/> 35 Director of Golf | 24 <input type="radio"/> 65 Other Titled Personnel |
| 19 <input type="radio"/> 70 Green Chairmen | (please specify) _____ |

3. What are the types of turf on your:

- | | | |
|---|---|---|
| A. GREENS | B. TEES | C. FAIRWAYS |
| 25 <input type="radio"/> 1 Bent | 29 <input type="radio"/> 1 Bent | 34 <input type="radio"/> 1 Bent |
| 26 <input type="radio"/> 2 Bermuda | 30 <input type="radio"/> 2 Bermuda | 35 <input type="radio"/> 2 Bermuda |
| 27 <input type="radio"/> 3 Rye | 31 <input type="radio"/> 3 Rye | 36 <input type="radio"/> 3 Rye |
| 28 <input type="radio"/> 4 Other (please specify) _____ | 32 <input type="radio"/> 4 Fescue | 37 <input type="radio"/> 4 Fescue |
| | 33 <input type="radio"/> 5 Other (please specify) _____ | 38 <input type="radio"/> 5 Zoysia |
| | | 39 <input type="radio"/> 6 Other (please specify) _____ |

4. What is your facility's annual maintenance budget?

- | | |
|--|--|
| 40 <input type="radio"/> A More than \$2 Million | 44 <input type="radio"/> E \$300,001-\$500,000 |
| 41 <input type="radio"/> B \$1,000,001-\$2 Million | 45 <input type="radio"/> F \$150,001-\$300,000 |
| 42 <input type="radio"/> C \$750,001-\$1 Million | 46 <input type="radio"/> G Less than \$150,000 |
| 43 <input type="radio"/> D \$500,001-\$750,000 | |

5. If you work for a golf course, how many holes are on your course?

- 47 A 9 49 C 27 51 E Other (please specify) _____
 48 B 18 50 D 36+

6. Are you the person responsible for golf car purchasing/leasing?

- 52 A Yes 53 B No

7. Are you directly involved in purchasing decisions for your facility?

- 54 A Yes 55 B No

7A. If yes, which of these products do you specify, buy or approve?

- | | | |
|---|---|--|
| 56 <input type="radio"/> A Aerators (pond) | 71 <input type="radio"/> P Insecticides | 86 <input type="radio"/> 5 Sod |
| 57 <input type="radio"/> B Architectural Services | 72 <input type="radio"/> Q Irrigation Systems | 87 <input type="radio"/> 6 Soil Analysis |
| 58 <input type="radio"/> C Batteries | 73 <input type="radio"/> R Irrigation Parts | 88 <input type="radio"/> 7 Sprayers |
| 59 <input type="radio"/> D Biostimulants | 74 <input type="radio"/> S Landscaping | 89 <input type="radio"/> 8 Spreaders |
| 60 <input type="radio"/> E Construction Services | 75 <input type="radio"/> T Lubricants | 90 <input type="radio"/> 9 Tanks/USTs |
| 61 <input type="radio"/> F Chain Saws | 76 <input type="radio"/> U Mowers | 91 <input type="radio"/> 10 Tires |
| 62 <input type="radio"/> G Course Accessories | 77 <input type="radio"/> V Nematicides | 92 <input type="radio"/> 11 Tools |
| 63 <input type="radio"/> H Cultivation Equipment | 78 <input type="radio"/> W Pond Management | 93 <input type="radio"/> 12 Tree Care |
| 64 <input type="radio"/> I Drainage Supplies | 79 <input type="radio"/> X Pumps/Stations | 94 <input type="radio"/> 13 Turf Markers |
| 65 <input type="radio"/> J Erosion Control | 80 <input type="radio"/> Y Rakes | 95 <input type="radio"/> 14 Uniforms |
| 66 <input type="radio"/> K Fertilizers | 81 <input type="radio"/> Z Range Supplies | 96 <input type="radio"/> 15 Utility Vehicles |
| 67 <input type="radio"/> L Fungicides | 82 <input type="radio"/> 1 Safety Products | 97 <input type="radio"/> 16 Weather Systems |
| 68 <input type="radio"/> M Generators | 83 <input type="radio"/> 2 Sand | 98 <input type="radio"/> 17 Wetting Agents |
| 69 <input type="radio"/> N Golf Cars | 84 <input type="radio"/> 3 Seed | |
| 70 <input type="radio"/> O Grinders/Sharpeners | 85 <input type="radio"/> 4 Snow Equipment | |

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| 102 | 114 | 126 | 138 | 150 | 162 | 174 | 186 | 198 | 210 | 222 | 234 | 246 | 258 | 270 | 282 | 294 | 306 |
| 103 | 115 | 127 | 139 | 151 | 163 | 175 | 187 | 199 | 211 | 223 | 235 | 247 | 259 | 271 | 283 | 295 | 307 |
| 104 | 116 | 128 | 140 | 152 | 164 | 176 | 188 | 200 | 212 | 224 | 236 | 248 | 260 | 272 | 284 | 296 | 308 |
| 105 | 117 | 129 | 141 | 153 | 165 | 177 | 189 | 201 | 213 | 225 | 237 | 249 | 261 | 273 | 285 | 297 | 309 |
| 106 | 118 | 130 | 142 | 154 | 166 | 178 | 190 | 202 | 214 | 226 | 238 | 250 | 262 | 274 | 286 | 298 | 310 |
| 107 | 119 | 131 | 143 | 155 | 167 | 179 | 191 | 203 | 215 | 227 | 239 | 251 | 263 | 275 | 287 | 299 | 311 |
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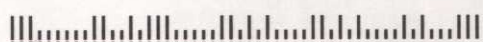
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| 05 <input type="radio"/> 50 City/State/Municipal | 12 <input type="radio"/> 100 Others Allied to the Field |
| 06 <input type="radio"/> 55 Other Golf Courses
(please specify) _____ | (please specify) _____ |

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- | | |
|--|--|
| 13 <input type="radio"/> 10 Golf Course Superintendent | 20 <input type="radio"/> 45 Club President |
| 14 <input type="radio"/> 15 Assistant Superintendent | 21 <input type="radio"/> 75 Builders/Developers |
| 16 <input type="radio"/> 25 Owner/CEO | 22 <input type="radio"/> 55 Architect/Engineer |
| 17 <input type="radio"/> 30 General Manager | 23 <input type="radio"/> 60 Research Professional |
| 18 <input type="radio"/> 35 Director of Golf | 24 <input type="radio"/> 65 Other Titled Personnel |
| 19 <input type="radio"/> 70 Green Chairmen | (please specify) _____ |

3. What are the types of turf on your:

- | | | |
|---|---|---|
| A. GREENS | B. TEES | C. FAIRWAYS |
| 25 <input type="radio"/> 1 Bent | 29 <input type="radio"/> 1 Bent | 34 <input type="radio"/> 1 Bent |
| 26 <input type="radio"/> 2 Bermuda | 30 <input type="radio"/> 2 Bermuda | 35 <input type="radio"/> 2 Bermuda |
| 27 <input type="radio"/> 3 Rye | 31 <input type="radio"/> 3 Rye | 36 <input type="radio"/> 3 Rye |
| 28 <input type="radio"/> 4 Other (please specify) _____ | 32 <input type="radio"/> 4 Fescue | 37 <input type="radio"/> 4 Fescue |
| | 33 <input type="radio"/> 5 Other (please specify) _____ | 38 <input type="radio"/> 5 Zoysia |
| | | 39 <input type="radio"/> 6 Other (please specify) _____ |

4. What is your facility's annual maintenance budget?

- | | |
|--|--|
| 40 <input type="radio"/> A More than \$2 Million | 44 <input type="radio"/> E \$300,001-\$500,000 |
| 41 <input type="radio"/> B \$1,000,001-\$2 Million | 45 <input type="radio"/> F \$150,001-\$300,000 |
| 42 <input type="radio"/> C \$750,001-\$1 Million | 46 <input type="radio"/> G Less than \$150,000 |
| 43 <input type="radio"/> D \$500,001-\$750,000 | |

NAME (please print) _____ TITLE _____

FIRM _____

ADDRESS* _____

CITY _____ STATE _____ ZIP _____

PHONE (_____) _____ FAX (_____) _____

E-MAIL ADDRESS _____

*Is this your home address? Yes No

5. If you work for a golf course, how many holes are on your course?

- | | | |
|-------------------------------|--------------------------------|---|
| 47 <input type="radio"/> A 9 | 49 <input type="radio"/> C 27 | 51 <input type="radio"/> E Other (please specify) _____ |
| 48 <input type="radio"/> B 18 | 50 <input type="radio"/> D 36+ | |

6. Are you the person responsible for golf car purchasing/leasing?

- 52 A Yes 53 B No

7. Are you directly involved in purchasing decisions for your facility?

- 54 A Yes 55 B No

7A. If yes, which of these products do you specify, buy or approve?

- | | | |
|---|---|--|
| 56 <input type="radio"/> A Aerators (pond) | 71 <input type="radio"/> P Insecticides | 86 <input type="radio"/> 5 Sod |
| 57 <input type="radio"/> B Architectural Services | 72 <input type="radio"/> Q Irrigation Systems | 87 <input type="radio"/> 6 Soil Analysis |
| 58 <input type="radio"/> C Batteries | 73 <input type="radio"/> R Irrigation Parts | 88 <input type="radio"/> 7 Sprayers |
| 59 <input type="radio"/> D Biostimulants | 74 <input type="radio"/> S Landscaping | 89 <input type="radio"/> 8 Spreaders |
| 60 <input type="radio"/> E Construction Services | 75 <input type="radio"/> T Lubricants | 90 <input type="radio"/> 9 Tanks/USTs |
| 61 <input type="radio"/> F Chain Saws | 76 <input type="radio"/> U Mowers | 91 <input type="radio"/> 10 Tires |
| 62 <input type="radio"/> G Course Accessories | 77 <input type="radio"/> V Nematicides | 92 <input type="radio"/> 11 Tools |
| 63 <input type="radio"/> H Cultivation Equipment | 78 <input type="radio"/> W Pond Management | 93 <input type="radio"/> 12 Tree Care |
| 64 <input type="radio"/> I Drainage Supplies | 79 <input type="radio"/> X Pumps/Stations | 94 <input type="radio"/> 13 Turf Markers |
| 65 <input type="radio"/> J Erosion Control | 80 <input type="radio"/> Y Rakes | 95 <input type="radio"/> 14 Uniforms |
| 66 <input type="radio"/> K Fertilizers | 81 <input type="radio"/> Z Range Supplies | 96 <input type="radio"/> 15 Utility Vehicles |
| 67 <input type="radio"/> L Fungicides | 82 <input type="radio"/> 1 Safety Products | 97 <input type="radio"/> 16 Weather Systems |
| 68 <input type="radio"/> M Generators | 83 <input type="radio"/> 2 Sand | 98 <input type="radio"/> 17 Wetting Agents |
| 69 <input type="radio"/> N Golf Cars | 84 <input type="radio"/> 3 Seed | |
| 70 <input type="radio"/> O Grinders/Sharpeners | 85 <input type="radio"/> 4 Snow Equipment | |

101	113	125	137	149	161	173	185	197	209	221	233	245	257	269	281	293	305
102	114	126	138	150	162	174	186	198	210	222	234	246	258	270	282	294	306
103	115	127	139	151	163	175	187	199	211	223	235	247	259	271	283	295	307
104	116	128	140	152	164	176	188	200	212	224	236	248	260	272	284	296	308
105	117	129	141	153	165	177	189	201	213	225	237	249	261	273	285	297	309
106	118	130	142	154	166	178	190	202	214	226	238	250	262	274	286	298	310
107	119	131	143	155	167	179	191	203	215	227	239	251	263	275	287	299	311
108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
109	121	133	145	157	169	181	193	205	217	229	241	253	265	277	289	301	313
110	122	134	146	158	170	182	194	206	218	230	242	254	266	278	290	302	314
111	123	135	147	159	171	183	195	207	219	231	243	255	267	279	291	303	315
112	124	136	148	160	172	184	196	208	220	232	244	256	268	280	292	304	316