



Back to the Basics

Stick to the central tenets of good agronomy so your spring fertility program can kick-start your season

By Frank H. Andorka Jr.
Managing Editor

How you handle your early season fertility program can mean the difference between providing excellent season-long conditions and being beset by disease and insect infestations. But despite its importance, experts say superintendents can get caught up in the latest fertility fads and forget the central tenets of plant nutrition. To prepare for the season, it's time to revisit the basics of spring fertility.

Basic principles forgotten

Keith Happ, an agronomist in the USGA's Mid-Atlantic Regional office, says superintendents should stick to what they know about basic agronomy, such as the importance of soil testing and using proper nutrition ratios.

"All too often, sound agronomic principles, such as the importance of soil tests, are forgotten," Happ says. "A turf manager should always be in a position to apply fertilizer when

it is needed. Instead, superintendents often apply large amounts of fertilizer at once, and they lose control over turf growth."

Superintendents should combine common sense with scientific testing when they're planning spring fertility programs, says Stan Zontek, director of the USGA's Mid-Atlantic Regional office.

"Good fertility is a mixture of art and science," he says. "While scientific testing is a great help in determining what the grass needs for food, it's also important to look at the grass. Turf talks to you and lets you know what it needs — if you're willing to listen."

Soil tests highlight deficiencies

Pat Gross, director of the USGA's Green Section's Southwest Regional office, says superintendents should take regular soil tests from representative areas in the spring, including two samples each from greens, tees and fairways. Then they should have them analyzed by established labs to see where specific deficiencies exist. "Superintendents should use the same labs year after year so the results are reliable and comparable," he adds.

But it's not just enough to do soil tests — superintendents must follow the recommen-

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dations to be successful. Gross also believes superintendents should keep a journal outlining their plans and results.

"It's important to stick with what they know," Gross says. "Superintendents should make sure they don't fall for fancy gimmick products."

James Camberato, professor of turfgrass management at Clemson University, says he recommends taking 10 to 20 soil cores from the area to be tested and prepare them for the lab.

"For established turf, the cores should be 3 inches to 4 inches deep," Camberato says. "If you're doing a grow-in, the cores should be 6 inches to 8 inches deep. That gives you the right amount of soil to see where your deficiencies lie."

Superintendents should research the labs that do their testing because not all labs do test for the same nutrients, Camberato says. "You have to make sure their tests will find what you're looking for. Otherwise, the results may not help you."

Caring for warm-season grasses

Todd Lowe, an agronomist in the USGA's Florida Regional office, says warm-season grasses are fairly easy to treat as they re-emerge in the spring. But he says Southern superintendents shouldn't ignore the importance of spring fertility during the transition from overseeded varieties to the main grass.

"We recommend pushing the over-

seeding out with practices like lower mowing, light verticutting and increased fertility," Lowe says. "These practices should be manipulated around the weather because it should be warm enough to sustain bermudagrass growth."

He adds that fertility on warm-season greens can be increased to .33 pounds to .5 pounds of nitrogen per 1,000 square feet per week, using products like ammonium sulfate in rotation with complete fertilizers.

Ross O'Fee, certified superintendent of The Country Club of Salt Lake City, says superintendents who care for warm-season grasses should resist the temptation to fertilize heavily in the spring. "If you start putting out fertilizer while the soil temperatures are still cool, you won't see any benefit from them," he adds.

Find the right ratio

Zontek says too many superintendents rely on determining fertility programs based on percent base saturations (PBS), which measures the adsorption complex of a soil that is saturated with exchangeable cations other than hydrogen or aluminum. It is expressed as a percentage of cation exchange capacity and measures the amount of nitrogen (N), phosphorus (P) and potassium (K) in soils. It's an older system that was originally developed for agricultural crops and may be outdated for today's turfgrass managers as a sole determinant of nutritional ratios.

"In my opinion, you keep fertility simple," Zontek says. "After you've done your soil tests, you develop your own N-P-K at a ratio determined by soil tests. There is nothing wrong with the old 3-1-2 or 4-1-4 ratios for those nutrients."

But superintendents have to take into consideration the types of turf they have on their courses, says Chris Thuer, certified superintendent of Bear Slide GC in Cicero, Ind. One-size fertility programs clearly don't fit all.

"At my last course, which had bluegrass, ryegrass, and *Poa annua* fairways, we used a program that was light in nitrogen and heavy on potassium," Thuer

says. "Since divots were not much of a concern, we only needed nitrogen in small amounts for color. The heavy potassium application prepared the turf for the extreme stresses of summer."

When Thuer arrived at Bear Slide GC and found largely pure bentgrass fairways, he realized he had to change his program. He applied equal amounts of nitrogen and potassium because divots are a bigger problem at his new course. The fairways survived a brutal Indiana summer well partly because of the influx of potassium, Thuer believes.

Don't forget to spoon-feed

More and more superintendents are moving toward spoon-feeding programs on their turf in the spring, Happ says.

"The programs run the gamut regarding frequency of application and nutrient sources," Happ says. "But superintendents need to keep their eyes on the overall health of the turf. Sometimes, there is too much emphasis on micronutrients and not enough focus on growing grass."

Dan Dinelli, certified superintendent at North Shore CC in Glenview, Ill., is a proponent of spoon-feeding his turf in the spring through his course's fertigation system. He enhances the irrigation system with inputs of monopotassium phosphate and seaweed extract for trace elements.

"The general idea is to offer the plant and soil system an easily used biostimulant and nutrients package, when soil temperatures are still a little cool, to stimulate root growth and plant health," Dinelli says. "Research has shown that frequent low mowing shortens root growth. We are trying to offset that with this approach."

Fall treatments beget spring health

Before superintendents can provide adequate spring fertility, they have to evaluate what they did in the fall, says Wayne Kussow, a professor of soil science at the University of Wisconsin-Madison. He rattles off four or five questions he would ask before advising anyone on a spring program, starting with an account of what

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they did at the end of the previous year.

If superintendents follow a light and frequent fertilization plan, they should prepare in the spring by putting down heavier granular products, Kussow says. It's easier to find combination products containing micronutrients in granular form rather than in foliar, so if the soil is deficient in potassium or phosphorus, granulars can build a reserve of them in the soil. Then he recommends finishing the year in the fall with a foliar product to put the course to bed, Kussow says.

"Granular feeding should be at least part of the feeding regime because an all-liquid plan isn't the best way to optimize turf-root development," says Pat O'Brien, director of the USGA Green Section's Southeast Regional office. "Most superintendents are better off using some mixture of the two types."

Oscar Miles, certified superintendent at The Merit Club in Libertyville, Ill.,

agrees that the preparation for the spring should begin in the fall.

"Superintendents should build the root system and carbohydrate reserve in turf in October through November," Miles says. "If this is done through cultural methods and nutrient applications in the fall, superintendents won't need to supplement it to promote vertical growth until the soil temperatures are averaging 55 degrees F and above since the soil doesn't really become biologically friendly to promoting growth until then."

Miles says golfers enjoy the fruits of good fall preparation.

"Golfers really like the green speed and trueness in the spring when the turf isn't growing vertically," Miles says. "Superintendents don't need to promote spring growth unless there has been winter damage from low-temperature kill, ice damage, wind burn, snow mold or new grass growth."

In the Western region, which includes

Utah, O'Fee says fall fertilization is vital to getting off to a good start in the spring.

"We always get winter damage, so fertilizing in the fall before the bad weather hits allows nutrients to build up in the soil," O'Fee says. "If you fertilize before the damage hits, you'll have some fertility in the soil that will help the turf recover more quickly in the spring."

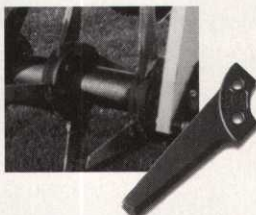
Happ says he recommends performing soil tests again in the summer so any deficiencies can be made up before the fall. "Much regrowth occurs in the fall/winter, and this is the best time to start preparing for the next season."

In the end, the University of Wisconsin's Kussow may offer the most succinct advice for superintendents about preparing a spring fertility program.

"My rule of thumb for spring fertility is that if it ain't broke, don't fix it," he says. "If it worked last year, stick with it. There's no substitute for experience in this kind of planning." ■



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