Back to the Basics

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

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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 recommend-

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dations to be successful. Gross also be-
lieves superintendents should keep a jour-
nal outlining their plans and results.

“lt’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 turf-
grass management at Clemson Univer-
sity, 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,” Cam-
berato says. “If you’re doing a grow-in,
the cores should be 6 inches to 8 inches
depth. 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, Cam-
berato 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 over-
seeded 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 .35 pounds to
.5 pounds of nitrogen per 1,000 square
feet per week, using products like am-
nonium sulfate in rotation with com-
plete 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 tempta-
tion 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 per-
centage 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 origi-

nally developed for agricultural crops
and may be outdated for today’s turf-
grass 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, cer-
tified superintendent of Bear Slide GC
in Cicero, Ind. One-size fertility pro-
grams clearly don’t fit all.

“At my last course, which had blue-
grass, ryegrass, and Poa annua fairways,
we used a program that was light in ni-
trogen 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 div-
ots 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 re-
garding frequency of application and
nutrient sources,” Happ says. “But su-
perintendents need to keep their eyes
on the overall health of the turf. Some-
times, 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 sys-
tem. 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 tem-
peratures 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 try-
ing to offset that with this approach.”

Fall treatments beget spring health

Before superintendents can provide ade-
quate spring fertility, they have to eval-
uate 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."