

the compost helped the plots mature at least twice as fast as the others.

"The compost-amended plots were consistently denser and greener," Dinelli says. "We also observed slightly less disease pressure."

Dinelli says more research is needed into the long-term stability of those products, and Jim Murphy, a professor of turfgrass science at the Center for Turfgrass Science at Rutgers University in New Brunswick, N.J., may be the man to do such studies. Murphy started his study of amendments in 1997 and plans to continue for the foreseeable future.

"The nutrient-holding capacity of the composts has been good so far," Murphy says. "But we've got a way to go before we can determine their long-term success."

Composts can be inconsistent because the composition of materials can vary from company to company, Murphy says. Before using a composted material, superintendents should test it by a laboratory to see exactly what's in it.

"There are plenty of horror stories out there from superintendents who've used composts with disastrous results," Murphy says. "You need to make sure you know what you're getting. When you find one that works well, stick with it."

Dinelli says the turf industry should institute testing procedures to ensure consistency.

### Don't discount inorganics

In the field of amendments, companies that produce inor-

ganic materials must feel like the whole industry is against them. The USGA green-construction guidelines recommend against them in root-zone mixes, and superintendents often complain about their cost. That doesn't mean, however, that they aren't useful, and the USGA may soon change its recommendations. This could overcome the reluctance of some superintendents to use amendments the USGA hadn't approved.

"We're looking to change our recommendations soon to include the possible use of inorganic amendments," Moore says. "It's not that they're bad, but they do tend to be costlier than organics."

Murphy says the longer he studies the inorganics, the more he is starting to recognize subtle differences in the effects they have on the turf. He says he wants to study the data from his project longer before he offers a recommendation on them.

Dinelli says the inorganics he used on his practice green performed well, and the differences between the composted plots and the inorganic plots have finally lessened five years after his study began.

"I'd hesitate to say anything one way or the other about the inorganic amendments," Dinelli says. "It's hard to make sweeping judgments based on tests at one location. In certain soils and under certain conditions, inorganic amendments may be the perfect solution."

Traficano says the debate over amendments will only be settled when more field

tests are done in different regions of the country.

"Amendments are often tested under laboratory conditions instead of the real world," Traficano says. "It makes it difficult for superintendents to evaluate them independently. That often leaves superintendents at the mercy of salespeople who are trying to get you to buy their products."

### Examining alternatives

Dinelli says the industry should also establish a protocol for organic products in particular to ensure consistency from batch to batch.

"We need standards so superintendents know what they're getting when they choose an organic alternative to peat," Dinelli says. "It would help alleviate the fears some superintendents have."

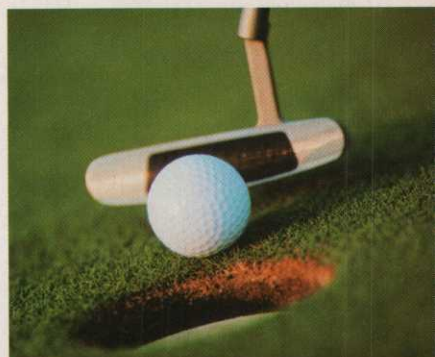
Merkel says the industry may also be missing the boat by not allowing native soil to be used as an amendment.

"Soil is another option that doesn't get a lot of attention, but there may be solid reasons to add it in lieu of another organic," Merkel says. "It's something I'd like to see studied."

Traficano says he doesn't know what the perfect amendment looks like, but superintendents must examine their own needs before making a decision.

"You may discover that there are 150 different microclimates on your course, which may require different amendments for different greens," Traficano says.

"That's the hardest part of making the decision, but it's what we get paid to do." ■



## Five Great Things About Modern Greens

By Geoff Shackelford

**USGA Greens** — They're manageable, they breed healthier turf and nothing better has come along.

**Elimination of grain** — Except in Johnny Miller's eyes.

**They're faster and more consistent** — Slick greens are fun and give people something to talk about. Of course, some of the talk says the greens are too slow or inconsistent.

**They hold shots** — And reward precise, well-struck iron shots.

**They're getting larger** — Which creates more hole locations for better golf and improved conditioning.

## Five Lousy Things About Modern Greens

**USGA Greens** — They're expensive, difficult to construct and not as reliable as billed.

**Elimination of grain** — Pete Dye says that negotiating grain used to be one of the most interesting aspects of the game.

**They're faster and more consistent** — Slick greens slow down play, and more speed means less contour can be constructed.

**They hold shots** — Which can shift the game to a one-dimensional approach.

**They're getting larger** — If we could just get architects to build large greens that don't feel so huge and clumsy, like the old architects did.