Gettin' the Dirt

Renowned professor Beard offers tips for proper soil testing

By Larry Aylward, Editor in Chief

The topic is soil testing. Who better to talk shop about this vital agronomic subject than James B. Beard, professor emeritus of turfgrass science at Texas A&M University? Beard, the author of "Turf Management for Golf Courses," has been living this stuff for much of his distinguished career. Like Bo Jackson knew baseball and football in his day, Beard knows greens, tees and fairways.

We asked Beard, who recently received an honorary doctorate of agriculture from Purdue University, to wax on three key points of soil testing that he discusses in his book.

In his first point Beard reports that accurate chemical soil testing depends on a collection of representative soil samples. But what constitutes such a collection?

Beard says a golf course might include soil types with different textures and classifications, such as clay, loam, muck and sand. "So you would want to take a separate sample from each of those areas," he adds.

Also, the history of fertilization plays an important role in gathering appropriate soil samples for testing, Beard stresses. If the fairways were on a different fertilizer program than the greens, a superintendent needs to take soil samples from both.

Beard says about 15 soil samples conducted with a soil probe and taken randomly throughout the course should be enough to conduct a well-rounded test. A 2- to 4-inch-deep sample should be adequate. The turf should then be separated from the core, and the latter placed in a clean container.

In his second point Beard says a "reputable" soil-testing lab should be used to analyze turfgrass samples. Beard says superintendents searching for reputable labs should consult their experienced peers for direction.

Beard says some superintendents take soil samples and send them to multiple labs for testing. Then they're surprised when they get back different results.

"That's entirely possible and each lab could be correct in that different labs in different states may not always use different extraction procedures for certain nutrients depending upon the dominant soils in their areas," Beard states.

He explains that labs in different regions also have different soils. Those soils, whether alkaline- or acidic-based, will dictate extraction procedures for phosphorous, potassium, iron and other nutrients.

Hence, superintendents shouldn't be surprised if they received different results.

Despite different results, what's important across the board, Beard stresses, is what a lab judges as a proper nutritional level in the soil. "And those [results] should be reasonably in the same ballpark," he adds.

The key, Beard notes, is that results are only as good as the sample that's drawn.

In his third point Beard states that proper

interpretation of results is crucial. So what are the keys to proper interpretation?

Superintendents should make sure the labs they're sending soil samples to are not just strictly agricultural labs that lack expertise in interpreting turf test results.

"First of all, you hope a lab has efficient expertise to make recommendations on their analysis for given situations," Beard adds.

It all starts with a superintendent who should have provided efficient information along with the soil sample to help the lab with a proper interpretation. That information could include turfgrass species and cultivar, irrigation practices and whether clippings were removed from the soil sample being tested.

"These types of things are needed for a lab to make an overall assessment and recommendation," Beard stresses.

Proper interpretation also lands with a superintendent, who must be able to read a report and act accordingly. And that includes trusting in the information collected.

Beard says he has met superintendents who conduct soil tests but doubt their results. Then they end up not acting accordingly and having problems with their turf.

"That amazes me, quite frankly," Beard says with a chuckle. "They end up paying consultants a lot of money to come in and tell them, when they already have the information right there from their soil tests."

Beard says state laws could force more soil testing in the future. That could be a good thing for golf courses, especially if they're accused of over-fertilizing by environmentalists and are innocent of such charges. Then all they have to do is reveal the results of soil tests.

"You have documentation record that you haven't been fertilizing excessively but to the needs for the particular type of culture and the grass involved," Beard says.

Beard says soil testing has "greatly improved" over the past 40 years.

Beard says most labs today are reliable. A 1957 graduate of The Ohio State University, he says soil testing has "greatly improved over the 40-some years I've been around."

But Beard warns superintendents to be wary of the "slippery" labs whose soil test interpretations are based on making money. They might make interpretations just to sell some of their products to help correct a problem that doesn't exist. ■