

# Views from the Field

We asked readers if they favor USGA or California greens and why:

■ "We have always had excellent success with our USGA-constructed greens. I have very little knowledge and even less experience with any of the other methods. Frankly, I've never had much interest in the California method. With our success with the USGA method, I would say, 'If it ain't broken, don't fix it!'"

**Bob Farren, CGCS**  
*Pinehurst Resort and CC*

■ "If the soil is suitable, we favor native soil/sand greens where possible. Failing that, we lean toward USGA greens because they're considered the 'optimum,' and we could have legal troubles someday if we advise differently and the greens fail. I've built a bunch of USGA greens by the book, and they still work fine. But I don't really understand the benefits of the perched water table."

**Tom Doak, Architect**

■ "Let's assume correctly sized sand was used in the first place, which is critical. Since they are created with very limited nutrient holding capacity, California greens have proven to be difficult for the majority of superintendents to grow in. Few can

fertilize enough to do the grow-in without major setbacks. But once grown in, California greens are essentially equal to correctly constructed USGA greens in performance and at a significantly lower total cost of establishment (sand almost always costs less than organic matter). Few have read, and fewer understood, John Madison's work that led to the specification for California greens. Madison is nearly forgotten today, but he was the first academic to write about greens construction and maintenance as an environmental system. That's where the California green concept came from, and it's 100 percent viable when done correctly."

**Mike Heacock, former vice president and director of maintenance**  
*American Golf Corp.*

■ "I have never had any experience with California greens. We built a USGA-spec green in 1994 and have had good success with it. I don't believe I would try a California green because my experience with a straight 100-percent sand-base construction has not worked for me in the past. Even the 85/15 mixture that is in our 1994 USGA green is not nearly as forgiv-

ing as our 1921 push-up soil greens, which have been topdressed with straight 100 percent sand since 1976."

**Wayne Otto, CGCS**  
*Ozaukee CC*  
*Mequon, Wis.*

■ "I recommend the USGA method of putting green construction. This method has withstood the test of time. If all the parameters are met during construction (including quality-control methods), putting greens can be built anywhere in the world under any conditions."

**John Hamilton**  
*Agronomist*  
*Southern Turf Nurseries*

■ "I prefer USGA because that's where the science is, and [the greens] have a 40-year history. Very few people know what a true California green is because they never take time to study the real specifications from the California booklet. Most greens built are modified California greens with no basis for scientific backup."

**Gary Grigg**  
*President*  
*Greenscape*

## The Trend Toward Inorganics

**S**ignificant progress has been made in the past 10 years in the search for the next generation of putting greens. During this time, the golf industry has begun to re-evaluate decades-old construction methods in an effort to produce greens that are easier and less expensive to manage and that will also last longer. While USGA- and California-style greens remain the standards, putting greens built using inorganic soil amendments have caught the attention of more than a few superintendents, architects and builders. More than 1,000 golf greens have been built in the past decade using these materials.

There are several classes of inorganic amendments (clay-based porous ceramics,

kiln-fired and nonkiln-fired diatomaceous earths and zeolites). Although these classes of inorganic amendments have different physical characteristics and chemical properties, they do have two things in common: Since they do not contain carbon compounds, they are more stable than organic amendments and do not decompose. They also contain varying amounts of internal porosity. For that reason, they are often referred to as internally porous inorganic amendments (IPIAs).

Superintendents are wise to be skeptical of products that don't have significant research to support them. In general, the products that have been most extensively researched and proven are in the category known as clay-based porous ceramics. These products provide benefits that at

one time were considered to be mutually exclusive — significantly increasing water and nutrient retention, while at the same time increasing drainage during saturated conditions.

Proven IPIAs can be used the same way sand is in common cultural practices. Either alone or mixed with properly sized sand, they can be used for topdressing during the growing season or following aeration, as well as drill and fill machines or dry inject units.

For new construction, the best practice is to substitute IPIAs for organic amendments or use IPIAs in combination with them.

Although the use of inorganic amendments in putting greens is still in its infancy, the trend is growing.