

Too good to be true

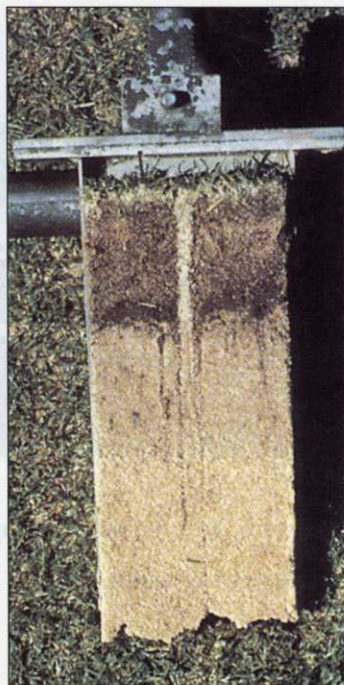
Here we go again! Calls and letters are coming in from people or about people who are going to build pure sand greens (using a uniform coarse sand, no less) instead of USGA specification greens because of some article they read recently in a widely distributed turf publication. And why not? After all, the article says that all-sand greens are easier and cheaper to build... nice and simple. All the complicated, high-tech, unnecessary, costly steps have been eliminated. No need to worry about today's inconsistent organic materials, or about gravel drainage beds or intermediate coarse sand layers.

Worried about water retention? Just mix some water-absorbent polymers or other unproven inorganic amendment into the top few inches of the sand profile, place the whole 12" rootzone on top of the existing soil base with some drain lines installed in it, and grow healthy, carefree turf.

Revolutionary, you say? No, it isn't. Sounds too good to be true, you say? Yes, it is!

There's usually a price to pay for taking a shortcut, and hundreds of greenkeepers (and their Clubs) around the world have paid a high price for taking the 'easy' way with pure sand greens and untested modifications. Our experience tells us this:

- Pure sand greens built without a perched water table are often extremely droughty and experience severe dry spot problems.
- There is no buffering capacity in pure sand greens, and wide shifts in pH can occur very quickly.
- Pure sand greens often require extremely high rates of fertilizer during establishment and for several years thereafter. Rates as high as 30-40 lbs. N/1000 sq. ft. or more per year have been reported. Potassium, phosphorus, and micro-nutrients also must be applied more frequently and in greater amounts.
- Disease problems often are much more severe on pure sand greens. It is a medium with extremely low microbial activity and offers almost no resistance to take-all patch, root pythium, and other root diseases.
- Lateral movement of water through the sand rootzone to



The grow-in layer on a pure sand green can cause layering problems that eventually lead to black layer

drainage tiles may occur very slowly in some sands, resulting in wet areas between tiles and dry streaks over the tiles.

- Pure sand greens often are harder and less resilient than modified rootzones. Surface wear and root and shoot damage occur more readily, particularly with sharp sands.
- According to work by Dr. James B. Beard, pure sand rootzone construction has a significant negative effect on root hair development and maintenance compared to a properly mixed rootzone.
- Greens built of unmodified, round sands that fall in a narrow particle size range are unstable. Footprinting and tyre tracking can occur for years after construction.
- The grow-in layer of sloughed-off root organic material on pure sand greens is often quite dense. This layer can create a perched water table in the top 3 to 5 inch zone, and black layer frequently results.

As far as adding water-absorbent polymers and other unproven inorganic amendments into the top several inches of the profile is concerned, this is nothing more than gambling with other people's money and the greenkeeper's job

security. The Green Section specs are based on decades of field experience and university-based research. Unproven alternatives should not be promoted until thoroughly researched and field tested.

Proponents of pure sand greens and other 'fast and easy' methods suggest that the golf Club hire itself a good greenkeeper, since a top greenkeeper can grow grass on anything, including concrete. This is a cop-out! Lousy construction eventually begets lousy turf. The Club often pays big bucks to get out of the mess and the greenkeeper often pays with his job.

Last, but not least, how can the golf industry accept pure sand greens – or any other method – that requires extremely heavy use of water and fertilizer? It's environmentally irresponsible. Who wants to be first to be challenged about what happens to 40 lbs.

N/1,000 sq. ft./year applied to a droughty, pure sand rootzone?

Space in this column does not permit a thorough rebuttal to all of the misleading statements used to rationalize pure sand greens and other untested methods. The fact is, USGA greens offer the best compromise to allow a green to drain properly and to resist compaction while holding reasonable amounts of moisture and nutrients for plant growth. Don't be fooled by anyone into thinking that greens can be built easily and cheaply without having to pay for it later with interest. Pure sand rootzones and their untested modified versions should not be encouraged or condoned.

■ The author, James T Snow, is National Director, USGA Green Section. This article first appeared in volume 30, No 4 of the USGA Green Section Record and is reproduced here with due acknowledgement and thanks.

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