

SAND TOPDRESSING AND OTHER OBSERVATIONS FROM 1985

James M. Latham
Director, Great Lakes Region, USGA Green Section

Once upon a time a bunch of agronomists got tired of looking at dead grass on mud greens and decided to do something about it. They looked around to see where the good greens were and by golly, they were all on sand -- at least the ones where lots of golfers played. They fiddled around with various materials to find one that would drain well, support foot and equipment traffic and hold fertilizer just long enough for the roots to get some as it flowed past enroute to the drain tile. Now this stuff couldn't cost very much, because clubs weren't accustomed to large expenditures at the time.

Concrete Sand! Of course. Add a little soil and peat and we're off to the races. But troubles came up as fast as the grass did. The new greens grew good grass, but they were so hard the golfers hated them. Especially if soft mud greens made up the rest of the course. Well, trials and errors kept on keeping on. After mortar sand failed to work consistently, the agronomists went back and took the middle fraction out of mason sand. Eureka! This stuff works!

Now, after 30 or so years, we have guidelines to use in construction and maintenance sands for golf greens. When they found out that golf people meant business and would pay for quality, sand suppliers made good quality sands available. And when golf people found that foundry sand is in line with golf needs, we knew someone else to contact. If 75% of the sand passes through a 0.5 mm screen and is retained on a 0.25 mm screen, with only minimal quantities of clinkers and dust, it's in the ballpark.

The only thing left to do for topdressing was put the stuff on at the right time in the right amount. Easy? No way. It took a Californian to come up with a crazy idea of topdressing once a month. He settled on three week intervals just in case bad weather or a golf event got in the way. A postponement to four weeks is OK, but five weeks is not often enough. A five week interval allows a layer of organic matter to develop between layers of sand. Layers of any ilk are bad. So now we have a lovely program for topdressing management, right? We do not need an additive for sand topdressing because we grow our own organic matter in every day's growth. Therefore, our needs are greatly simplified. Just find a good sand and run with it.

About this time someone came up with the Lean and Mean Theory of Fast Grass. Quit Fertilizing! Hungry grass means skinny leaves. Hungry grass means it stays mown longer. Hungry is healthy.

But if we keep adding three cubic feet of sand per 1,000 sq. ft. every three weeks and the grass ain't growing we start playing on sand greens again, especially since we all know that 1/8" cut is what the tour pros want and we must follow the leaders. At any rate, we no longer generate much organic

matter. We see more sand now because the grass growth doesn't cover it up. There are too few leaves remaining on the stems.

Oh, well, let's just add some peat and hide the sand. Besides, peat will make up for the lack of self-generated organic matter. About 20% ought to do it. After all, we have sand specified down to a quarter of a millimeter. Why worry about an added 10, 20 or 30% peat? A mere detail.

And which peat? We can assume nothing from a dark, fluffy, moist material called peat. H. B. Musser defined it as:

"Peat. Partially decomposed organic matter resulting from decay of reeds, sedges, mosses, and other aquatic plants under water. Composition varies widely depending upon conditions under which formation took place. Peats are high in moisture-absorptive capacity, varying from 200 to more than 1,000 per cent. Used on golf courses as physical soil conditioners. Organic matter content varies from 70 to 95 per cent."

Yet last summer a peat being used in a topdressing mixture was only 30% organic matter and had a water holding capacity of only 90%. It was black.

The moral here is that we shouldn't mess up 30 years of sand research and development with an unknown additive.

There's still another item in this saga of sand. As we cut cups and sink probes into these remarkably delightful modern greens we continue to see dark layers. How come? Frequency and rate of application are correct. Aerifier cores have been carefully removed so the old soil is not a continuant.

I think this has to do with startup time in the spring and shut-off time in the fall. If we are correct in assuming that topdressing with sand should be in balance with the growth rate of grass, the process should begin with first mowing and end with last mowing. Not just from spring aeration to fall aeration.

To recap these opinions:

1. After 30 years of R&D we have a sand topdressing program and available materials which work well when they are in sync with the rest of the management programs.
2. Topdressing period, rate and frequency should balance the rate of grass growth.
3. Never add a constituent until it has been tested and proven to do the things you expect of it.

When you embark on a sand topdressing program stick to the knowns, accept NO unknowns and never look back. It is always easier to criticize than to create. While this may not give the ideal playing surfaces, no one has come up with anything consistently better.