

# Topdressing Techniques

By John Walsh

Superintendents find success with methods beyond the book

Photo: Turfco

As with almost all cultural practices, each superintendent has a little twist that allows him to achieve his desired results. Topdressing is no exception.

It's a given a topdressing program should be tailored to meet the needs of a particular golf course. Most superintendents topdress with straight sand, but others topdress with a mix of sand and organic matter, be it mushroom soil or peat. Some even topdress with 100 percent peat.

Those looking to the USGA for a standard recommendation for topdressing won't find one because it doesn't have one, according to Jim Moore, director of construction education for the USGA Green Section. Topdressing – material and amount – depends on the type of green. The needs of older, soil-based, push-up greens

are different than those of newer, USGA-spec, sand-based greens. However, there are some general topdressing goals no matter the type of green:

- Prevent layering in the soil profile, whether it's excess organic matter or layers of excess sand.
- Improve drainage and root-zone aeration.
- Encourage upright plant growth.
- Provide a smooth surface.
- Prevent grain.
- Improve putting quality.

#### DIFFERENT APPROACHES

Many superintendents who manage older, soil-based greens



## TURFGRASS MANAGEMENT

basically rebuild them through aeration and topdressing. As a result, Moore says it's not uncommon for members of the Green Section staff to see as much as six inches of topdressing sand built up during a 20-year period on top of older greens.



Adding too much sand too quickly can result in a shallow, droughty layer immediately above the soil. Photo: Turfco

"If you don't want to rebuild older, soil-based greens, your best bet is to improve them through a combination of aeration and topdressing," Moore says.

If a superintendent is trying to improve older, soil-based greens in this manner, he needs to make the change in the profile a gradual one. Adding too much sand too quickly can result in a shallow, droughty layer immediately above the soil. To avoid building such a layer, it's important to combine sand topdressing with core aeration.

Moore suggests removing cores at least 2 to 3 inches deep when aerating and backfilling the holes with sand. Many superintendents aerate two to three times a year and follow with a heavy topdressing application to fill the holes. Additionally, they lightly topdress four to eight times per year depending on the duration of the growing season. As a general rule, about 1/4 inch of sand will accumulate on the surface of the

green each year with this type of program.

Another topdressing program is one in which a superintendent tries to match the existing root zone – a 90/10 sand/organic matter mix, for example – which typically occurs on newer, sand-based greens, instead of building a new root zone on older, soil-based greens. On new construction greens, Moore suggests topdressing with the exact same material the green was built with if possible. As the turf starts to produce excess organic matter, the switch can be made to straight sand if desired.

### CHANGE IS ORGANIC

With sand-based greens, superintendents try to match the rate and frequency of topdressing with organic matter in the green. Organic matter accumulates in a soil profile because the plant is producing it faster than it can break down. One needs to change one's topdressing program if organic matter is building up, Moore says.

AquaMaster®  
AQUATIC FOUNTAINS AND AERATORS

Powered by Ingenuity.



LET US HELP YOU MASTER THE POWER AND BEAUTY OF WATER

AquaMaster® is the Worldwide Leader in the engineering and manufacturing of fountains, aeration equipment and natural microbial products for any aquatic environment.



**AquaMaster**  
FOUNTAINS AND AERATORS  
MASTER THE POWER AND BEAUTY OF WATER

[www.aquamasterfountains.com](http://www.aquamasterfountains.com)

1.800.693.3144



Changes can include:

- Reducing nitrogen fertilizer, which accelerates organic matter production.
- Aerating more often.
- Diluting organic matter with sand.

When following a guideline of a certain percentage of organic matter in the soil – 3 to 4 percent, for example – superintendents should make sure they're measuring profiles of the same depth and measure organic matter by weight, not volume, Moore says. Too much organic matter holds too much water in the top of the root zone, creating an environment ripe for disease.

Some organic matter is needed between the root zone and crown of the plant. Part of the grow-in process is to accumulate organic matter near the top of the profile. Without this cushion, traffic would cause excessive wear on the turf. However, once the plant is in the ground for a while, it might begin to produce so much organic matter there's no need to add more, Moore says.

On mature greens, too little organic matter isn't a problem the Green Section typically sees.

"If you look in a superintendent's maintenance building, you'll find several tools for removing organic matter but nothing that adds it," Moore says.

#### SIZE MATTERS

Another issue with topdressing is the size of sand particles. When buying topdressing sand, superintendents need to know which size to buy, Moore says. Some superintendents buy sand that's finer than the sand used to build the green. The finer-particle sand is desirable because it moves down in the profile easier and doesn't damage mower reels. However, the downside to this strategy is the finer sand holds more water than the courser sand used to build the green, allowing too much water in the top of the profile. This could cause problems down the road, in some cases after a superintendent

leaves and a new one arrives.

#### MATERIAL

Scott Anderson, greens superintendent at Huntingdon Valley Country Club in Pennsylvania, topdresses bentgrass/*Poa annua* greens differently than most superintendents. He avoids pure sand topdressing.

The topdressing Anderson uses is a mix of sand (80 percent) and mushroom soil (20 percent), which has been screened and baked. (These mushrooms grow on horse manure, and after the mushrooms pull all of the nutrients out of the manure, they're ground, baked and screened.) The mushroom soil still has organic matter in it, which stimulates growth. Anderson estimates that when he topdresses he receives about an 1/8 of a pound of nitrogen a year in an organic form.

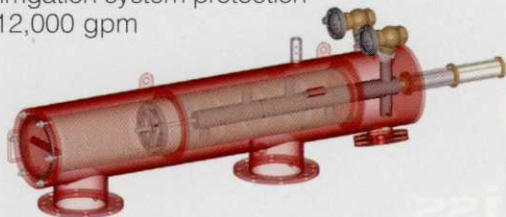
Anderson pays about \$60 a ton for the topdressing – compared to \$40 a ton for straight

## Consultant/Specifier, Pumping Station Producer, Owner/Superintendent *Finally a water filter they all agree on*

### ORI Series

#### Line Pressure Powered Filters

- For irrigation system protection
- 50-12,000 gpm



### ORE Series

#### Electric Powered Filters

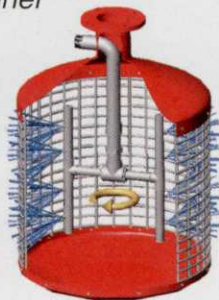
- For high dirt load
- 50-6,000 gpm



### ORS Series

#### Pump Suction Strainer

- Fully automatic
- 100-5,300 gpm
- Heavy duty bearing



### Case Study

Bodega Harbor Country Club recently replaced its three carbon steel Filtomat (now owned by Amiad) filters with all **Stainless Steel** construction Orival Filters

**ORIVAL**  
Automatic Self-Cleaning  
**WATER FILTERS**

213 S. Van Brunt St.,  
Englewood, NJ 07631  
(800) 567-9767  
(201) 568-3311  
Fax (201) 568-1916  
www.orival.com  
filters@orival.com



sand. Because of the topdressing Anderson uses, he is also able to use less water than other superintendents in the area, he says. He uses 7 million gallons of water between April and October on 27 holes.

Anderson keeps the soil as dry as possible, and the grass actually goes dormant on greens, browning out. Even the *Poa* goes off color and doesn't die. Often he will apply a wetting agent in anticipation of rain to rewet the soil.

"The browning out will scare anybody because they think it's death," he says. "I'm promoting the plant's natural ability to defend itself. Everyone is doing what the USGA recommends. They've seen this, but they don't seem to be promoting it. The soil first approach works well here."

At Pecan Plantation Country Club in Granbury, Texas, golf course superintendent Michael Underwood, who maintains 328 bermudagrass fairways and Tifdwarf greens with a \$575,000 budget, topdresses with an 80/20 sand/peat mix, which costs \$35 a ton. He's been using that mix for two years. Before that, he was using straight sand but wasn't getting enough moisture retention, and isolated dry spots were problematic.

To increase the disease suppression for take-all patch, bermuda decline, spring dead spot and curvularia, Underwood adds acid to the peat. He says organic matter helps with disease suppression – this based on research conducted by Phil Colbaugh, Ph.D., a turfgrass pathologist (colbaugh-turf.com).

"Some guys topdress with solid peat, but the USGA isn't keen on that," he says. "It's easier to grow grass with a mix than straight sand. It's easier to do a grow-in and build the roots when you have that mix. Straight-sand greens aren't as healthy."



Underwood used to use straight sand on the courses he maintained before coming to Pecan.

"In this area, I'm one of few who are topdressing with sand/peat mix," he says. "If you build a green with 80/20 sand/peat mix, why wouldn't you use the same mixture as the soil profile when topdressing?"

"A lot of people topdress with straight sand and don't consider anything else," he adds. "The USGA doesn't recommend the peat. I was leery of peat because one of the courses I worked at before had a bad organic matter layer. The organic matter will breakdown. It's like good carbs/bad carbs. As long as you're putting good organics into the soil, it's OK."

At the 18-hole, Donald Ross-designed White Bear Yacht Club in White Bear Lake, Minn., John Steiner, CGCS, who maintains *Poa annua*/bentgrass greens with an \$800,000 maintenance budget, uses straight fine-building sand when topdressing.

"Why add organic matter when you have some already in the profile?" he asks. "There's enough."

#### AMOUNT

Dusting – applying a light amount of sand frequently so one doesn't have to drag the sand into the profile – is another topdressing method.

"With dusting, you can water it in that night, and the next morning, golfers don't even know you topdressed," Moore says. "Frequent dusting is very helpful in preventing organic layers."

"When you look at a soil profile of a green of those people who don't topdress enough, you can count the layers in the profile like rings on a tree," Moore adds. "It's the absolute worst thing

Finer-particle sand is desirable because it moves down in the profile easier and doesn't damage mower reels. However, the downside to this strategy is that finer sand holds more water than the courser sand most likely used to build a green, allowing too much water in the top of the profile. Photo: Wiedenmann

# Eagle every time with Echelon™



New Echelon™ does more than control your *Poa Annua*. It also takes down sedges, goosegrass and more – all in the same shot. So you'll use fewer products and have fewer applications, which saves you time and money. Now that's playing under par.

For more information on Echelon, visit us at [www.fmcprosolutions.com](http://www.fmcprosolutions.com).

**Echelon. Expect More.**

Always read and follow label directions. FMD and Echelon are trademarks of FMC Corporation. © 2008 FMC Corporation. All rights reserved. FSP-0732 07/08NK

  
**Echelon™**  
HERBICIDE



## Dress for Success



### Thin Layers Are In This Fall

Fertl Soil Topdressings used in a light, frequent application are the perfect way to keep greens healthy. Our organic blends are made with USGA Sands and Sterilized Aged Mushroom Soil, screened and dried to make a homogeneous blend that is unsurpassed in the marketplace today.

Call today for samples

- Biodressings
- High & Medium Sand Biodressing
- Peat Blends
- Topdressing Sands

(866) 688-8628

**Fertl Soil**

www.fertl-soil.com

www.golfcourseindustry.com/readerservice - #26

## TURFGRASS MANAGEMENT

you can do.”

Steiner doesn't dust because he doesn't think it does any good.

“To put down enough topdressing to do any good, we'll lose speed for five days,” he says. “If I topdressed more, I'd have dull mowers.”

Steiner doesn't know exactly the amount of topdressing he uses because he applies by feel. But he puts down a modest amount, which he sweeps in with a broom. He can't water it in because there's too much.

Underwood applies light applications of topdressing that just cover the surface, so it takes one drag to get it in. His heavy topdressing applications equal 0.5 tons on three acres of greens, or 0.4 tons per 1,000 square feet.

The topdressing Anderson uses is the consistency of sugar, and he spreads it with a hand-spreader so there are no problems with the mowers. He applies it in three to four directions and doesn't have to brush it in. He usually applies about 0.5 ton for 5,000 square feet.

### FREQUENCY

Anderson topdresses the greens at Huntingdon Valley four times a year. The first thing he does in the spring is topdress with purchased material to protect the crowns going into the summer heat.

“I'd never do that with straight sand because you'd cook the roots,” he says. “Try growing grass on beach sand.”

Anderson uses a hand spreader twice a year. The other two times he pulls quad tines and drags them around, knocking off the soil.

Anderson says he doesn't get a thatchy buildup because a lot of organic matter assists in its natural degradation.

“Sand doesn't have the organisms in it; it's more sterile,” he says. “It doesn't have capacity to host organisms that break down thatch so you get a build up of organic matter, so you need to keep adding sand or keep pulling it out.

“My approach is less common,” he adds. “The few people I know who do this worked for me. I can't see people learning about this in school and doing it because it would scare them.”

Anderson monitors the amount of thatch or puffiness so there's no need to topdress more than he does, he says. He manages growth by controlling moisture and fertility and by using PGRs. However, if there's an event at Huntingdon Valley, such as the Pennsylvania State Amateur, Anderson will topdress in advance

of it. Topdressing basically protects the crown against scalping.

The one downside to Anderson's topdressing method is that when the greens get wet, they stay wet for three to four days. The percolation rate is 0.2 to 0.4. The deep tine aeration improves that, he says.

“I take this approach because I've got push-up greens,” he says. “If I had USGA straight-sand greens, I'd have a different approach. When you have an organic approach, the organisms create porosity and channels naturally. It's what we do, but it's generally not promoted as an option.”

At Pecan Plantation, Underwood topdresses the push-up greens, which have sand caps on them, heavily twice a year and lightly every two to three weeks.

Steiner topdresses about three times a year, including May and September when he aerifies.

“I'd like to topdress every month, but I don't in June and August,” Steiner says. “If it's hot, I don't. I never topdress in July.

“Topdressing isn't a priority,” he adds. “I've never been on a strict schedule. We use rollers a-lot, which keeps the greens smooth.”

### GRASS TYPE

Grass varieties also affect topdressing. The new bentgrasses and the ultradwarf bermudagrasses generate a lot of thatch so superintendents need to keep up with their topdressing, aerating and verticutting, Moore says.

Steiner's *Poa* greens don't produce a lot of thatch, and the turf is upright. He says if he had L-93, A-1 or A-4 bentgrass greens, he'd be more concerned about thatch and topdressing.

“There's a high percentage of *Poa* on the greens, so topdressing isn't imperative,” he says. “I'm sure people would debate me to death about that though. Topdressing is a good thing, especially with bentgrass. For me, the negatives outweigh the positives. I'm getting away with not doing it often. A lot of people don't agree with me.”

### WHAT TO DO

So what is the best way to topdress? It depends on the needs of the green and the demands of the golfers. Moore's opinion is clearer.

“Of the people who have a reputation for great greens, more are topdressing heavily at least twice each year after aeration and dusting every 14 to 28 days during the growing season to prevent layering,” he says. **GC**