

## PROS AND CONS OF SAND TOPDRESSING

In our travels as agronomists for the USGA Green Section we are frequently asked what can people expect from and what are some of the problems we envision with sand topdressing. I have attempted to briefly list some of these pros and cons along with a few words of explanation for each. As you can see from the list there are 15 pros and 13 cons. Perhaps this is why this type of putting green program remains so controversial. There is no absolute or clear cut answer to what is the best topdressing to use on every golf course. It really comes down to what type of putting greens you want in terms of appearance and playability and then having to accept that particular type of management program often for many years to come.

### THE PROS

1. Firmer greens (not hard greens) - Properly sized sand "bridges" resulting in firm greens but not hard greens.

2. Smoother greens - Any topdressing program will smooth out depressions and the sand program because it is performed so frequently during the season will definitely give you smoother putting surfaces.

3. Less thatch-straight sand seems to accelerate the decomposition of excessive organic matter.

4. Allows for lower cutting heights - the crowns of the grass plant are insulated and protected by the layers of topdressing sand. In reality, the grass plant is actually growing through the sand that has been lightly dusted on the putting surface. In this way, cutting heights can be lowered with the mowers only cutting the grass blades and not necessarily the stems or crowns of the plant. It allows for safer lower cutting heights.

5. Faster greens - the combination of smoother greens with less thatch and lower cutting heights will give you faster putting greens. There just is no doubt about it.

6. Tightens the surface - less grain and leafiness results. Between the lower cutting heights and the actual matting-in or the dragging process, the putting greens surface tightens up and has good texture. This is a combination between the topdressing and the actual process of working it into the greens.

7. Lower compaction - properly sized sands don't compact anywhere near what a topsoil based topdressing which contains large amounts of silt and clay.

8. Better roots - roots grow in between soil particles. A properly sized sand has outstanding aeration allowing the roots freer movement through this new soil medium.

9. Better drainage - Because these sands have such good aeration water tends to soak freely into them and they seem to dry out quicker after a rain, firm up earlier in the spring and stay firm later into the fall. All of this relates back to a sandier, firmer and better draining topdressing.

10. Less weeds and weed grasses - because the greens are topdressed on a frequent basis seeds are physically buried. Certain of our weed seeds need direct rays of sunlight to germinate so by constantly burying them, they just never germinate.

11. Generally less disease - less free water on the surface and because most of our disease are related to surface moisture there is the **potential** for less disease.

12. Generally less insect activity - Perhaps this is related to less thatch?

13. Generally less winter injury - less ice injury due to better drainage and as this program will tend to encourage the development and spread of creeping bentgrass over **Poa annua** there is less potential for winter injury **Poa annua** is

the most susceptible grass in this part of the country to winterkill so the less **Poa annua** you have the less potential you will have for winter injury.

14. Generally an extended playing season - greens that have been on a good sand topdressing program will generally tend to firm up earlier in the spring, are less spongy through the season and generally are quicker to return for play after a rain.

15. Generally a fairly inexpensive program when compared to topdressing efforts using commercially prepared materials. It is a very economical program in most instances.

### THE CONS

1. Increased wear and grinding of reels and bedknives - The light, frequent applications of topdressing sand always tends to leave some particles on the surface and when the greens are cut this sand causes extensive wear and dulling of the cutting blades and bedknives. Also, because of lower cutting heights it is also necessary to grind some of the thickness off of the bedknives ... which can significantly decrease their life. So, between using thinner bedknives and the abrasiveness of the sand you can expect to use more bedknives and do more maintenance on the mowers.

2. Firm greens - some golfers don't like firm greens (they won't hold as well)- Firmer greens simply won't hold as many shots as will softer greens. Firmer greens can cause some objections from at least one segment of golfers.

3. More hydrophobic dry spots - Hydrophobic or isolated dry spots seems to occur more frequently on high sand soils. Thus, with a sandy topmix you can expect more of these dry spots (increased useage of spot coring and wetting agents) than with topsoil based topdressings.

4. Lower or different microbial activity levels - Dr. Clinton Hodges has been studying some of the effects of these high sand soils on the flora and fauna in the soil. When you are dealing with a straight sand grass growing medium things are different in terms of soil microbes than a more native or natural type of soil. This may or may not be a problem but it is a different environment to deal with.

5. Lower nutrient holding capacity - sand soils just don't hold nutrients as efficiently as a topsoil type of topdressing. Their Cation Exchange Capacities (CEC) are generally lower.

6. Lower moisture retention - high sand soils just don't hold as much water.

7. Different diseases to manage - whereas a sandy topmix would generally tend to decrease overall disease problems those diseases which still are active will tend to be more of the soil borne type (again referring to Dr. Hodges' work) and not necessarily the traditional diseases common on golf courses. In a nutshell, these high sand soils are different environments for the growth of organisms and this can sometimes lead to some very unusual disease problems. Also, it has been our experience that you tend to get more algae with sands.

8. Tough to germinate seed - less moisture near the surface and less moisture retention will tend to make seed germination more difficult. Extremely careful water control must be exercised when attempting to germinate seed in these high sand soils because they dry out so quickly.

9. Possibility of more winter desiccation on **Poa annua**. Because these soils hold less water under severe desiccation pressure in the winter susceptible grasses such as **Poa annua** may have somewhat increased potential for winter injury due to desiccation.

10. A commitment to one type of topdressing material - it has been said many times but it is worth repeating again that once you begin a sand topdressing program you must



essentially stay with it forever. In reality, you have determined the basic type of topdressing material to be used on that green for the remainder of its useful life. Some people simply don't like to make that committment.

11. Must maintain quality control of the sand both physically and chemically - all sands are not alike. Some are high pH (Calcareous) and others are neutral to slightly acid (silica based). Also, care must be exercised to make sure that the sands don't vary in their particle size analysis. You don't want to use coarse sand one time, medium sand the next followed by an application using very fine sand. Conceivably, you could get into some serious layering problems by using different sands. Truly, sands are not all the same and once you begin using one type you really should stay with that same basic type of material.

12. Concern about placing a faster draining layer over a slower draining soil as is found in so many greens. There is some concern about what happens when water moves through the sandy profile, strikes the slower draining underlying topsoil and then backs up. In essence a type of "septic tank effect". There is some concern that when this occurs, especially in the summer, problems with roots may arise.

13. Uncertain future - no one has been topdressing with sand for a very long period of time so there is no sure example of what to expect from long-term useage of sand for topdressing greens. There may or may not be a problem but the uncertainty of not knowing for sure what to expect can be a negative aspect to this type of program.

These then are the basic advantages and disadvantages I see for straight sand topdressing. Some obviously are more valid than others, some may or may not be a problem but in traveling throughout the region these are the basic concerns I see expressed. There may be some additional ones but I have attempted to group them into fairly major categories. I am certain for many years to come there will be a continuing discussion on straight sand topdressing. It is controversial now and it will probably stay that way for some time to come or at least until we know just how valid some of these pros and cons really are.

**Stanley J. Zontek, USGA Green Section  
North-Central Director**

Dear Peter,

The years slip by "hurrieder and hurrieder" but my Midwest friends stand staunch and true. The Honorary Certificate and card are ample evidence of the way you remember a friend. It is a gracious gesture for which I am pleased and grateful.

Is the golf course still in use as the A.D. Lasker Estate? It was there that I saw my first (and only) hole-in-one. Carter Harrison made the shot, a 3-iron, while I caddied for him.

When did the USGA Green Section Demonstration Garden disappear? Harold Clemens, Homer Aylsworth and I were together every day while I was there. I've lost track of Harold. I buried Homer in a little country cemetery near Scranton, PA 50 years ago. How things change.

The Midwest can be proud of its organization. You have had strong leaders who have maintained progress. That has not changed!

My best to all of you and thank you again for the continuing courtesy.

**Fred V. Grau, President**

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