SAND-GROWN SOD REVISITED©

I have been employed in the turfgrass industry for 40 years this year, and I am now convinced I will go to my grave (or the crematorium) not understanding sod transplant problems or lack thereof. In most cases where the installation and post-installation care are done properly, there are no problems. I wish that was always the case. But before you even talk about maintenance, you must select the sod.

The standard in the industry is that the sod *must* be grown on a sand to be transplanted onto a sand-based mix. When you talk about a standard in the industry there are usually legal ramifications that if you don't follow those standards things don't work out they way they should. I don't deny that using sand-grown sod is the preferred way of sodding a sand-based field, but it often comes at a huge expense to the owners. Let's face it, there really aren't too many sod growers in this country that are growing their product on a sand, much less a sand that is sized similarly to what a field is built with. Therefore, sand-grown sod is sometimes transported hundreds of miles to reach the installation site.

The fact is, I have probably seen at least as many problem fields where the "standard of the industry" is followed as not. In some of those cases the problem could be attributed to post-installation care. A new sand-based field is often a challenge to sports turf managers without experience with this type of field. There is definitely a learning curve. Based on my experience doing the forensic work on these problem fields, over-irrigation is often the suspected cause (**Figure 1**). I would guess that there is some element of fear that the mix will be droughty, that fear leading to excessive irrigation. A properly designed and built sand-based system should not be droughty, but that is a topic for another article.

On the other hand, I have seen installations that should have failed (based on our standard of the indus-

▼ **Figure 1. Overwatering** can cause issues even with sand-grown sod.

try) that have done extremely well. These were sand-based fields that were sodded with sod grown on fine textured soils; as fine as silt loams. Higher profile examples of these include the Great Lawn in New York's Central Park and two sand-capped soccer fields at Cornell University.

In a recent project I was retained by a design firm to write the rootzone and turfgrass specifications for two sand-based fields for the Rush Henrietta School District in suburban Rochester, NY. The rootzone mix was my standard specification taking into consideration local materials. I specified a sand-grown sod. At the preconstruction meeting the cost of importing a sand-grown sod was discussed, as it was a concern. I explained that the use of a sand-grown sod was the standard of the industry and that using such reduces the risk of soil incompatibility problems. But then I shared my experience of successful projects where soil-grown sod was used on sand-based mixes, making it clear it was not my recommendation. I further explained that if there was a problem, regardless of the cause, that they would have no problem finding an expert to say that sod incompatibility was the problem. The risk was theirs to take.

The school district would realize thousands of dollars in savings if they used a local, soil-grown sod. They decided it was worth the risk. Before construction began we built a mockup of the field profile using the proposed rootzone mix and sod. Since this was done in winter, the study was conducted in a small growth chamber. I applied about 2 lb. P_2O_5 /1000 square feet from triple superphosphate and a pound of nitrogen from urea to the mix preplant. The fertilizers were mixed into the top 2 inches. The sod was watered lightly to wet the sod twice daily with a deeper watering every 3 days. By week two I backed off on the water to once every 3 days without any problem. In 25 days we had dense rooting to a depth of 6 inches (**Figure 2**). This study provided the school district with some level of comfort in their decision.

The sod was a blend of Kentucky bluegrass cultivars with a small amount of Thermal bluegrass grown on a loam soil (49% sand, 42% silt, 9% clay). The football field was sodded in late July with temperatures well into the 80s. By the time of the first game was played 8 weeks later, roots were deep and dense (**Figure 3**).

I have to note that the sands used to make the root zone mixes in the Rush Henrietta fields as well as the Cornell sand-capped fields were coarser than a USGA greens sand. The fact that these coarser sands may provide better aeration and higher oxygen diffusion rates may have contributed to the massive and deep rooting we observed. I'm not sure I would be as comfortable using a soil-grown sod transplanted onto a sand on the fine end of USGA greens construction guidelines. But then, we aren't talking about greens.

If a soil-grown sod is used on a sand-based field, I think it will be especially important that the sports field manager employ a core cultivation program to include harvesting or sweeping the cores, followed by sand topdressing. In the long term it will be best to remove as much of

▼ **Figure 2. Left:** Rooting of sod 25 days after sodding in growth chamber. **Figure 3. Right:** Rooting of soil-grown sod on sand-based mix, 7 weeks after installation.

▲ **Figure 4. Rush** Henrietta field after first game.

the imported fine textured soil as possible to maintain the sand as the growing medium.

In the event you have no choice but to use soil grown sod, here are some tips*.

• First, don't even consider a sand-based field unless you have the resources and commitment to maintain it properly.

• Set up a mockup profile as discussed with the rootzone and sod proposed for your project; see how it goes.

• Use a sod just mature enough to harvest. Do not use old sod.

• Have the grower cut the sod as thin as possible, minimizing the amount of fine textured soil transplanted.

• Consider having a rootzone mix designed with a sand coarser than greens construction sand but still meeting accepted performance parameters.

• Practice good pre and post plant care, especially with regards to post plant watering.

A sod grown on a soil media similar to that on which it will be transplanted is still the best way to minimize the risk of soil compatibility problems. My intent in sharing these experiences was not to debunk or challenge any standards, but to offer some information and hope to those that may want a sand-based field but no easy access to sand-grown sod.

* My experience is predominately with cool-season grasses. These tips and your outcome may or may not apply to warm-season grasses. ■

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