



Q&A

Topdressing Materials

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Have Questions?

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Over the past four years we have topdressed our football fields with DOT sand (approximately 45 tons per field), and have had decent results. Recently we had representatives from a soil amendment company come by and demo their products (Turface MVP and Profile) on one of our baseball fields. These products can also be used for topdressing. My question is what kind of results can we expect from using these products? Will they relieve compaction and retain moisture and nutrients at the root level? We are thinking about putting it between the hash marks on our football fields.

Mike Guild
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Topdressing athletic fields is an important practice to maintain a level playing surface and as a means to gradually amend the soil profile. Depending upon the topdressing material and rate of application, topdressing can enhance drainage of heavier soils or slow rapid infiltration through coarse sand profiles. Topdressing can also be used to control thatch. The material used for topdressing should be physically and chemically very similar to the existing soil unless the intent is to modify the soil profile.

It is after the decision has been made to modify the soil profile that alternative amendments may provide be investigated. Some type of sand is probably the most commonly used material for topdressing. Due to the larger particle size of sand, it is generally more resistant to compaction and has a higher rate of permeability

than most native soils. Of course not all sands are alike. The term DOT sand is a very loose description that I have often heard used to describe a cheaper, more readily available medium that contains variable particle sizes of silica or quartz sands. The problem with DOT sand is that the percent of a particle size allowed is so great. A DOT sand can actually contain a high percentage of large particles (15 percent gravel and from 3 to 70 percent coarse sand). Gravel is of course not wanted on an athletic field surface, and too much coarse sand can result in an unstable, droughty field. Before a sand is purchased for topdressing, at minimum ask for a particle size analysis. A sand acceptable for building roads may not be acceptable for topdressing your athletic fields.

Heat-treated materials like calcined clay, calcined diatomaceous earth and porous ceramics are commonly found in today's athletic field market. The two products you mentioned are labeled by the company that markets them as porous ceramics. The product Profile has most often been associated with the golf course industry and the Turface product line mostly with the athletic segments, particularly as a clay topdressing on skinned areas. These two products (as well as several other inorganic amendments) often have internal pore space that retains a percentage of the soil water. The release of soil water varies depending upon the product. So, one of their primary uses is moisture control/management.

To more specifically address your question, 1) core aeration is still the best way to improve root zone permeability and at the same time con-

trol compaction. It is fast, easy and effective. Generally, most compaction from normal use occurs in the top 1 to 3 inches of the soil surface. Combining normal depth core cultivation (3 to 4 inches) with deep core cultivation (greater than 4 inches) will provide both surface and subsurface improvements. 2) Putting a larger particle material in the root zone (e.g. Turface) should increase permeability to a certain extent and will generally delay further compaction compared to a fine textured root zone. Coarse sand would have the same effect, but it holds almost no moisture. 3) A material with internal pore space (e.g. Turface) will hold more water than sand. In general that water is available for plant use. 4) Many of the inorganic amendments will hold more nutrients than sand due to higher CEC.

You should see no negative effects from these particles applied to southern turfgrasses maintained for athletic fields. I say this because a lot of superintendents think that these particles will break down and "stop-up their green" (fill pore space). I have seen no indication of this with Turface or Profile, nor do I believe that would ever happen. The response I have heard from users of these materials has ranged from neutral to very satisfied. My experience is that the decision to use one of these products is generally an economic question. In Florida, the cost to apply 250 pounds per 1,000 square feet (between the hash marks) is roughly the same price as topdressing the entire field with sand. These materials will not solve all your problems, but do provide another tool that can be used for soil management.

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