If the organic materials used in green construction have a low 'ash content,' a high amount of fine material will plug it up.

Dirty ponds, dirty sand, dead greens

Use clean sand, and install the irrigation system inlet where it won't pull material out of the bottom of the pond.

By BILL KNOOP, Ph.D. / Technical Editor

In the past, native top soils were frequently used for putting green construction. In some cases, this is still being done.

Native soil greens can survive, but it's a matter of traffic. Native soils contain varying amounts of clay and silt, which tend to slow drainage. Clay will plug up a green and, of course, greens that drain poorly don't tolerate high traffic, and usually have more disease problems.

Most agree that a washed sand in the 0.25 to 0.5 mm particle size range works best. Some may put the bottom of the range at 0.10 mm. Adding a decomposed organic material to the sand adds some degree of water and nutrient retention.

The percentage of organic material may be based on experience, as much as anything. The range seems to be from 20 percent to as little as 5 percent. And, I emphasize the word 'decomposed.' I've seen new greens fail due to fresh organic material.

Fresh organic matter uses nitrogen in the decomposition process. A severe nitrogen deficiency can occur if the organic material in the greens mix is not decomposed.

About washed sand

New greens fail because the sand used to build them was not washed. Sand size quality can be evaluated by passing it through a set of sieves. The problem is that the sand can be dirty; that is, coated with clay. And this dirty sand can pass the sieve test easily. But as the new green is irrigated, the very fine clay particles can wash off the sand, and they may slowly accumulate to form a layer. This layer reduces internal drainage, restricts root growth, and may support increased disease activity.

Even though the sand is of proper size, the "dirt" that covers it significantly lowers the quality of the green and may force reconstruction. The use of dirty sand in topdressing will end up creating the same problem. Put a sand sample in a glass container with water, swirl it around and see how dirty the water becomes. Whatever is floating in the water is going into the green. Dirty sand used for green construction and for topdressing can be a major source of future problems.

Intake pipes a problem

Many golf courses get their irrigation water from ponds. If, during construction, soil is allowed to erode into these ponds, the water becomes "dirty." The fine particles may be carried through the irrigation system to the greens. Dirty irrigation water may be caused simply because the irrigation system intake pipe is too close to the bottom of the pond.

I've seen large holes or depressions in the bottom of ponds just under the intake pipe. All that very fine soil material had been sucked up through the system and deposited on the greens. In some parts of the country, water is hard to get and very expensive. Golf courses pay thousands of dollars a month for city water, only to store it in "dirty" ponds.

Burn to learn ash content

One other smaller problem area to be concerned about is the source of any organic material used in construction or used for topdressing. There is a test used in the evaluation of organic material which simply involves burning the sample to determine the "ash content." This tells us just how much of the sample is truly organic and how much is "dirt."

A low "ash content," it means that a lot of fine material will remain. This just becomes another source of fine particles that can plug up a green.

Use "washed" sand of the proper size, get the "dirt" out of the irrigation system, and use organic material with the highest "ash content" possible.

These suggestions will help prolong the life of any green. □