For turf's sake, don't take peat for granted

By Tom Lever

The constructed soil in sports turf root zones is the foundation of your golf course. It is easy and often taken for granted until it is placed and covered with turf. Yet your continued success is largely linked to root-zone management, including construction. When roots are healthy, strong, and sustained, you are also able to establish and sustain healthy, playable turf. This goal is best achieved through the proper use of peat in the root zone and the bonus is water and nutrient conservation.

No other organic material is as effective as peat in constructed soils for maintaining healthy turf. Our organic options are ever increasing, but peat is the proven standard in the horticultural industries and for very good reasons. Healthy turf relies on a balanced diet of water, air and nutrients. A properly constructed root zone and peat provide both or sorption sites. The water held within your turf is readily available to the roots of the turf. No other organic can provide both storage and availability so well. The fibrous nature and structure of peat enables the controlled metering of water and gases in the constructed root zone.

The greatest benefit of sphagnum peat in sports turf management is water conservation. The water in the root zone is the "chicken soup" to the turf — a broth carrying nutrients, gases and other natural substances to and from the turf roots. If stagnant, this water can suffocate the roots and give rise to diseases and turf failure. The proper use of peat will improve your efficient water use, storage, with optimum gas exchange which promotes an aerobic environment. This means moisture storage without stagnant, anoxic conditions. The balance of water movement and storage is very critical, since all root-zone functions are related to these processes.

Not only is total water use made more efficient with peat, but water quality is also improved. Peat provides a physical barrier to root-zone water which may be laden with nutrients and agrochemicals. Micro-organisms reside in the organic and biologically degrade agrochemical residues structurally and biocycle into the peat. By using peat, the water percolating through the root zones of your facility is physically and biologically treated.

An additional conservation bonus of peat is related to the inherent presence of peat humic substances. Organic acids stimulate microbial activity and promote more efficient nutrient conversion and uptake by the plants. This effect on the beneficial micro-organisms gives them a competitive advantage over pathogens in the root zone.

Letters

Detailing A Recipe For Root Zones

To the editor:

I admire Mark Leslie's editorial in the November issue. "We mustn't forget: Greens, root zone are living organisms." The "recipe" you describe is widely accepted, specified and used by the Deans of American Golf Construction. You identify several of these Deans in your editorial and the accompanying article ("Experts decry inconsistent root-zone mixes"), none of whom address your question: "Does anyone know what this recipe evolves into?"

The solution to your "recipe" is not found in the school of agronomy but is discovered in the school of medicine; pre-med to be exact, in the microbiology section.

See "Facts on File, Biology," edited by Elizabeth Tostill; Library of Congress catalog 88-045476; published in New York-Oxford-Sydney. This particular volume describes Part A of your "recipe" for peat. What follows is a partial description of "peat" from the above text:

1. Partially decomposed plant material that accumulates in water-filled anaerobic conditions; varies from light spongy material to a dense, brown, humified material in the lower layers.

A. If mineral salts are present, neutral or alkaline peat (fen peat) is formed.
B. If there are no mineral salts present, peat or bog peat is formed.

What follows next is a description of the spongy and humified material:

1. Mull: humus from deciduous and hardwood forests; fen; fire spongy material to a dense, brown; alkaline; supports bacteria, worms, larger insects are abundant; decay is rapid.
2. Mor: humus; usually acidic characteristis of coniferous forests; contains anthroponds and fungus being the most common organisms; decay is very slow.

The textbook description of your recipe would now read:

peat = peat (bog) = raw humus (mor)...

and the solution to your “recipe,” which is missing a big opportunity — an opportunity to make the game more enjoyable for your golfers, and give them a reason to prefer your course.

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