

# Topdressing For Success

*The reasons for topdressing golf greens and athletic fields include controlling thatch, providing a smooth putting surface, and modifying the surface soil characteristics.*

**T**he practice of spreading soil, sand, organic matter, or some combination of these onto a turfgrass area goes back many, many years. In the early part of this century, golf course superintendents would mix their own topdressing from soil, sand, and manure, often keeping their formulas a secret.

More recently, topdressing is becoming as much a standard practice on high maintenance turf areas as fertilization. As routine as it seems, I often get the sense that many don't fully appreciate the impact this practice may have on their turf, good or bad, and the importance of selecting the proper topdressing material to achieve your goals.

## Why Do We Topdress?

The reasons for topdressing golf greens and athletic fields are many. The primary reasons are to control thatch, to provide a smooth putting surface, and to modify the surface soil characteristics.

Topdressing is a means of biologically controlling thatch. The application of a topdressing helps minimize thatch by preventing the formation of a physical separation between the soil and the plants. The mixing of a topdressing material with the thatch as it accumulates actually provides an ideal environment for the decomposition of the organic matter. In some cases, the topdressing may actually serve as a microbial inoculum that further enhances decomposition.

Topdressings are also used to smooth or level the surfaces of greens and athletic fields. The putting surface of greens are kept smooth by light frequent topdressings. Irregularities in grade on larger areas, such as athletic fields, can be removed by applying topdressings and floating or regrading the affected areas.

## What Should I Topdress With, and How Often?

The topdressing material you use will depend largely on the goals of your topdressing program. If your primary goal is to prevent thatch, or to remove subtle irregularities in grade, and the soil existing on the site is suitable, the area should be topdressed with a soil very similar to the existing soil.

Unfortunately, athletic fields are often constructed with heavy soils found on the site, and not well suited for high traffic. The surface

physical properties of these fields can be improved through a topdressing program. Frequent, heavy topdressings with a sand or sand mix will build a more permeable cap on the surface of the soil that will expedite surface drainage, and improve the compaction resistance of the soil. The field should be topdressed at least twice a year with a high sand topdressing at a rate of 0.5 to 1 cubic yard of topdressing per 1,000 square feet. Topdressing should always follow core cultivation to further amend the soil surface.

The success of a program to amend surface soil characteristics will only be as good as the sand selected to topdress with. The sand should be uniform in particle size with most of the sand particles falling into the medium and coarse size fractions (0.25 to 1.0 mm). Table 1 lists a recommended particle size distribution for a sand topdressing for athletic fields.

Many theories exist on the selection of topdressing materials for greens, the most controversial being sand vs. sand mix. The proponents of straight sand topdressing argue that there is sufficient organic matter in mature greens, so that additional organic matter is unnecessary. Furthermore, straight sand is less expensive than sand peat mixes, and much easier to apply.

Proponents of sand based mixes argue that straight sand can become hydrophobic, and that it is biologically sterile. Furthermore, research conducted at the University of Rhode Island several years ago showed better turfgrass quality with sand:soil topdressings compared to sand alone.

Newly constructed greens should be topdressed with the same mix used for construction; this normally being a sand:peat or sand:soil:peat mix. New greens constructed to USGA Recommendations or similar have very little cation exchange capacity (CEC); an 80:20 sand sphagnum peat mix rarely having a CEC of more than 2 meq/100 grams. This inherent lack of fertility makes fertility management difficult, especially during the maturing years. It is very desirable, then, to continue to add organic matter through topdressing.

The sand used as the base of a putting green topdressing mix should be uniform in particle size, with most of the particles falling into the fine through coarse size fractions (0.10-1.0 mm). There is little tolerance for sand particles larger than 1 mm in diameter, since these will be difficult to work into the turf, leaving the potential for mower damage. Table 1 lists my recommendation for sand particle size for a putting green (or tee) topdressing. Many topdressing sands in New York State are very fine in texture.



*Infrequent topdressing can result in layering.*



**Table 1. Recommended topdressing particle size distributions.**

Sand Particle Size	Sieve Mesh Size	Athletic Fields % Passing	Putting Greens % Passing
2.0 mm	10	95-100%	100%
1.0 mm	18	80-100%	95-100%
0.25 mm	60	0-25%	0-30%
0.10 mm	140	0-10%	0-10%

While this may be working out well for topdressing older, native soil greens, these sands have the potential to seal off the surface of sand based greens built to USGA or similar specifications.

Topdressing should be applied at least monthly during the growing season at a rate of 0.25 to 0.5 cubic yards per 1,000 square feet. Infrequent topdressing may result in the formation of alternate layers of thatch and topdressing (see photo), a condition that no doubt has a negative effect on water and air movement in the soil.

Working in the topdressing after it dries on the surface should be performed by an experienced worker. I saw two incidences of severe turf injury this past year alone from excessive dragging of greens following topdressing. If you are topdressing during stress periods, you may consider brushing it in rather than using a drag mat.

### What Type of Organic Matter Should be Used?

There are several sources of organic matter that can be included in your topdressing material. Well decomposed products such as peat humus and reed sedge peats blend very uniformly with sand and are ideal organic sources for topdressings. Since there are many mucks being sold as peat, be sure that the peat you use is high quality. I recommend that any peat used in topdressing have a minimum organic matter content of 85%, as determined by a loss on ignition test. Mucks have a high silt and very fine sand contents, and will seal up sands.

Sphagnum peats are very high in organic matter and are well suited for use in topdressing. Since sphagnum peat is more fibrous than the reed sedge peats and peat humus, there may be some segregation of the peat from the sand, especially when it dries.

There are some high quality composts being marketed in New York and surrounding states. Quality composts (see article on compost beginning on page 1) are suitable for topdressing materials, and may actually be advantageous to

peat. The benefits of some composts for disease suppression are becoming well known. The main disadvantage of compost is the presence of small wood chips. A topdressing supplier can screen much of this out with a 1/4 or 1/8 inch screen. Any wood chips remaining on the turf surface will be removed with the first mowing, without damage to the mowing equipment. With the proliferation of compost products on the market, I would recommend physical and chemical testing any topdressing mix containing compost before you topdress your greens or athletic turf.

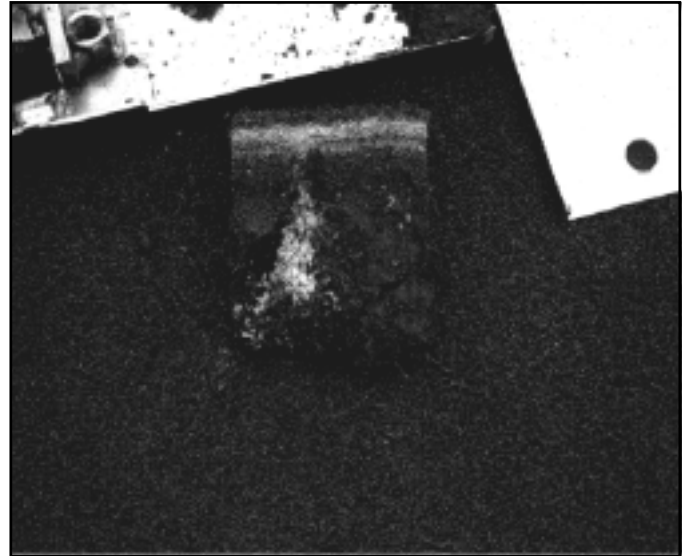
### Can I Switch Topdressings?

It is not desirable to switch topdressing materials. Unfortunately, there may come a time when you have no choice due to supply problems or economic considerations. The greatest danger in switching topdressing is the potential for layering in the profile. If you must seek out an alternative topdressing source, look for a product with a sand particle size similar to your existing topdressing material. A competent soil testing laboratory can assist you in determining similarities in topdressing materials. Switching a topdressing from one that has no organic matter to one that does (or vice versa), presents less of a layering potential than switching sand sources.

Topdressing fine turf areas can bring great improvements to high value turfgrass areas. Selecting the proper topdressing material and topdressing frequently enough to show some benefit are the keys to a successful program.

NORMAN W. HUMMEL, JR.  
DEPT. OF FLORICULTURE AND ORNAMENTAL HORTICULTURE

***Topdressing fine turf areas can bring great improvements to high value turfgrass areas. Selecting the proper topdressing material and topdressing frequently enough to show some benefit are the keys to a successful program.***



*Light, frequent topdressings build up a sand "cap".*