

# TOP-DRESSING FOR TURF

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**A**ny serious discussion of "Principles of Turf Management" would be most incomplete without giving consideration to such a basic principle as topdressing. With the lack of manpower during World War II, we found we could get along without it. Improperly done, it can add to our problems and essentially destroy a well-constructed green of otherwise excellent quality. Apply too much and we smother the grass. If we fail to sterilize topdressing components, we plant weeds and very likely encourage disease.

There are other potential disadvantages too numerous to mention, so why don't we just close the book on topdressing and forget it? We don't because ever since man began managing turf and improving it for sports use, the many advantages have been obvious, although not often understood. Topdressing is the turf industry's castor oil. It is a bitter medicine to take, but it certainly does a lot of good things for turf.

Many of the advantages of topdressing are spelled out in an article by W.H. Bengeyfield, entitled "Top-Dress Greens and See the Difference," published in the GREEN SECTION RECORD in January, 1969.

Bengeyfield lists the advantages as (1) smoother putting surfaces, (2) tighter and finer textured turf,

(3) reduced grain, (4) an aid to thatch decomposition, (5) reduced disease, (6) better water and fertilizer infiltration, (7) alleviation of compaction, and (8) protection against cold weather injury. In addition to these advantages, we might suggest at least two beneficial uses of topdressing as (1) soil modification, and (2) as a seedbed for winter grasses on bermudagrass greens.

These beneficial aspects of topdressing place the subject in an entirely different light. Still, there are a great many valid questions left unanswered about the materials to use and how best to apply them in addition to the basic question about the need for topdressing at all. At this point, I can only rely on the preponderance of research information which favors topdressing and my own practical experience and observations which also favor the practice.

One reference published in 1970 said topdressing is usually not necessary. Suitable turf grasses will thrive without it. However, there are a few special situations where topdressing may be warranted (because of the labor and expense involved, topdressing should be limited to the most important turf areas). This isn't a complete shutout because the door is left open to some topdressing in special

*The sod job pictured was a poor one but top-dressing is certainly in order with this or any other sod job.*





situations and, besides, it refers more to parks, lawns, and athletic fields than to putting greens. On the other hand, the entire reference tends more to downgrade the benefits of topdressing than to promote them. Perhaps this particular reference is a little too far removed from our real subject to be applicable, however, we can start there and move on to a reference published in 1973 which says, "Topdressing should not be used as a routine practice in the cultural system but only as needed to control thatch or to improve the smoothness of a green surface. The frequency of topdressing varies from none to as frequently as every 3 to 4 weeks. Quality bentgrass greens have been maintained for years without topdressing, while topdressing may be a necessary cultural practice on other greens."

The most recent reference is an article in the May, 1974, issue of the GREEN SECTION RECORD by Madison, Paul, and Davis, of the University of California. The article is entitled, "Consider a New Management Program for Greens." This article outlines some advantages of and procedures for light, frequent topdressings. Basically, they are talking about topdressing 15 or 20 times a year, depending on such variables as the section of the country, the management the turf receives, and the type of grass being grown.

Now, who are you going to believe and which practice should you follow? All of these references are correct if taken in their proper context and if followed advisedly. What a turf manager must do is learn the basic principles behind topdressing, use these with a definite purpose in mind, and adjust the topdressing schedule according to the needs of his individual situation.

Now, let us go into some basic facts about topdressing and its use:

## 1. Topdressing Material and Layering

The material used as a topdressing must be a properly analyzed product which would be suitable

for use in green construction. Specifications for such a material are clearly and definitely outlined in the USGA "Green Section Specifications for Putting Green Construction," and in the recently published article, "Sand for Golf Courses." There is no way to achieve the best result from topdressing greens with a material of lesser quality.

A good topdressing material (properly analyzed) can eventually modify or replace the poor soil to a depth which is adequate to give your green a new lease on life and provide a manageable situation.

Although we would prefer to have the entire topsoil on a green uniform in depth, this is seldom possible unless the right soil was used in construction and its use was continued as topdressing.

Dr. Marvin Ferguson has said that, "Much of the controllability of traffic on putting greens is either built in at the time of construction or it is left out." The same goes for manageability. We may be able to improve a poor soil with topdressing to the point where we can live with it, but we can never make it as good as it would have been if properly constructed in the first place.

A compaction resistant soil with adequate drainage as well as adequate moisture retention, such as would be the product of a proper physical analysis according to USGA specifications, when placed as topdressing over a tight clay, typical of most older greens, would make an almost immediate improvement in the growth of the turf. Of course, the deeper the layer of good soil the better, but in numerous situations like this (a loose soil on top and a clay underneath) we have seen bentgrass roots strong and healthy below 12 inches. The tops were good, too. In this special case, layering has distinct advantages.

## 2. How Much Topdressing and Why?

The amount of topdressing required will vary with each situation; soil modification taking the most and normal topdressing for thatch and grain control tak-



*Vandalism is an increasing problem which necessitates costly repair. New soil (topdressing) will have to be used to fill up the ruts.*





*Soil needs proper pore space for both air and water.*

ing the least.

In my opinion, topdressing should always be done so that it is incorporated with or naturally blends with the thatch. Simply covering a layer of thatch, especially a heavy layer of more than  $\frac{1}{2}$  inch, would have about the same effect as installing one of those bad layers we are all so afraid of.

To properly mix the topdressing with the thatch, we must either topdress frequently enough to keep the thatch from getting ahead of us, as Madison suggests, or we must mechanically remove the thatch by aeration, filling the holes with good topdressing material; or remove the thatch by slicing and filling the grooves with topdressing.

Mixing the thatch with topsoil encourages microbiological activity which in turn breaks down thatch and converts it into valuable soil humus. In addition, new soil around the grass plant will cover stems causing them to take root and send out new shoots thereby producing a tighter, finer-textured turf with less grain. Last but not least, repeated topdressing will smooth and true the putting surface—ball marks, footprints, damaged areas and all—and help to keep it putting better.

Exactly how much topdressing to use should be redetermined for each application and will vary with such things as type of grass, temperature, purpose of the topdressing, and condition of the grass on the putting surface. A handy figure to remember is that it takes 1.54 (roughly one and one-half) cubic yards of topsoil to cover 1,000 square feet  $\frac{1}{2}$  inch deep. To figure other depths or volumes required, simply multiply for greater depths and divide for less.

In most cases,  $\frac{1}{5}$  (.2) of a cubic yard per 1,000 square feet is considered a very light topdressing. This is one cubic yard on an average 5,000 square foot green. This would figure out to about  $\frac{1}{16}$ -inch of topdressing over the entire green. When using a heavier topdressing, possibly before overseeding bermudagrass, two to three cubic yards per 5,000 square foot green might be used to prepare a good seedbed and to aid in protecting the bermuda stolons and rhizomes through the coming winter.

### **3. Preparation, Handling and Application of Materials**

The final step in preparation is sterilization, which can be done in many ways, such as composting or with chemicals such as methyl bromide or Vapam. However you do it, this is an important step that should never be omitted.

Proper handling of topdressing materials means that they will be stored in a place that will keep them uncontaminated and dry; ready for use at any time. Polyethylene covers are sometimes used, but they are a poor choice over permanent storage facilities.

The advantages of a good topdressing are many, and where the finest quality putting greens are desired, this practice is a must. In my opinion, the merits of topdressing have been adequately proven although there are still a great many unanswered questions about when, how, and why we should do it; what it does for the turf, and especially what constitutes a good material. We certainly hope that current soil studies being carried on at several research stations can help supply some of these answers.