

Turf Blankets

by Jim Hermann, CSFM

Give your turf a jump-start in the early spring by installing turf blankets. Understanding the principles involved in soil temperature manipulation is a key component in getting the most benefit out of your turf blankets.

The basic concept behind utilization of turf blankets is to increase average soil temperatures beneath the blanket at an accelerated rate as compared to uncovered turf areas. This increase in soil temperature stimulates an earlier growth response in the turf.

Soil surface temperatures respond closely to what could be called the temperature budget. If more heat is gained in the soil than is lost there is a net rise in temperature. If more heat is lost from the soil than is gained there is a net loss in temperature. There are two major recurring heat cycles, which have the greatest affect on soil surface temperature, *diurnal* and *annual*. We are all very familiar with both of these cycles although many of us have not been formally introduced.

The *diurnal* cycle or period consists of the daytime warming and nighttime cooling of the soil throughout the year. This warming and cooling of the soil is stimulated by variations in radiation from the sun. The sun comes up during the day and it warms up. The sun goes down at night and it cools down.

The *annual* cycle or period is the result of seasonal changes in temperature due to seasonal variations in the sun's radiation. Basically, in our area there is an increase in radiation from the sun, which starts after December 22nd, "winter solstice". This is the shortest day of the year. This is the day with the least amount of daylight for the entire year). After winter solstice, the sun's radiation increases and soon begins to provide enough energy to start to warm the soil surface. Although these increases start in December, the affects are not really noticeable until mid to late February. This is the time of year when daytime temperatures typically rise above freezing and nighttime temperatures fall below freezing. Turf blankets should be installed by this period in time to achieve the greatest benefit both in the

root development and lateral growth of the turf. This warming trend continues for the next six months or so until the sun's radiation begins to decrease. The reverse then holds for the half-year summer to winter solstice. What does all this have to do with the use of turf blankets?

The function of a turf blanket is to allow for the increase in soil temperature due to the increase in the sun's radiation. This is accomplished while minimizing temperature losses caused by lower nighttime temperatures. In effect you are maximizing the positive temperature gains provided by the *annual* or yearly cycle and minimizing the temperature losses caused by the *diurnal* or daily cycle. The soil temperature increases and maintains relative warmth. This principle allows for earlier warming of the soil and therefore earlier turf growth response. Based on results I have witnessed, you can gain two to three weeks of early turf development by using turf blankets in this manner.

I have a few warnings or considerations when utilizing turf blankets for early spring turf stimulation:

1. When covering the turf in this manner you increase the risk of snow mold similar to the increased risk involved with prolonged snow cover. Turf maintained at a higher level of fertility such as that receiving late season fertilization is more susceptible to snow mold. A preventive fungicide

application may be warranted. Previous problems with snow mold should be considered when making this decision. If you have never had snow mold, a preventive fungicide application may not be justified. Blankets should be removed periodically to inspect for snow mold.

2. Caution should be exercised when removing turf blankets in the spring. Blankets should be removed during the day to accomplish mowing and replaced at night until the threat of frost is passed, in an attempt to acclimate the turf to normal seasonal temperatures and minimize turf damage. Late frost on sensitive turf can burn the leaf tissue and counter act early gains in turf development. Although a minor setback, turf generally recovers from frost burn with little or no long lasting ill affects.

3. Be prepared to initiate your mowing program earlier than usual and as always follow the 1/3 rule, never to remove more than 1/3 the leaf at any one time.

4. Last but not least, turf blankets are nothing more than a tool. When used in conjunction with an effective turf management program, turf blankets can enhance benefits realized from that program. That program should include but not be limited to:

- a. Periodic soil testing
- b. Effective nutrient management thru a site specific fertility program based on soil test results
- c. Aeration a minimum of two to three times a year
- d. Proper mowing management

References

Marshall, T.J., Holmes, J.W., Rose, C.W. 1999. *Soil Physics*. Cambridge University Press 3rd ed. ♦



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