Temperature and some sunlight conditions occur. Carbohydrates manufactured during this time are not "burned off" with growth and clippings, but are stored. This builds up the plant for next spring.

The rate of nitrogen application will again vary with turf conditions and the philosophy of the turf manager.
- For greens, 1/2 lb. N/1000 sq. ft. may be sufficient.
- If tees are still thin from traffic, especially on par 3 tees, 1/2 to 1 lb. may be needed.
- Fairways could receive 1/2 to 1 lb.
- Lawns and general grounds can receive 1/2 to 1 lb. N.

Some turf may perform better without late fall nitrogen. Some lawn care companies cannot justify the cost of late-fall nitrogen for customers who may not continue with their services the next year. However, turf quality the next spring should be excellent about the time spring sales begin.

Snow mold caution—Snow mold was severe on many turfs over the winter of 1992-93. Some of the greater infestation was aided by late fall nitrogen applications.

If turf is hit hard by snow mold nearly every year, and no snow mold prevention program is followed, it may be best to avoid late-fall nitrogen. In most years, the late fall N may increase the amount of snow mold, but there is a much quicker recovery from injuries.

Snow mold damage may be more superficial with the late fall nitrogen and/or the recovery is quicker. Either way, the next spring the turf returns to a better quality condition sooner with late-fall nitrogen.

For the Great Lakes region, we suggest applying the nitrogen after growth has ceased for all practical purposes.

This does not mean there will be no need to further mowing, but regular mowing will not be needed. An additional mowing or two may be required before growth ceases entirely. This occurs anywhere from the last week of October to the second week of November.

Avoiding early spring nitrogen has the advantages of reduced carbohydrate loss caused by excessive growth, less mowing, potential reduction in several diseases and greater moisture stress tolerance during the summer.

—Dr. Paul Rieke is a turfgrass specialist at Michigan State University. This article is excerpted from a paper he wrote for Hole Notes.

Take the bite out of summer patch

- Summer patch is one of the most destructive diseases of cool-season turf in North America. Prior to 1984 it was an unidentified component of the disease Fusarium blight. Summer patch has been reported on annual bluegrass, Kentucky bluegrass and fine fescue.

The symptoms—In mixed stands of annual bluegrass and bentgrass maintained under putting green conditions, patches are circular, 1 to 12 inches in diameter. As annual bluegrass yellows and declines, bentgrass species frequently reconcolorize patch centers. On fairways, rings or patches may not develop; symptoms may appear as diffuse patterns of yellowed or straw-colored turf that are easily confused with heat stress, insect damage or other diseases.

Infection commences in late spring when soil temperatures stabilize between 65-68 F. Symptoms develop during hot (86-95 F.) rainy weather or when high temperatures follow heavy rainfall. Patches may expand through the summer and early autumn and are often still evident the following growing season.

Chemical control—Systemic fungicides such as fenarimol (Rubigan), propiconazole (Banner), triadimeton (Bayleton), and the penazimidazoles (i.e. Tersan 1991, Fungo 50, and Cleary 3336) are most effective applied at label rates. Begin preventive applications in late spring or early summer when the maximum daily soil temperature exceeds 60° F. for four or five consecutive days. Monitor soil temperatures at a two-inch depth during the warmest part of the day. Repeat fungicides two to three times at 21-28 day intervals. Control is enhanced by applying products in 4- to 5 gallons of water per 1000 sq. ft. Post-treatment irrigation does not seem to increase control.

Cultural control—Because summer patch is a root disease, cultural practices...
that alleviate stress and promote good root development to reduce disease severity. Avoid mowing turf below recommended heights, particularly during periods of heat stress. Summer patch is stimulated at high soil pH. Maintain soil pH between 5.5 and 6.0 with the application of ammonium sulfate or a slow-release nitrogen source such as sulfur-coated ureas. Conversion of golf areas from annual bluegrass to bentgrass will further reduce disease incidence. Good cultural practices such as aeration, raising the height of cut, and fertilizing with acidifying nitrogen sources can reduce the use of fungicides.

Although these practices may take two to three years to reduce disease severity, they represent an environmentally sound means to improve turfgrass vigor and reduce fungicide rates 25-50 percent. Acidifying fertilizers and systemic fungicides have also been used on golf greens to effectively control summer patch and increase the population of bentgrass 11 to 20 percent over a three-year period.

—Bruce B. Clarke, Ph.D., Rutgers, presented this information at the 1994 Turf-Seed Field Day, Hubbard, Ore.

CORRECTION

- The systemic vs. contact fungicides "definition" debate has returned, after an article in our July issue.

A reader called to say that the article on page 29—which was supplied to LM—misidentified thiophanate, Chipco 26019, Vorlan and Curalan as contact fungicides, while thiophanate and Chipco 26019, he says, are systemic fungicides. Others may prefer to call them "penetrants," while many turf pathologists will say the only "true" systemic is Aliette.

If you have questions on fungicides, contact your supplier or an extension turfgrass pathologist.

Landscape Management regrets any inconvenience this may have caused.

We spoke with Scott Werner of Lincolnshire Fields, about whom the article was written. He agreed that thalonil was the only "true" contact fungicide mentioned in the article, which was also the opinion of our caller.

Werner explained there has long been a difference of opinion as to how the product action of fungicides should be described. Werner said there is no danger in combining these products, but agreed that some clarification was in order.

We spoke with Dr. Bruce Clarke of Rutgers University. He describes thalonil, Vorlan and Curalan as contact fungicides, while thiophanate and Chipco 26019, he says, are systemic fungicides. Others may prefer to call them "penetrants," while many turf pathologists will say the only "true" systemic is Aliette.

If you have questions on fungicides, contact your supplier or an extension turfgrass pathologist.

Landscape Management regrets any inconvenience this may have caused.

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