

## Balance nutrients for early fertilization

**Organics, 'bridge products' and coated fertilizers now offer more choices.**

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■ Late-season fertilization is common in most cool-season turf programs, and even in some warm-season programs. However, quality turf cannot be sustained without some kind of early-season fertilization.

Certainly, applying too much N in spring causes more mowings and increases the likelihood of turf diseases. Concerns about the potential for water contamination via run-off and leaching force us to more closely consider N sources, application rates, and in which situations we should—or should not—be using that fertilizer.

**Stimulate color, not growth**—This is a good rule-of-thumb for the average turf that is not subjected to intensive wear. On a heavily-used soccer field, however, N must be applied more frequently to stimulate the growth that promotes better wear

tolerance and speeds recovery from intense foot traffic. Common sense must be used in determining frequency and amount of fertilizer to apply. The proper amount will vary with species, desired quality level, and what the turf is used for.

Some turf managers rely on residual activity of fertilizer sources to carry them from one application to the next.

In Table 1, note that those fertilizers which promote rapid greening possess short residual activity, and that the potential for fertilizer burn is higher with these quickly-available sources. On the other hand, the quickly-available N sources are less affected by temperature and are less expensive per pound.

Slowly-available N fertilizers provide more even feeding and longer residual activity than fertilizers like urea or ammonium sulfate. However, some slow-

TABLE 1  
**CHARACTERISTICS OF NITROGEN FERTILIZERS**

Fertilizer name	Analysis	Source of N	Moisture dependence	Low temperature response	Residual N activity	Salt index (per N unit)	Leaching potential
<b>Quickly-available N fertilizers</b>							
Ammonium nitrate	33-0-0	ammonium nitrate	minimum	rapid	4-6 weeks	3.2	high
Ammonium sulfate	21-0-0	ammonium sulfate	minimum	rapid	4-6 weeks	3.3	high
Ammonium phosphate	18-46-0	diammonium phosphate	minimum	rapid	4-6 weeks	1.6	high
Urea	46-0-0	urea	minimum	rapid	4-6 weeks	1.6	moderate
<b>Slowly-available N fertilizers</b>							
<b>Slow-release sources</b>							
Sulfur-coated urea	22-38% N	urea	moderate	mod. rapid	10-15 weeks	NA	low
Once	24-35% N	urea, nitrate, amon. N	moderate	mod. rapid	15-36 weeks	NA	low
Polyon	11-44% N	urea, potassium nitrate	moderate	medium	4-12 weeks	NA	low
Scotts Poly-S products	16-40% N	urea, methylene urea	moderate	medium	12-24 weeks	NA	low
<b>Slow-soluble sources</b>							
IBDU	31-0-0	isobutylidene diurea	high	mod. rapid	10-16 weeks	0.2	mod.-low
<b>Ureaform reaction fertilizers</b>							
Nitroform	38-0-0	ureaformaldehyde	high	slow	10-30 weeks+	0.3	very low
Fluf	18-0-0	urea/ureaformaldehyde	moderate	medium	6-10 weeks	NA	low
Nutralene	40-0-0	methylene ureas	moderate	medium	10-16 weeks	NA	low
Methylene urea	39-0-0	methylene ureas	moderate	medium	7-9 weeks	0.7	low
Coron	28-0-0	urea/methylene ureas	minimal	mod. rapid	7-9 weeks	NA	moderate
N-Sure	28-0-0	triazone/urea sol.	minimal	mod. rapid	6-9 weeks	NA	moderate
<b>Natural organic fertilizers</b>							
Ringer	6-1-3	blood, bone, seed meals	high	medium	10-12 weeks	0.7	low
Sustane	5-2-4	composted turkey waste	high	medium	10-12 weeks	0.7	low
Milorganite, Terrene	5-6% N	activated sludge	high	slow	10-12 weeks	0.7	low

*Inclusion of products does not imply endorsement, nor does exclusion imply criticism.*

Source: Dr. Koski

ly- available fertilizers may provide a slow initial green-up, especially under cool, dry spring conditions.

Slow response can be offset with high rates (1.5 to 2 lbs. actual N/1000 sq. ft.) of the slowly-available sources, as is often done with straight ureaform and natural organics.

This is one of those rare instances in which more than 1 lb. of N/1000 sq. ft. can be safely applied. Unless you wish to adhere to a strictly natural organic pro-

gram, it is wiser and easier to apply a blend of quickly- and slowly-available N sources in the early season.

The resin-coated product called "Once" allows you to fertilize once in the spring and yet provide even greening throughout the growing season. This fertilizer has performed impressively in three years of testing at Colorado State University.

**Disease control**—Over- or under-fertilization, especially in the spring, can result in turfgrass disease problems.

Red thread can be a problem during moist, cool springs on fine fescue and perennial ryegrasses if they are under-fertilized and not growing at a satisfactory rate. On the other hand, diseases like stripe smut can become severe if susceptible Kentucky bluegrass cultivars get too much fertilizer during the spring.

Research at Cornell University and other universities shows that nitrogen sources may also help suppress certain diseases. That work suggests that natural organic fertilizers and composts, when used as turf fertilizers, can sometimes reduce the incidence or severity of diseases like brown patch, necrotic ring spot, red thread, dollar spot and pythium root rot. Success may vary depending on fertilizer and location.

**Clippings return nutrients**—Grass clippings provide legitimate and important nutrient sources when returned to lawns. In addition, the severity of rust and red thread may be dramatically reduced on ryegrass and bluegrass lawns where clippings are returned.

**Use fertilizer responsibly**—Any fertilizer application has the potential to contaminate water resources through surface run-off or leaching. Continuing research, however, indicates that careful fertilizer use presents negligible risk to most ground and surface water sources.

Using water-soluble fertilizers on sandy soils with high precipitation or irrigation rates greatly increases the potential for groundwater contamination.

Run-off from turf sites probably presents little hazard to water quality. However, sloppy application of fertilizer onto hard surfaces like driveways and streets will obviously present a problem when that fertilizer (which often is a pesticide carrier) is carried into storm drains with precipitation.

The responsible applicator will guard against this altogether, or clean up any mistakes by sweeping up the mis-applied material.

**Benefits of other nutrients**—Remember to test for and maintain adequate potassium levels for your soil type. Research shows that potassium can be an important enhancer of wear, heat and drought stress on both cool- and warm-season species. Try reducing the amount of N you use by making iron a more important part of your standard fertility program.

—Dr. Koski is an extension turfgrass specialist at Colorado State University's Department of Horticulture.

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