

WHAT'S IN THE BAG?

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What's in that bag of fertilizer you purchase? Obviously, when you buy fertilizer, one of the first things you check is the printed analysis to determine the amount of nitrogen, phosphorous, and potash it contains.

Once line requirements have been met, the production of good turf depends on the application of the proper quantities of those ingredients. Of the three, nitrogen is the primary growth-producing element, and a continuous and sufficient supply is needed to produce season-long turf growth.

With any nitrogen carrier the best results will be obtained if you know the breakdown mechanism, the amount of area to be nourished, the recommended rate per acre, and the frequency of application.

All forms of nitrogen, if used properly, will produce excellent turf and will maintain active and uniform growth over the entire growing season. Where they differ is in their availability to the grass and their lasting qualities. Some nitrogens are quickly available, but do not last in the soil. Others may not provide a quick surge of growth, but they continue to release nitrogen uniformly over a long period.

For your turf program you have a choice of three types of nitrogen—solubles, natural organics and ureaform, which are identifiable, generally, by the rate at which the nitrogen is converted to the nitrate (NO₃) form. They differ in the frequency of applications and in the amount per application required for a well-managed program.

The soluble nitrogens are quickly available because they are readily soluble in water, and all the nitrogen is converted to a form available to the plant in a matter of days. The principal products in this group are ammonium nitrate, ammonium sulfate, and urea.

The soluble form of nitrogen is the least costly per pound, but its feeding period is relatively short and care must be taken in application or discoloration or burning of foliage may result. Rapid turf growth quickly follows application of the solubles, and, for best results, they must be applied frequently in small amounts. As a result, their cost in terms of labor and time may be excessive.

Seed meals, sludge and tankage are forms of the natural organic type of nitrogen. They do not injure plants at time of application and are longer-lasting than the solubles. However, their breakdown may be erratic because of a dependence on soil temperature and moisture. Release of nitrogen may be slow during a cool, wet spring, but more rapid as soil temperatures rise.

Because fewer applications of the organics are necessary, labor costs are lower than with solubles. However, they usually are low in nutrient value and larger quantities are needed in each application, and they are more expensive per pound of nitrogen than the solubles.

Ureaform nitrogen is a combination of quickly-available and long-feeding nitrogens. It is more expensive than the solubles, but about equal in cost, or less expensive, than the organics. Ureaform outlasts other sources of nitrogen.

In terms of labor ureaform is the cheapest nitrogen source because it can be applied at relatively high rates without discoloring or burning the plant. The nitrogen becomes available due to solubility and soil organism activity with no excessive breakdown.

Unlike other forms of nitrogen, all the ureaform nitrogen applied in a single year will not become available to the plant in that year. A residual level is built up, and once it has been reached the efficiency of recovery is as good, or probably better, than from similar annual amounts of soluble materials.

An interesting study was conducted by Dr. Roy Blaser at Virginia Polytechnic Institute. In an experiment on bent grass he applied nine pounds of each of the three types of nitrogen per 1000 square feet. With solubles, 13 applications were made, for a total of 27 pounds of 33-1/3 per cent product. The organics required seven applications and 164 pounds of 5.5 per cent product. He applied the ureaform twice and used 24 pounds of 38 per cent product. Results were excellent in each case, but the number of applications and the amount per application varied greatly.

In summary, all nitrogen products will produce excellent turf. They differ, as indicated, in the timing of their availability to the plant and in the interval between applications. The superintendent using any of these materials should adjust his fertilization program to the product he is using.

All forms of nitrogen are aids in good turf management programs. They are not intended to take the man out of management.

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