

'Bridge products' for late-season fertilization

Two concerns often voiced by landscapers and lawn care companies regarding late-season fertilization are:

- higher precipitation and decreasing nutrient uptake by the plant during this time of year create a potential for leaching and run-off of soluble fertilizers; and
- soil micro-organisms and macro-organisms don't react well to harsh chemical changes in their environment, so heavy doses of soluble salts in the soil can have detrimental effects.

Landscape professionals might respond to these concerns by using chemicals more judiciously and by exploring alternative products and technologies.

Until recently, landscape professionals had to choose between synthetic fertilizers and natural (organic) products, each with its own set of strengths and weaknesses. But a new category of fertilizers called "bridge products" combine organic material with a moderation of environmentally-safe synthetic ingredients. They have all the safety and benefits of natural fertilizers without sacrificing the high nitrogen and lower cost of synthetics.

Bridge products are an advantageous choice for late-season fertilization. In addition to providing nutrition for the plant, fall fertilization benefits soil life: bacteria, protozoa, nematodes, earthworms, insects, fungi and algae.

Bridge products provide a combination of water insoluble nitrogen (WIN), quick-release nitrogen and organic material to create the optimum soil condition for fall and winter. The quick-release nitrogen in bridge products is available to the plant immediately, regardless of temperature. Yet the amount of quick-release nitrogen is balanced with slowly-available organic sources in order to minimize waste or leaching.

The long-term benefits of bridge products lie in the slow release, water insoluble nitrogen. WIN breaks down gradually through microbial activity and thus will not leach excessive nitrogen. If temperatures fall below those required for organic breakdown, unused WIN is stored in the soil until microbial activity resumes in the spring.

Results of late-season fertilization can be observed in the head start it gives in spring. The stores of nitrogen and other essential nutrients enhance root growth and promote early spring green-up.

Bridge fertilizers are made from materials that

enhance macro- and micro-organisms in the soil, each of which plays a synergistic role in plant life functions. For example, the earthworm—probably the single most important macro-organism in soil—keeps the soil aerated and creates channels for water distribution and root growth. Bacteria and fungi are also necessary to maintain balance in the dynamic soil environment.

Bridge products work well with IPM, a system that allows for reduced and more efficient usage of pesticides and other chemical products. Through agronomic practices—such as judicious use of chemical treatments and close monitoring of turf—IPM promotes healthy, fertile soil. By promoting a balanced soil and turf environment, bridge products can reduce the need for more frequent application of ecologically harmful chemicals to control insects and weeds.

Beneficial nematodes, bacteria and fungi help keep their turf-damaging close cousins in check. Soil micro-organisms also break down organic and mineral materials in the soil, making them available to nourish plants. Keeping this dynamic environment in balance is the secret to successful, economical turf management.

A two-year study by Dr. Charles Peacock, associate professor of crop science at North Carolina State University, found that bridge products are effective fertilizers. Organic materials used as fertilizer bases provide an energy source for soil micro-organisms, enabling them to continue their soil-building activity; this in turn provides optimum conditions for plant growth.

—J. Mark Nuzum □



J. Mark Nuzum is president of Harmony Products, Chesapeake, Va., a leader in developing bridge products. Formerly a division of Nitrex, Harmony was formed in January 1989 to research, develop and market environmentally sound products for professional and consumer use.

Iron application is preferred for providing late fall green color for warm-season grasses such as centipedegrass, bahiagrass, and St. Augustinegrass.

Consider the species

Not all turf species should be fertilized late in fall due to excessive damage that often occurs during the winter.

Centipedegrass and bahiagrass should not only be fertilized earlier in the season; annual nitrogen rate should be minimum for both turf species. Problems such as centipedegrass decline have consistently been

associated with heavy annual nitrogen use and late fall nitrogen fertilization. Potassium fertilization of these species is, however, recommended in fall to promote rooting and cold hardiness. One to two pounds of potassium should be applied 30 to 45 days prior to the first killing frost.

As mentioned above, iron applications to centipedegrass and bahiagrass often provide the desirable green color without resulting in undesirable effects.

A light fertilization of St. Augustinegrass may be applied in

early- to mid-fall but is not recommended in late fall. No more than 1½ lbs. actual nitrogen should be applied at this time. St. Augustinegrass has less natural temperature tolerance than most other warm-season grasses, therefore, is not normally grown where temperatures fall consistently into the teens. Iron application to St. Augustinegrass also often provides desirable green color without undesirable effects. **LM**

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