

Backyard Bulletin

by OSU Extension Agent

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Fertilizer Considerations . . .

It is suggested that the last nitrogen application of the season, on warm-season turf such as bermuda, St. Augustine and Zoysia, should be made by the middle of September. Fertilizers are used to prevent or overcome nutrient stress in plants. Fertilizers usually contain one or more of three primary nutrients – nitrogen, phosphorus and potassium. Fertilizers may also contain other essential nutrients that are needed in much smaller amounts. Some considerations, regarding fertilizer choices:

Slow-release vs. quick-release

Nitrogen is available in slow-release and quick-release forms. Slow-release means that the nitrogen does not dissolve in water. The nitrogen must be broken down by soil microbes and by soil chemicals to arrive at a form that plants can use. Slow-release fertilizers, since they do not leach quickly, can supply nutrients to plant for a longer period than quick-release forms. The slow-release rate makes fertilizer less likely to injure plant roots if used in large amounts. However, slow-release fertilizers may not release nutrients fast enough to correct a deficiency causing poor plant growth.

Quick-release fertilizers easily dissolve in water. Nitrogen tends to leach and be removed from the root zone of the turf, increasing the risk of nitrate pollution of groundwater sources. You may be able to lengthen the effects of quick-release fertilizers by making smaller applications more often, instead of applying the entire recommend amount at once. Most “organic” fertilizers are in a slow-release form. The “inorganic” or man-made fertilizers are available in both slow- and quick-release formulations.

Since the growing season is coming to a close, it is recommended that quick-release formulations are usually more appropriate for September applications on warm-season turf.

Organic vs. Man-Made

Plants do not know the difference between organic and man-made fertilizers. The organic fertilizer materials are broken down by soil organisms into water-soluble materials identical to those in man-made fertilizers.

When choosing between organic and man-made fertilizers, several factors should be considered:

- ◆ Cost per pound of the actual nutrients
- ◆ Rate of release
- ◆ Ease of application
- ◆ Number of applications required
- ◆ Safety to plants, especially seedlings
- ◆ Hazards to the environment

Application Rates

Once you have chosen a fertilizer, you must decide how much to apply. Recommendations are usually based on the size of the area where the application is to be made. If your yard is square or

rectangular, simply multiply the length by the width to determine the number of square feet. For odd shaped lawns, it is often easier to visualize a rectangle that approximates the area of your lawn and estimate the square feet.

Recommended quantities may be measured in pound of the fertilizer per 1,000 square feet, pounds per 100 square feet, or pounds per acre. This can cause confusion when calculating actual application rates. Recommendations may also call for the amount of “actual” pure nitrogen, or other nutrient, in the fertilizer. This makes calculations even more confusing, because no fertilizer, whether organic or man-made, contains 100 percent of the nutrient needed.

The following formula can be used to determine the application quantity:
(the recommended quantity per unit area) divided by (percentage of the pure element in your fertilizer/100) times (the square feet of lawn) = total quantity of fertilizer

Example: If the recommended quantity is 2 pounds of actual nitrogen per 1,000 square feet, using a 20-10-10 fertilizer (the first number, 20, means that the fertilizer contains 20% nitrogen), and your lawn is 500 square feet: (2 lbs./1000 sq. ft.) divided by (20/100) multiplied by (500 sq. ft.) = 5 lbs. of the fertilizer for the lawn.

One of the problems with organic fertilizers is that they often contain only small amounts of nutrients. For example, only 7 percent of cottonseed meal is nitrogen. If a soil test recommended 2 pounds of actual nitrogen per 1,000 square feet of lawn, and you wanted to use cottonseed meal as your organic fertilizer, you would need: (2 lbs./1000 sq. ft.) divided by [(7/100) times 500 sq. ft.] = 14.29 lbs. or about 14.3 pounds of cottonseed meal for a 500 sq. ft. yard.

Depending on the type of fertilizer you choose, you could end up needing very large amounts of the organic fertilizer to supply the required nutrients, even truckloads, in some instances. In such a case, you may prefer to make split applications – applying only a portion of the fertilizer initially, and applying more later.

The labels on commercially-sold organic fertilizers often do not specify application rates. This can be a problem in deciding how much of the fertilizer to apply. Look on the label of a similar fertilizer that does list application rates. You will need to know the rate needed of the first fertilizer and the percentage of the nutrient(s) in both fertilizers. Use the following formula to determine the application rate for the second fertilizer: (Rate of #1 multiplied by the percentage of #1) divided by (percentage of #2) = rate of #2.

It is recommended that persons choosing to use organic fertilizers use a combination of fertilizer materials, not just one kind of fertilizer. A variety of materials will provide a better balance of nutrients.

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