



Fertilization of Lawns

A good lawn needs adequate nutrients for good growth. Lawns need regular fertilization to keep the grass growing and weeds out.



Fertilizer Analysis

Grass should be fertilized with nitrogen, phosphorus and potassium. The fertilizer label must state the percentage by weight of nitrogen, phosphorus and potassium in that order. A 20-10-10 fertilizer has the mineral elements in the ratio of two parts of nitrogen, one part of phosphorus and one part of potassium (2-1-1), as does a 10-5-5. The difference is that weight for weight the 10-5-5 contains half as much fertilizer value as the 20-10-10, and twice as much would have to be used for the same results.

A 100-pound bag of 10-5-5 fertilizer contains 10 pounds of actual nitrogen ($100 \text{ lb} \times 10 \text{ percent nitrogen} = 10 \text{ lb}$), five pounds of actual phosphorus ($100 \text{ lb} \times 5 \text{ percent phosphorus} = 5 \text{ lb}$), and five pounds of actual potassium ($100 \text{ lb} \times 5 \text{ percent potassium} = 5 \text{ lb}$). The amount of nutrients in any other fertilizer can be determined in the same way. The amount of fertilizer product to apply is based on the percentage of nitrogen, the first number in the analysis (Table 1).

Generally, a 3-1-2, 4-1-2 or 5-1-2 ratio is considered best for Ohio lawns. The ratio need not be exactly 3-1-2, 4-1-2 or 5-1-2. For example, 24-6-6 analysis approaches a 4-1-2 ratio, and a 10-3-7 grade is close to a 3-1-2 ratio. Substitutions of this type can be made without concern.

Types of Nitrogen

How do you choose between products with the same nutrient content? The big choice is between fast and slow release of the nitrogen fraction. The percentage of the total nitrogen that is water insoluble and that which is water soluble usually is listed on the fertilizer bag. In the water soluble form the nitrogen is available quickly, and in the insoluble form it is available slowly.

A good turf fertilizer contains some of each kind of nitrogen. The slow release portion provides nitrogen over a period of time but is not available to the plant during cool weather. The soluble fraction, or fast release, will provide nitrogen almost immediately after application and during cool weather. Something approaching 30 percent to 50 percent insoluble or slow release (time released) nitrogen is suggested.

Fertilizer Programs

University research has shown that fall (August or September) and late fall (October, November or December) fertilization is ideal for home lawns. Fertilization during these times will benefit lawns more than any other practice. Most homeowners place too much emphasis on spring and summer fertilization. Some fertilizer is needed during the spring and summer, however, over-application of fertilizer at these times can cause disease and other problems and result in "summer lawn nightmares."

Advantages of Fall/Late Fall Fertilization

Disease and weed problems are usually less severe when fall and late fall fertilization are practiced. Heat and drought tolerance are usually better, thus enhancing summer lawn quality. Finally, the grass plant produces more root mass and a deeper root system, resulting in an overall healthier plant.

Fertilization Schedule

Lawns need to be fertilized periodically (several times) throughout the growing season. Fertilizations (feeding) should be made at six to ten week intervals throughout the growing season.

Fertilizer Burn

Any fertilizer may burn the turf if applied improperly. Fast release nitrogen is more likely to burn than slow release forms. To avoid burn: 1) Do not apply more than 1 1/2 pounds of actual nitrogen per 1,000 square feet at one time; 2) Spread uniformly; 3) Do not overlap or spill fertilizer; 4) Apply fertilizer only when foliage is dry; 5) Water after application. Pulverized materials are more likely to burn than pelleted or granulated materials.

Lime

Lime should be applied only when a soil test indicates a need for it. Excessive amounts of lime in the soil may be detrimental to the production of good turf. When a soil test is made, apply the amount recommended. Liming will not reduce the need for fertilizing. The presence of moss in the lawn does not necessarily indicate a need for lime.

Clipping Removal

It is advisable to return grass clippings to the lawn because they are a valuable source of nutrients. Research has shown that when clippings are removed, a third more nitrogen fertilizer was necessary to maintain the same color and density as areas where clippings were returned. Furthermore, and contrary to popular belief, grass clippings do not contribute to thatch accumulation if the turf is maintained at its recommended cutting height and not more than a third of the leaf surface is removed at one mowing.

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