7-1-1988

Liming Turfgrass

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The degree of acidity or alkalinity of a soil is expressed as a pH value. The soil pH value will range from 3.5 to 8.5 for most turf situations. A pH of 7.0 is considered neutral. A pH less than 7.0 is acid, while that above 7.0 is considered alkaline or basic. Soil pH is important in controlling the availability of nutrients to the turf plant. Most turf grasses are adapted to a moderately acid soil.

Satisfactory growth can usually be achieved with a pH in the range of 5.5 to 7.5. For extremely acid soils, lime can be used to adjust the pH upward. Table 1 will be helpful in determining the correct application rate. For samples with a pH above 7.0, refer to AY-18, “How To Interpret Your Soil Test Results.” The section on soil pH above 7.0 will be helpful.

A buffer pH or SMP reading is used by the Purdue Soil Test Laboratory to more accurately measure the lime needs of the soil. Table 1 lists the SMP readings for soil pH’s less than 7.0 and provides appropriate lime recommendation. Useful liming guidelines are presented below.

<table>
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<th>Table 1. Lime Requirements, Pounds per 1,000 Square Feet.</th>
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<tr>
<td>SMP Reading</td>
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<tr>
<td>6.7 - 6.8</td>
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<tr>
<td>6.5 - 6.6</td>
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<td>6.3 - 6.4</td>
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<td>6.1 - 6.2</td>
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Liming Guidelines

1. Don’t lime unless a soil test shows that limestone is needed.

2. Hydrated and burned lime are generally unsatisfactory for use on turfgrass. Both can burn turf. They readily stick to the feet and can be tracked through the house.

3. Agricultural ground limestone, calacium carbonate, is the most widely used liming material. Dolomitic lime contains both calcium and magnesium carbonate and should be used where there is a low pH and a low magnesium level. Pelletized lime is finely ground agricultural lime that has been cemented into pellets. It is less dusty and easier to apply, but it is more expensive.

4. Apply lime uniformly. It does not move from one location to another. For best results, apply one half of the lime in one direction and the remainder at a right angle.

5. Do not use more than 100 lb. of agricultural lime per 1,000 sq. ft. on high cut turf. A better program for the application of lime when the recommendation calls for 50 lb. or more per 1,000 sq. ft. is to split the application. Apply one half in the spring and the remainder in the fall. On close-cut turf, the application should not exceed 50 lb. per 1,000 sq. ft.

6. Aeration prior to liming is generally recommended where possible. It will allow the limestone to react more quickly by getting it into the soil.

7. Agricultural limestone can be applied in any month of the year, but spreading in September through November is preferred.

8. When liming a new seeding, incorporate the lime into the top 4 to 6 inches. In addition, double the recommended rate on the Purdue Soil Test form.

9. When using urea fertilizer, make the fertilizer application 3 to 4 weeks before the lime application. If urea is applied at the same time as lime, nitrogen loss will occur because of an increase in pH around the fertilizer granules.

10. Retest the area every 3 years to check for a change in the pH. Contact your local county Extension office for Purdue Soil Testing forms and bags.

11. The limestones commonly applied to turf are non-toxic to humans. They will not cause pollution problems.

12. Avoid application of lime near acid-sensitive plants such as the azalea or rhododendron.
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