

## Back Messages: Maintaining Commercial Turf

1. Lime may be applied at any time of the year, although fall application is considered optimum. Use a high quality agricultural ground limestone product to meet the lime recommendation on this report. Manufacturers of agricultural ground limestone products provide a number called the calcium carbonate equivalent, or CCE, on the label. CCEs with high numerical values (close to 100 or above) indicate a pure lime source (greater ability to neutralize soil acidity). The amount of lime recommended on this report is based on an agricultural ground limestone with a CCE of 100. If your lime source is close to or equal to 100, you don't need to adjust the recommended amount. In the event that you use a lime source with a CCE well below or above 100, use the following formula to adjust the required amount.

$$\text{Actual liming material required} = \frac{(\text{Soil test recommendation in lbs of lime/1000 square feet}) \times 100}{\text{CCE of liming material}}$$

### **Example Only:**

Soil Test Recommendation: Apply 75 lbs lime/1000 square feet

CCE on label: 80 percent

$$\text{Actual liming material required} = \frac{(75 \text{ lb of lime}) \times 100}{80}$$

$$= 94 \text{ lb liming material/1000 square feet}$$

2. With the exception of golf course putting greens and tees, if the lime recommendation exceeds 100 pounds per 1000 square feet, split the recommended amount into 2 or more separate applications 4 to 6 months apart. No application should exceed 100 lbs per 1000 square feet. For putting greens and tees, if the lime recommendation exceeds 25 pounds per 1000 square feet, split the recommended amount into 2 or more separate applications 4 to 6 months apart. No application should exceed 25 lbs per 1000 square feet.
3. The source of nitrogen in a fertilizer is important in determining the growth rate, density, and color of your turf. Nitrogen fertilizers can be divided into two categories - quick release and slow release. Quick-release nitrogen sources are soluble in water, hence nitrogen is available to the plants immediately. They also can burn turf easier than slow-release sources. Slow-release nitrogen sources typically release a portion of their nitrogen over relatively long periods (several weeks to several months). Slow-release nitrogen sources can be grouped into several categories including the natural organics, ureaform, urea-formaldehyde reaction products, triazones, IBDU, sulfur-coated urea and polymer-coated nitrogen. Sources vary widely in nitrogen release rates. Slow-release nitrogen sources generally cost more than quick-release sources and this has prompted many manufacturers and turf managers to mix or blend both slow- and quick-release sources.

The amounts of quick- and slow-release nitrogen in a fertilizer product are listed as percentages of the total nitrogen on the fertilizer label. Quick-release nitrogen is designated as ammoniacal nitrogen and/or urea. Slow-release nitrogen is designated as water insoluble nitrogen (WIN) or controlled-release nitrogen (CRN).

When possible, use fertilizer containing 30% or more of the total nitrogen in a slow-release form as water insoluble nitrogen (WIN) or controlled release nitrogen (CRN). This information is provided on the fertilizer label.

4. Soil should be retested in three years for new recommendations.
5. Publications on turfgrass management are available from your county cooperative extension office or the Publication Distribution Center, The Pennsylvania State University, 112 Agricultural Administration Bldg.,