

PRIMARY FIELD CARE: FERTILIZATION

Of the 17 different nutrients required for plant growth, nitrogen, phosphorus and potassium are called “macronutrients” because they are needed in relatively large quantities. Nitrogen (N) is the nutrient that primarily controls the growth of turf and is required in the largest amount.

When adequate nitrogen is provided the turf will have a vigorous root system, high shoot density, maximum recuperative potential and tolerance to environmental stress. Also, varieties that have a color response to nitrogen will darken up when fertilized. Inadequate or low levels of nitrogen will reduce shoot density and stress tolerances;

and favor weed encroachment and certain diseases like rust, red thread and dollar spot. Excessive amounts of nitrogen can be detrimental to the turf by reducing rooting and stress tolerance and by increasing thatch and favoring diseases that thrive in high nutrient situations like snow mold, leaf spot and brown patch.

There is no reliable soil test for nitrogen so other factors are used in determining the amount of nitrogen that is needed. However, soils with more than 6% organic matter require less nitrogen. You can select nitrogen fertilizer sources that are water soluble and have quick release properties, fertilizers that have slow release properties or a combination of both. See tables for advantages and disadvantages of different nitrogen sources.

Phosphorus (P) promotes rooting and is especially important in new seedings because it enhances establishment, especially with tall fescue. Phosphorus should be incorporated into the seedbed since it is not very mobile in the soil. Applications of phosphorus to established turf are rarely needed but applications of P may be necessary when overseeding. Soil test to determine needs.

The availability of phosphorus in the soil is influenced by pH. Phosphorus is most available at pHs above 6.5 so check your soil pH.

Some common sources of phosphorus include superphosphate (16-21% P₂O₅), triple superphosphate (40-47%), Monammonium phosphate (48%) and Diammonium phosphate (46-53%). A natural organic source is steamed bone meal (23-30%).

Nitrogen Sources		
Nitrogen Forms	Advantages	Disadvantages
Quick Release Urea Ammoniacal N Ammonium Nitrate	Quick release, rapid response (within a week) Minimal temperature dependency Water soluble Can be tank mixed Low cost	Short duration of response (peaks in 2 weeks, can last up to 6 weeks) High salt index, can have foliar burn Can leach or volatilize Losses can be greater
Slow Release Sulfur Coated Urea (SCU) Polymer Coated Urea Methylene Ureas IBDU Natural Organics	Usually last 8-12 weeks, some 20 Low foliar burn potential Reduced loss by leaching Some contain other macro and micronutrients Some improve soil properties Some have disease suppressive activity	Higher cost per unit of nitrogen Slow initial release rate If bags damaged nutrients released Microbial activity may be required for release Slow initial release Lower nitrogen content Higher cost/unit of nitrogen Nitrogen release is dependent on microorganisms, temperature and moisture dependent