Slow Release Fertilizers

Characteristics	• Water insoluble • Low salt • Not susceptible to environmental loss • Lasts several weeks to several months • Nitrogen is released over long periods • Formulation allows fertilizer to slowly dissolve or release into the soil solution surrounding roots • Nitrogen release is dependent on microbial decomposition or physical and/or chemical processes in combination with microbial activity (microbial activity is dependent on soil moisture, pH, and temperature conditions)
Turf Response	• Provide low, uniform supply of nitrogen throughout the growing season • Initial turf response is slow, but the consistent release allows the fertilizer to last up to several months
Sources	Slowly Available Water Soluble Sources • Fertilizer granules can be coated in semi or impermeable membranes which regulate nutrient release. These products include: polymer coated urea, sulfur coated urea, and methylene urea. • Release occurs between 5-11 weeks. • Release is determined by temperature, moisture and/or the thickness of the coating. Water Insoluble Sources • These products include: urea formaldehyde, IBDU, and organic sources. • Release starts at 12 weeks and can last more than 32 weeks. • Release is dependent on microbes. Microbes are influenced by soil moisture, pH and temperatures. • Slow release organic sources require some combination of dissolution, hydrolysis, or microbial decomposition to release plant available nitrogen.
Most efficient use	Apply at higher rates less frequently
Advantages	• Release nutrients at more gradual rates which permit maximum uptake and utilization of the nutrient in the plant • Reduced losses due to leaching or volatilization • Cuts back on excessive turf growth • Longer turf response
Disadvantages	• More expensive than quick release products • Some slow release sources are temperature dependent, which can be problematic in cooler regions