



Fertilizer: An Overview

When we address fertility issues, it is important to look at the needs of the grass itself. Of the three major nutrients used by turfgrass, nitrogen is used in the largest amount. It is followed by potassium and then phosphorus. There are other nutrients, of course, but our primary focus is with these three.

When we set nutrient budgets, we are basing them on nitrogen to be delivered in one form or another to the turfgrass system. Nutrient analysis soil tests point out any deficiencies in the other macro or micro nutrients. We then take the opportunity during the initial years of transition to balance soil chemistry with the appropriate amendments. We should always adhere to the concept that “Less is More”. All organic applications should be low-dose.

Fertilizer is any organic or inorganic material of natural or synthetic origin that is added to a soil to supply one or more plant nutrients essential to the growth of plants. Fertilizers are broadly divided into organic fertilizers (composed of enriched organic matter—plant or animal), or inorganic fertilizers (composed of synthetic chemicals and/or minerals).

Synthetic fertilizer is most often produced using the Haber-Bosch process, which produces ammonia as the end product. This ammonia is used as a feedstock for other nitrogen fertilizers, such as anhydrous ammonium nitrate and urea. Artificial nitrogen fertilizers are typically synthesized using fossil fuels such as natural gas and coal, which are limited resources. Synthetic fertilizers are produced in ways that theoretically cannot be continued indefinitely. The resources used in their production are non-renewable. They are most often water-soluble.

Organic fertilizer includes naturally occurring organic materials, or naturally occurring mineral deposits. They are typically composed of material produced through the decomposition process, animal by-products, or grains. Organic fertilizers improve biodiversity and long-term productivity of soils. Organic nutrients increase the abundance of soil organisms and can drastically reduce external inputs of pesticides, energy, and fertilizer. Organic fertilizers do not leach because they are not water-soluble.