

The do's and don'ts of spring fertility

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Generally, I warn against a lot of nitrogen fertilizer in early spring. Turf usually grows at a rapid rate once soil temperatures remain around 50-55F. This explosion of growth is thought to be from freeze-thaw cycles during the winter, which release plant available nitrogen. Microbial activity is also low in early spring because the soils are cold. This means the grass roots have less competition for mineral nitrogen, and the grass surges once temperatures are conducive for growth in the spring. The spring growth surge can also be related to late fall and early winter nitrogen fertilization. Applying nitrogen at that time is very inefficient and most of the fertilizer remains in the soil until growth resumes in spring or it is lost to the environment. Adding large quantities of additional nitrogen in early spring can promote excessive shoot growth. This depletes carbohydrate (sugar) reserves before the stress of summer. This is the reason I advocate to use stand-alone preemergence herbicides (PREs) for the first spring app. A combination fertilizer + PRE product is better for a sequential application in late spring-early summer.

There are situations where early season nitrogen may be appropriate. In most cases, however, only small amounts of nitrogen (0.1-0.5 lb N/1000 ft²) are required to positively impact the turf. Use soluble or sulfur coated nitrogen sources. Avoid natural or synthetic organics and polymer-coated products that need active microbial communities to release nutrients.

Here are just a few examples:

- **High traffic in spring:** Turf areas with extensive use in spring can benefit from small applications of nitrogen application in spring to promote regrowth and recovery. Typical areas would include sports fields and golf courses with a lot of spring play.
- **Lightly shaded areas:** The lower sun angle in the fall can usually increase shade stress around trees and other structures. This leads to thinning of the turf in late fall. It can be beneficial to supply small amounts of nitrogen in the spring to build density and store sugars before the trees leaf-out. Shaded areas as a rule should be treated with minimal nitrogen, especially when the trees are full of leaves. Too much nitrogen in shade reduces carbohydrate reserves and promotes excessive growth as the turf tries to out-grow the trees.
- **New turf stands:** Areas of turf that were established last fall likely need more nitrogen fertilization to build density before the summer. These areas should receive enough fertilizer to promote 100% cover before the summer annual weeds take over later in the year. Older turf stands will need less nitrogen in the spring to achieve acceptable color than stands established in the past couple years.
- **Achieve even green-up:** Sometimes turf stands do not green-up evenly. This could be from different species in the lawn (i.e. tall fescue is generally slower than perennial ryegrass or older cultivars of Kentucky bluegrass). There may also be differences in the soil or dog spots from the winter. In these cases, small amounts of fertilizer will stimulate green-up without placing extra stress on the plant.

Spring is also a good time to soil test for other nutrients. The most important nutrients to test for are phosphorus and potassium. Use a lab that can do the Mehlich-3 soil test method and use this [NebGuide](#) to help make sense of the results. Fix deficiencies in the spring before the heat and stress of the summer.

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