Changing Lawn Fertilization Recommendations

For many years, Nebraska Extension recommended fertilization of high-quality lawns up to four times each year. We often used memorable dates to help homeowners remember when these applications should be made – Tax Day, April 15; Memorial Day, Labor Day and Halloween. However, turf research is ongoing, and our understanding of how turfgrasses grow and utilize soil nutrients have led to updates on home lawn fertilization recommendations.

Here are a few changes to consider when planning this year's fertilizer program.

New Lawn vs. Old Lawn
There can be differences between the fertilizer needs of a new lawn versus an older lawn. One reason lies in the response of newer turfgrass cultivars to nitrogen.

Studies on the effects of varying nitrogen levels on new and old Kentucky bluegrass cultivars showed older cultivars had only marginal improvement – primarily in color and density – when receiving higher levels of nitrogen.

However, newer Kentucky bluegrass cultivars showed dramatic differences to higher amounts of nitrogen. Grasses receiving no nitrogen were light green, thin and heavily invaded by weeds. As the research plots

received progressively higher amounts of nitrogen, the grass became darker green and more dense resulting in few weeds.

There are also extreme differences between soil found under old lawns and what remains under a new lawn following home construction. Disturbed soils, which are often actually subsoil - not topsoil anymore - have low levels of organic matter and fertility. Soil quality has a significant impact on turfgrass quality and fertilization needs.

According to Bill Kreuser, Nebraska Extension Turfgrass Specialist, new lawns or lawns on poor soil, benefit from 3-6 fertilizer applications per year. Old lawns or those on fertile soils, may only need 0-2 applications per year to maintain an attractive appearance.

When Is the Best Time of Year for Fertilizer Applications?
Soil freeze and thaw over winter, combined with soil microbial activity, results in the decomposition of soil organic matter, resulting in a naturally higher level of nitrogen available for early spring grass growth. It's common to see a strong spring surge in grass growth. But too much nitrogen in spring results in increased disease susceptibility, increased mowing, reduced root growth and thatch build-up. So why not save your fertilizer application for later in the year when it's needed more?

Early season turf growth slows in June when the naturally available nitrogen is used up. For many years, turf specialist cautioned against mid-summer lawn fertilization, but recent research is pointing toward the benefits of a mid to late June application.

Finally, turfgrass growth slows in the late fall and plants take in fewer nutrients. At the same time, nitrogen leaching potential is highest in fall. For these reasons, the recommendation for a heavy late fall application of slow release fertilizer is going away. If a late fall application is made, it should be a light application of water-soluble product, made before the end of October.

Current recommendations focus on late spring and early fall applications. Minimize early spring and late fall applications, and make a light mid-summer application if grass growth and quality indicate a need.

So How Many Applications Should I Make?
It depends on the age and needs of your lawn. Homeowners often use a 4-step program, with each application providing 0.75 to 1.0 lbs of nitrogen. This results in 3 to 4 total pounds of nitrogen applied each year. This may be too much for an older lawn and too little for a newly established one.

Instead of following a set program, look to your turf for clues. A well-fertilized lawn should be a nice green color and have an acceptable growth rate. It should be thick and crowd out most weeds. It should be able to grow back fairly quickly after heavy use or traffic, like a family barbecue, and plants should be healthy enough to tolerate the stress of hot, dry summer conditions.

For more on turfgrass research and management, visit Turf.unl.edu.

Your Suggestions are Welcome!
Is there a lawn and gardening topic you would like to learn more about? Sarah Browning is an Extension

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