

Do you want to help the environment?

Properly Fertilize your Lawn this Fall

Adapted from Virginia Tech Cooperative Extension publications and podcasts by Dr. Mike Goatley, Virginia Tech Turfgrass Extension Specialist and Jeff Miller, Virginia Certified Horticulturist and Executive Director of the Virginia Green Industry Council.

Do you want a green lawn next summer?

Do you want to mow less next summer?

Do you want less disease, insect and weed problems, reducing the need for pesticide applications?

"Fertilizing your lawn at the proper time this fall will answer these questions and you'll have more sustainable lawn next year" -Lin Diacont, President of the Virginia Green Industry Council

What if I don't fertilize?

Your lawn will gradually thin and weeds may invade. Proper and timely fertilization can be good for both your lawn and the environment. There is less chance for nutrient and soil runoff to surface waters from a healthy stand of grass than bare soil or thin grass. Healthy lawns will have less disease, insect and weed problems, reducing the need for pesticide applications. Well-maintained lawns look appealing and are more wear tolerant.

Fall Fertility Strategies for Virginia's Home lawns

There are some definite do's and don'ts when it comes to fertilizing Virginia's home lawns in the fall, primarily in terms of appropriate timing for the many grasses that are grown in this state. This article discusses fertility programs for cool- and warm-season grasses that will promote the health and quality of your turf, as well as protecting the environment.

Timing is everything. **Fall is the OPTIMAL time to aggressively fertilize cool-season turfgrasses** (bluegrasses, fescues, and ryegrasses). Cooling (but still warm) temperatures and shorter days are ideal conditions to maximize root growth and food storage in cool-season turfgrasses. The period from September through November is the time of year to deliver the annual nitrogen (N) fertilization requirement, so don't miss the chance to optimize your turf quality as well as its health.

For warm-season grasses (bermudagrass, zoysiagrass, centipedegrass, and St. Augustinegrass), fall is a time to prepare the turf for winter dormancy. Refrain from additional N applications and ensure your soil test indicates appropriate pH, phosphate (P), and potash (K) levels as you put the turf to bed for its winter nap.

Never forget the value of soil testing. Anytime is the right time to soil test, but fall and winter months are ideal periods to modify your soil during a period when plant growth is significantly slowing. If you have not done so within the past 3 years, perform a soil test to bring your lawn up to speed in terms of pH and major nutrient levels. You can use your local Virginia Cooperative Extension (VCE) office for the materials and assistance with the test, which you can look up at www.ext.vt.edu/offices/ or in your local phone directory in the blue local government pages listed under "Extension Service" or "Virginia Cooperative Extension". You can also arrange to have a test done through a private lab through a local lawn and garden center – ask for a Virginia Certified Horticulturist.

A full discussion on the steps in conducting a test and interpreting the results is available in a Breeze presentation entitled "Soil Testing for the Lawn and Landscape" found at <http://connect.ag.vt.edu/p36588349>

Fertilizer choices

There are lots of things to consider in fertilizer selection. First, what's in the bag? Left to right, the numbers on the fertilizer bag indicate the % of nitrogen (N), phosphate (P), and potash (K) on a weight basis. Hence, a 50 lb bag of 10-10-10 contains 5 lbs each of N, phosphate, and potash (and even for liquid fertilizers, the analysis still represents % by weight). Next, look at the fertilizer label for some additional information on precisely what other nutrients are contained in the bag, and perhaps most importantly, what type of release characteristics the N has. If the source contains slow release N, you will see a reference to a certain percentage of WIN (water insoluble nitrogen) on the label. Many synthetic turf fertilizers purchased right off the garden center shelves contain between 20-30% WIN. These predominantly water soluble sources can be safely applied at levels up to 1 lb N/1000 sq ft. according to the grass and the season. Most organic manure-based fertilizers can contain up to 75-85% WIN. These materials can be applied at levels up to 1.5 lbs N/1000 sq ft and will provide very sustained growth and color responses with minimal potential for environmental impact. However, most are very low analysis (only 5-8% N by weight) and very large amounts of product are needed if trying to apply normal N-use levels. **Used properly, almost any source of N can promote desirable turf responses with little if any environmental impact; it's the user, not the fertilizer, who creates the problems.**

Recommended N levels and timing

The Virginia Department of Conservation and Recreation has an excellent tri-fold brochure entitled "Keep Your Lawn Green and the Bay Clean" (http://www.dcr.virginia.gov/stormwater_management/documents/tipsbay.pdf) that details recommended N levels and timing for our major lawn grasses. Essentially, the information reemphasizes the facts that N applications are highly beneficial on cool-season grasses in the fall and only minimal N should be applied in the spring. Warm-season grasses should be aggressively fertilized after complete greening in mid-late spring through mid-summer. Seasonal N totals range from 2-4 lbs N/1000 sq ft depending on the grass species.

What about other nutrients?

Any nutrient that is deficient will limit growth of our turf and landscape plants, so apply them as indicated by soil tests. However, it is very important that we pay attention in particular to phosphorus applications since it is known to be a major contributor to water pollution when mis- and/or over-applied. The days of using a complete fertilizer such as 10-10-10 should be over when we have fertilizers specifically developed for turf use that emphasize N and minimize phosphorus. Standard turf fertilizers will have N labels of 23-30%, 3-5% phosphate, and 5-15% potash.

A popular fertilizer analysis for many fall cool-season programs that is on the lawn and garden center shelves is a "Winterizer" formulation of 22-3-14. This is good, but better still, would be to use a N-only fertilizer source (for example urea, 45-0-0) when you have no need for phosphate or potash. For warm-season grasses, research has shown that ample soil potash levels promote winter hardiness. (Note: K is required by cool-season grasses, but research has shown that the most important component of winter performance in these species is an appropriate N fertility program.) However, in the 22-3-14 "Winterizer" formulation just mentioned, there would be excessive N applied to the turf. If your soil test indicates the need for potash, you can purchase potash-only sources such as 0-0-50 and 0-0-60 at most specialty lawn and garden centers. Remember if your turf needs potash, apply it BEFORE the turf goes dormant.

Think about "non-target" effects of your fertilizer. What I mean here is to consider where your fertilizer ends up after the application. Your turf serves as an excellent filter of chemicals, nutrients, and water, but it is obviously important to apply these resources TO the turf. If your fertilizer ends up on the street, sidewalk, or patio, take an additional few moments to sweep or blow the fertilizer back into the turf canopy. **Any granular material sitting on a hardscape is only minutes away from entering our lakes and streams when we have our next rainfall event.**

I hope this information and the extension publication links make it easier for you to make informed decisions in fall fertilization. For further information, please consult your local Virginia Cooperative Extension office.

For information, go to <http://www.anr.ext.vt.edu/lawnandgarden/turfandgardentips/>

For additional details on lawn turfgrass management, see these publications:

Lawn Fertilization in Virginia - Pub 430-011 <http://www.ext.vt.edu/pubs/turf/430-011/430-011.html>

Home Lawn Fertilization in VA: FAQ - Pub 430-003 <http://www.ext.vt.edu/pubs/turf/430-003/430-003.html>

Additional Info

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Factors Affecting Nutrient Management

You should determine the amount and frequency of fertilization that is proper. This will be influenced by the quality desired, source of nitrogen, soil type, type of turfgrass, length of growing season, traffic, shade, and whether clippings are recycled. Evaluate your lawn situation based on these factors and how each affects the amount and frequency of nitrogen application. Choose the amount and frequency that best suits your situation.

Soil Type - Sandy soils will generally leach more nitrogen than silt loam and clay loam soils. Therefore, more frequent nitrogen applications are often required in sandy soils when quickly-available sources of nitrogen are used. Leaching can be minimized by using slowly-available nitrogen sources, which in turn can reduce possible contribution to the problem of nitrogen-enriched water in nearby streams and lakes.

Type and Age of Turfgrass - Nitrogen application to cool season grasses such as Kentucky bluegrass, tall fescue, perennial ryegrass, and the fine fescues (creeping red fescue, hard fescue, sheep fescue and chewings fescue) is best done in the late summer and fall period. Warm-season grasses perform best when nitrogen is applied in the mid-spring to mid-summer period. Newly established lawns or lawns lacking density or ground cover will benefit from properly timed applications of nitrogen until ground cover and density have reached a desirable level. Mature zoysiagrass, centipedegrass, and fine fescue lawns require lower levels of nitrogen than Kentucky bluegrass, tall fescue, perennial ryegrass, or bermudagrass.

Length of the Growing Season - Areas at higher elevations in western Virginia may have a three month shorter growing season than areas in southeastern Virginia. A turfgrass growing in an area with a longer growing season will require more nitrogen.

Traffic - Where heavy traffic or use is anticipated, higher rates of properly timed nitrogen can be beneficial in generating recuperative potential.

Shade - Grasses growing in heavily shaded areas require only 1/2 to 2/3 as much nitrogen as grasses growing in full sun. Shade also affects the timing of nitrogen applications. Since grass plants in shade can best use nitrogen when sunlight can reach the grass leaves, fertilizer applications should be timed after the majority of leaves have fallen from the trees in the fall. Applications made in October and November are generally most effective. In heavily shaded areas with fine fescue turf, it may be beneficial to reduce fertilization rates even further or omit applications until leaf collection is finished in the fall.

Quality Desired - Turfgrass quality is a measure of density, color, uniformity (free of weeds and off-type grasses), smoothness, growth habit, and texture. If high levels of turfgrass quality are desired, a commitment must be made to proper turfgrass species and variety selection, frequent mowing, and to slightly higher rates of nitrogen and increased application frequency. Additionally, irrigation, aeration and pesticide application may at times enhance quality.

Clipping Recycling - Significant amounts of nitrogen and potassium are returned to a lawn when clippings are returned. Recycling turfgrass clippings contributes very little to thatch, provides nutrients and organic matter and an environmentally friendly method of clipping disposal. If clippings must be collected, higher rates of nitrogen and potassium applications may be necessary. So use a "mulching" mower and save money!

Micronutrients - Fertilizers that contain micronutrients are most suited for application on sandy soils.

Fertilizer application equipment and methods - Nitrogen fertilizer will "green-up" a lawn. Therefore, it is important to uniformly apply nitrogen-containing fertilizers. This will eliminate streaking caused by different shades of green turf in the lawn. Proper application of nitrogen fertilizers by hand is difficult, even for a trained professional. Drop-type or rotary spreaders should be used. When using drop-type spreaders, be sure to overlap the wheel tracks, since all the fertilizer is distributed between the wheels. Drop-type spreaders are not as easy to maneuver around trees and shrubs as rotary spreaders. Rotary spreaders usually give better distribution where sharp turns are encountered because they tend to cover a broader swath and fan the fertilizer out at the edges of the swath. It is advisable to apply one half of the material in one direction and the other half in a perpendicular direction until one is experienced with a spreader. This will minimize streaking. Avoid application of any fertilizer to non-turfed areas (driveways, roads or bare soil) since it is then prone to runoff into drainage ways at which time it can enter water supplies.

The Virginia Green Industry Council is the voice of the horticulture industry in the Commonwealth and is dedicated to enhancing the beauty of the state's environment, the well-being of our citizens, improving our state's economy, and improving the health and wellness for everyone in Virginia. The Council is made up of providers and consumers of horticultural products and services. The Council works to provide public and industry education, environmental guidelines and other information that will keep Virginia green and growing. For more information, visit www.virginiagreen.org ; 540-382-0943; FAX: 540-382-2716; E-mail: info@virginiagreen.org