



Home Lawn Fertilization in Virginia: Frequently asked Questions

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How do I know if my lawn needs fertilizer?

The best way to determine if your lawn requires certain plant nutrients is to get the soil tested. This test is available through your local Extension Agent. It is easy to do and inexpensive. The results returned to you will include recommendations on the amounts of plant nutrients and lime that would be beneficial to your lawn. Soil tests are not used to determine nitrogen needs. Nitrogen is applied based upon established requirements by grass species, seasons of growth and intended use.

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.

When should I fertilize?

It depends on the type of grass you are growing and the lawn appearance (e.g.; color, density, uniformity) you want. In general, it is best to fertilize when grass is actively growing and can take up the fertilizer. Summer is best for warm season grasses (zoysiagrass and bermudagrass), while September, October, and November are best for cool season grasses (tall fescue, Kentucky bluegrass, perennial ryegrass). If you are unsure what type of grass you have, ask your Extension Agent or landscape professional. See the tables on the back for more information.

How much fertilizer do I need?

Your soil test report will give you specific information on the amounts of phosphorus, potassium, calcium and magnesium available in the soil and if additional amounts are required. The tables will further help you determine an appropriate level of nitrogen by month. Remember that more is not better, and less may be worse! Lawn fertilizer is measured in pounds per 1000 square feet. To determine square feet multiply length by width of turf area.

How do I select the right fertilizer?

There are many types of nutrient analyses and nitrogen sources. All fertilizer packages must have three numbers present on the package (like 10-10-10 or 16-4-8). These numbers represent the percentage of nitrogen, phosphorus (as P_2O_5), and potassium (as K_2O) present by weight (also called the N-P-K ratio). For example, a 40 pound bag of 10-6-4 is 10 percent nitrogen (4 lb. of N), 6 percent phosphate (2.4 lb. of P_2O_5), and 4 percent potash (1.6 lb. of K_2O). While these three nutrients are necessary for proper growth of all plants, many soils have enough phosphorus and potassium already. Your soil test report will help you understand which nutrients your soil is lacking and those that are present in adequate amounts. Typical nitrogen recommendations might suggest applying 1 pound of actual nitrogen per 1000 square feet. To do so, using a 10-10-10 fertilizer, you would need to apply 10 pounds of the fertilizer since it is 10% nitrogen by weight. This application would also apply 1 pound of P_2O_5 and 1 pound of K_2O per 1,000 square feet. In this way, you would be able to apply the amounts of P_2O_5 and K_2O recommended by the soil test.

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Lawn-Fertilization in Virginia: when and how much nitrogen for established lawns

Use this table if the fertilizer is less than 50% WIN or other slow release N source

Month Type of Grass	Sept	Oct	Early Nov	April	May	June	July/Aug	Yearly LBS N/1000 sq. ft.
TF, PR*	1	1	1	0	0 - .5	0	0	2 to 3.5
KB	1	1	1	0	0 - .5	0	0	3 to 3.5
Bermudagrass	0	0	0	1	1	1	1	2 to 4
Zoysiagrass	0	0	0	0	1	0	1	1 to 2

Use this table if the fertilizer is more than 50% WIN or other slow release N source

Month Type of Grass	Aug 15 Sept 15	Oct 1 Nov 1	April May	May 15 June 15	June July	Yearly LBS N/1000 sq. ft.
TF, KB, PR	1.5	1.5	0	0 - 1	0	3 to 4
Bermudagrass	0	0	1.5-2	0	1.5-2	3 to 4
Zoysiagrass	0	0	1.5-2	0	0	1.5 to 2

How to use this table:

Look in the first column for the type of grass you have, then see when to fertilize and how many pounds of nitrogen to add for each 1000 square feet of turf you have. **Clear** boxes show the basic nitrogen needs for each grass. **Shaded** boxes show optional feedings that may be helpful in some years and under heavy use conditions. * TF = tall fescue, PR = perennial ryegrass, KB = Kentucky bluegrass.

What is the best fertilizer for my lawn?

- One that provides P₂O₅ and/or K₂O if determined deficient by soil test or provides only N when P and K levels are adequate.
- One that has some amount of slowly available N source. Slow release N sources are usually stated on the label. It may be as WIN or Water Insoluble Nitrogen, sulfur-coated urea, natural organic N or other slow release technologies.
- Slowly available N fertilizers make nitrogen available a little at a time, the way your lawn needs it, which reduces leaching potential.
- For a 16-4-8 fertilizer: the first number (% N) on the bag is 16 % N.
- Calculate lbs. of applied N per 1000 sq. ft. by dividing the amount of N you want to add (1 lb. of N in most cases) by the % nitrogen (16 % in this case)
- 1 divided by 0.16 = 6.2 lbs. of fertilizer to apply 1 lb. of N per 1000 square feet.
- If you have a 5,500 square foot lawn, multiply the area (5,500/1000 square feet or 5.5 units of 1000 sq. ft.) by 6.2 lbs. and get 34.1 lbs., round to 34 lbs. of fertilizer to apply 1 lb. N to your lawn.

Using Fertilizer Analysis to Calculate Nitrogen Rates

Fertilizer Bag Reads:	Amount of fertilizer to apply 1 lb. of Nitrogen/ 1000 sq. feet
6-2-0	16.6 lb.
10-10-10	10 lb.
16-4-8	6.2 lb.
20-5-5	5 lb.
22-3-14	4.5 lb.
29-3-7	3.4 lb.

How to use this table: A fertilization rate of 1 lb. of N per 1000 square feet can be obtained by finding the fertilizer analyses in the first column, and applying the number of pounds of fertilizer product shown in the second column to each 1000 square feet of turf. The amounts are rounded to the nearest pound. For different analyses, try this example:

Any other tips I should know?

- Avoid applying fertilizers to sidewalks, driveways, and curbs. If fertilizer gets on hard surfaces, sweep, don't hose, it back into the grass. This will prevent run-off.
- Use soil test results for 2-3 years, and then take another test.
- Make timely applications when the grass can use the fertilizer – see the tables.

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Virginia Cooperative Extension would like to remind you that what we do to the lawn and landscape impacts local water quality and that of the Chesapeake Bay.

Reviewed by Dr. Greg Evanylo, Regina Prunty, Lynnette Swanson, and Julie Cochran.