Fertilizing Trees and Shrubs

- Try to use native plants that require less fertilizer and often have a better survival rate.
- Healthy trees do not need fertilizer. Undersized leaves and short new twig growth could indicate a need for fertilizer.
- Yellow leaves may indicate a need for fertilizer, although insects or disease can cause this symptom. Check out all possibilities before deciding to fertilize. If fertilizer is needed, apply in mid-fall after the leaves have fallen. Do not fertilize trees and shrubs in summer or early fall, since this interferes with plant preparations for winter dormancy.
- If a fertilizer is needed, choose one with a slow release form of nitrogen. Apply fertilizer to the area under the tree, beginning at the midpoint between the trunk and the drip line and extending approximately 8 feet beyond. The recommended rate is no more than 1 pound of nitrogen per 1,000 square feet.
- Do not use fertilizer spikes; they can burn tree roots.

Maryland Department of Agriculture
Office of Resource Conservation
50 Harry S. Truman Parkway
Annapolis, MD 21401
410-841-5863
mda.maryland.gov/fertilizer

HOME & GARDEN Information Center
UNIVERSITY OF MARYLAND EXTENSION
12005 Homewood Road
Ellicott City, MD 21042
extension.umd.edu/hgic

GROW IT EAT IT
Maryland's Food Gardening Network
extension.umd.edu/growit

MDA 15.09.16 | Recycled paper

2 use fertilizers responsibly

Protect the Chesapeake Bay

Like farmers, homeowners play an important role in protecting our soil and water resources, especially the Chesapeake Bay. This series of fact sheets highlights various conservation measures—best management practices—that farmers use to produce healthy crops and protect water quality in the Chesapeake Bay and its tributaries. Homeowners can apply these same conservation measures to home, lawn, garden, and landscape projects. Working together, we can make a difference for the Bay. For more information on ways to improve your lawn or garden and protect the Bay, contact the organizations on the back panel.

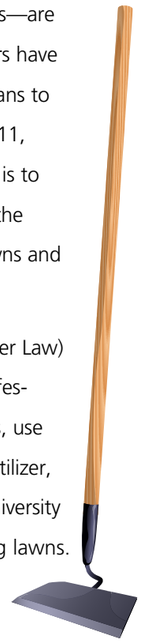
MARYLAND DEPARTMENT OF AGRICULTURE

Fertilizers and the Chesapeake Bay

Over the years, we have learned that excess fertilizers from farm fields, public parks, golf courses, and hundreds of thousands of suburban lawns are washing off the land and finding their way into streams, rivers, and the Chesapeake Bay. Once in our waterways, fertilizers designed to make our crops healthy and our lawns lush and green, fuel the growth of harmful algae. As algae grow, they block sunlight from reaching Bay grasses, rob the water of oxygen, and threaten underwater life.

Nutrients—primarily nitrogen and phosphorus—are key ingredients in fertilizer. Since 2001, farmers have been required to use nutrient management plans to protect waterways from fertilizer runoff. In 2011, Maryland passed the *Fertilizer Use Act*. Its aim is to reduce the amount of nutrients washing into the Bay from non-agricultural sources—mainly lawns and other grassy areas.

The *Fertilizer Use Act* (Maryland's Lawn Fertilizer Law) requires both homeowners and lawn care professionals to obey fertilizer application restrictions, use best management practices when applying fertilizer, observe fertilizer blackout dates and follow University of Maryland recommendations when fertilizing lawns. Read on to learn more.



THE BASICS—Test Your Soil

Farmers test their soil to determine the precise amount and type of fertilizer needed for a healthy crop. A soil test will do the same for your lawn or garden. The basic test measures the soil's pH (acidity) as well as phosphorus, potassium and magnesium, three important plant nutrients. Special tests are available to help diagnose less common soil fertility problems.

Visit the Home and Garden Information Center at **extension.umd.edu/hgic** for soil testing information and a video on how to take a soil sample. Ideally, soil samples should be taken well before the planting season using the following guidelines:

- New lawns: test after grading, but before seeding
- Vegetable gardens: test every three years
- Established lawns, landscape plants, and perennial gardens: test every three years

Understanding Fertilizers

- All fertilizer products are labeled with three numbers indicating the percentage of nitrogen, phosphorus and potassium (N, P, K), the three main plant nutrients. Nitrogen promotes grass shoot growth and leafy top growth, phosphorus encourages root, flower and fruit production, and potassium fosters hardiness, disease resistance and durability.
- A fertilizer is referred to as "complete" when it contains all three plant nutrients. A bag of 15-10-10 fertilizer, for example, contains 15 percent nitrogen, 10 percent phosphorus and 10 percent potassium. In terms of weight, a 10 pound bag of 15-10-10 fertilizer contains 1.5 lbs. of nitrogen.
- Some plants require more of some nutrients than others. Root crops, such as carrots, garlic and radishes require less nitrogen than leafy crops such as lettuce or spinach.
- Fertilizer should always be applied according to soil test results. Remember, too much fertilizer may burn your lawn or landscape plants.
- Lime may be applied to acidic soils based on soil test results. Limestone does not pollute water if it is used and handled according to the manufacturer's instructions.
- Many soils in Maryland provide all the phosphorus that established lawns need. Lawn fertilizer products sold in Maryland do not contain phosphorus unless they are labeled for use in establishing lawns or patching a small area.
- In these instances, you may purchase specially labeled starter fertilizer for lawns that contains phosphorus. Starter fertilizer may also be purchased when a soil test indicates that it is needed.

- Excess nitrogen running off the land poses a major threat to the health of the Chesapeake Bay. To help minimize nitrogen losses to the environment, at least 20 percent of the nitrogen contained in lawn fertilizer products sold in Maryland is in a slow release form.
- When fertilizing lawns or home landscapes, look for products that contain Water Insoluble Nitrogen, abbreviated "WIN." This means that the nitrogen will release slowly over time. Products labeled with the terms controlled release nitrogen, sulfur coated urea, IBDU, urea formaldehyde or resin coated urea also indicate slow release forms of nitrogen.
- Cottonseed meal, blood meal, bone meal, fish emulsion, compost and manures are examples of natural fertilizers. Compost and manures also add valuable organic matter to the soil.

Fertilizing Lawns

Maryland's Lawn Fertilizer Law limits the amount of nutrients that can be applied to lawns or turf and restricts phosphorus content in lawn fertilizer. The goal is to help homeowners and lawn care professionals maintain healthy lawns without applying unnecessary amounts of nitrogen and phosphorus.

- Fertilizer products sold in Maryland are labeled to ensure that no more than 0.9 pound of total nitrogen is applied per 1,000 square feet in a single application. Follow the directions on the fertilizer bag to comply with the law. Visit **extension.umd.edu/hgic** for seasonal and yearly recommendations.
- Phosphorus may only be applied to lawns when a soil test indicates that it is needed or when the homeowner is establishing a lawn or patching a small area.
- It is against the law to apply fertilizer to sidewalks, driveways or other impervious surfaces. Any product that lands on these surfaces must be swept back onto lawns or cleaned up.
- Do not apply fertilizer within 15 feet of waterways. This setback is reduced to 10 feet if a drop spreader, rotary spreader with deflector or targeted spray liquid is used to apply fertilizer.
- Do not apply lawn fertilizer between November 15 and March 1, when the ground is frozen or if heavy rain is predicted.
- Fertilizers may not be used to de-ice walkways and driveways.

MOWING GUIDE	Spring and Summer	Fall and Winter
Tall Fescue	2½ - 3½ inches	2½ inches
Perennial Ryegrass	2½ - 3	2 - 2½
Kentucky Bluegrass	2½ - 3½	2 - 2½
Fine Fescue	2½ - 3½	2½
Bermudagrass	1½ - 2	1½ - 2
Zoysiagrass	1½ - 2	1½ - 2

Mow to the Right Height

- Mowing lawns to the proper height can reduce weeds by as much as 80 percent. Low and infrequent mowing can damage your lawn as well.
- Remove no more than 1/3 of the grass height each time you mow. For example, to maintain a 3-inch height, do not let the grass get much taller than 4 ½ inches. Sharpen lawn mower blades in the spring. A dull blade can damage grass.

Select the Right Grass

- Select grasses that do not require substantial fertilizer applications. Check out new, improved varieties of tall fescue and bluegrass.
- Ask for certified seed—it's worth the extra effort and cost. If you don't see a tag indicating certification by the Maryland Department of Agriculture, you may be getting too many weeds with your seeds.

Fertilize at the Right Time

- Cool season grasses (fescue, bluegrass, ryegrass) should be fertilized in late summer or early fall to help the grass recover from summer stresses. Nitrogen uptake in the fall is at its peak for cool season grasses.
- Zoysiagrass and Bermudagrass are warm season grasses that should be fertilized in early summer when they are growing most actively.

Recycle Grass Clippings (Grasscycling)

- Grass clippings are a free source of nutrients and will not cause thatch problems. Grasscycling can reduce your lawn's nitrogen requirement by 50 percent.
- If clippings are too long, they may clump. Rake up excessive clippings for mulch or compost and mow more frequently.
- Sweep or blow grass clippings and other lawn debris away from street gutters.

Aerate the Soil

- Aerate the soil to reduce compaction. Lawn care professionals can provide this service or you can rent an aerator from a lawn and garden supplier.

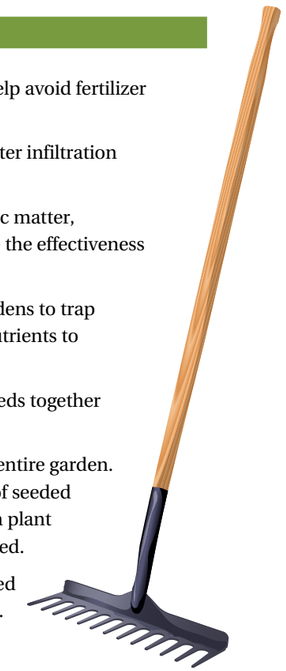
Let Lawns Go Dormant

- Some grass species have natural dormancy periods and will turn brown. Applying fertilizer to force a lawn to turn green during its dormancy period can damage the grass. It is safe to let an established lawn go dormant in summer.
- Dormancy is a natural survival mechanism and lawns usually recover when the rains return. Dormant lawns continue to protect water quality by holding soil and nutrients in place.

Using A Lawn Care Service

A lawn care service is a popular alternative for homeowners who would rather have someone else care for their lawns. If you decide to use a lawn care service, follow these important guidelines to help ensure an attractive lawn and a healthy environment.

- Get recommendations from friends and neighbors. Research lawn care providers online. Call/email several firms and ask for information to be sent to you.
- Make sure that the firm and its personnel are licensed and certified by the Maryland Department of Agriculture's (MDA) Pesticide Regulation Section. Trained personnel are issued identification cards from MDA and the business license number must be painted on the service vehicle. Call 410-841-5710, if you are unsure.
- Lawn care professionals who apply fertilizers must also be licensed and certified by MDA's Nutrient Management Program. Visit **mda.maryland.gov/fertilizer** for a list of licensed and certified fertilizer applicators.
- Soil tests must be taken if phosphorus will be applied to the lawn. Ask for a copy of the soil test results.
- Make certain the company provides you with health, safety, or precautionary information taken from the labels of the products it plans to apply to your lawn.

Fertilizing Gardens

- Choose a level site for a garden to help avoid fertilizer runoff after heavy rains.
- Use organic mulches to improve water infiltration and keep rainwater from splashing.
- Use compost to add valuable organic matter, improve soil structure, and enhance the effectiveness of fertilizers.
- Maintain a grassed area around gardens to trap sediment runoff, which can carry nutrients to nearby waterways.
- Plant crops with similar fertilizer needs together to help prevent over-fertilization.
- Do not broadcast fertilizer over the entire garden. Instead, apply fertilizer along rows of seeded vegetables or in a circle around each plant to reduce the amount of fertilizer used.
- Substitute local sources of composted manure for manufactured fertilizers.