

Fertilizing Gardens

- Choose a level site for a garden to help avoid fertilizer runoff after heavy rains.
- Use organic mulches to improve infiltration and keep rainwater from splashing.
- Use compost to add valuable organic matter back into your garden, 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.
- Avoid broadcasting fertilizers over the entire garden.
- Apply fertilizers along rows of seeded vegetables or in a circle around each plant. This will reduce the amount of fertilizer used.
- Use local sources of compost.



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, and garden 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 listed on the back panel.

Maryland Department of Agriculture



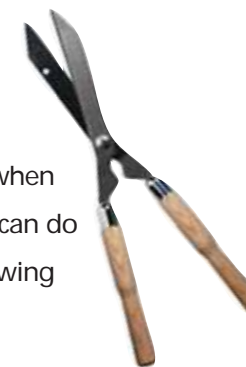
Fertilizers and the Chesapeake Bay

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 our streams, rivers, and the Chesapeake Bay. Once in our waterways, fertilizers designed to make our crops healthy and our lawns green, trigger reactions that promote the growth of harmful algae. As algae grow, they block sunlight, rob the water of oxygen, and threaten underwater life.

Leaders from the Bay states are committed to reducing nutrient pollution entering the Bay and its tributaries. Maryland farmers are now required to use nutrient management plans to protect waterways from fertilizer and animal wastes. Lawn care companies are also required by law to follow Maryland Cooperative Extension recommendations when applying nutrients to lawns. Homeowners can do their part to protect water quality by following the guidelines outlined in this fact sheet.

Have Your Soil Tested

Farmers get their soil tested to determine the amount and type of fertilizer needed for a healthy crop. Excess nutrients cost money and they can pollute our waterways. Soil testing will determine the type and amount of fertilizer needed for a healthy 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 also available to help diagnose less common soil fertility problems.



Call the Home and Garden Information Center at 1-800-342-2507 or visit www.hgic.umd.edu to request information on soil testing and tips on selecting and using a soil test laboratory. Ideally, soil samples should be taken well before the planting season.

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

Understanding Fertilizers

- All fertilizers are labeled with three numbers indicating the percentage of nitrogen, phosphorus, and potassium, the three main plant nutrients. Generally, 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 said to be complete when it contains nitrogen, phosphorus, and potassium. A 100-pound bag of 15-10-10 fertilizer, for example, contains 15 percent nitrogen, 10 percent phosphorus, and 10 percent potassium. Some crops require more of some nutrients than others. Root crops, such as carrots, garlic, and radishes, require less nitrogen than leafy crops.
- When fertilizing lawns and trees, 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, ureaformaldehyde or resin coated urea also indicate slow release forms of nitrogen.
- Cottonseed meal, blood meal, bone meal, fish emulsion, and manures are examples of natural fertilizers containing relatively low concentrations of nutrients. These fertilizers add valuable organic matter to the soil.
- Yard waste compost also makes a good soil conditioner. Although relatively low in nutrients, it can be used to enhance soil structure. This, in turn, increases the effectiveness of fertilizer applications.



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Martin O'Malley, Governor | Roger L. Richardson, Secretary
Anthony G. Brown, Lt. Governor | Earl F. Hance, Deputy Secretary

MOWING GUIDE	Spring & Summer	Fall & Winter
Tall Fescue	2½ - 3½ inches	2½ inches
Perennial Ryegrass	2½ - 3	2 - 2½
Kentucky Bluegrass	2½ - 3	2 - 2½
Fine Fescue	2½ - 3½	2½
Bermuda Grass	½ - 1	½ - 1½
Zoysia Grass	½ - 1	½ - 1½



Mow to the Right Height

Mowing lawns to the proper height can reduce weed problems by as much as 80 percent. Low and infrequent mowing can damage your lawn, as well. It is best to remove no more than 1/3 of the grass blade each time you mow. For example, to maintain a 3-inch height, do not let the grass get much taller than 4 inches. Also, make certain to sharpen lawn mower blades in the spring. A dull blade can damage grass.

Apply Fertilizer at the Right Time

Cool season grasses (fescue, bluegrass, ryegrass) should be fertilized primarily in the 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. Warm season grasses, such as zoysia grass and Bermuda grass, should be fertilized in the early summer because that is when they are growing most actively.

Recycle Grass Clippings

Grass clippings supply free fertilizer and will not cause thatch problems. If clippings are too long, they may clump. Rake up excessive clippings for mulch or compost and mow more frequently. If you leave clippings on the lawn for two years or longer, you may be able to lower the amount of nitrogen fertilizer you use by 25 percent or more. Sweep or blow grass clippings and other lawn debris away from street gutters.

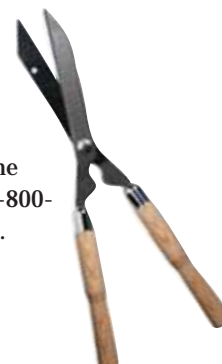


Let Your Lawn Go Dormant

Some turf species have natural dormancy periods when they 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 during the summer. Dormancy is a natural survival mechanism and your lawn will usually recover when rainfall returns. Dormant lawns continue to protect water quality by holding the soil and nutrients in place.

More Facts to Know

- Apply fertilizer in accordance with your soil test results. Remember, too much fertilizer will burn your lawn.
- Select grasses that do not require substantial fertilizer applications. Several new, improved varieties of tall fescue and bluegrass are now available.
- 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 in with your mixture.
- Spread lime on acidic soil. Limestone does not pollute water as long as it's used and handled according to manufacturer's instructions.
- Aerate your soil, if needed, to reduce soil compaction. Lawn care specialists can provide this service or you can rent a plug aerator from a lawn and garden supplier.
- When buying fertilizer, remember, you'll probably need less than you may think. Don't exceed one pound of nitrogen per 1,000 square feet in a single application.
- Don't leave fertilizer on sidewalks or driveways where it can be washed away. Blow or sweep back onto the lawn.
- Do not fertilize if a heavy rain is predicted.
- Never use fertilizers to de-ice walkways and driveways.
- For more lawn care tips call the Home and Garden Information Center at 1-800-342-2507 or visit www.hgic.umd.edu.



When Using a Lawn Care Service

A lawn care service is a popular alternative for homeowners who would rather have someone else care for their lawn—even though most lawn companies use products and practices that homeowners can buy and apply themselves. If you decide a lawn care service is for you, follow these important guidelines to help ensure both an attractive lawn and a healthy environment.

- Call several firms and ask to have information on individual management practices sent to you.
- Make sure that the firm and its personnel are licensed and certified by the Maryland Department of Agriculture's 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.
- Find out if the firm will develop a customized lawn care plan for your needs, rather than a blanket approach.
- Make certain the company provides you with health, safety, or precautionary information taken from the label of the product it plans to apply to your lawn.
- Request least toxic controls and environmentally-friendly lawn care products.
- The Water Quality Improvement Act of 1998 requires commercial applicators to apply nutrients in accordance with the most recent Maryland Cooperative Extension recommendations. This will require periodic soil testing and may place restrictions on the amount of fertilizer that can be applied to your property. In addition, increased emphasis may need to be placed on lawn maintenance practices.
- If you have a question or concern about your lawn care provider, contact the Maryland Department of Agriculture's Nutrient Management Program at 410-841-5959.



Fertilizing Trees and Shrubs

- When possible, use native plants which require less fertilizer and have a better survival rate.
- Keep an eye on the general health of trees and shrubs. Undersized leaves and short new twig growth could indicate a need for fertilizer.
- Yellow leaves may also indicate a need for fertilizer, although insects or disease can sometimes cause similar symptoms. Check out all the possibilities before deciding to fertilize. Call the Home and Garden Information Center at 1-800-342-2507 for advice.
- As a general rule, fertilize recently transplanted trees and young, rapidly growing trees once a year.
- The best time to fertilize is mid-fall (after the leaves have fallen) and early spring before active top growth occurs. Avoid fertilizing trees and shrubs in summer and early fall, since this interferes with the plant's ability to prepare for winter dormancy.
- Choose fertilizers 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.
- Rhododendron, azalea, camellia, and mountain laurel are acid-loving plants. When planting, include liberal quantities of peat, pine bark, or other acidifying organic matter. Fertilize with a product that has a high percentage of ammonium.
- Fertilizer spikes can burn tree roots and should not be used.

