



Home Landscape Practices to Protect Water Quality

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Protecting Water Quality

In Virginia, we rely on reservoir systems, wells, and other sources for our freshwater. In recent years, our previously plentiful clean water supplies have been threatened not only by overuse, but also by contamination. Pollutants are carried down with water soaking through the soil to the water table. Runoff (water that does not soak into the ground) flows over the surface, often taking soil and polluting chemicals with it into lakes and streams.

Home lawns and landscapes may contribute to this water pollution when homeowners apply pesticides and fertilizers carelessly. By using pesticides and fertilizers properly and only when necessary and following recommended landscape practices, you can do your part to protect our lakes, streams, and drinking water for the future.

Identify the Problem Before Using Pesticides

- When diagnosing a plant problem, remember that most problems are not caused by insects or disease. Severe cold or heat, waterlogging or drought, lawn mower damage, and carelessly applied herbicides frequently injure plants. Pesticides will be useless for these kinds of plant damage.
- Be aware that even if an insect or disease is present, that may not be the cause of your plant problem the original source of damage to your plant may no longer be present. Also, poor growing conditions can make a plant more susceptible to pests and are often the cause of “pest” problems.
- If you determine your problem is caused by a pest, identify the insect, disease, or weed before choosing a pesticide. Ask yourself:

- Is the injury severe enough to require control? If so, what options are available? Is chemical control the best option?
- Can the pest be controlled by a pesticide at this stage of its life cycle?
- Is there a pesticide labeled for use on the plant involved and effective against the pest?

Often no pesticide is required for proper control-but if needed, the right pesticide must be applied at the right time to control a particular pest.

- Refer to expert information. Talk to your Extension agent, or an experienced horticulturist at your local garden center-or check the symptoms against a good chart or reference book.

Use Pesticides Properly

- Plan ahead to eliminate or reduce storage and disposal problems. Buy only what you will need for one season. Purchase pesticides in formulations with minimal packaging, if possible. For example, some herbicides are now available in a tablet form that can be dissolved in water.
- Always **read the label** completely before spraying. Measure accurately and according to label instructions. Mix only the amount needed to do the job at hand. Follow the label’s instructions for application method and safety measures. Note specific warnings and precautions-they are there for your protection!
- Never spray near water or when there is wind. Pesticide can drift directly into streams or drainage ditches, polluting our waterways. Pesticide may also drift into unintended areas, damaging desirable plants.

- Buy and mix only what you will use—unused pesticide is difficult to dispose of properly. Never pour pesticides down the sink or into storm drains. If you have extra pesticide mixed, to dispose of it legally you must spray it on plants listed on the label at no more than the allowable rate. This means you cannot respray the same area (this would exceed the allowable rate) and you cannot spray excess pesticide labeled for tomatoes on the lawn (unless *home lawns* also happens to be listed on the label). Consult your Extension agent for advice on disposal of excess or unusable pesticide.
- Clean liquid containers by rinsing the contents into the spray applicator when you mix the last batch. To rinse, fill container about one fourth full with clean water, recap tightly, and shake. Allow 30 seconds for the container to drain between each rinse. Repeat three times.
- Dispose of empty containers as directed by the product label. If possible and appropriate, break or puncture the container so it will never be reused. Containers destined for a sanitary landfill should be wrapped securely in newspaper before disposal.

Apply Fertilizer Properly for the Best Result

- Always apply fertilizer at the right rate and time. See your local Extension agent for recommendations. Too much fertilizer or fertilizer applied when the plant cannot take up the nutrients can damage plants and contribute to water contamination.
- Calibrate your spreader for each type of fertilizer so you can apply the right amount.
- Have your soil tested for fertility and acidity/alkalinity, and follow recommendations on the soil test report. See your Extension agent for forms and instructions.
- Use slow-release fertilizers for most ornamental plants, including lawns, especially in areas with sandy soil. These fertilizers are less likely to allow nitrates to wash through the soil into the groundwater.
- Sweep spilled fertilizer off pavement before it is washed away by rain or irrigation. Nitrogen and phosphorus from fertilizers have been associated with many environmental problems, including excessive algae growth, depletion of the water's oxygen supply, and suffocation of aquatic life.

Reduce Erosion

Because soil sediment makes up most of the pollutant carried by runoff and most of the phosphates and pesticides entering Virginia's waters are attached to this sediment, controlling erosion will help control water pollution. Landscaping can help control erosion by holding soil in place and reducing runoff.

Plant a vigorous ground cover on steep slopes to reduce erosion and runoff. Turfgrass is often impractical here because mowing is difficult and dangerous on steep terrain.

- Build terraces or a retaining wall on slopes. These can intercept runoff, giving water time to soak into the ground, and can make attractive planting beds. Be aware that altering the soil level near established trees can seriously damage their root systems.
- Don't leave soil bare over the winter. Plant a cover crop, such as annual rye, or place mulch on the soil.

Use Good Landscape Practices

By taking good care of your landscape plants, you can reduce the need for pesticides that could potentially endanger water quality. Good planting and maintenance practices can also promote healthy, attractive plants that can add value to your property.

- Mulch with shredded bark or other organic material around planting beds, trees, and shrubs. Mulch helps keep down weeds, protects trees from lawn mower wounds, helps reduce erosion, and protects roots near the soil surface from hot, dry summer weather. Keep mulch 2 inches from all plant stems/trunks for water and gas exchange, plus reduced pest opportunities.
- Prune dead or diseased branches out of trees and shrubs.
- Use the right plant in the right place. Placing plants where they will do their very best can help reduce pesticide needs. For example, planting a rose in full sun with good air circulation can reduce black spot.

Keep Your Lawn Healthy

A properly maintained lawn looks beautiful, and also helps protect water quality. Healthy grass needs less

pesticide and will be better able to take up fertilizer, reducing the chance of pollutants washing through the soil and reaching our water supplies.

- Mow high and often. Setting your mower at the highest recommended level for your grass type (2 1/2 to 3 inches for Kentucky bluegrass and fescue, 1 inch for bermudagrass) helps keep out weeds, especially crabgrass, and makes your lawn more resistant to drought and disease.
- Leave grass clippings on the lawn. They recycle nutrients, lessening the need for commercial fertilizer. Clippings also add organic matter, helping to reduce runoff.
- Fertilize cool-season grasses (Kentucky bluegrass, fescue, ryegrass) in the fall. Fertilize warm-season grasses (bermudagrass, zoysiagrass) in the summer, according to Virginia Cooperative Extension guidelines for fertilizer rates - more fertilizer is NOT better.

For more information on selection, planting, cultural practices, and environmental quality, contact your local Virginia Cooperative Extension Office. If you want to learn more about horticulture through training and volunteer work, ask your Extension agent about becoming an Extension Master Gardener.

The original development of this series was funded by ESUSDA Smith Lever 3(d) National Water Quality Initiative Funds and the Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation.

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2022

426-723 (SPES-439NP)