THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXTENSION SERVICE
SP508 G

TENNESSEE

Home•A•Syst

Assessing Your Lawn and Garden

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The goal of *Home•A•Syst* is to protect your health and the environment from pollutants in and around your home.

The following checklist is designed to help you pinpoint potential problem areas in your lawn or garden that may need your attention. If a statement reflects the current situation in your household, check "Agree." If the statement does not describe your household, check "Disagree."

If you disagree with any of these statements, or if you are unsure, you may have a situation in your lawn or garden that could affect the environment or your health. Refer to the fact section with the same number as that statement (under the heading, "What you should know about . . .") for more information.

Agree	Disagree	
O	O	1. I always test my soil for its nutrient content before applying fertilizer.
O	O	2. I apply lawn or garden chemicals only when the immediate forecast calls for dry weather.
O	O	3. I use a human-powered lawnmower instead of a power mower.
O	O	4. I make sure I know the specific cause of my plants' problems before applying lawn or garden chemicals.
O	O	5. My land is fairly level *and* I've planted ground cover so that there are no areas of bare soil on my property.
O	O	6. I compost lawn, garden, and kitchen wastes.
O	O	7. My compost pile is more than 50 feet from any well or body of surface water.
O	O	8. My landscaping plants are native to Tennessee.
O	O	9. I water plants only when necessary, and at the appropriate times of the day.

Don't be alarmed if you disagreed with many or even all of these statements. That does not automatically mean you have an environmental problem related to your lawn or garden. It may, however, tell you that change is needed to avoid potential problems. In the same way, agreeing with every statement does not mean you are *not* at risk or cannot make improvements.

Why should you be concerned?

Your lawn and garden are probably the last places you'd expect to find pollution problems. After all, they're part of nature, aren't they? But behind the full foliage of your shade trees and the generous bloom of your flowerbed, there may be conditions that can threaten your health and the environment.

On the average, homeowners use *ten times* more chemical pesticides and fertilizers per acre than farmers use on farmland. When these chemicals are applied improperly, they can find their way into drinking water wells or pollute nearby lakes and streams. Children are also particularly vulnerable to chemicals that are stored or used without taking proper safety precautions.

Chemicals are only the beginning of pollution problems in the lawn and garden. Exposed soil that washes away during a storm can harm wildlife habitats and choke waterways. Indiscriminate watering of lawns and gardens wastes large amounts of clean drinking water. Gasoline-powered mowers, weed cutters, leaf blowers, and other devices make noise and pollute the air with their exhaust. While it may seem that your contribution to pollution is minor, the combined effects of chemicals, soil loss, and wasted water from thousands of homes add up to a major problem.

Home•A•Syst is only for your own use and benefit. It is a voluntary program intended to provide general information about protecting your health and the environment. Information from a *Home•A•Syst* assessment will not be collected by Extension or any other outside agency and should remain in your private records.

What you should know about . . .

1. Nutrient testing

Applying fertilizer without first testing your soil for its nutrient content is like taking medicine without knowing if you really need it. Your soil already has certain levels of the nutrients necessary for proper plant growth, such as nitrogen, phosphorus, and potassium. If you apply the wrong amount of fertilizer to your soil, you can actually increase the incidence of insects and disease. Also, too much fertilizer will likely wash away before plants take it up, causing unwanted plant growth in nearby streams or lakes. Testing your soil to find out how much of each nutrient is present takes the guesswork out of applying fertilizer.

Check with your local Extension office about testing your soil. This involves taking small samples from several places in your yard and garden and sending them to a laboratory in Nashville. After the soil is analyzed, you will receive a lab report summarizing the amounts of each nutrient in each sample. It's possible that some parts of your property need regular applications of fertilizer while other areas need little or none. Soil testing will give you the answer.

2. Lawn chemicals and rain

If you apply fertilizers or pesticides up to 24 hours before a rainfall, runoff can wash the chemicals (as well as soil, pet wastes, and other pollutants) into storm sewers. Contrary to popular belief, water in storm sewers is not on its way to a treatment plant. Storm sewers form an underground network that empties directly into local bodies of water.

Be sure to sweep excess fertilizer from walks back onto the lawn before it is washed away by rain.

3. Power mowers

Power mowers contribute to both air and noise pollution. If you reduce the size of your mowing area and grow plants that require little maintenance, switching to a human-powered mower is practical and environment-friendly.

Cut your grass to the right height; lawns cut too short invite weeds to invade by exposing more bare soil for weed seed germination.

Recommended mowing heights for grasses in home lawns:

Common Bermuda grass	¾ to 1 inch
Hybrid Bermuda grass	½ to 1 inch
Zoysia grass	½ to 1 ½ inches
Tall fescue	2 to 3 inches
Kentucky bluegrass	1 to 2 inches
Fine fescue	1 to 2 inches

Leave grass clippings on the lawn. They usually supply enough natural fertilizer to reduce significantly the amount of commercial fertilizer you need to apply. Mulching mowers are now available to cut clippings into small pieces and speed their biological breakdown. Never sweep grass clippings down your storm drain; loaded with nutrients, they cause algae blooms in nearby bodies of water, which take up the oxygen that aquatic creatures need to live.

4. Problem identification

Although removing weeds, insects, and other pests by hand is the safest practice for the environment and your health, chemical pesticides can pose only a minimal risk *if used properly*. Unnecessary chemicals can cause unnecessary pollution. The key is doing your homework before you start treatment and identifying problems correctly.

Many plant problems are not caused by insects or disease, but instead are related to temperature extremes, waterlogging or drought, lawnmower damage, or chemical overuse. Learn when and where pesticides are needed and apply them appropriately. Select the least toxic chemicals available, or ones that break down quickly into less harmful substances. Investigate releasing beneficial insects and microorganisms that feed on pests into your garden. Your local Extension office can help you get the information you need.

Remember that pest *prevention* is often simpler and cheaper than pest removal. Disease-resistant plants that are properly maintained will have few problems. Consider planting pest-repellent plants throughout your garden; for example, marigolds repel nematodes. (Your local library or bookstore can provide more information on this subject.) Also, ask yourself if, for the sake of clean groundwater and an environment with fewer chemical pollutants, you can tolerate a few bugs and weeds in your lawn or garden.

5. Erosion

Like pesticides and fertilizers, soil can pollute nearby bodies of water if it is washed away by rain or overwatering. In fact, even if you don't live near a body of water, soil from your lawn and garden can be carried far away by storm runoff. Gardens, lawns, and construction sites that have areas of bare soil, especially on sloped land, are prone to soil erosion.

Protect your soil and reduce erosion from your lawn by planting ground-cover vegetation. On steep slopes, plant a vigorous ground cover, but avoid turf grass, which requires mowing. Plant across the slope instead of up and down so that the plants catch rainfall and prevent soil and nutrients from washing downhill. Terraces or retaining walls on slopes also help prevent soil loss. In your garden, planting a winter cover crop in the fall or using mulch, compost, or fabrics can reduce erosion.

6. Composting

Bagging and throwing away leaves and clippings not only creates more trash for our landfills, but wastes a valuable resource. Composting is a cost-effective, natural way to convert leaves, clippings, vegetable scraps, and other yard wastes into high-quality fertilizer. If your compost pile is maintained correctly and receives enough aeration, it will be relatively odor-free. You can simply put biodegradable yard and kitchen wastes in a pile, or use homemade or store-bought bins. Natural decomposition processes break the wastes down into material that plants can use. Finished compost can be mixed into garden soil or spread on lawns as a slow-release fertilizer.

Check with your Extension office, garden stores, library, and neighbors for ideas and assistance. Also see SP508K, *Assessing Your Household Trash Management.*

7. Compost and contamination

If you have a well or live near a body of water, locate your compost pile at least 50 feet away to protect surface and groundwater from contamination. One important caution: if you mix manure from horses, sheep, cows, or other plant-eating animals into your compost pile, be sure to add plenty of leaves, straw, sawdust, or pulled weeds to offset the heavy nitrogen concentration in the manure. This measure helps to protect surface and groundwater. Do *not* put wastes from cats and dogs in the pile; this can cause parasite and disease problems. Also, adding diseased plant parts will only spread the disease to the plants

you mulch with the compost.

8. Exotic plants

Plants native to the Tennessee area are the ones that use Tennessee's resources most efficiently. Exotic plants, on the other hand, need special attention–and, most often, more water. If you use landscaping plants adapted to your region and its water availability, you are taking an important step to conserve water.

9. Water conservation

The average American uses approximately 200 gallons of clean water a day. Depending on the climate and the time of year, up to half that amount is used for landscaping and gardening. Of this immense amount of water, only a fraction is actually used by the plants. Once a lawn is established, it can usually survive on rainfall.

Water your plants according to their needs, and water wisely. Plants can only absorb so much water; watering after that point is a waste. Because most plants can tolerate short dry periods, watering should be timed, not constant. Watering slowly and deeply helps develop deep roots; in the long run, your plants will need less frequent watering. The only plants that benefit from shallow watering are weeds.

Consider allowing established cool-season lawn grasses to go dormant during the hot, dry summer rather than irrigating. Use drip irrigation systems or soaker hoses rather than sprinklers so that less evaporation will occur. If possible, water only in the early morning, when more water will be absorbed instead of evaporating. Place a shallow mulch–around two inches–of wood or bark chips over bare soil to reduce stormwater runoff and keep water from evaporating. Plant perennials, which conserve water because their roots grow deeper than those of annual plants and require little or no watering once established.

Contact your Extension office for information about the watering needs of specific plants.

Make a note:

The table on page 6 of SP508M, *Assessing Your Homesite*, provides a space for you to list all the problem areas in your home that you find while completing *Home•A•Syst*. Take a few minutes now to list any problems you discovered as you completed *Assessing Your Lawn and Garden*. Later, when you complete *Assessing Your Homesite*, you will include these items on the map you draw of your property. Potential items from this factsheet include:

- areas of bare soil
- steep slopes
- stored chemicals

Remember:

- Test your soil for its nutrient content before applying fertilizer.
- Don't apply lawn or garden chemicals when rain is in the immediate forecast.
- Consider using a human-powered lawnmower.
- Cut your grass only to recommended heights.
- Leave grass clippings on the lawn instead of bagging them and throwing them away.
- Identify the causes of your plants' problems before deciding to solve them with chemicals.
- Select chemicals that break down easily in the environment.
- Protect soil from erosion by planting ground cover or installing a terrace on a steep slope.
- Compost your yard and kitchen wastes, and aerate the pile regularly.
- If manure is included in your compost pile, add plenty of leaves or sawdust.
- Never put cat or dog waste or diseased plant parts in a compost pile.
- Choose native plants for your landscaping.
- Water your plants according to their needs, and with conservation in mind. Remember, early morning is best.

If you want more information . . .

Contact:

- Your local Extension office

- National Pesticide Telecommunication Service (NPTN)
  (800)858-7378
  Daily, 9:30 a.m. - 7:30 p.m. EST
  A toll-free pesticide information service that welcomes your questions. Also available on the World Wide Web at http://ace.orst.edu/info/nptn.

Read:

- *Composting Yard, Garden and Food Wastes at Home. PB 1479.*

- *Safe Pesticide Practices. PB 654.*

- *Lawn Insects: How to Control Them. PB 1158.*

- *You Can Control Vegetable Garden Insects. PB 595.*

- *Disease Control in the Home Vegetable Garden. PB 1215.*

- *Lawn Fertilization. PB 1038.*

- *Soil Testing. PB 1061.*

- *Lawn Care to Reduce Landscape Waste. PB 1455.*

The above publications are available from your University of Tennessee Agricultural Extension Service county office.

Download:

- http://funnelweb.utcc.utk.edu/~utext
  The University of Tennessee Agricultural Extension Service home page.

- http://www.logicnet.com/cathy.kitlar/world.htm
  Site recommended by Infoseek with links to information about recycling, composting, lead poisoning, ozone, acid rain, and more

- http://www.ncg.nrcs.usda.gov/public.html
  The Natural Resources Conservation Service home page. See section entitled, "Public Service Information," for information on lawn and garden care and other topics.

- http://www.plcaa.org/index.html
  The Professional Lawn Care Association of America home page. PLCAA coordinates an environmental stewardship program with the EPA to educate the public about how lawn-care practices affect the environment.

- http://www.in.net/wellness/progwell/lawncare.htm
  The Progressive Wellness page devoted to environment-friendly lawn care; includes other contacts such as the EPA Office of Pesticide Programs.

- http://solstice.crest.org/environment/gotwh/index.html
  Composting page maintained by the Center for Renewable Energy and Sustainable Technology (CREST). Click on the White House icon in the upper left-hand corner to see how the White House has adopted an environment-friendly maintenance plan.

- http://net.indra.com/~topsoil/Compost_Menu.html
  Link menu for RotWeb, a site devoted to composting information. Includes resources for both users and teachers.

- http://www.gvrd.bc.ca/waste/bro/swhist.html
  Interesting information about the history of composting, if you're curious.

- http://www.webdirectory.com
  Comprehensive environmental search engine/bulletin board–a great way to find information about any environmental topic.

This *Home•A•Syst* assessment does not cover all potential health or environmental risks related to lawn and garden care. It is meant to be a starting point for identifying and addressing the most apparent risks.

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