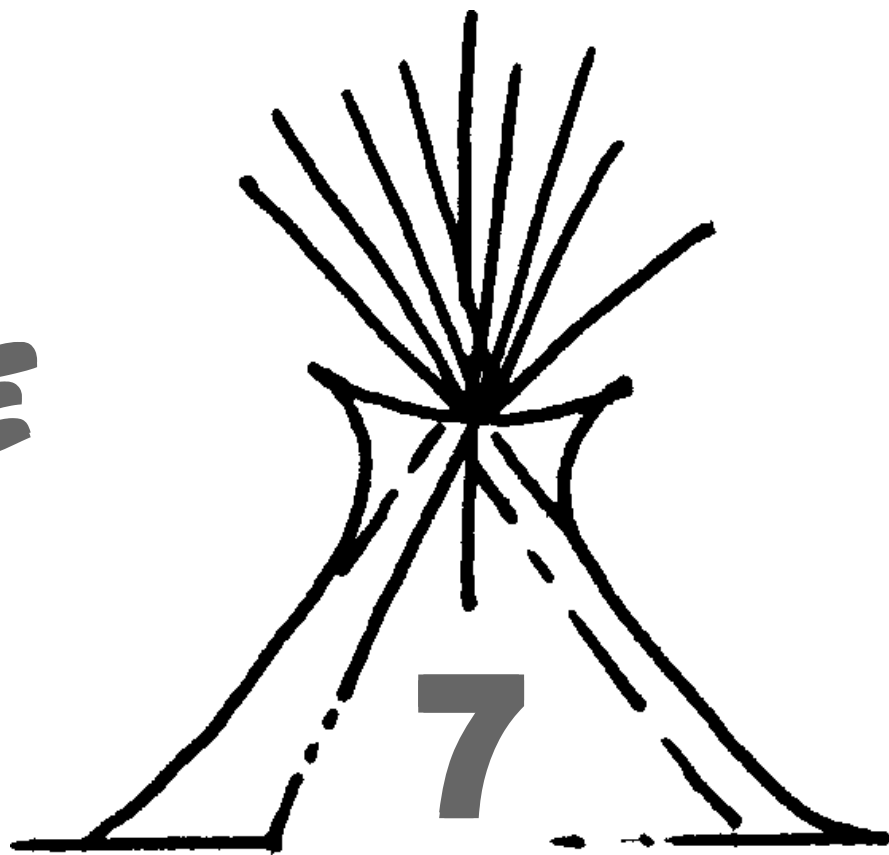


# YARD AND GARDEN CARE



**How you take care of your yard and garden can affect the health of your environment, your reservation, your community and your family.**

This fact sheet tells about pollution risks in your yard and garden, and how to reduce them:

- ***Soil testing***
- ***Lawn care***
- ***Fertilizers and pesticides***
- ***Ground covers and erosion protection***
- ***Composting***
- ***Water conservation***

Connected to the Earth

**We are responsible for the condition of the Earth.**

**—Hunbatz Men, Mayan**

## Health risks in your yard or garden

Your yard and garden might be the last places you would look for pollution problems. But beautiful landscapes may hide things that may threaten the health of your family and the environment. The average homeowner uses 10 times more chemical fertilizers and pesticides per acre than farmers use on farmland! These chemicals can find their way into drinking water wells and pollute lakes and streams, especially if you are not careful in following the directions when you use them. Children are particularly at risk when pesticides are stored or used without carefully following safety precautions.

When exposed soil from your yard or garden washes away during a storm it can harm wildlife habitat and choke waterways. Watering of lawns or garden can waste large amounts of water if you aren't careful. Gas-powered mowers, weed cutters, leaf blowers, and other machines make noise and pollute the air. A two-cycle lawnmower engine spews as much exhaust in one hour as a car does in 350 miles. It may seem that your yard and garden care only pollute a little bit, but the effects of chemicals, soil loss, and wasted water from hundreds or thousands of homes really adds up.

## Save time and money

Americans spend a lot of money on garden gadgets, flowers, seeds, and chemical products. They spend hours of leisure time caring for their yards and gardens. That valuable time and money may be wasted, though if your lawn garden ends up harming the environment.

It costs time and money to replace a lawn or garden damaged by over-fertilization or misuse of pesticides. It takes hard work to recover ugly eroded areas. And it takes a lot of effort to rake and bag grass clippings.

You can save yourself some time money with a low-maintenance lawn and still keep your home looking nice—plus, you will be doing something good for the environment!

## Lawn and garden products

Most homeowners want their yard to look nice, and spend a good deal of time and money on flowers, woody plants and a green lawn. The demand for lawncare products and services increases every year.

Normal amounts of lawn and garden products are not usually harmful. A well-kept home landscape can even help reduce soil erosion and increase water retention and soil fertility. But if you don't take care of it, or if you overuse chemicals, it leads to soil problems, polluted runoff and unsafe well water.

## Test your soil before fertilizing

Using fertilizer without testing your soil is like taking medicine without knowing if you need it. Your soil already has some of the nutrients needed for good plant growth, such as nitrogen, phosphorus, and potassium. Find out how much of each nutrient is there with a soil test. It takes the guesswork out of how much fertilizer to use. Check with your tribal offices or your local Cooperative Extension office, garden supply stores, and neighbors about testing your soil.

Testing often involves taking small samples from several places in your yard and garden. The soil is analyzed, and you receive a lab report that lists the amounts of each nutrient in each sample. Some parts of your property may need regular applications of fertilizer, and other areas may need few applications or none. Soil should be tested every three years.

**White House groundskeepers use integrated pest management to control pests using a minimum of chemicals.**



## GREENING THE WHITE HOUSE

Take a cue from the White House in Washington D.C. Groundskeepers have launched a gardening and landscaping practice designed to protect the environment. The staff now uses integrated pest management (IPM), an environmentally friendly

approach that controls pests using a minimum of chemicals. They fertilize according to local recommendations, limit watering to the early morning hours to save water, and leave grass clippings on the lawn where they decompose naturally.



## Fertilizer cautions

Your soil tests will let you know where your lawn needs fertilizer and how much is needed. Nitrogen is the key plant nutrient for building a thick, green lawn. If you put the right amount of fertilizer on at the right time, it will supply the nitrogen your soil needs.

If you apply fertilizer at the wrong time or use the wrong amount, you may make conditions worse. Insect and disease problems can increase. Too much fertilizer is likely to wash away before the grass takes it up. Fertilizer in runoff can cause unwanted plant growth in nearby streams or lakes. Nitrogen and other chemicals can seep down (especially in sandy soils) and contaminate groundwater used for drinking.

If you hire a lawncare service, make sure they test your soil before applying fertilizer. Insist that lawn fertilizers *are not applied* if rain is expected within 24 hours. Keep children and pets away from treated lawns for at least 24 hours. Sweep extra fertilizer off of walks and back onto the lawn before it is washed away by rain.

If you are using nonchemical fertilizers like compost or fish meal, or other soil amendments, you should still apply them based on the needs of your lawn and be careful to prevent runoff and groundwater contamination.

## Lawn care tips

It is easier to keep your lawn healthy if the type of grass is suited to local growing conditions like rainfall, temperature, soil type, and available light. Contact your local Cooperative Extension office for a list of recommended grasses for your region.



**Figure 7.1 Pull weeds by hand instead of controlling with chemicals.**

- **Cut your grass to the right height**—lawns cut too short invite weeds to invade.
- **Leave grass clippings on the lawn**—in many cases, they supply enough natural fertilizer so that only minimal additional fertilizer is needed to keep your lawn green and healthy.
- **Sweep clippings off of paved surfaces**—so they aren't carried away by stormwater.
- **Consider switching to a human-powered mower**—to cut down air and noise pollution and provide exercise.
- **Consider reducing your lawn size**—and growing plants that require little maintenance. Then a human-powered mower can be practical. Or consider using an electric mower for smaller-sized lawns.

## Applying pesticides

Removing weeds, insects, and other pests by hand is safest for the environment and your health. But pesticides, if you use them carefully, may pose only a small risk. The key is doing your homework before you start treatment:

**Correctly identify the problem.** Many plant problems are not caused by insects or disease. They may be related to temperature extremes, too much or too little water, damage caused by lawn mowers, or overuse of chemicals.

**Learn when and where pesticides may be needed** to control problems. Apply them only where pests occur. Select the least toxic to do the job. Look for chemicals that break down quickly into less harmful substances. Check with your tribal offices or your local Cooperative Extension office or garden supply stores for information. Remember to read the pesticide label carefully and follow the directions for application rates and methods.

**Prevent pests.** Pest prevention is often simpler (and cheaper) than pest removal. If you have disease-resistant grasses or other plants and you keep them healthy, pests will be less of a problem. Finally, when it comes to using pesticides, ask yourself if you can tolerate a few more weeds and bugs for the sake of clean groundwater and a healthier environment.

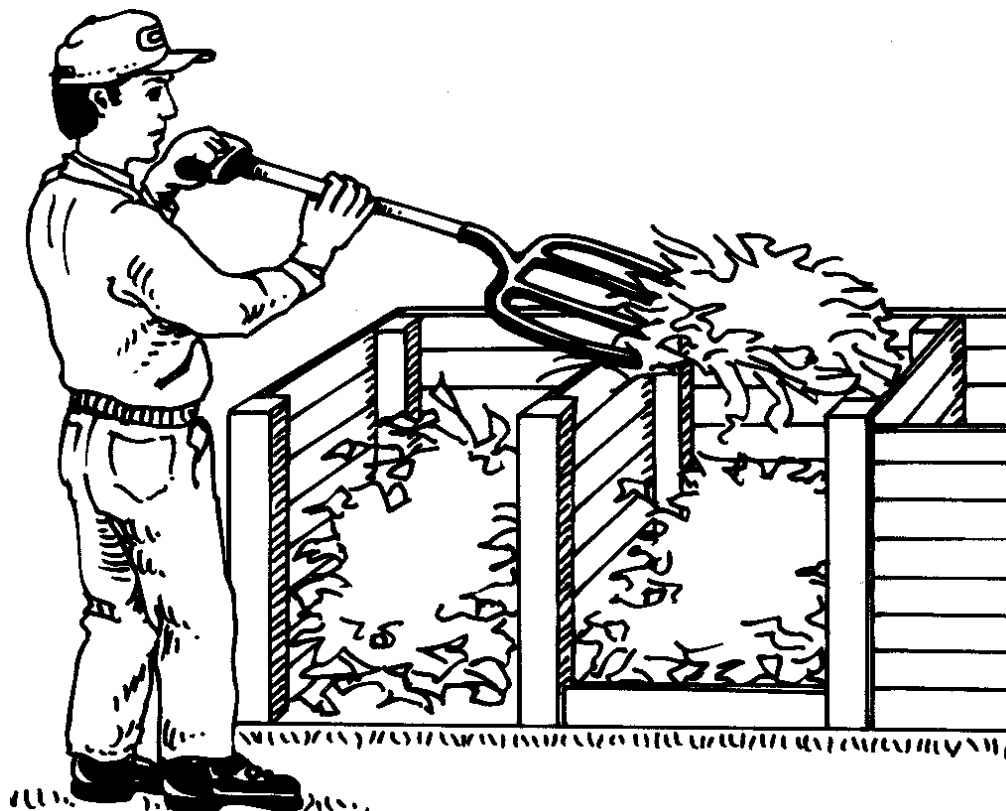
## Integrated pest management (IPM)

It sounds fancy! But integrated pest management (IPM) is actually a natural approach to controlling pests. Integrated Pest Management, to generalize, means making a commitment to try natural ways of fighting pests before resorting to chemicals. Weeds can be controlled by hand pulling (figure 7.1) or hoeing. Bugs can be removed by picking them off vegetables and garden plants. Cleaning up dead leaves and debris removes potential homes to pests. Natural predators (beneficial insects and microorganisms that you can buy) can be used to control pest insects.

When you have no other choice, try to find nontoxic or low-toxic chemicals such as insecticidal soaps. Follow directions carefully, and mix only the amount you need. For IPM to work, you have to give more time and attention to your yard and garden.



**Figure 7.2**  
**Compost**  
**piles stay**  
**relatively**  
**odor-free if**  
**they are**  
**turned**  
**regularly.**



## Prevent soil erosion

We might tend to think that since soil is everywhere it is not a pollutant, but soil washed away by rain can pollute streams, lakes, or bays. Even if you don't live near water, soil will eventually be carried to surface water in runoff from storms. Gardens, lawns, and construction sites with areas of bare soil—especially on sloped land—are soil erosion risks.

Protect soil and reduce erosion by planting vegetation to cover the ground or by using wood-chip mulch or landscape fabric. On steep slopes, plant a fast-growing ground cover, but avoid grass that requires mowing. Building terraces or retaining walls on slopes can also help prevent soil loss. Choose plants that are naturally suited to your area and resistant to insects and diseases.

## Composting

Composting is an inexpensive, natural way to handle leaves, grass clippings and other yard wastes—materials that might otherwise end up in a landfill. Composting creates an organic, slow-release fertilizer and soil-enhancing material. It uses nature's own recycling system to break down plants and other organic materials.

Composting is easy: Just put yard wastes in a pile, or in homemade or store-bought bins. You can add vegetable trimmings and fruit peels from your kitchen, but don't put meat products or other trash in it. Turn the pile regularly to let air in and keep it relatively odor free (figure 7.2).

One word of caution: You have to be careful about putting manure in compost. Animal manures have high levels of nitrogen. Different types have different levels. If you leave it in piles exposed to the weather, nitrogen-rich runoff may be a problem.

If you mix manure from horses, sheep, cows, or other *plant-eating* animals into your compost, add plenty of high-carbon plant materials like leaves, straw, or sawdust to keep concentrations of nitrogen low. This will help prevent contamination of groundwater.

**Do not** put pet wastes (from cats and dogs) in compost piles because of potential parasite and disease problems. Try to locate piles at least 50 feet from any well, lake or river.

Finished compost, which looks and smells like soil, can be mixed into garden soil or spread on lawns as a slow-release fertilizer. Check with your local tribal offices or Cooperative Extension office, garden stores, the library, tribal college and your neighbors for more information.

## Saving water

The average American uses about 200 gallons of water each day. About half of that water may be used for landscaping and gardening. This is an immense amount of clean water—and only a small amount of it is actually used by your plants. The biggest step in conserving water is to convert your landscape plants to ones adapted to your region and climate.

In dry climates, many drought-tolerant native plants are available. Consider landscaping with drought-resistant turfgrass species like tall fescues and buffalo grass.

Perennial flowers conserve water because their roots grow deeper than annual plants and require little or no watering once established. A shallow mulch (about 2 inches deep) of wood or bark chips over bare soil will reduce stormwater runoff and keep water from evaporating.

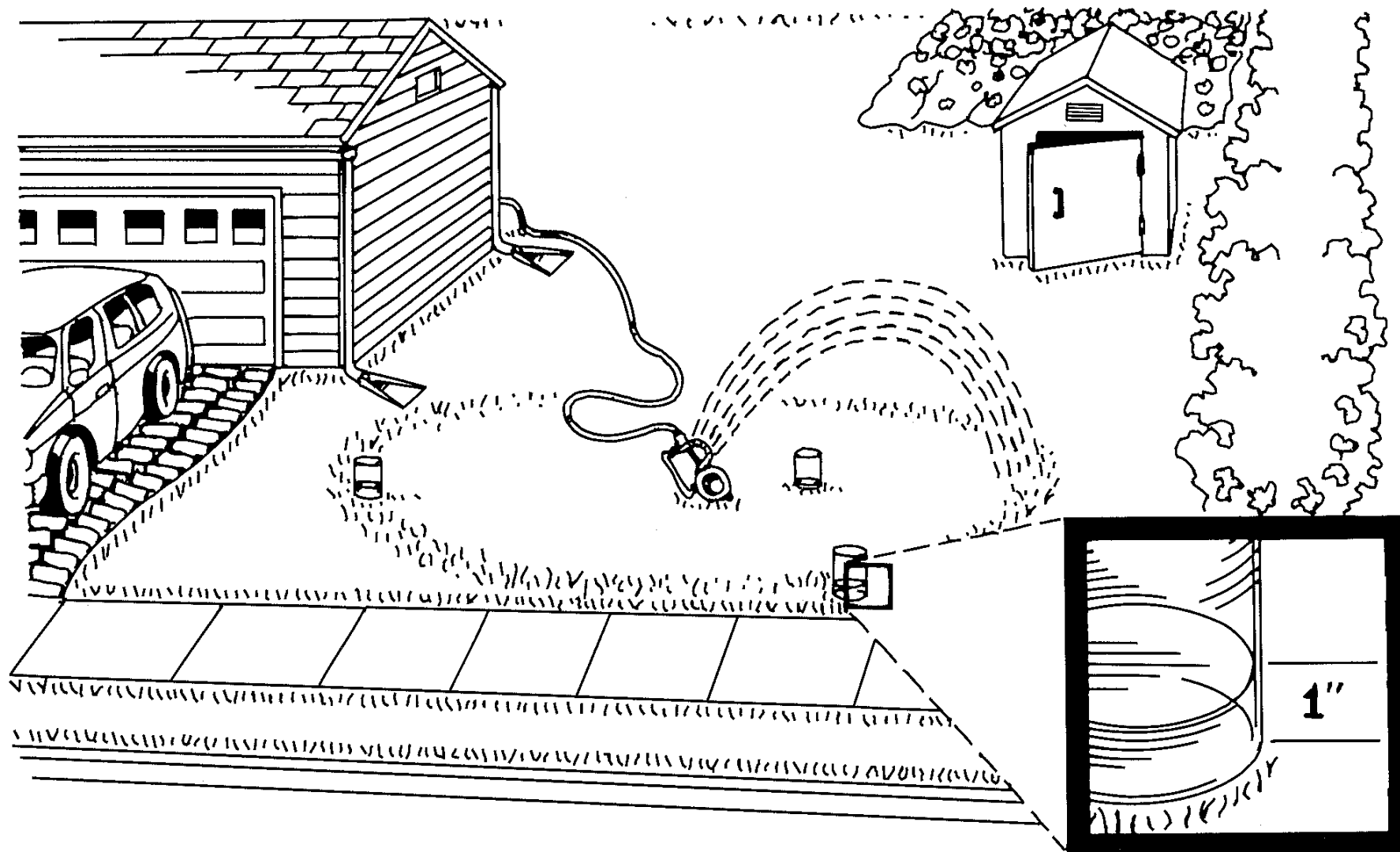


## **Watering wisely**

Most plants can tolerate at least short dry periods, so learn about your plants and time watering to meet their needs. Watering slowly and deeply helps develop deep roots so that in the long run your plants will need less frequent watering. Shallow watering can actually benefit the plants you don't want— weeds.

Plants can only absorb so much water. Besides being wasteful, overwatering can injure plants. Place containers with 1-inch marks under your sprinkler to gauge how much water your lawn or garden is getting (figure 7.3).

Another option in some regions is to allow established cool-season lawn grasses to go dormant during the hot, dry summer rather than irrigating. Most stores that have yard and garden supplies carry drip irrigation systems and soaker hoses. They are good ways to water because they can deliver water directly to the plants that need it. The time of day when you irrigate matters, too—early morning is best. To learn more about yard care in your area, try asking your local Extension office for information.



**Figure 7.3** Placing containers with 1-inch marks under your sprinkler will help measure water.



## Do Table 1 Yard and garden care

The table below will help you find environmental risks related to your yard and garden care. For each question, mark the risk level in the right-hand column that fits your situation best.

### Responding to risks

Do the action checklist on the following page and make plans to reduce your risks.

### Table 1 - Yard and Garden Care

	LOW RISK	MEDIUM RISK	HIGH RISK	YOUR RISK
<b>Fertilizers</b>	Soil is tested for nutrients, and fertilizer is used as recommended.	Soil is tested, but more fertilizer is used than recommended.	Soil is not tested, and fertilizer is used in large amounts	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
<b>Pesticides</b>	Nonchemical or low-toxicity methods (such as integrated pest management) are used to control pests.	Chemicals are used according to label instructions.	Chemicals are used without regard to label instructions or conditions	<input type="checkbox"/> Low <input type="checkbox"/> High
<b>Lawn (turf) type and maintenance</b>	Turfgrass is suited to soil type, available sunlight, and climate. Grass is pest-resistant and mowed to the proper height.	Turfgrass is suited to the site but is well-fertilized and mowed short.	Grass type is not suited to available light, soil type, or climate. Grass is pest-prone and mowed too short.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
<b>Ground cover and other plantings</b>	Ground covers, flowers, trees, and shrubs are planted to reduce soil erosion. Plantings resist insects and disease.	A slow-spreading ground cover is used.	A hilly landscape or lack of ground cover causes soil erosion. Plants require insect- and disease-fighting chemicals to survive.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
<b>Composting</b>	The compost pile is well-maintained: It is aerated regularly and contains yard waste, vegetable food scraps, and a nitrogen source such as manure.	The compost pile is poorly maintained: It is not aerated or lacks the proper mix of materials. Dog, cat, and other pet wastes are added to the pile.	The compost pile is poorly maintained: It contains excessive high-nitrogen material and is not turned regularly. The pile is less than 50 feet from a shallow well or surface water.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
<b>Water requirements of plants</b>	Grass, flowers, trees, and shrubs are able to survive with normal rainfall.	Landscape plants require light to moderate watering.	Heavy watering is required to keep the lawn and other plants alive.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
<b>Water methods</b>	Watering is done in the morning or evening, only as needed. Low water-use devices (like soaker hoses) are used.	The sprinkler system is on manual control. Watering is excessive. (For example: The sprinkler is left unattended, and much water lands on the pavement.)	Watering is done during the heat of the day. The sprinkler system is used daily without regard to weather conditions. There is excessive water runoff.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High



## TAKE ACTION

In the checklist below, write all medium- and high- risks you found in the table on the previous page. For each risk, write down the changes you plan to make. Use advice from this fact sheet and other resources to decide on actions you are likely to complete. Set a target date to help you stay on schedule. You don't have to do everything at once, but try to eliminate the most serious risks as soon as you can. Often it helps to tackle the inexpensive actions first.

## For More Information

### Soil testing

Contact your local tribal offices, Cooperative Extension office or private testing laboratories. In your yellow pages, look under the heading "laboratories" or "soil testing."

### Acknowledgments

*This fact sheet has been revised from the original written by K. Marc Teffeau, Regional Extension Specialist, Wye Research and Education Center, University of Maryland Cooperative Extension and Ray Bosmans, Regional Extension Specialist, Home and Garden Information Center, University of Maryland Cooperative Extension.*

## ACTION CHECKLIST - Yard and Garden Care

Write all high and medium risks below.	What can you do to reduce the risk?	Set a target date for action.
Sample: Fertilizers applied but soil has never been tested.	Find laboratory that does soil testing. Take samples and send them to lab	One week from today: March 15





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To obtain additional fact sheets in the *Connected to the Earth* series, contact your local Extension office or call Montana State University's Extension housing program at (406) 994-3451.