

## Pollution Prevention In The Home

# Lawn Care

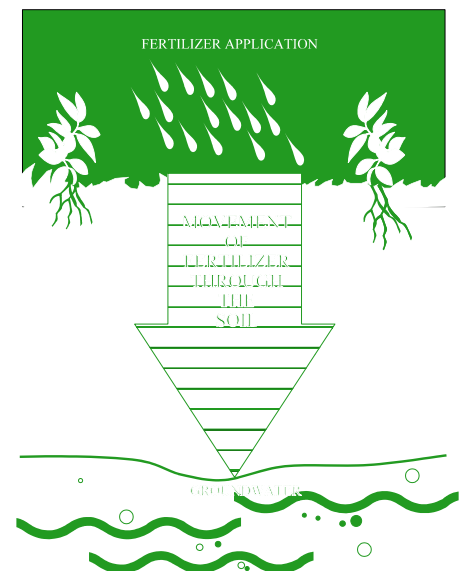
One common question asked by homeowners is “Could my lush, green lawn be a health risk to my family, pets or the community?” The answer may be “Yes!” Your lawn is a health hazard if you are not applying nitrogen fertilizer wisely. Water pollution from nitrates is a problem in some parts of South Dakota. Sources of contamination include lawns, cities, industry, and agriculture. It’s important that everyone does their share to protect our scarce water supplies.

In South Dakota, lawns around houses, cemeteries, parks, schools, and golf courses are maintained with the use of several chemicals such as nitrogen, phosphorus, potassium, as well as applications of fertilizer, herbicides and pesticides. Over-application or ill-timed applications of these lawn additives can (and do) lead to drinking water contamination in some areas of South Dakota.

The US Department of Agriculture and South Dakota State University Cooperative Extension Service recommend fertilizing grass with 110 pounds of nitrogen per acre or 2-4 pounds of nitrogen per 1,000 square feet of lawn. However, other sources recommend applying up to 248 pounds per acre! Over twice the suggested limit! As a way of comparison, 96 bushels of corn can require 180 pounds of nitrogen fertilizer per acre, but actual application rates often depend on soil analysis results.

You may be asking, “What do lawns and lawn care have to do with water pollution?” Lawns need fertilizer each year. That fertilizer contains nitrates. Nitrates from fertilizer can leach into groundwater or enter lakes, river, and streams through storm gutters, or by runoff.

Groundwater (water that exists beneath the surface of the earth) often is used as a drinking water supply for people and animals. When nitrates get into our water, health problems can occur. Once contaminated, groundwater is difficult and sometimes impossible to clean. Because groundwater moves slowly, contaminants do not spread or mix quickly. If groundwater becomes contaminated, the contamination may eventually appear in surface water. Most of South Dakota uses groundwater for its drinking water supply.



Surface water is also used as a drinking water supply. Nitrates can produce “algae blooms” in lakes, causing the water to turn green. Although these blooms are not a health problem, they can cause taste and odor concerns if that water is used for drinking.

Lawn fertilization practices on your lawn can have a negative effect on your neighbors downstream if improperly applied. An important consideration in lawn maintenance is to match the lawn conditions with a fertilization program that will produce the desired quality of lawn without harming water supply areas around you when it rains or when you irrigate.



High nitrates can cause health problems for animals and humans, especially for infants. In infants, nitrates can cause “Infantile Methemoglobinemia,” or “blue baby syndrome.” This is a condition where the child turns blue because the blood cells are unable to carry oxygen. It has been known to cause death in babies. In animals, nitrates cause a condition similar to asphyxiation.

There are negative effects that are caused by over-application of lawn fertilizer. Beside damaging your grass and creating an unhealthy lawn, you spend extra money and run the risk of causing pollution on the water resources in your community. Whether it’s surface water or groundwater, excess fertilizer will runoff or leach into the ground and end up in someone’s water supply!

## Ways you can help



When applying fertilizer to your lawn, read the instructions on the fertilizer bag carefully.



Do not over-apply fertilizer. Measure your lawn to determine the square footage. Putting a little extra fertilizer on your lawn for good measure is a sure way to pollute our water supplies and does not promote the health of your grass.



Do not over-water your lawn. Excessive lawn irrigation can cause fertilizer to runoff your lawn, down the storm gutters and into the river and streams. Fertilizer could also leach into the groundwater.



Use split applications. Farmers often apply several small amounts of fertilizer during the growing season to improve efficiency of the fertilizer applied. A lawn will require less nitrogen over a growing season by using smaller, more frequent applications.



Consider the use of xeriscaping. This technique utilizes indigenous grasses that are more drought resistant. Less water and fertilizer are required by these types of plants.



Shut off fertilizer spreaders when crossing a pathway, sidewalk, driveway, or other hard-surfaced areas. Avoid fertilizing drainage areas in your lawn. This will help reduce the potential for nutrients to be carried to a surface water supply.



Allow grass clippings to decompose on the lawn. This will provide your lawn with up to one pound of nitrogen per 1,000 square feet of lawn per year.



Determine what type of water requirements your lawn really needs. Water requirements vary with changing weather conditions and lawn maintenance levels; however, once you've established how and when you should water to best meet the needs of your lawn, it will better resist the invasion of weeds, insects and diseases, as well as the effects of drought, wind, and excessive heat.



Calibrate your fertilizer spreader. Pick a small area of your lawn (100 square feet), fill your spreader with only the amount of fertilizer required for the square footage, and apply the product to your grass. You should not run out of fertilizer until the entire area is covered.

Soil testing is another way you can be sure that your lawn is healthy and not over-fertilized. You can contact your local cooperative extension agency to receive a soil testing bag and instructions, or go online to South Dakota State University's soil testing page (<http://plantsci.sdstate.edu/soiltest>). For a minimal fee you can have your soil tested for nitrate-nitrogen, organic matter, phosphorus, potassium, pH, soluble salts and find out its texture class. If you are having problem areas on your lawn, you can also take this opportunity to describe them and have the soil tested to address those areas as well.

The soil testing process is easy to do. The data sheet you send to the lab provides step-by-step instructions to collect soil. The results sheet which will be mailed to you will have the results, what they mean, and recommendation for your soil. Suggested tips on

fertilization and a pamphlet discussing the different kinds of fertilizers are also included with your results.

“How To Take A Soil Sample” is a handout in this guide.