STORM WATER FACT SHEET

Protecting Local Waters Through Proper Lawn Care

DID YOU KNOW?

Over-fertilizing your lawn can have a serious consequence on water quality!

Many fertilizers, as well as leaves and grass clippings, contain nitrogen and phosphorus. If you over-fertilize your lawn, rain can wash these excess nutrients into our waterways and cause:

- Lower dissolved oxygen levels in the water (fish need adequate levels of dissolved oxygen to live)
- Algae blooms & excessive aquatic weed growth (which clog waterways and take oxygen out of the water)
- Ammonia to be released, which is toxic to fish

Fertilizer carelessly applied on one lawn can be a waste of the homeowner's money but may otherwise seem insignificant. Careless applications on hundreds or thousands of lawns, however, can add up to major problems for local streams, lakes, rivers, and waterways.

FACT:

Sweeping or blowing grass clippings, leaves, or yard debris into drainage ditches or streets can:

- Clog Storm Drains
- Cause Flooding
- Cause Pollution in Local Waterways

Before You Fertilize Get Your Soil Tested

- Getting your soil tested can save you **TIME** and **MONEY.**
- Soil tests provide specific fertilizer recommendations for your lawn and can help you avoid over-fertilizing.
- Depending on the history and current condition of your soil, you may not even need fertilizer.
- Adding too much fertilizer to your lawn can impair water quality and harm your lawn. Apply only the amount of fertilizer your lawn needs. Testing your soil provide valuable information.

FREE!!!

Soil testing kits & services are free at the Brunswick County Cooperative Extension Service
25 Referendum Drive
Bolivia, NC
(910) 253-2610

MOWING GUIDE

Proper mowing height and sharp mower blades reduce weed growth and promote healthy grass growth.

Turf Type	Height after mowing
Bahiagrass	2-3"
Bermudagrass	3/4 – 1"
Centipedegrass	1- 1½"
St. Augustinegrass	2-3"
Zoysiagrass	3/4 -1½"

- Mow when grass is dry.
- Alternate mowing patterns frequently.
- Remove no more than 1/3 of the grass height at a time, any more can be very stressful to the grass & increase pest or disease problems.
- Don't cut grass too short. Taller grass shades the soil, prevents water loss, and prevents weed growth.

GRASSCYCLE!

Grass clippings are organic fertilizers. They are also 85% water! Leave grass clippings on your lawn after mowing. Grass clippings return nutrients and moisture to your lawn and reduce the need for additional fertilizer.

Rake, sweep, or blow grass clippings back onto your lawn (not into the street or storm drain) or use a mulching lawn mower. You can also compost grass clippings and leaves to make a mulch or soil conditioner.

NOTE: Your soil must be biologically active to decompose grass clippings. If your lawn is over-fertilized or frequently treated with pesticides, the soil may be deficient in the elements it needs. Soil testing can tell you if your soil is biologically active.

WHEN TO FERTILIZE

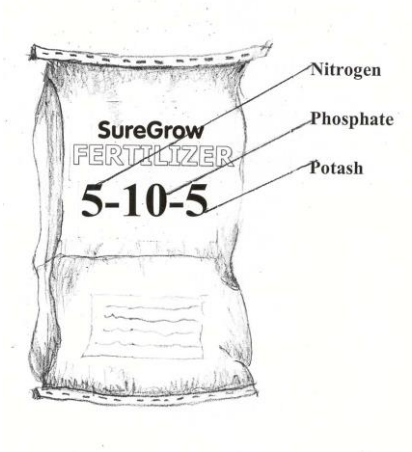
Different types of grass require different amounts of fertilizer for healthy growth. Specific times to fertilize will also depend on the type of grass you have. The chart below can help you determine the amount of nitrogen your lawn may need. A soil test should be conducted first to give the accurate and specific fertilizer recommendations for your lawn.

- **Keep fertilizer <u>OFF</u> paved surfaces**
- **Never fertilize before it rains**
- **Calibrate your spreader to deliver the proper amount**

NITROGEN FERTILIZER GUIDE FOR LAWNS

Lawns need some nitrogen each year to remain dense and healthy. Many lawns do fine with only 1 or 2 pounds of nitrogen per 1,000 square feet each year. The chart below shows when and how much nitrogen to apply to your lawn, depending on the kind of grass you have.

<u>TURF</u>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total Lbs. of Nitrogen /1000 sq. ft. / Year
Bahiagrass					½		½						1
Bermudagrass					1	1	1	1					4
Centipedegrass						½							½
St. Augustine				½	½	1	½						2½
Zoysiagrass				½		½		½					1½



FERTILIZER FACTS

Fertilizers always display three numbers in the same order (5-10-5).

These numbers represent the percent by weight the fertilizer contains of three important nutrients:

- NITROGEN (N)- for green leafy growth
- Phosphorus (P)- for root and bud growth
- Potassium (K)- for drought and disease tolerance

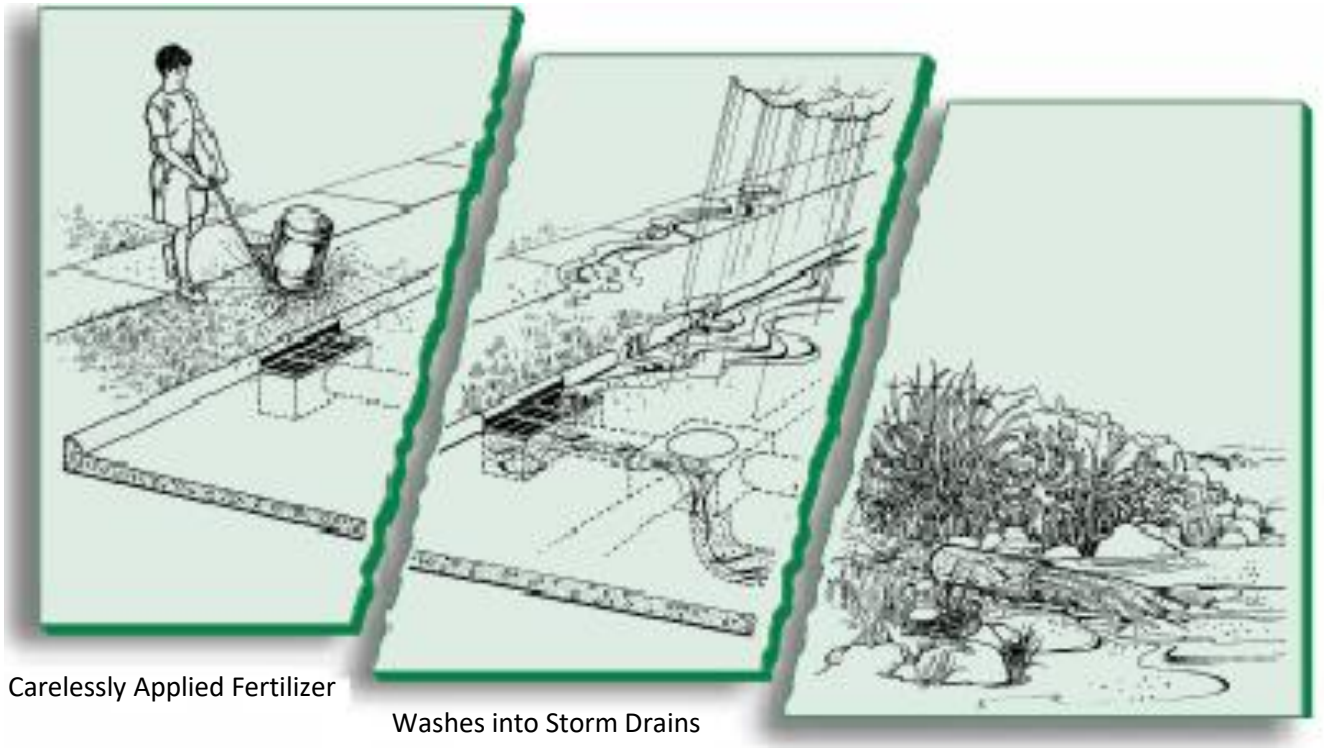
For Example: A 40-pound bag of 5-10-5 fertilizer is: 5% nitrogen (2 lbs.), 10% phosphate (4 lbs.), and 5% Potassium (2 lbs.)

PESTICIDES

The pesticides used in a yard are poisons and may pose a health threat to the person applying them if not handled carefully. They also pose a threat to animals, plants, and insects beyond the intended pests. Honeybees are an example of non-target organisms. They are very susceptible to many household pesticides such as carbaryl (Sevin) and chlorpyrifos. Other non-targets include ladybird beetles, which are a natural biological pest control, and fish, which can suffer direct poisoning from the household insecticides permethrin, resmethrin, pyrethrin, and rotenone washed into a stream or lake. Until recently, groundwater was thought to be immune from the many chemicals used on lawns and gardens. However, contamination may occur when polluted surface water moves through the soil to the water table.

<u>Steps to Follow in Integrated Pest Management:</u>

- Learn about plants and their pests.
- Select the right plants for the location.
- Frequently inspect plants to see if pest levels are increasing or decreasing.
- Identify pest symptoms. Knowledge of pests, their life cycle, and the damage they cause is essential for effective pest management.
- Determine if control measures are really needed. For example, this can be determined by counting the number of insects present and looking carefully at the amount of damage they are causing. Most plants can tolerate a considerable amount of feeding by insects before any serious damage occurs.
- When treatment becomes necessary, select methods that are least disruptive to natural controls and least hazardous to human health and the environment. Start with cultural, mechanical, or biological controls.
- Evaluate your treatment to see which methods worked best.



Carelessly Applied Fertilizer

Washes into Storm Drains

And Flows Directly into Waterways

WEED CONTROL

Turf management begins with proper planning and proper lawn establishment. A properly established lawn is part of a landscape plan that matches your needs with the environmental conditions present (soil type, wetness/dryness, trees, etc.). Such lawns are better able to prevent weed problems, tolerate insects and disease, and endure seasonal weather extremes. They also produce less lawn chemical runoff, thus protecting urban water quality. Weeds grow well in open areas where there is minimal competition from turf grasses. With proper maintenance, you can help your lawn out-compete weeds for light, nutrients and water. When a few weeds do appear, hand-digging saves time and money, and is healthier for the environment than herbicide treatments.

Many homeowners buy fertilizer/herbicide mixes, which sometime lead to unnecessary herbicide applications. Herbicides are frequently found in the water that flows through storm sewers, most of which empty into the nearest stream. You can help keep our waterways herbicide-free by practicing the following tips:

- If you spread granular weed-and-feed type fertilizer, keep it on the lawn. If granules accidentally land on paved areas, sweep them onto the grass.
- If you use a liquid herbicide, be careful not to overspray the lawn, and do not spray it on a windy day. The herbicides may land on the street or sidewalk and wash into the storm sewer. They may also drift onto shrubs and sensitive garden plants, or across your property line.
- When cleaning your fertilizer or herbicide application equipment, the rinse water will contain small concentrations of chemicals. Therefore, do not wash the equipment on the driveway, and do not dump any water into the gutter or storm sewer grate. Apply the rinse water to the lawn.

WATERING GUIDE (Irrigation)

- Before you irrigate, check the soil moisture. It should be almost dry before you water again.
- Irrigate slowly so that water does not runoff or compact the soil.
- Water early in the morning to discourage disease and reduce evaporation.
- In dry spells, allow an established lawn to go dormant, but water every 4-6 weeks.
- If you want a nondormant lawn, water when the grass looks bluish-grey and you leave footprints on it when you walk.
- Clay soils hold more moisture and dry out more slowly, therefore need less watering.
- Avoid runoff from your lawn to the street or storm drain.
- Avoid light, frequent watering.
- Over-watering your lawn can wash pesticides and fertilizer into storm drains and waterways.
- Use a can to measure the amount of water you are putting on your lawn. When it fills with an inch of water, stop watering. DO NOT OVER-WATER.

PREVENT EROSION

In North Carolina, sediment is our biggest problem. Sediment smothers fish eggs, clogs fish gills, and kills beneficial aquatic plant life. In addition, phosphorus in fertilizer attaches to exposed soil particles and can wash into our waterways. (Phosphorous causes algae blooms.)

- Well-managed lawns control soil erosion.
- Bare spots in lawns should be reseeded or resodded.
- Exposed soil in other areas such as gardens or natural areas should be covered with some type of mulch such as pine straw, hardwood mulch, or cedar.

Planting trees, shrubs, and bushes on your property will anchor loose soil and help filter polluted runoff from your lawn and driveway.

Xeriscaping is a method of landscaping that uses native plants and site designs to conserve water and protect the environment. Xeriscaping can save you time and money spent on fertilizer and lawn care. Native plants also do an excellent job of filtering out storm water runoff!!!

FERTILIZING TREES AND SHRUBS

- Start with a soil test!
- Healthy trees and shrubs in well drained fertile soils **do not** require annual fertilizer applications.
- If they appear unhealthy, the problem may be caused by insects, disease or weather.
- Fertilizers should be applied when trees and shrubs are growing poorly, and the problem cannot be traced to other causes. If plants do not respond, the problem may be soil related.
- When planting gardens, trees, or shrubs, cover the bare soil with a mulch to prevent erosion and sweep (and collect) loose soil off paved areas. (Phosphorous from fertilizer is often attached to soil particles. When these particles are washed into lakes and streams, the phosphorous stimulates excessive weed and algae growth.)

THATCH?

Thatch is dead, dying, matted grass clippings that have accumulated on top of soil. Thatch prevents air, water, and fertilizer from reaching the soil.

- If thatch is more than 1/2" thick, remove it with a rake or dethatching machine.
- Over-fertilizing and poor fertilizer timing, **NOT GRASS CLIPPINGS,** are the primary reasons for thatch problems in lawns.
- Aerating helps prevent thatch build-up.

TO AERATE OR NOT TO AERATE?

- Aerate spots where you can't push a screwdriver 6" into the soil, where water pools, where grass looks thin, or where there is heavy traffic.
- After aerating, break up plugs with a shovel or rake and leave them on the lawn.
- Aerating your lawn will also help prevent thatch build-up.