Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Virginia Cooperative Extension
Knowledge for the CommonWealth

VIRGINIA STATE UNIVERSITY

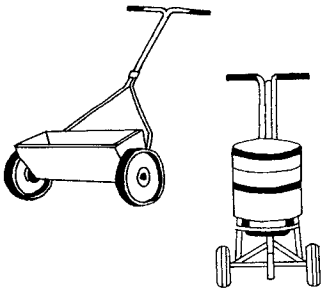
Calibrating Your Lawn Spreader

Authors: John Hall III, Extension Agronomist, Turf; Diane Relf, Extension Specialist, Consumer Horticulture; Patricia Carry, Extension Technician; and Jim May, Extension Technician, Departments of Agronomy and Horticulture, Virginia Tech

Publication Number 430-017, August 1996

There are two basic types of fertilizer spreaders for use on the home lawn: the drop and the broadcast.

The drop type spreader (shown at left) "drops" a set rate of fertilizer. This type is best suited for a limited space in order to avoid wide dispersal on sidewalks and driveways. The amount of fertilizer that is spread depends on the opening setting, the type of fertilizer used, and the speed at which the spreader is pushed.



The broadcast type, also called the rotary or cyclone type, (shown at right), has a rotating disc that "throws out" a circular pattern of fertilizer as it is pushed. This type is best suited for large areas with a wide dispersal range to cover. Both types of spreaders have opening settings for different fertilizer formulations. The settings are only approximate at best, and it is important to calibrate the spreaders before they are used.

Too much fertilizer can be harmful to the lawn and may lead to water pollution through run-off or leaching of nutrients. Some brands of fertilizers have setting information on the bag; other brands don't. Since the amount of nitrogen in fertilizers varies, remember that you should be figuring your application rates from pounds of nitrogen needed, not just pounds of product.

Using the percentage of nitrogen from the fertilizer analysis on the bag, you can accurately figure how much to apply by using the formula:

$$\frac{\text{Desired lbs. of Nitrogen per 1,000 sq. ft.} \times 100}{\text{\% Nitrogen in fertilizer}} = \frac{\text{lbs. of fertilizer}}{\text{to apply desired lbs. of Nitrogen to 1,000 sq. ft.}}$$

For example, if you want to apply 1.0 lb. of nitrogen per 1,000 sq. ft. using a 29-4-8 fertilizer you would set up the formula as shown here:

$$\frac{1.0 \times 100}{29} = \frac{\text{3.44 lb. of 29-4-8 required}}{\text{to apply 1.0 lb. of Nitrogen to 1,000 sq. ft.}}$$

Before calibrating your spreader, walk off or measure the length and width of your lawn. Multiply length x width to get area in sq. ft. If you have several smaller areas, simply add them up to get your total lawn area. Record this number for future reference. This number is important to check for accurate fertilizer application.

If you know how much lawn area you have and how much fertilizer to apply per 1,000 sq. ft., you can then determine the total amount of fertilizer to purchase and apply.

For example, if your lawn area is 5,000 sq. ft. and you want to apply 1 lb. of nitrogen per 1,000 sq. ft. using 29-4-8:

$$\frac{3.44 \text{ lb.}}{1{,}000 \text{ sq. ft.}} = \frac{17.20 \text{ lbs.}}{5{,}000 \text{ sq. ft.}}$$

Next, you must actually calibrate the spreader so it will spread the fertilizer at the correct rate. For the calibration of a drop type spreader, make a V-shaped or box-shaped trough out of heavy cardboard or a piece of aluminum guttering; attach it beneath your spreader to catch the fertilizer as it comes out. Set the spreader on the manufacturer's suggested number, put the fertilizer into the spreader and push it over a 100 sq. ft. area.

If your spreader is:

1.5 ft. wide -- go forward 66.6 ft.

2 ft. wide -- go forward 50 ft.

3 ft. wide -- go forward 33.3 ft.

Weigh the collected material and multiply by 10. This will give you the amount that would be applied for 1,000 sq. ft. Most fertilizer recommendations are given on a 1,000 sq. ft. basis. If you applied the incorrect amount, too much or too little, adjust the setting number appropriately and try again. When you get the correct amount of fertilizer pouring through the spreader, record the setting number so you don't forget it next time.

A broadcast spreader is a bit more difficult to calibrate since you can't catch the fertilizer as it's being thrown out. In this case, first weigh out an amount of fertilizer to cover a specific size test area; for instance, enough for a 200 sq. ft. area.

Note that this area is 1/5 of the area in which you did the fertilizer calculation. Therefore, in the example we have been using, you would only need to put 3.44/5 = 0.69 lb. of 29-4-8 fertilizer in the spreader to apply the correct amount of nitrogen to the 200 sq. ft. area. Mark a starting point, then push the spreader several feet to measure the width over which the fertilizer is effectively spread. Now calculate and mark off a 200 sq. ft. area from the original starting point. For example, if your spreader throws out a 10 ft. effective width, mark off a total of 20 ft. (10 x 20 = 200 sq. ft.), and complete spreading the fertilizer over 200 sq. ft.

Increase the setting number if there is still fertilizer in the hopper. If you ran out of fertilizer before finishing, close down the setting. Repeat the tests to get it just right. Move across your lawn as you do this to avoid over fertilizing. Once you get an accurate setting, record the setting number for future use.

Another point to remember is to calibrate the spreader over the lawn area, not on the driveway or street. Not only are you wasting money, the fertilizer will be washed into storm drains or creeks and other water systems.

Never leave unused fertilizer in the hopper. Fertilizer salts are corrosive and could ruin the spreader. Be sure to collect unused fertilizer and pour it back into the bag, not on the driveway or road. The spreader should be rinsed thoroughly with water and allowed to dry. Oil the spreader with a light machine oil to prevent rusting and keep the working parts in good condition.

This publication was developed at Virginia Polytechnic Institute and State University through a grant from the Virginia Department of Conservation and Historic Resources, Division of Soil and Water Conservation.