

# Granular Spreaders

By

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## How to Adjust Granular Spreaders With V-shaped Hoppers

**D**RY GRANULAR herbicides, fungicides, insecticides, and fertilizers are usually applied with spreaders that meter the formulation through adjustable discharge ports in the bottom of the spreader. Although many of these spreaders give approximate settings, it is practically impossible for a manufacturer to provide accurate rate settings for products other than their own granular materials.

### Applied Rates Depend on Granules

The metered application rate at any given setting will vary for different materials. Density, particle size, and flowability are common material characteristics which vary and affect the application rate. Finely powdered material that tends to pack often can be applied only with those spreading devices equipped with special agitators to maintain a steady flow. If there is a considerable variation from bag to bag in particle size and product density, or if the forward speed of the spreader changes appreciably during application, rates are apt to be affected.

Generally, it is necessary to establish a spreader setting that will apply a desired amount of granular material per square foot of soil surface, usually figured per 100 sq. ft. or per one acre. This is called "establishing the rate."

Parts of spreaders, particularly the metering mechanism, will wear. Worn mechanisms require

adjustments to maintain the rate of application according to standards or tolerances set forth by the original manufacturer. This adjustment is normally referred to as "calibration" and usually can be done only by instructions from the manufacturer.

### Rate Establishment Based on 100 sq. ft.

To establish the rate by which granules will spread from an applicator, equipment measurements and a treatment area (100 sq. ft.) must be determined for use as standards. First, measure the width (W) of the spreader in feet. Divide 100 by the width (100/W); this will give the lineal feet (F) the spreader must travel to cover 100 sq. ft.,  $100/W = F$ . Select an area of turf to be treated and mark off the lineal feet (F). As a double-check, the length of this area (F) multiplied by the width of the spreader (W) should then equal 100 sq. ft., or  $F \times W = 100$  sq. ft.

### Application Rate Adjusted by Three Methods

Now that a standard treatment area has been marked, the rate of discharge for V-shaped hopper spreaders may be established by any of three methods.

*Method 1:* Fill the spreader half full with granules. Weigh both the spreader and the granules and record their total weight. Adjust the spreader's output rate to an approximate setting and operate it over the

lineal feet (F) marked for the test plot. Again, weigh the spreader and its contents. Subtract the second weighing from the first; the answer will be the number of pounds of granules you applied on 100 sq. ft. If the weight of material applied is more or less than the desired or recommended rate, readjust the spreader's output and make another test run until the correct setting is established.

*Method 2:* Construct a light-weight metal pan 2 inches deep, 6 inches wide, and of sufficient length to fit between the wheels of the spreader. Drill a hole in each corner of the pan and fasten a piece of wire in each hole. This pan then can be hung beneath the spreader and should catch all of the granules. Next, determine the desired rate of product application (from label or other recommendations) per 100 sq. ft. Fill the spreader half full of material and operate it over the lineal distance (F). Weigh the granules caught in the pan (do not include the pan's weight). If the amount of material is more or less than the recommended rate per 100 sq. ft., reset the spreader and make another test run until the correct setting is established.

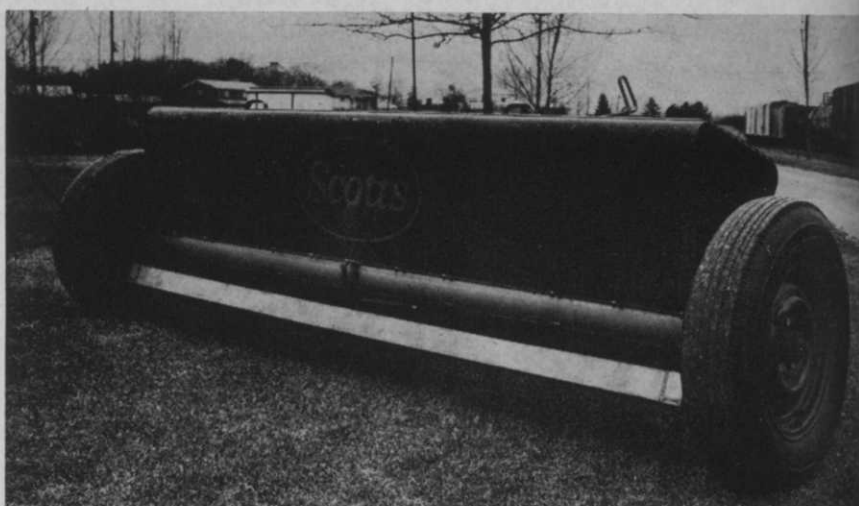
*Method 3:* Agitators of most hand-pushed spreaders are driven by one wheel only. Find the wheel that drives the agitator and drill a 1/4-inch hole near its outside edge. Fasten a 1/4-inch  
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bolt 3 inches long into the wheel so it can be used later to turn the wheel. Measure the circumference (distance around) of the wheel in feet. Divide this figure into the lineal feet (F) the spreader must travel to cover 100 sq. ft. Lineal feet, in this case, are determined by dividing 100 by the diameter of the spreader's output pattern (D), or  $100/D = F$ . By dividing the circumference of the drive wheel by the linear feet, you determine the number of wheel revolutions required for the spreader to cover 100 sq. ft. Now fill the spreader half full with granules and estimate its rate setting. Place the spreader over a large sheet of paper or cloth; block up the drive wheel side of the spreader so that it is about 1/2 inch off the ground. Next, open the spreader, and by using the bolt as a crank, rotate the wheel the same number of turns re-



**Metal calibration pan** fastened temporarily between wheels of V-shaped hopper spreader and hung directly below slot in bottom of hopper to catch granule output. Granules are retained in this catch pan and weighed after each trial run.

quired to cover 100 sq. ft. Crank the wheel at the approximate speed at which it would move under normal applications. Weigh the material on the paper. If the amount collected is more or less than the recommended rate, per 100 sq. ft., reset the spreader and repeat the test until the desired rate is applied.

Some spreaders are specifi-

cally designed and manufactured to apply granulated materials quite accurately. Other spreaders are designed primarily for fertilizer applications where accuracy is not as important. Generally speaking, those multi-purpose spreaders which are made to apply herbicides, pesticides, and also fertilizers are of necessity manufactured at closer tolerances and for greater accuracy than are typical fertilizer spreaders.



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### Banvel D, 2,4-D Use With Fertilizer Is Described

Banvel D herbicide and 2,4-D have both been approved for use in combination with dry fertilizer to control broadleaf weeds in established lawns (not pastures) and golf courses, according to Velsicol Chemical Corp.

A formulation was approved for use in spring or fall at the rate of 5 lbs. per 1000 sq. ft. (½ lb. of Banvel D and 1-1½ lbs. 2,4-D per acre.)

One application per year, if needed, for control of dandelion, plantain, chickweed, knotweed, clover, sheep sorrel, stitchwort, buckhorn, dog fennel, mustard, and other broadleaf weeds is recommended by the company.

Applications to moist grass are said to give best results. Turf should not be mowed or watered for 24 hours after treatment.

For additional information write Velsicol Chemical Corp., 341 East Ohio St., Chicago, Ill.