



# Granular Spreader Calibration For Lawn Care

Mark F. Mohr  
Extension Specialist, Application Equipment  
Dept. of Agricultural Engineering  
University of Illinois

Whether you are applying fertilizer to improve a lawn's appearance and health, or a granular herbicide to control problem weeds, the application will be more effective, less costly, and better for the surroundings if you get an accurate, uniform application.

## Accurate Spreader Rates

Sometimes, a lawn care product will have directions for a few of the more common brands of lawn spreaders. These instructions might include what setting to use on the spreader to apply a certain rate of product. However, the given setting should be verified. It is very possible that your spreader will not be listed on the instructions. If this is the case, you have to determine for yourself what the setting should be to apply the proper rate.

The easiest way to check the application rate of a spreader is to apply a weighed amount of product to a known area. For drop spreaders use 1000 square feet, for rotary spreaders use a larger area, something like 5000 square feet. Spread the product on the area and weigh what's left. The amount you applied is the difference. Some drop spreaders may come with a pan you can hang under it to collect the product while calibrating the spreader. This is convenient because then you won't be spreading the wrong amount of product on the lawn while you're calibrating the equipment.

If you want to avoid spreading any material until your spreader is calibrated properly (so you don't put on too much product) the spreader can be raised on blocks above the driveway or floor, and the wheels turned. Of course, if you have a rotary spreader disconnect the spinner drive mechanism so you don't scatter the product all over your work area. It would be messy, but worse than that it could be unsafe. If the wheels are turned at the right speed (the speed they would turn when really spreading) for the correct number of turns, you can collect the granules in a container, weigh them, and reuse them when spreading on the lawn. The formula for the number of turns for the wheels (to simulate 1000 square feet) is:

$$\frac{45,837}{\text{wheel diameter in inches} \times \text{swath width in inches}} = \text{number of wheel turns}$$

So the process would be to collect the product while turning the wheels the right number of turns, then weigh the product to see if the output is right. For adjustment, open or close the metering slide as needed and try it again until the spreader output is set right.

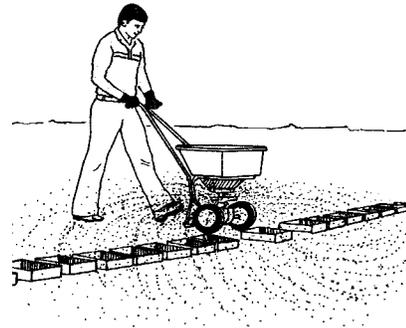
## Uniform Spreader Patterns

A drop spreader will usually be more precise and have a more uniform application pattern than a rotary spreader. Rotary spreaders cover a wide swath and thus cover a given area more quickly, but they can be less precise in terms of uniformity and distribution. The first two steps on the way to a good application are simple: 1) read and follow the spreader instructions and 2) read and follow the product label.

**Drop spreaders** do just that: they drop the product straight down. This means the pattern ends abruptly at the end of the spreader, so for a uniform application be careful not to leave a gap between spreader swaths. Likewise, be careful not to overlap swaths when applying the full rate, or the overlapped strips will get a double rate. Simple maintenance will help keep a drop spreader pattern uniform. Keep all metering holes clean and unplugged, and keep rust or flaked paint from choking down the metering holes.



**Rotary spreader** patterns are more difficult to assess. One method is to lay out a row of shallow (1" to 2" deep, like a pop flat or beer flat) boxes at regular intervals like every 1 or 2 feet (see figure at right). Spread a pattern three times going the same direction, perpendicular over the line of boxes. Put the product caught in each box in a clear test tube, vial, or bottle, and keep them in the order the boxes were laid on the ground, left to right. The pattern should smoothly taper from nothing at the far left to maximum in the center, and again to nothing on the far right. If the pattern isn't smoothly tapered, follow the spreader manual to adjust the pattern, if possible. The appropriate swath width should be to the point where the pattern is half what it is in the center. For example, if the center 3 or 4 bottles have material 2 inches deep, and the bottles at the 6-foot positions (6 feet to the left and right of the spreader centerline) have material 1 inch deep, the effective swath width is 12 feet.



Never leave a lawn care product in an unlabeled container. Empty out any container used for the pattern testing. Also, never reuse a container for anything else after it has had pesticide in it. Either clearly label all of the boxes and jars you used during the tests and keep them all locked in a safe place, or discard them all in the trash.

With a little extra care, the performance of your spreader will be greatly improved. That means your lawn care products will be applied more efficiently and work better. The result will be a more responsible, more effective, and less expensive application.