THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXTENSION SERVICE

SP268G

Small Engines

Calibrating Fertilizer Spreaders for Lawns and Gardens

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Fertilizers, granular pesticides, seed and lime should be applied according to recommended rates from soil tests or product labels. Most homeowners use small drop-type or trough spreaders and rotary or broadcast spreaders for this purpose. To obtain desired application rates, these spreaders must be adjusted to proper settings and checked to verify output rates. Name brand spreaders may be listed on the product label with recommended settings for various rates. However, some brands of spreaders will not even be listed on the label and correct settings must be determined by the user. For this reason, homeowners should calibrate their equipment to achieve desired application rates. (NOTE: Many pesticides are rate specific — too much or too little material can damage a lawn or fail to control a pest.)

Drop Type Spreaders

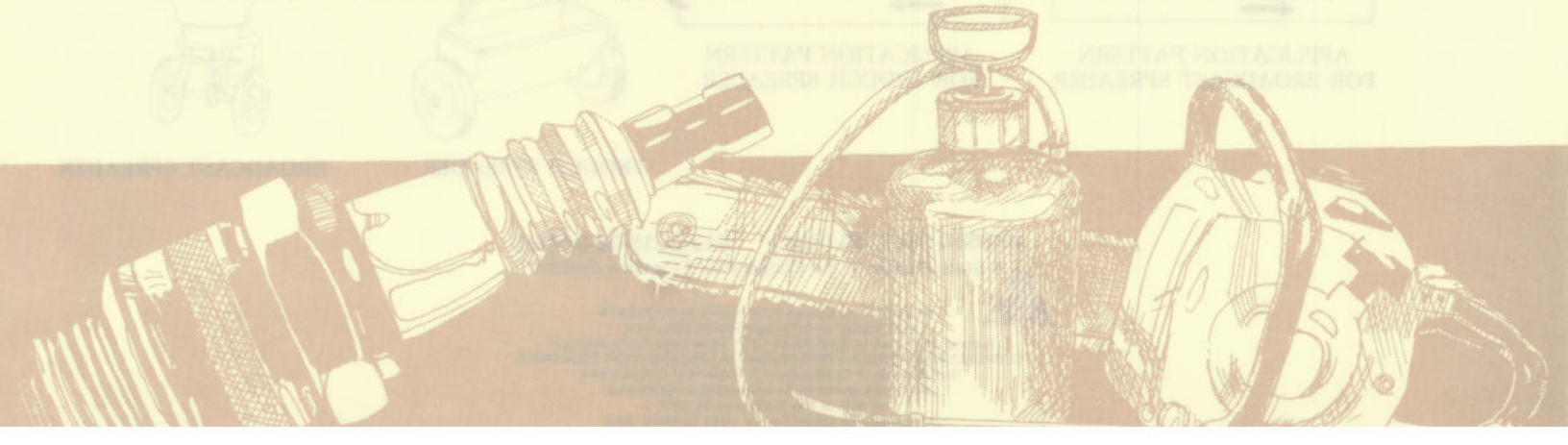
These spreaders can give a very accurate and uniform application rate with proper calibration and operation. Care must be taken not to overlap swaths or to leave strips between swaths.

To Calibrate

1. Choose a smooth flat area of about 12 feet by five feet to work. A driveway, garage floor or similar area is suitable.
2. Sweep an area 4 feet x 12 feet clean or put down a piece of plastic of the same size with the corners secured. Measure and mark off a course 10 feet in length on the floor or plastic.
3. Fill the spreader with material to be applied and select a setting on the spreader that should give about the rate you wish to apply.
4. Walking at normal speed, turn the spreader on as you reach one end of the 10 foot course. Push the spreader along the length of the course and turn it off after traveling 10 feet. Repeat this procedure so that you have made two trips across the course. Sweep or gather the material that dropped from the spreader over the course and weigh the amount in ounces.
5. Divide the total coverage area on the product label by 2000.
6. Divide the weight of the product bag or container (shown on the label) by the answer you calculated in step 5 above.
7. Multiply the answer in step 6 by 0.27 if you are using a 20-inch wide spreader or by 0.48 if you are using a 36-inch spreader.
8. The figure you calculated in step 7 should be equal or very close to the amount of material you collected and weighed in step 4. If you collected too much material, close the openings (reduce the setting) on the spreader slightly and repeat step 4 until you are collecting very close or equal to the figure calculated in step 7. If you collected too little material in step 4, increase the openings on the spreader and repeat step 4 until you are catching the amount of material needed to give the proper application rate.

Example

A 50-pound bag of fertilizer that should cover 10,000 square feet and using a spreader with a 20 inch width:



a. Divide coverage (10,000) by 2,000
10,000/2,000 = 5
b. Divide bag weight (50) by 550/5 = 10
c. Multiply 10 by 0.27 (20 inch spreader)
10 x 0.27 = 2.7

You should have collected 2.7 ounces in step 4 of calibration. If not, reset the spreader and repeat the calibration process until you obtain the correct amount of material to give the desired rate.

Rotary Spreaders

Rotary spreaders are ideal for spreading fertilizer and lime on fairly large areas. Seeding and pesticide application is not recommended with this type of spreader because material is not uniformly distributed with this type spreader. Better uniformity of application can be achieved by overlapping one application with another application at right angles to the first (see illustration).

To Calibrate:

1. Fill the spreader hopper with material to a given level (usually about half full) and mark this level on the hopper.
2. Adjust the spreader to a setting that you feel will give the desired application rate.
3. Operate the spreader over an area with known dimensions (if your spreader covers a swath eight feet wide and you travel a distance of 50 feet you have applied material to an area 50 x 8 = 400 square feet.
4. Refill the hopper with weighted material until the level you marked in step 1 is reached. Record the weight of material required to fill the hopper.
5. Using the recommended coverage for that container of material (from the product label), divide this coverage figure by 1,000.
6. Divide the weight of the full container by the answer you calculated in step 5.
7. Multiply the answer in step 6 by the answer in step 5. Then divide this answer by 125.

The final figure that you calculate in step 7 should be equal to the amount of material in ounces required to refill the hopper in step 4.

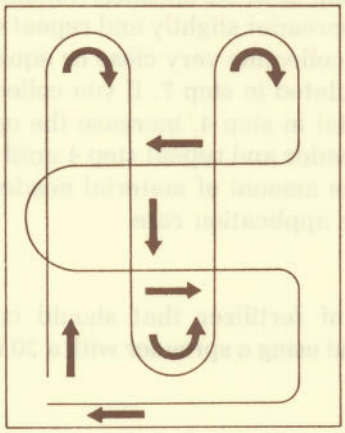
Example

A 50-pound bag of fertilizer that will cover 10,000 square feet. Spreader will cover an eight foot wide swath. You will travel 50 feet.

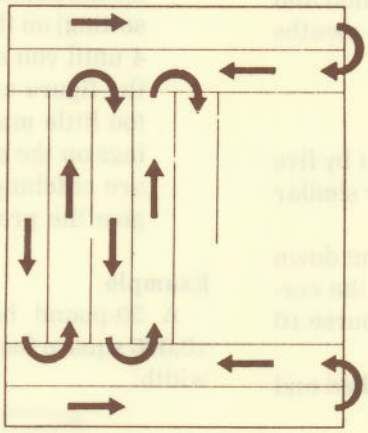
a. Divide total coverage (10,000) by 1,000
10,000/1,000 = 10
b. Divide container weight (50) by 1050/10 = 5
c. Multiply 5 by 400 (area covered)5 x 400 = 2,000
d. Divide 2,000 by 1252,000/125 = 16

You should have used 16 ounces of material to refill the hopper to get the desired application rate. If not, reset the spreader and repeat the above procedures until the desired rate of application is obtained. NOTE: You are calibrating to apply half of the material with one application and the remaining half with the second application at right angles to the first.

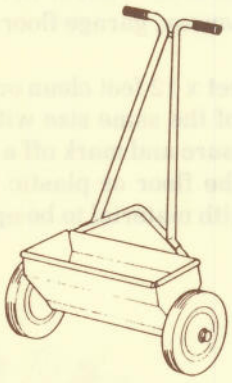
CAUTION: Changing your walking speed will change the rate of application. Walk at the same speed when calibrating and applying the material.



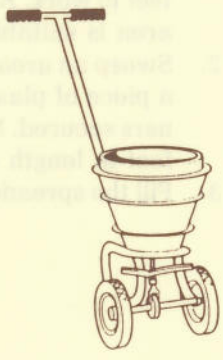
APPLICATION PATTERN
FOR BROADCAST SPREADER



APPLICATION PATTERN
FOR TROUGH SPREADER



TROUGH SPREADER



BROADCAST SPREADER

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