

Calibration of Band Granular Applicators

Band granular applicators are attachments to crop planters.

A dial at the bottom of the hopper adjusts to vary the amount of chemical that is discharged. You must take special care to assure the ground wheel does not bounce or slip while you are operating it. Nightly cleaning of the hoppers is necessary because caked chemicals on the fluted metering rolls reduce the application rate.

Calibration Preparation

Follow the manufacturer's suggestions for an initial dial setting to approximate the desired rate of granular product per acre. Some manufacturers provide calibration tubes to estimate application rates.

Granules for different insecticides, fungicides, or herbicides are various sizes and densities; therefore, accurate weighing is the only way to get proper calibration. Get accurate scales, calibrated in quarter ounces, and a 100-foot tape.

Never mix different granular products unless otherwise stated on the label.

Obtain containers for each hopper on the planter to be calibrated. The containers should be large enough to catch one-sixteenth of the amount recommended per acre.

Work with one hopper until you determine the desired calibration. Put enough granular material in all the hoppers so they are at least half full. Adjust all hoppers so they discharge within 5 percent of the recommended rate. Check all of the hoppers once you make the initial setting to be sure they are applying the same amount.

Calibration

1. Set the hopper dial to the desired position to have the recommended rate per acre.
2. Fill the hopper at least half full, and run the applicator until granules discharge at a uniform rate.
3. Disconnect the feed tubes under the hopper, and securely attach a container to catch all granules discharged.
4. Lay out the distance that corresponds with the desired row spacing (in a field that is ready to plant). This distance and corresponding row spacing equal one-sixteenth of an acre. This is a rather long distance, but using shorter distances results in very small amounts of material. The small amounts of material are not easily weighed with the scales that are readily available in most areas.

Table 1. Row Spacing and Corresponding Distances to Equal One-sixteenth of an Acre

Row Spacing (in)	Distance
40	817
38	860
36	907
34	961
32	1,021
30	1,089

5. Travel the distance at normal planting speed with the planter in the ground. (If you use dual or split hoppers with two granular products, one dial should be in the closed position while you calibrate the other, or calibrate for both materials simultaneously. Repeat this step for the second granule hopper.)



6. Weigh and record the amount in each container. One granular product on one row covers one-sixteenth of an acre; therefore, the granule weight collected in ounces equals pounds of material applied per acre.
7. Readjust the dial position and repeat steps 5 and 6 until the discharge is accurate on each hopper.
8. Refill all hoppers equally while planting to assure each one is metering properly. Frequently recheck the acreage that a bag of granular material covers to assure proper application.

Low sample weights are expected, so accurate scales are necessary. You can buy scales to read within one-fourth of an ounce from local suppliers for about \$30.

Humidity and caking in the metering rolls affect the application rate. Rechecks on the acreage that a bag of granular material covers are extremely impor-

tant. Check hoses and outlets at each fill-up, and look for any obstructions that might restrict the particle flow through them; other calibration methods using manufacturers' calibration cups are also accurate. The procedure is usually written on the cup. Be sure you use a cup specifically designed for the particular material being applied.

Most granular materials are caustic to metals. You can increase the life of these units with proper care. Before storing the unit, thoroughly clean it. A 50/50 mixture of diesel fuel and used oil sprayed or brushed on all metal parts slows rust development. Remove any plastic, fiberglass, or rubber parts exposed to sunlight. The sun's rays break down these compounds and cause them to become hard and brittle. Store inside.

Handle pesticides with care and according to label recommendations. When misused or applied, they can be deadly.



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By **Don Blasingame**, Ph.D., former Extension Plant Pathologist, and **Herbert Wilcutt**, Extension Agricultural Engineer

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