PESTICIDE RATE AND DOSAGE CALCULATIONS

How to Calculate Pesticide Dilutions and Dosages for Large Areas

Pesticides for use in sprays are generally available as wettable or soluble powders and as liquid concentrates. These must be diluted, usually with water, before use. Other diluents, such as deodorized kerosene, may be used for special applications.

The precise amount of water applied to an acre (or other given area) is immaterial as long as it falls within a recommended range, delivers the recommended amount of pesticide, provides adequate coverage, and does not result in excessive runoff or drift. If you know the area (acres, sq. ft., etc.) or units (trees, cows, etc.) covered by a given amount of spray you can determine the dosage or rate of active ingredient each receives by adding the proper quantity of pesticide to that amount of water. Dusts and granules are applied without dilution by the user. Therefore the amount applied per acre or unit is much more critical because you have no other way of controlling the dosage or rate of active ingredient.

The amount of active ingredient in liquid concentrates is expressed in pounds per gallon. In granules, dusts, wettable or soluble powders, and other solids it is nearly always expressed as percent by weight. Application rates are usually expressed as amount of pesticide product but sometimes they may be expressed as pounds of active ingredient or actual toxicant. Actual toxicant and active ingredient are practically synonymous.

1. To find the pounds of wettable powder (WP), dust (D) or granules (G) per acre to obtain the desired pounds of active ingredient (a.i.) per acre:

\[
\text{lbs. of WP, D or G per acre} = \frac{\text{lbs. a.i. desired} \times 100}{\% \text{ a.i. in WP, D, or G}}
\]

2. To find the pints of liquid concentrate per acre to obtain the desired pounds of active ingredient (a.i.) per acre: pints of liq.

\[
\text{conc. per acre} = \frac{\text{lbs. a.i. desired} \times 8^*}{\text{lbs. a.i. per gallon of liq. conc.}}
\]

*If you want the answer in gallons, quarts, or fluid ounces substitute 1, 4, or 128 respectively for 8.

3. To find the amount of wettable powder (WP) or liquid concentrate to use in a given amount of spray:

\[
\text{amt. of WP or liq conc.} = \text{no. of acres treated with amount of spray} \times \text{desired amount of WP or liq. conc. per acre}^*
\]

*Trees, animal, etc. can be substituted for acres.

4. To find the pounds of wettable powder needed to obtain a desired percentage of active ingredient in water:

\[
\text{lbs. of WP} = \frac{\text{gals. of spray desired} \times \% \text{ a.i. desired} \times 8.3^{**}}{\% \text{ a.i. in WP}}
\]

5. To find the gallons of liquid concentrate needed to obtain a desired percentage of active ingredient in water:

\[
\text{gal. of liq. conc.} = \frac{\text{gals. of spray desired} \times \% \text{ a.i. desired} \times 8.3^{**}}{\text{lbs. a.i. per gal. of liq. conc.} \times 100}
\]

**One gallon of water weighs approximately 8.3 pounds. If another diluent is used the weight per gallon of the other diluent should be substituted for 8.3.
PESTICIDE RATE AND DOSAGE CALCULATIONS (continued)

Pesticide Conversion Table for Large Areas

LIQUID FORMULATIONS
Amount of Commercial Product to Add to Spray Tank for Each Acre Treated

<table>
<thead>
<tr>
<th>FORMULATION</th>
<th>Desired Rate Per Acre of Active Ingredient, Lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBS./GAL. ACTIVE INGREDIENT</td>
<td>0.1</td>
</tr>
<tr>
<td>1.5</td>
<td>10 oz</td>
</tr>
<tr>
<td>2</td>
<td>8 oz</td>
</tr>
<tr>
<td>3</td>
<td>5 oz</td>
</tr>
<tr>
<td>4</td>
<td>4 oz</td>
</tr>
<tr>
<td>6</td>
<td>2.6 oz</td>
</tr>
<tr>
<td>6.7</td>
<td>2.3 oz</td>
</tr>
<tr>
<td>7</td>
<td>2.2 oz</td>
</tr>
<tr>
<td>8</td>
<td>2 oz</td>
</tr>
</tbody>
</table>

WETTABLE POWDER FORMULATIONS
Pounds of Commercial Product to Add to Spray Tank for Each Acre Treated

<table>
<thead>
<tr>
<th>% ACTIVE INGREDIENT</th>
<th>Desired Rate Per Acre of Active Ingredient, Lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.2</td>
</tr>
<tr>
<td>50</td>
<td>0.4</td>
</tr>
<tr>
<td>75</td>
<td>0.3</td>
</tr>
<tr>
<td>80</td>
<td>0.3</td>
</tr>
</tbody>
</table>

GRANULES AND DUSTS
Pounds of Commercial Product to Apply Per Acre

<table>
<thead>
<tr>
<th>% ACTIVE INGREDIENT</th>
<th>Desired Rate Per Acre of Active Ingredient, Lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2.5</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>6.6</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
</tr>
</tbody>
</table>
PESTICIDE RATE AND DOSAGE CALCULATIONS (continued)

Converting Large Volume Recommendations to Small Volumes or Areas

Frequently, pesticide recommendations are given only for large volume applications, i.e. amount per 100 gallons or per acre, but only a small amount is needed. Conversion of liquids to smaller quantities is relatively easy and precise because suitable equipment such as measuring spoons are readily available. Scales sensitive enough to handle small quantities of solid materials are not widely available and it is often more practical to use volumetric measures. Various conversion tables have been prepared on the premise that there are 200 to 300 teaspoons (roughly 2 to 3 pints) per pound of solid pesticide product. These tables are grossly inaccurate because of the wide variation in bulk density among solid pesticide formulations. For instance, a pint of almost any insecticide wettable powder will weigh much less than a pint of fungicide that has a high metal content. Greater accuracy can be obtained if one first determines the weight of a given volume of the solid material and then calculates the volumetric measure. This will usually provide acceptable accuracy but it is still not as accurate as actually weighing a solid formulation. When coupled with a little simple arithmetic the following formulas will enable you to convert large volume recommendations to smaller quantities.

1. To find the amount of liquid concentrate per gallon when label recommendations are given in pints per 100 gallons:
   teaspoons/gallon = recommended pints per 100 gallons x 1*
   or
   teaspoons/gallon = recommended pints per 100 gallons x 0.96
   or
   milliliters/gallon = recommended pints per 100 gallons x 4.73*

2. To find the amount of wettable powder (WP) or other solid formulation per gallon when label recommendations are given as pounds per 100 gallons:
   teaspoons/gallon = recommended lbs./100 gals. x cupfuls in 1 lb. of formulation x 0.053*
   or
   teaspoons/gallon = recommended lbs./100 gals. x Tbs. in 1 ounce of formulation x 0.53*
   or
   grams/gallon = recommended lbs./100 gals x 4.54*

3. To find the amount of liquid concentrate to apply per 1,000 square feet when label recommendations are given as pints per acre:
   teaspoons/1,000 sq. ft. = recommended pints/acre x 2.20*
   or
   milliliters/1,000 sq. ft. = recommended pints/acre x 10.9*

4. To find the amount of dust (D), granules (G) or wettable powder (WP) to apply per 1,000 square feet when label recommendations are given as pounds per acre:
   lbs./1,000 sq. ft. = recommended lbs./acre x 0.023*
   or
   Tbs/1,000 sq. ft. = recommended lbs./acre x cupfuls in 1 lb. of formulation x 0.37*
   or
   Tbs/1,000 sq. ft. = recommended lbs./acre x Tbs. in 1 lb. of formulation x 0.023*
   or
   grams/1,000 sq. ft. = recommended lbs./acre x 10.4*

*These values have been rounded off to facilitate calculations.

Conversion Tables for Small Areas

LIQUID FORMULATIONS1
Amount of Commercial Product to Add to Spray Tank to Treat 10 00 Sq. Ft.

<table>
<thead>
<tr>
<th>FORMULATION LBS./GAL. ACTIVE INGREDIENT</th>
<th>Desired Rate Per Acre of Active Ingredient, Lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.25</td>
</tr>
<tr>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Tbs1 (43.4)3</td>
</tr>
<tr>
<td>1</td>
<td>1 Tbs 1 tsp (21.7)</td>
</tr>
<tr>
<td>2</td>
<td>2 tsp (10.8)</td>
</tr>
<tr>
<td>4</td>
<td>1 tsp (5.4)</td>
</tr>
</tbody>
</table>

1 approximate values
2 refers to level measure
3 figure in parentheses refers to milliliters
CALIBRATION METHOD FOR HYDRAULIC BOOM AND BAND SPRAYERS, AND OTHER LIQUID APPLICATORS

Paul E. Sumner, Extension Engineer

The procedure below is based on spraying 1/128 of an acre per nozzle or row spacing and collecting the spray that would be released during the time it takes to spray the area. Because there are 128 ounces of liquid in 1 gallon, this convenient relationship result in ounces of liquid caught being directly equal to the application rate in gallons per acre.

Calibrate with clean water when applying toxic pesticides mixed with large volumes of water. Check uniformity of nozzle output across the boom. Collect from each for a known time period. Each nozzle should be within 10 percent of the average output. Replace with new nozzles if necessary. When applying materials that are appreciably different from water in weight or flow characteristics, such as fertilizer solutions, etc., calibrate with the material to be applied.

Exercise extreme care and use protective equipment when active ingredient is involved.

Step 1. Determine type of application to be made and select appropriate procedure from Table 1. Example - Herbicide Broadcast - Procedure A.

Table 1. Corresponding procedures for different spray applications.

<table>
<thead>
<tr>
<th>Type of Application</th>
<th>Procedure</th>
<th>Coverage Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbicide, Insecticide, Nematicide, Fungicide, or Liquid Fertilizer</td>
<td>Broadcast A</td>
<td>Broadcast (gal/acre)</td>
</tr>
<tr>
<td>Row (See note)</td>
<td>C</td>
<td>(Use this procedure when rates are given for row treatment)</td>
</tr>
</tbody>
</table>

Note: Determine and use average row spacing for modified row patterns. Use width of area covered per row as row spacing in skip row patterns.

Step 2. Using procedure A, B, or C below as selected in Step 1, determine appropriate calibration distance from Table 2.

(A) Broadcast Application: Outlets or nozzles must be evenly spaced. Measure outlet (nozzle, etc.) spacing. Find this spacing in left column of Table 2 and read the corresponding calibration distance. Example - for a 19” spacing the distance would be 214.9 feet.

(B) Band Application: Measure band width. Find this band width in the left column of Table 2 and read the corresponding calibration distance. Example - for a 12” band, the distance would be 340.3.

(C) Row Application: Measure row spacing for evenly spaced rows. Find this row spacing in the left column of Table 2 and read the corresponding calibration distance from the column on the right. Example - for a 38” row spacing, the distance would be 107.5 feet. (See note above for modified and skip rows.)

CAUTION: AGRICULTURAL CHEMICALS CAN BE DANGEROUS. IMPROPER SELECTION OR USE CAN SERIOUSLY INJURE PERSONS, ANIMALS, PLANTS, SOIL, OR OTHER PROPERTY. BE SAFE: SELECT THE RIGHT CHEMICAL FOR THE JOB. HANDLE IT WITH CARE. FOLLOW THE INSTRUCTIONS ON THE CONTAINER LABEL AND INSTRUCTIONS FROM THE EQUIPMENT MANUFACTURER.

Step 3. Measure and mark calibration distance in a typical portion of the field to be sprayed.

Step 4. With all attachments in operation (harrow, planters, etc.) and traveling at the desired operating speed, determine the number of seconds it takes to travel calibration distance. Be sure machinery is traveling at full operating speed the full length of the calibration distance. Mark or make note of engine RPM and gear. Machine must be operated at same speed for calibration.

Step 5. With sprayer sitting still and operating at same throttle setting or engine R.P.M. as used in Step 4, adjust pressure to the desired setting. Machine must be operated at same pressure used for calibration.

Step 6. For procedure (A) Step 2, broadcast application, collect spray from one nozzle or outlet for the number of seconds required to travel the calibration distance.

For procedure (B) Step 2, band application, collect spray from all nozzles or outlets used on one band width for the number of seconds required to travel the calibration distance.

For procedure (C) Step 2, row application, collect spray from all outlets (nozzles, etc.) used for one row for the number of seconds required to travel the calibration distance.
To determine distance for spacing or band width not listed, divide the spacing or band width expressed in feet into 340.3. Example: for a 13” band the calibration distance would be 340 divided by 13/12 = 314.1.

** To increase calibration accuracy for a wide nozzle spacing, multiply calibration distance by a factor (for example, 2); then, divide the fluid amount collected by the same factor for GPA. For narrow nozzle spacings with long calibration distances, divide calibration distance by a factor (for example, 4); then, multiply the fluid amount collected by the same factor for GPA.

Step 7. Measure the amount of liquid collected in fluid ounces. The number of ounces collected is the gallons per acre rate on the coverage basis is indicated in Table 1. For example, if you collect 18 ounces, the sprayer will apply 18 gallons per acre. Adjust applicator speed, pressure, nozzle size, etc. to obtain recommended rate. If speed is adjusted, start at Step 4 and recalibrate. If pressure or nozzles are changed, start at Step 5 and recalibrate.

Step 8. To determine amount of pesticide to put into a sprayer or applicator tank, divide the total number of gallons of mixture to be made (tank capacity for a full tank) by the gallons per acre rate from Step 7 and use recommended amount of pesticide for this number of acres.

**Band Application**

Band Application

Use the recommended broadcast pesticide rates to make tank mixtures for band applications when calibrating with procedure (B) of this method. The number of gallons/acre determined in Step 7 is the gallons that will be applied to each acre of actually treated band.

To determine the gallons of spray mixture required to make a band application on a field, the number of acres that will be in the actually treated band must be determined. When all treated bands are the same width and all untreated bands are the same width, which is usually the case, the acres in the actually treated band can be calculated by placing the width of the treated band over the sum of the widths of the treated band and the untreated band, and multiplying this fraction times the number of acres in the field. Example - How many acres will actually be treated in a 30 acre field if a 12” band of chemical is applied over the drill of rows spaced 36” apart. The treated band width is 12”. The untreated band width is (36” - 12”) = 24”. Acres actually treated will be 12” divided by (12” + 24”) times 30 acres equals 10 acres. The amount of mixture required will be 10 times the number of gallons per acre from Step 7. The amount of chemical required will be 10 times the recommended broadcast rate for one acre.

Check rate recommendations carefully as to type of application, broadcast, band or row, and type of material specified, formulated product, active ingredient, etc.

**Calculating Formulation Requirements For Active Ingredient Rates.**

To determine amount of liquid pesticide required for a rate given in pounds of active ingredient per acre, divide recommended rate by pounds active ingredient per gallon stated on label. Example - Pesticide label states 4 lbs. active ingredient per gallon and recommends 1/2 pound active ingredient per acre. Amount of pesticide required: 1/2 lb./A divided by 4 lb./gal. = 1/8 gal./A.

To determine amount of wettable powder required for a rate given in pounds active ingredient per acre, divide recommended rate by percent active ingredient stated on label. Example - Pesticide label states powder is 50% active ingredient. Two pounds of active ingredient is recommended per acre. Amount of pesticide powder required: 2 lbs. AI/A divided by 0.5 AI/lb. = 4 lbs./A.
CALIBRATION METHOD FOR BOOMLESS BROADCAST SPRayers

Paul E. Sumner, Extension Engineer

All sprayers should be calibrated often to ensure that pesticide is being applied at the correct rate. Most broadcast applications are made with a boom arrangement where the nozzle tips are spaced evenly along the boom. However, in some situations this may be impossible or undesirable, so a cluster nozzle or a single nozzle with a wide spray pattern may be used.

Calibrate with clean water when applying toxic pesticides mixed with large volumes of water. When applying materials that are appreciably different from water in weight or flow characteristics, such as fertilizer solutions, etc., calibrate with the material to be applied. Exercise extreme care and use protective equipment when active ingredient is involved.

The following instructions outline a simple method to calibrate a boomless broadcast sprayer.

**Step 1.** Determine spray width. The spray width is the distance between successive passes through a field. This is usually given in the manufacturers’ literature for a specific nozzle. If you are unable to find this in the catalogs, use 80 to 85 percent of the wetted spray width.

**Step 2.** Using the spray width in Step 1, determine the calibration distance from Table 1.

**Step 3.** Measure and mark calibration distance on typical terrain to be sprayed.

**Step 4.** With all attachments in operation and traveling at the desired operating speed, determine the number of seconds it takes to travel the calibration distance. Be sure machinery is traveling at full operating speed the full length of the calibration distance. Mark or make note of engine RPM and gear. Machine must be operated at same speed for calibration.

**Step 5.** With sprayer sitting still and operating at same throttle setting or engine R.P.M. as used in Step 4, adjust pressure to the desired setting. Machine must be operated at same pressure used for calibration.

**Step 6.** Collect spray from all nozzles or outlets for the number of seconds required to travel the calibration distance.

<table>
<thead>
<tr>
<th>Swath Width (feet)</th>
<th>Calibration Distance (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>85.1</td>
</tr>
<tr>
<td>38</td>
<td>89.5</td>
</tr>
<tr>
<td>36</td>
<td>94.5</td>
</tr>
<tr>
<td>32</td>
<td>106.3</td>
</tr>
<tr>
<td>30</td>
<td>113.4</td>
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<tr>
<td>28</td>
<td>121.5</td>
</tr>
<tr>
<td>24</td>
<td>141.8</td>
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<td>20</td>
<td>170.2</td>
</tr>
<tr>
<td>18</td>
<td>189</td>
</tr>
<tr>
<td>16</td>
<td>212.7</td>
</tr>
<tr>
<td>12</td>
<td>283.6</td>
</tr>
<tr>
<td>10</td>
<td>340.3</td>
</tr>
<tr>
<td>8</td>
<td>425</td>
</tr>
</tbody>
</table>

To determine distance for swath width not listed, divide the swath width expressed in feet into 340.3 and multiply by 10. Example: for 13 feet swath the calibration distance would be 340.3 divided by 13 multiplied by 10 = 261.8.

**Step 7.** Measure the amount of liquid collected in fluid ounces.

**Step 8.** Divide the total number of fluid ounces by 10 to obtain gallons per acre applied. For example, if you collect 180 ounces, the sprayer will apply 18 gallons per acre. Adjust applicator speed, pressure, nozzle size, etc. to obtain recommended rate. If speed is adjusted, start at Step 3 and recalibrate. If pressure or nozzles are changed, start at Step 5 and recalibrate.

**Step 9.** To determine amount of pesticide to put into a sprayer or applicator tank, divide the total number of gallons of mixture to be made (tank capacity for a full tank) by the gallons per acre rate from Step 8 and use recommended amount of pesticide for this number of acres.

CAUTION: AGRICULTURAL CHEMICALS CAN BE DANGEROUS. IMPROPER SELECTION OR USE CAN SERIOUSLY INJURE PERSONS, ANIMALS, PLANTS, SOIL, OR OTHER PROPERTY. BE SAFE: SELECT THE RIGHT CHEMICAL FOR THE JOB. HANDLE IT WITH CARE. FOLLOW THE INSTRUCTIONS ON THE CONTAINER LABEL AND INSTRUCTIONS FROM THE EQUIPMENT MANUFACTURER.
CALIBRATION METHOD FOR GRANULAR APPLICATIONS

Paul E. Sumner, Extension Engineer

Applicators used in granular applications should be calibrated to insure uniformity and accuracy of the application. A more accurate and uniform application can reduce the quantity of an active ingredient required for a given degree of control, which benefits the environment as well as the producer.

Several factors influence the amount of granular material applied to a given area. Granular material is usually metered with an adjustable orifice. The amount of material that flows through the orifice per revolution relies on orifice opening size and may rely on rotor speed. A wide variation in product characteristics, such as size, density, and shape, requires that a calibration be made for every chemical applied. Also changes in climatic conditions, such as temperature and humidity, can result in a different flow rate.

CAUTION: Calibration is done using the chemical to be applied. Protective equipment, such as rubber gloves, etc. should be used to avoid contact with the chemicals to be applied.

Granular application is usually done in combination with another operation, such as planting or cultivating. The applicator may be ground driven or driven with a small electric motor. The following procedure will give the pounds (total weight) of material applied per acre broadcast or row basis as indicated. A weight scale incremented in ounces is required for this procedure.

Step 1. Determine type of application to be made and select appropriate procedure from Table 1. Example - Broadcast - Procedure A.

Table 1. Corresponding procedures for different spray applications.

<table>
<thead>
<tr>
<th>Type of Application</th>
<th>Procedure</th>
<th>Coverage Basis (Volume of Application)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadcast</td>
<td>A</td>
<td>Broadcast (lbs /acre)</td>
</tr>
<tr>
<td>Band</td>
<td>B</td>
<td>Broadcast (lbs/acre of band)</td>
</tr>
<tr>
<td>Row (See note)</td>
<td>C (Use this procedure when rates are given for row treatment)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Determine and use average row spacing for modified row patterns. Use width of area covered per row as row spacing in skip row patterns for broadcast rates

Step 2. Using procedure A, B, or C below as selected in Step 1, determine appropriate calibration distance from Table 2.

(A) Broadcast Application: Outlets must be evenly spaced. Measure outlet spacing. Find this spacing in left column of Table 2 and read the corresponding calibration distance. Example - for a 19” spacing the distance would be 214.9 feet.

(B) Band Application: Measure band width. Find this band width in the left column of Table 2 and read the corresponding calibration distance. Example - for a 12” band, the distance would be 340.3.

(C) Row Application: Measure row spacing for evenly spaced rows. Find this row spacing in the left column of Table 2 and read the corresponding calibration distance from the column on the right. Example - for a 38” row spacing, the distance would be 107.5 feet.

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Step 3. Measure and mark calibration distance in a typical portion of the field to be applied.

Step 4. With all attachments in operation (harrows, planters, etc.) and traveling at the desired operating speed, determine the number of seconds it takes to travel calibration distance. Be sure machinery is traveling at full operating speed the full length of the calibration distance. Mark or make note of engine RPM and gear. Machine must be operated at same speed for calibration.

Step 5. Multiply the number seconds required to travel calibration distance by 8. This is the number of seconds to collect.

Step 6. With applicator sitting still and operating at same speed as used in Step 4, adjust gate openings to desired setting. Check uniformity of outlets across the swath or rows. Collect from each outlet for a known time period. Each outlet should be within 5 percent of the average outlet output.
To determine distance for spacing or band width not listed, divide the spacing or band width expressed in feet into 340.3. Example: for a 13” band the calibration distance would be 340 divided by 13/12 = 314.1.

* To increase calibration accuracy for a wide outlet spacing, multiply calibration distance by a factor (for example, 2); then, divide Step 8 material collected by the same factor for pounds per acre. For narrow spacings with long calibration distances, divide calibration distance by a factor (for example, 4); then, multiply Step 8 by the same factor for pounds per acre. Keep in mind that application accuracy will decrease when factoring narrow outlet or band spacings.

Step 7.**For procedure (A), Step 2, broadcast application, collect from one outlet for the number of seconds indicated in Step 5. For procedure (B), Step 2, band application, collect from all outlets used on one band width for the number of seconds indicated in Step 5. For procedure (C), Step 2, row application, collect from all outlets used for one row for the number of seconds indicated in Step 5. **For ground driven equipment, multiply the calibration distance by 8 and collect from each outlet while traveling the calibration distance.

Step 8. Weigh the amount of material collected in ounces. The number of ounces collected is the pounds per acre rate on the coverage basis indicated in Table 1. For example, if you collect 18 ounces using procedure (A) or (B), the applicator will apply 18 pounds per acre on a broadcast coverage basis. Adjust applicator speed, gate opening, etc. to obtain recommended rate.

Step 9. Applicators should be checked for proper calibration every 4-8 hours of use. Simply repeat steps 7 and 8. If there is a difference of more than 5 percent of original calibration, check the system.

**Band Application**

To determine the pounds of material required to make a band application on a field, the number of acres that will be in the actual treated band must be determined. When all treated bands are the same width and all untreated bands are the same width, which is usually the case, the acres in the actual treated band can be calculated by placing the width of the treated band over the sum of the widths of the treated band and the untreated band, and multiplying this fraction times the number of acres in the field. Example - How many acres will actually be treated in a 30 acre field if a 12” band of chemical is applied over the drill of rows spaced 36” a part. The treated band width is 12 inches. The untreated band width is (36” - 12”) = 24”. Acres actually treated will be 12 inches divided by (12” + 24”) times 30 acres equals 10 acres. The amount of material required for the 30 acre field will be 10 times the number of pounds per acre from Step 8.

Check rate recommendations carefully as to type of application, broadcast, band or row, and type of material specified, formulated product, active ingredient, etc.