



## HAND SPRAYER CALIBRATION

Donald R. Daum, Professor, Agricultural Engineering

Larry J. Kuhns, Professor, Horticulture

**H**and sprayers should be calibrated before applying any materials. Calibration for herbicide application is simply making a trial on a known area and determining the application rate. The method below is easy, quick, and accurate if measurements are made carefully. The procedure is for knapsack (backpack) sprayers but will also work with most hand sprayers.

### Simplified Sprayer Calibration

1. On an area that best represents the average topography for the area to be sprayed, measure and mark off the Calibration Distance that coincides with your band width, if band applying, or your nozzle spacing (width covered by single nozzle) if broadcast applying. (See Table 1 on back.)

Calibration Distance = \_\_\_\_\_ Feet

2. Fill the sprayer with water only and record the number of seconds required to walk the Calibration Distance at a comfortable, steady speed while spraying and pumping to maintain a uniform pressure.

Time = \_\_\_\_\_ Seconds

3. While pumping to maintain the selected application pressure, collect the spray output from one nozzle for the same number of seconds needed to travel the Calibration Distance.

Collected Water = \_\_\_\_\_ Fluid Ounces

*Example:*

With a 32" band, if it took 28 seconds to travel 127', collect the nozzle discharge for 28 seconds.

**The number of fluid ounces collected equals the gallons per acre (GPA) applied.**

*Example:*

16 ounces collected equals 16 GPA

4. If using a boom, repeat step 3 two more times collecting water from a different nozzle each time. *The average number of ounces collected for each of the three nozzles is equal to the gallons of water applied per acre for that boom, speed, and pressure.*
5. To determine the amount of chemical to add to the spray tank, divide the capacity of the tank by the number of gallons of water per acre (GPA) to determine the fraction of an acre that can be covered with a tankful of spray.

*Example:*  $\frac{3.0 \text{ gal tank}}{16 \text{ GPA}} = 0.19 \text{ acre covered per tank}$

6. Multiply the application rate of the product per acre times the fraction of the acre covered per tank and add that amount of chemical to the sprayer tank.

*Example:*

2 qts per acre = 64 fl oz per acre x .19 acre per tank = 12 oz per tank.

*Example:*

5 lb per acre = 80 oz per acre x .19 acre per tank = 15 oz per tank.

## Uniform Application Check

Hand sprayers require skilled operators to achieve a uniform broadcast application. A simple and quick test is to spray an area on a paved surface with water in your normal spraying manner on a warm day. In a few minutes the drying pattern will indicate your distribution. Fast drying areas indicate low application rates while slow drying areas received high amounts of spray. Uniform drying without streaks indicates uniform application. Practice until uniform distribution is obtained.

TABLE 1. Select the Calibration Distance to be used based on nozzle spacing if broadcast applying, or on band width if band applying.

Band Width or Nozzle Spacing	Calibration Distance	Band Width or Nozzle Spacing	Calibration Distance
10 inches	408 feet*	24 inches	170 feet
12 inches	340 feet	28 inches	146 feet
16 inches	255 feet	32 inches	127 feet
18 inches	227 feet	36 inches	113 feet
20 inches	204 feet	40 inches	102 feet

\*For calibration of a small walk-behind or hand-carried boom having a 10 inch nozzle spacing use a distance of 102 feet and multiply the time of walking by four (4).

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Agricultural Engineering Department  
246 Agricultural Engineering Building  
University Park, PA 16802  
Telephone: 814-865-7685  
FAX Number: 814-863-1031



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