

# Sprayer Calibration: Determining Gallons per Acre Applied.

## Important notes:

- \***ALWAYS FOLLOW THE LABEL.** By Law, pesticide users are required to comply with all the instructions and use directions found on the pesticide product label.
- \*It is important to triple rinse sprayers before and after use to insure there are no pesticide residues left in the equipment.
- \*Sprayer calibration should be done after the last pre-rinsing and not while there are pesticides in the equipment.

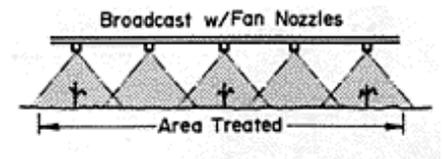
Sprayer calibration depends on three things.

### 1. Nozzle flow rate

To determine the nozzle flow rate measure the amount of spray coming out of a single nozzle for a set amount of time (i.e. 1 minute). Flow rates should be checked on several of the nozzles to insure uniformity. Smaller units of measurement should be used (i.e. ounces), rather than cup or liter measurements for greater accuracy. If a nozzle is spraying 5% more or less than the average of all of the nozzles, it should be replaced. Note: A milk jug or 2 liter bottle works great to collect spray (liquids will often splash out of open containers).

### 2. Width sprayed

To determine the width sprayed, measure the distance of the area treated. This would also be a good time to look for uniformity/equal coverage.



### 3. Travel speed of the sprayer.

Travel speed can be measured with a vehicle speedometer, GPS, or with a stopwatch and a known distance. Use a mph or feet per minute units.

Conversions:

1 mph = 88 ft per min.

1 gal. = 128 ounces

1 acre = 43,560 square ft.

## **Example:**

### **Total flow rate of sprayer:**

5 nozzles X 90 ounces per nozzle per min. = 450 ounces per minute  
450 ounces / 128 ounces per gal. = **3.5 gal. per minute**

### **Gallons per Acre (GPA):**

5 mph x 88 ft per min. = 440 ft per min.  
440 ft per min x 15 (width sprayed) = 6600 square ft per min.  
6600 square ft. / 43560 square ft. per acre = .15 acres  
Convert 3.5 gal. per .15 acres to GPA: 1 acre / .15 = 6.7  
6.7 x 3.5 gal. = **23.5 GPA**

### **Example Measurements/Info.**

- Nozzle flow rate: 90 ounces per nozzle per minute
- Width sprayed: 15 feet
- Travel speed: 5 mph
- Sprayer boom has 5 nozzles
- Recommended pesticide rate (located on product label): 1 quart active ingredient per acre.
- Need to spray 2.5 acres

**\*Add 2.5 quarts of active ingredient to sprayer tank and then fill tank to 58.75 Gallons (23.5 GPA x 2.5 acres).\***