



Simplified Herbicide Sprayer Calibration

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One of the most important points of using a sprayer is to apply the correct rate of spray mix. The best method of determining application rate is to make a calibration test—a trial run over a small known area. The method described is a very easy straightforward procedure.

SIMPLIFIED BOOM 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 or nozzle spacing. See Table 1.

Calibration Distance = _____ Feet

2. Select a safe speed which can be maintained while spraying. Note and record the engine R.P.M.'s and the gear selection so the same speed is used during calibration and application.

_____ R.P.M.'s _____ Gear

3. With the tractor traveling at this selected speed, time and record the seconds needed to travel the Calibration Distance.

_____ Seconds

4. Fill the sprayer, engage the pump and adjust the pressure regulator to the desired boom pressure (between 15 and 50 psi for herbicides). Collect all the water from one nozzle for the same number of seconds needed to travel the Calibration Distance. (Step 3 above)

Example: With 20" nozzle spacing, if it took 35 seconds to travel 204 feet, collect the discharge of one nozzle for 35 seconds.

THE NUMBER OF FLUID OUNCES COLLECTED EQUALS THE GALLONS PER ACRE (GPA) OF OUTPUT OF THAT NOZZLE.

Example: 20 ounces collected equals 20 GPA.

5. Repeat Step 4 two more times, collecting water from a different nozzle each time. "The average number of ounces collected from each of the three nozzles is equal to the gallons of water applied per acre for that boom." Remember to maintain the same pressure and travel speed when spraying.

_____ Average ounces = _____ Gallons per acre

6. To determine the area covered by a tank-full, divide the capacity of the tank by the number of gallons of water applied per acre (GPA) to determine the area, in acres, that can be covered with a tankful of spray.

$$\text{Example: Acres sprayed} = \frac{200 \text{ gallons}}{20 \text{ GPA}} = 10 \text{ acres}$$

7. To determine the amount of chemical to add to the sprayer tank, multiply the application rate of the product per acre times the acres covered per tank. Add that amount of chemical to the sprayer tank.

$$\text{Example: Pesticide Needed} = 2 \text{ qts. per acre} \times 10 \text{ acres per tank} = 20 \text{ qts., or 5 gals. per tank-full.}$$

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

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