

Mid-Atlantic Services: Frequently Asked Questions

How do I calibrate my sprayer?

Improperly calibrated sprayers threaten the wallet and the environment. A few minutes spent calibrating a sprayer can ensure expensive inputs go where they are supposed to, and at their recommended rate. Proper calibration exposes under-pressured systems and worn tips that can sabotage a spray program and its budget. Follow these steps to calibrate your sprayer safely and effectively.

The first step in any calibration effort is to check tractor speed. Mark off lengths of 100 and 200 ft. for measuring tractor speeds of 5 mph and 10 mph, respectively. Fill the sprayer tank half full of water, select the engine throttle setting and gear that you expect to use when spraying, then record the seconds required to drive the length of each course twice, at their respective settings. Average the results of each set, and use the following equation to determine ground speed.

$$\text{Actual speed} = \frac{\text{Distance (ft.)} \times 60}{\text{Time (sec.)} \times 88}$$

The following table will help determine the actual speed if you measure the time it takes to go the specified distance. The values in the table will be the actual speed you traveled.

200 ft		100 ft	
Time (sec.)	mph	Time (sec.)	mph
19	7.1	19	3.6
18	7.6	18	3.8
17	8.0	17	4
16	8.5	16	4.3
15	9.0	15	4.6
14	9.7	14	4.9
13.6	10	13.6	5
13	10.5	13	5.2
12	11.4	12	5.7
11	12.4	11	6.2
10	13.6	10	6.8
9	15.1	9	7.6
8	17	8	8.5
7	19.5	7	9.7

Repeat the test as needed until the correct speed is identified. Mark that setting on the tachometer or speedometer for in-field reference.

SPRAYER CALIBRATION Field Test

1. Determine Distance to be run:

$$\text{Distance to be run: } \frac{43560 \text{ sq ft/acre}}{\text{boom width in ft.}} = \text{linear distance (ft) in 1 acre.}$$

Example - For a 40' boom spraying one acre:

$$\frac{43560 \text{ sq ft/acre}}{40 \text{ ft boom}} = 1089 \text{ linear feet}$$

2. Divide the above distance by 10 to get an easier number to work with. **Example:** 1089/10=108.9.

3. Collect and measure material from 1 nozzle (in ounces) while spraying this distance (108.9 ft).

4. Multiply the number of ounces measured by the number of nozzles on the boom, then multiply this number by 10 to compensate for dividing by 10 in step 2. This equals the total ounces per acre sprayed.

5. To get gallons per acre: Since 1 gallon = 128 ounces, divide the total ounces measured by 128.

$$\frac{\text{Ounces/Acre}}{128} = \text{gal/acre}$$

Example: We collect 32 ounces from 1 nozzle on a 12 nozzle, 40' boom, traveling 108.9 ft;

$$32 \text{ oz} \times 12 \text{ nozzles} = 384 \text{ ounces.}$$

$$384 \text{ ounces} \times 10 \text{ (compensation factor)} = 3840 \text{ ounces}$$

$$3840/128 = 30 \text{ gallons/acre.}$$