

# Sprayer calibration simplified

**In the name of safety, in the name of profits and in the name of professionalism, keeping pesticide sprayers properly calibrated is a necessity.**

■ To calculate the level that your sprayer is applying liquid to an area, consider these three methods offered by Brady Surrena of ISK Biotech in Mentor, Ohio. He believes the methods—once individual nozzles have been checked for proper operation—is simple. Calculations are based on the amount of liquid delivered to a smaller area and projected to one acre. From these calculations, gallons per acre (gpa) are determined.

If your test calibration determines the gpa is not what you need, the easiest method is to change the sprayer pressure. An increased pressure will increase the gpa; a decrease in pressure will decrease the gpa.

## Method one

1. Measure an area 660 feet (40 rods) long.

2. Fill the spray tank up to the neck with water and mark the water level.

3. Spray over the 660 feet at the sprayer pressure and speed to be used in the field.

4. Record the volume necessary to refill the spray tank to the level marked in Step 2.

5. Calculate the amount of water applied per acre by using this formula:

$$\text{gpa} = \frac{\text{gals. applied over the 660 ft.}}{\text{width actually treated by sprayer (ft.)}} \times 66$$

example:

$$\text{gpa} = \frac{12.12}{40} \times 66 = 19.99$$

6. The width treated by the sprayer would be the swath width for broadcast application.

## Example:

Swath width = 40 ft.

Test length = 660 ft.

Area of test = 660 ft. x 40 ft. = 26,400 sq. ft.

$$\text{Acres of test} = \frac{26,400 \text{ sq. ft.}}{43,560 \text{ (sq. ft./acre)}} = .606 \text{ acres}$$

Water to fill = 12.12 gals.

$$\text{Vol./acre} = \frac{\text{gals. to fill}}{\text{acres of test}} = \frac{12.12}{.606} = 20 \text{ gpa}$$



## Method two

1. In a band application, accurately determine the width, in inches, of the band sprayed. In a broadcast application, measure the distance, in inches, between the two adjacent nozzles.

2. Locate this width in the table below and read off the corresponding course distance. Mark it off in the course to be sprayed.

Width	Course dist.	Width	Course dist.
8"	510'	18"	227'
10"	408'	20"	204'
12"	340'	22"	185'
14"	291'	24"	170'
16"	255'	26"	157'

3. For more than one nozzle spraying the same area, as with fungicide, measure the band width of one of the nozzles and see Step 8 below.

4. Tie quart container to one nozzle to catch all that nozzle's spray.

5. Start a distance back from the beginning of the course to get operating speed, and turn sprayer ON at the beginning of the course and OFF at the end.

6. Remove quart container and read volume collected, in ounces.

7. For more than one nozzle spraying

same area, multiply ounces collected by number of nozzles spraying the same area.

8. Ounces collected will equal your gpa rate.

## Method three

1. Measure out 660 feet or 40 rods in the field to be sprayed.

2. Drive over the 660 feet with the sprayer and equipment that will be used during the time of spraying. This will most nearly simulate the conditions during the time that the chemical is actually being applied. Record the time required to travel over the 660 feet at the speed which will be used for the field.

3. With a stationary sprayer operating at the pressure to be used in the field, catch the volume of water delivered from 2 to 4 nozzles in the length of time it took to travel the 660 feet (time found in Step 2).

4. Record the volume caught from the nozzles and calculate how much would have been delivered from all nozzles:

$$\text{gals. over 660'} = \frac{\text{gals. caught} \times \# \text{ nozzles on sprayer}}{\# \text{ nozzles from which spray was caught}}$$

5. Calculate the amount of water applied per acre:

$$\text{gpa} = \frac{\text{gals. applied over the 660'}}{\text{width actually treated in feet}} \times 66$$

## Landscaping public areas for employee and consumer safety

**Of course you're not negligent. But in court, all of a sudden you'd better be prepared to prove it.**

by Dr. Arthur H. Mittelstaedt

■ In court cases involving people who are injured on public lands, about 65 percent of the defendants are government or university employees—a number that is rapidly growing.

Thus, landscape managers of public lands must be concerned about both employee safety and consumer safety, par-