

## Sprayer Calibration

Proper calibration is probably the most important part of spraying. Properly calibrated sprayers will save you money and grief.

**FOR EXAMPLE:** How to determine the gallons per minute (per nozzle).

$$\text{GPM} = \frac{\text{GPA} \times \text{MPH} \times \text{W}}{5940}$$

(PER NOZZLE)

**GPM** - Gallons Per Minute

**GPA** - Gallons Per Acre

**MPH** - Miles Per Hour

**W** - Nozzle spacing (in boom spraying)

This formula is useful to determine which tip to use on your boom, especially when your nozzle spacing is different from the standard 20" or 40" nozzle spacing on Precision Products, Inc. Sprayers.

For example: You know you want to travel 5 MPH. You want to apply your chemical at a rate of 20 GPA, and your nozzle spacings are 33" on center. By using the formula you will determine how many gallons per minute (GPM) per tip will be required to give you the correct application.

$$20 \text{ GPA} \times 5 \text{ MPH} = 100 \times 33'' \text{ (nozzle spacing)} = 3300$$

now divide 3300 by 5940 - .556 GPM

You have now determined that you need a tip with GPM of .556. Now find the type of tip you want to use. For example, maybe an 80-degree flat fan spray tip and then determine what pressure you plan to spray at. Let's say 30 PSI. How do you check this calibration? By using this formula.

$$\text{GPA} = \frac{5940 \times \text{GPM (PER NOZZLE)}}{\text{MPH} \times \text{W}}$$

Multiply 5940 x .52 GPM = 3088.8. Now multiply 5 MPH x 33 (nozzle spacing) = 165, then divide 3148.2 by 165 = 19.08 gallons per acre.

By simply adjusting your pressure or your tractor speed you will obtain the 20 GPA rate.

This second formula is useful to determine whether an old tip (one on which you cannot identify the number) is still spraying the right amount of chemicals. How do you determine how many GPM a tip is spraying? With the use of a catch jar and a stop watch. Hold the catch jar under the tip so you catch the total spray and time for one minute. The amount in the jar indicates the GPM.

Calibrate your sprayer carefully. If your tips are worn, replace them. New tips are a fraction of the cost compared to the cost of chemicals and crop damage caused by too little or too much chemical being applied. Also use these formulas to help determine if the pump intended to be used has the volume capacity to meet your spraying needs.

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