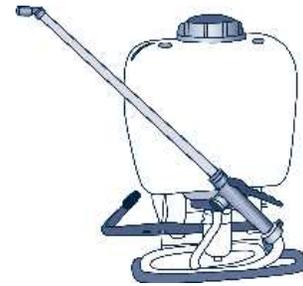


“Nearly No Math” Calibration and Pesticide Mixing

Hand or Back Pack Sprayer Worksheet

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Wayne Buhler, Pesticide Safety Extension Specialist



Step 1. Mark a square area of 18.5 by 18.5 ft., which is roughly equal to $1/128^{\text{th}}$ of an acre. If possible, do this in the field on which you will be spraying.

Step 2. Fill the sprayer half full with water and pump it to the desired operating pressure. Spray over a dry surface to see that the nozzle forms a uniform spray pattern. When using a flat fan tip, hold the nozzle at a constant height above the ground.

Step 3. Time the number of seconds it takes to “spray” the calibration plot. Be sure to maintain a constant spray pressure. It will take about 6 passes through the area for complete coverage. For best results, repeat this step at least twice and use the avg. number of seconds it took to cover the area.

Step 4. Maintain a constant sprayer pressure while you spray into a container marked in ounces for the time calculated in Step 3. The number of ounces collected in the container is equal to the number of gallons of water per acre (GPA) the sprayer is delivering. (There are 128 ounces in a gallon, so ounces collected in $1/128^{\text{th}}$ of an acre convert directly to gallons per acre.)

Step 5. Divide the amount of pesticide per acre (based on the labeled rate in oz., pts., or qts. of pesticide concentrate per acre) by the GPA (from Step 4), to determine the amount of pesticide to mix into each gallon of finished spray solution.

Step 6. To calculate the amount of pesticide concentrate to add to each tank, multiply the amount of pesticide/gallon (from Step 5) by the tank capacity (or amount needed for the treatment site) = total amount of pesticide to add to each tank load.

Example:

Let's assume it takes you 28 seconds to “spray” the calibration plot.

- After spraying into the cup for 28 seconds, you measure 20 ounces of water.
- 20 ounces collected over $1/128^{\text{th}}$ of an acre = 20 gallons per acre (GPA).
- Your backpack holds 3.5 gallons.
- You want to spray a pesticide at 2 pts./acre...(2 pts. = 32 fl.oz.)
- 32 fl.oz. of pesticide divided by 20 GPA = 1.6 fl.oz. Each gallon of solution in the sprayer must include 1.6 fl. oz. of the concentrated pesticide.
- Multiply 1.6 fl.oz. per gallon by the 3.5 gallon capacity of your backpack. (1.6 X 3.5 = 5.6 fl.oz. of product per tank load).

To calculate **how much area a full tank will cover**, divide the capacity of the tank by the GPA output.

Example: 3.5 gallon tank divided by 20 GPA = 0.175 acres per tank X 43,560 sq.ft./acre = 7,623 sq.ft.

Common Conversions:

1 gal. = 4 qts. = 8 pts. = 16 cups = 128 fl.oz.

1 Tablespoon = 3 teaspoons = 0.5 fl.oz. = 15 ml.