



For questions, contact the

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Calibrating Hand Sprayers

Determining Sprayer Output (GPA)

Backpack and other Hand Sprayers

Spray tip pattern should deliver a uniform spray pattern. Nozzle tips should be replaced or cleaned if the spray pattern seems uneven. Select nozzle tips which are rated for your application type. To determine the output of your hand sprayer, follow these steps:

- Step 1: Measure an 18 ½ ft x 18 ½ ft test strip area which represents 128th acre.
- Step 2: Fill the tank with water before increasing and maintaining pressure.
- Step 3: Time how long it takes to spray the test area at a constant speed and pressure. (Note: Ensure uniform coverage without dripping). Repeat 3 times and calculate average.
- Step 4: Spray into a measuring container for the average time calculated in step 3. (Note: Be sure to maintain constant pressure while filling container).
- Step 5: Measure the number of fluid ounces collected in container. The number of fluid ounces collected is equal to the number of gallons per acre your sprayer is delivering.

Example: It takes 95 seconds for John to spray his 18 ½ ft by 18 ½ ft test strip with his hand sprayer. John sprays into a measuring container for the same amount of time (95 seconds) and collects 30 ounces of water. His hand sprayer is calibrated to deliver 30 Gallons Per Acre.

Tank Mixing

Only precise amounts of diluent and pesticide product should be added to your tank. Follow these steps when determining your pesticide solution:

Step 1: To determine the amount of pesticide product (often expressed in ounces) to add per gallon of solution, divide the recommended product rate (must be in an amount per acre) by the output (GPA) of your sprayer.

Step 2: It may be more convenient to convert ounces to milliliters (cc's). Simply multiply ounces by 30 to give you milliliters (Table 1).

Amount of pesticide product to add per gallon of solution	=	Product Label Recommendation (per acre)

		GPA (Gallons Per Acre)

By knowing the output (GPA) of your sprayer and recommended product rate (oz/acre), you may reference Table 2 to assess milliliters of product needed in your tank per gallon of solution.

Example: If your sprayer was calibrated at 30 GPA and you need to apply pesticide product at 3 oz. per acre, how much pesticide product do you add to your 500 gallon tank?

Step 1: 3 ounces / 30 GPA = 0.1 ounces per gallon of solution

Step 2: 0.1 oz x 30 = 3 ml per gallon of solution (see Table 2).

Step 3: 3 ml per gallon x 500 gallon tank = 1,500 ml

Table 1. Useful conversions.

Multiply	By	To Get
Acres	43,560	Square Feet
Cups	8	Ounces
Gallons	128	Ounces
Liters	.264	Gallons
Ounces	2	Tablespoons
Ounces	30	Milliliters
Pints	.125	Gallons
Pints	16	Liquid (oz)
Quarts	32	Ounces
Tablespoon	0.5	Ounces

Table 2.

Total product (ml or cc's) to add per gallon of pesticide solution.

Recommended Pesticide Product Rate (oz/acre)							
GPA	1 fl oz	2 fl oz	3 fl oz	5 fl oz	8 fl oz	16 fl oz	32 fl oz
10	3.0	6.0	9.0	15.0	24.0	48.0	96.0
20	1.5	3.0	4.5	7.5	12.0	24.0	48.0
30	1.0	2.0	3.0	5.0	8.0	16.0	32.0
40	0.8	1.5	2.3	3.8	6.0	12.0	24.0
50	0.6	1.2	1.8	3.0	4.8	9.6	19.2
60	0.5	1.0	1.5	2.5	4.0	8.0	16.0
70	0.4	0.9	1.3	2.1	3.4	6.9	13.7