Calibration

For Hand Sprayers & High Pressure Handguns

One gallon = 128 ounces
Area to be sprayed is 1/128 acre
Ounces collected = gallons per acre (GPA)

Step 1:
Measure out an area 340 square feet (1/128 acre), which is 18.5 ft x 18.5 ft

Step 2:
With water in the tank, record in seconds the time it takes to spray the measured area.
Repeat this step a few times and calculate an average time.

Step 3:
Spray into a container or bucket for the same amount of time recorded to spray the area in step 2.
The amount of water in ounces collected from the container equals the gallons per acre (GPA) the sprayer is putting out.

If the recommended rate of an herbicide is 32 ounces per acre, and the sprayer is putting out 40 GPA, then you would need to add 32 ounces of herbicide to 40 gallons of water.
Since there are no 40 gallon backpack units, you will need to divide 32 by 40 to find out that you need to add 0.8 ounces of herbicide to 1 gallon of water.

For Boomless Sprayers

For nozzle types including Boombuster, Boominator, Boomjet

Step 1:
With water in the tank, begin spraying with the nozzle or nozzles that will be used.
Measure the length of the spray pattern in inches.

Step 2:
Spray into a container or bucket for 1 minute with the nozzle(s) that will be used.
Measure the amount of water in the container in fluid ounces. This is the ounces per minute that the sprayer is putting out. To get gallons per minute (GPM), divide the ounces per minute by 128.

Step 3:
Select the speed in miles per hour (MPH) that will be used for spraying.

Step 4:
Use one of the formulas to determine the gallons per acre that will be applied by the sprayer

$$\text{Gallons per acre (GPA)} = \frac{5940 \times \text{gallons per minute (GPM)}}{\text{MPH} \times \text{spray pattern length (inches)}} \quad \text{or} \quad \text{GPA} = \frac{46.4 \times \text{ounces per minute}}{\text{MPH} \times \text{spray pattern length (inches)}}$$

If the nozzle spray pattern was 18.5 feet (222 inches), the amount collected from the container after 1 minute was 480 ounces (3.75 gallons), and the speed that will be used for spraying is 5 miles per hour,

$$\frac{5940 \times 3.75 \text{ gpm}}{5 \text{ mph} \times 222 \text{ inches}} = 20 \text{ GPA} \qquad \text{or} \qquad \frac{46.4 \times 480 \text{ ounces/min}}{5 \text{ mph} \times 222 \text{ inches}} = 20 \text{ GPA}$$

The sprayer is putting out 20 gallons per acre. If the recommended rate of an herbicide is 32 ounces per acre, and the sprayer is putting out 20 GPA, then you would need to add 32 ounces of herbicide to 20 gallons of water.