The 1/128 Calibration Method for Backpack Sprayers and Hand Gun Sprayers

Introduction: You might have heard that it is impossible to calibrate a backpack or handgun sprayer. However, there are several methods you can use to calibrate your sprayer. One of the simplest methods is the 1/128 method. Why 1/128? Because there are 128 fluid ounces in a gallon, we can determine our sprayer output in gallons per acre based upon the number of ounces it takes to spray 1/128 of an acre. If we spray an area that is 1/128 of an acre (approximately 18.5 by 18.5 feet) and measure the volume in ounces and time required to spray the area, we have the information needed to calibrate our sprayer.

What you will need: Your sprayer filled with water, a stopwatch, a measuring tape, boundary markers, and a measuring container to measure spray volume in fluid ounces.

Here is how to do it:

1. Measure an area equal to 1/128 of an acre. This is approximately 340 square feet, which is approximately 18.5 feet by 18.5 feet. Mark the boundaries to clearly define the area to be sprayed. It is best to set this up in an area that is comparable to the terrain that you will be spraying in. However, when getting started, you might set up on an asphalt or concrete surface until you are comfortable with your sprayer.

2. Measure the time required to spray the marked area with your sprayer. Spray at a comfortable pace and maintain constant pressure. For backpacks this may require some practice to become consistent in pumping as you spray. Repeat this process three times and calculate the average time required to spray the area.

3. Use your sprayer to spray into a measuring container for the average time required to spray the area. Be sure to maintain the same constant pressure as you did when you sprayed the 1/128 of an acre. Then, measure how many fluid ounces of water are in the container. This amount is equivalent to your sprayer output in gallons per acre.

Here is an example:

1. Measure an area 18.5 feet wide by 18.5 feet long and mark each corner to delineate the boundaries.

2. Fill your sprayer with water and spray the measured area, maintaining a constant spray pattern and pressure. Measure the time it takes to do this and repeat for a total of three times. If the first time it took 60 seconds, the second time it took 54 seconds, and the third time it took 57 seconds, the average time is (60 + 54 + 57)/3 = 57 seconds. Therefore, in this example, it took an average of 57 seconds to effectively spray the measured area.
3. Using the same spray pressure used above, spray into a container for 57 seconds catching all of the spray. If 40 fluid ounces of spray is collected, then my sprayer output is 40 gallons per acre. Fluid ounces of spray collected equals gallons per acre when using this calibration method.

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