

## ATV BROADCAST SPRAYER CALIBRATION WESTERN SOCIETY OF WEED SCIENCE

### PRE-CALIBRATION CHECK;

- Be sure all nozzles are of the same type and size.
- Fill spray tank with clean water and prime the system
- Operate spray system checking for leaks and plugged nozzles.
- Check nozzle output uniformity by operating sprayer and collecting water from each nozzle for 60 seconds. Replace any nozzle with an output 10% above or below the average output.

### CALIBRATION;

Calibration is the process of determining the number of gallons of spray solution (volume) that a sprayer will deliver per acre (area). It can be accomplished by following these 9 simple steps.

#### **AREA:**

Step 1. Measure and mark a calibration plot of known length, at least 50.  
PLOT LENGTH = \_\_\_\_\_ ft.

Step 2. Measure the booms effective spray width in feet.  
SPRAY WIDTH = \_\_\_\_\_ ft.

Step 3. Calculate calibration plot area (effective spray area).  
Plot Length (from step 1) X Spray Width (from step 2).

**L. \_\_\_\_\_ x W. \_\_\_\_\_ = \_\_\_\_\_ SQ/FT**

**(OVER)**

**ATV BROADCAST SPRAYER CALIBRATION  
WESTERN SOCIETY OF WEED SCIENCE**

**VOLUME:**

**Step 4.** Drive the length of calibration plot at spray speed, note the time in seconds for three runs.

1<sup>st</sup> run = \_\_\_\_\_ sec. 2<sup>nd</sup> run = \_\_\_\_\_ sec. 3<sup>rd</sup> run = \_\_\_\_\_ sec.

**Average time required to drive calibration plot = \_\_\_\_\_ sec.**

**Step 5.** With ATV parked, collect and record output from 1 or more nozzles for the average time calculated in step 4.

**Average output per nozzle = \_\_\_\_\_ ounces.**

**Step 6.** Multiply the per nozzle value (step 5) by the number of nozzles to determine the total volume of water that would be applied to the calibration plot.

\_\_\_\_\_ oz per nozzle × \_\_\_\_\_ nozzles = \_\_\_\_\_ oz per plot.

**Step 7.** Convert ounces per calibration plot (step 6) into gallons.

\_\_\_\_\_ oz ÷ 128 oz per gallon = \_\_\_\_\_ gals/calibration plot.

**VOLUME per AREA (gallons per acre):**

**Step 8.** Divide the volume sprayed (step 7) by the area sprayed (step 3), multiply by the number of sq/ft per acre to find gallons per acre rate.

\_\_\_\_\_ Gallons ÷ \_\_\_\_\_ Square Feet × 43560 sq/ft per acre =

\_\_\_\_\_ Gallons per Acre

## ATV BROADCAST SPRAYER CALIBRATION WESTERN SOCIETY OF WEED SCIENCE

Use the chart below to determine the correct amount of liquid herbicide concentrate to use per gallon of water, based on the gallons per acre spray rate.

| Spray Volume<br>GPA | Amount of Herbicide to Add To Each Gallon  |          |            |            |            |
|---------------------|--|----------|------------|------------|------------|
|                     | <b>Recommended Herbicide Rate Per Acre</b> |          |            |            |            |
|                     | 1 Pint                                     | 1 Quart  | 2 quarts   | 3 quarts   | 4 quarts   |
| 15                  | 6tsp                                       | 2 fl/oz  | 4 fl/oz    | 6.25 fl/oz | 6.50 fl/oz |
| 20                  | 5tsp                                       | 10 tsp   | 3.25 fl/oz | 4.75 fl/oz | 6.33 fl/oz |
| 30                  | 3tsp                                       | 6 tsp    | 2 fl/oz    | 3.25 fl/oz | 4.25 fl/oz |
| 40                  | 2.33 tsp                                   | 4.75 tsp | 1.66 fl/oz | 2.33 fl/oz | 3.25 fl/oz |
| 50                  | 2 tsp                                      | 3.75 tsp | 1.25 tsp   | 2 fl/oz    | 2.50 fl/oz |
| 60                  | 1.66 tsp                                   | 3.25 tsp | 6.33 tsp   | 1.66 fl/oz | 2 fl/oz    |
| 70                  | 1.33 tsp                                   | 2.75 tsp | 5.50 tsp   | 1.33 fl/oz | 1.75 fl/oz |
| 80                  | 1.25 tsp                                   | 2.33 tsp | 4.75 tsp   | 7.25 tsp   | 9.50 tsp   |
| 90                  | 1 tsp                                      | 2 tsp    | 4.25 tsp   | 6.33 tsp   | 8.50 tsp   |
| 100                 | 1 tsp                                      | 2 tsp    | 3.75 tsp   | 5.75 tsp   | 7.66 tsp   |
| 120                 | 0.75 tsp                                   | 1.50 tsp | 3 tsp      | 4.75 tsp   | 6 tsp      |

### NOTICE:

The ground water in most of Malheur County has fairly high Ph and high amounts of dissolved calcium and magnesium. Because Glyphosate and these minerals have an ionic attraction, this will cause the Glyphosate molecules to bind to the mineral molecules and render much of the herbicide ineffective.

When using Glyphosate products, (**Roundup, Glypro, Durango, Glyphomax, ect**) it is very helpful to add Ammonium sulfate to the water first. Many of the Glyphosate product labels will have this recommendation usually 17 lbs per 100 gals of water or up to 2% by volume. **Please note, it is critical that the ammonium sulfate be added and mixed well BEFORE the Glyphosate is added.**

If you have questions about any of these instructions, please contact the Malheur County Weed Inspector.

**541-473-5102**

[gpage@malheurco.org](mailto:gpage@malheurco.org)