

# Backpack Sprayer Calibration

(No Math Version)

Professional  
Vegetation  
Management

**BASF**  
The Chemical Company

How To Calibrate A Backpack Sprayer			
<b>Step 1-2</b>	Establish a calibration plot that is exactly 18.5 feet wide by 18.5 feet long. Spray the calibrated plot uniformly with water, noting the number of seconds required.	Time required =	Seconds
<b>Step 3</b>	Spray into a bucket for the same number of seconds.		
<b>Step 4</b>	Measure the number of ounces of water in the bucket.	Volume sprayed =	Ounces (oz)
<b>Step 5</b>	The number of ounces collected from the bucket (step 4) is equal to the number of gallons per acre the sprayer is delivering.	Ounces collected =	Gallons per acre (GPA)
<b>Step 6</b>	Determine the volume of full spray tank.	Tank volume =	Gallons
<b>Step 7</b>	From the herbicide label, determine the amount of herbicide concentrate to apply per acre.		
<b>Step 8</b>	Determine the amount of herbicide to add to each gallon on Table 1 below.	Herbicide amount per gallon =	(tsp, Tbsp or oz)
<b>Step 9</b>	Calculate the amount of herbicide to add to one full tank by multiplying step 6 by step 8.	Herbicide amount per tank =	(tsp, Tbsp or oz)

Example of Backpack Calibration			
<b>Step 1-2</b>	Let's assume it takes you 25 seconds to spray the 18.5 foot calibration square.	Time required =	25 Seconds
<b>Step 3</b>	Spray into a bucket for 25 seconds.		
<b>Step 4</b>	Measure out 40 ounces of water from the calibration bucket in step 3.	Volume sprayed =	40 Ounces (oz)
<b>Step 5</b>	By measuring 40 ounces from step 4, your sprayer output is 40 GPA.	Ounces collected =	40 Gallons per acre (GPA)
<b>Step 6</b>	Your backpack sprayer holds 3 gallons.	Tank volume =	3 Gallons
<b>Step 7</b>	You want to spray leafy spurge with <b>Plateau® herbicide</b> at 10 oz/A.		
<b>Step 8</b>	From the GPA row and 10 oz/A column in Table 1, you will need 1 1/2 tsp of <b>Plateau</b> per gallon.	Herbicide amount per gallon =	1 1/2 (tsp, Tbsp or oz)
<b>Step 9</b>	Multiplying step 6 by step 8, you need to add 4 1/2 tsp of <b>Plateau</b> to the 3-gallon spray tank. (Repeat 7-9 to determine MSO)	Herbicide amount per tank =	4 1/2 (tsp, Tbsp or oz)

Table 1.

Amounts Per Gallon				
Spray Volume	Approximate amount of <b>Plateau</b> to add to each gallon			Amount of MSO (methylated seed oil) to add to each gallon
	Recommended Herbicide Rate Per Acre			
GPA	8 oz	10 oz	12 oz	2 pints/A
20	2 1/2 tsp	1 Tbsp	3 1/2 tsp	10 tsp
30	1 1/2 tsp	2 tsp	2 1/2 tsp	2 Tbsp
40	1 1/4 tsp	1 1/2 tsp	2 tsp	2 Tbsp
50	1 tsp	1 1/4 tsp	1 1/2 tsp	2 Tbsp
For sprayer output above 50 GPA, use a 1/8% or 1/16% solution of <b>Plateau</b> and a 1% solution of MSO. (Output volumes above 50 GPA are not required for adequate coverage.)				
GPA	1/8% Plateau		1% MSO	
60-80	1 tsp		2 1/2 Tbsp	
GPA	1/16% Plateau		1% MSO	
80-100	1/2 tsp		2 1/2 Tbsp	

Liquid Conversions		
1 teaspoon (tsp) =	1/3 Tbsp	5 ml
1 tablespoon (Tbsp) =	3 tsp	15 ml
1 fluid ounce (oz) =	2 Tbsp	30 ml
1 cup =	8 oz	237 ml
1 pint =	2 cups	473 ml
1 quart =	2 pints	946 ml
1 gallon =	4 quarts	3785 ml



# ATV Hand Wand Sprayer Calibration

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How To Calibrate An ATV Hand Wand Sprayer			
<b>Step 1-2</b>	Establish a calibration plot that is exactly 18.5 feet wide by 18.5 feet long. Spray the calibrated plot uniformly with water, noting the number of seconds required.	Time required =	Seconds
<b>Step 3</b>	Spray into a bucket for the same number of seconds.		
<b>Step 4</b>	Measure the number of ounces of water in the bucket.	Volume sprayed =	Ounces (oz)
<b>Step 5</b>	The number of ounces collected from the bucket is (step 4) equal to the number of gallons per acre the sprayer is delivering.	Ounces collected =	Gallons per acre (GPA)
<b>Step 6</b>	Determine the volume of full spray tank.	Tank volume =	Gallons
<b>Step 7</b>	From the herbicide label, determine the amount of herbicide concentrate to apply per acre.		
<b>Step 8</b>	If your spray tank is a standard 10- or 24-gallon, use tank table 2 or 3.	Herbicide amount per spray tank =	(tsp, Tbsp or oz)

Example of Hand Wand Calibration			
<b>Step 1-2</b>	Establish a calibration plot that is exactly 18.5 feet wide by 18.5 feet long. Spray the calibrated plot uniformly with water, noting the number of seconds required.	Time required =	40 Seconds
<b>Step 3</b>	Spray into a bucket for 40 seconds.		
<b>Step 4</b>	Measure out 60 ounces of water from the calibration bucket in step 3.	Volume sprayed =	60 Ounces (oz)
<b>Step 5</b>	By measuring 60 ounces from step 4, your sprayer output is 60 GPA.	Ounces collected =	60 Gallons per acre (GPA)
<b>Step 6</b>	Your ATV tank holds 24 gallons.	Tank volume =	24 Gallons
<b>Step 7</b>	You want to spray leafy spurge with <b>Plateau® herbicide</b> at 12 oz/A.		
<b>Step 8</b>	You'll need to use a percent solution due to the high output. Using a 1/8% solution from GPA table 3, at a 60-80 output, you need 3.8 fluid ounces of <b>Plateau</b> per full 24-gallon tank.	Herbicide amount per spray tank =	3.8 (tsp, Tbsp or oz)

Table 2.

Amounts For A Full 10-Gallon Spray Tank				
Spray Volume	Approximate amount of <b>Plateau</b> to add to a full 10-gallon tank			Amount of MSO (methylated seed oil) 10-gallon tank
	Recommended Herbicide Rate Per Acre			
<b>GPA</b>	<b>8 oz</b>	<b>10 oz</b>	<b>12 oz</b>	<b>2 pints/A</b>
20	1/2 cup	5 oz	6 oz	1 pint
30	1/3 cup	3.3 oz	1/2 cup	1 1/3 cup
40	4 Tbsp	5 Tbsp	6 Tbsp	1 cup
50	3 Tbsp	4 Tbsp	5 Tbsp	6 oz
For sprayer output above 50 GPA, use a 1/8% or 1/16% solution of <b>Plateau</b> and a 1% solution of MSO. (Output volumes above 50 GPA are not required for adequate coverage.)				
<b>GPA</b>	<b>1/8% Plateau</b>		<b>1% MSO</b>	
60-80	1.6 oz		12.8 oz	
<b>GPA</b>	<b>1/16% Plateau</b>		<b>1% MSO</b>	
80-100	1 1/2 Tbsp		12.8 oz	

GPA= Gallons Per Acre

Table 3.

Amounts For A Full 24-Gallon Spray Tank				
Spray Volume	Approximate amount of <b>Plateau</b> to add to a full 24-gallon tank			Amount of MSO (methylated seed oil) 24-gallon tank
	Recommended Herbicide Rate Per Acre			
<b>GPA</b>	<b>8 oz</b>	<b>10 oz</b>	<b>12 oz</b>	<b>2 pints/A</b>
20	9.6 oz	12 oz	14.4 oz	2.4 pints
30	6.4 oz	1 cup	9.6 oz	1.6 pints
40	4.8 oz	6 oz	7.2 oz	1.2 pints
50	3.8 oz	4.8 oz	5.8 oz	1 pint
For sprayer output above 50 GPA, use a 1/8% or 1/16% solution of <b>Plateau</b> and a 1% solution of MSO. (Output volumes above 50 GPA are not required for adequate coverage.)				
<b>GPA</b>	<b>1/8% Plateau</b>		<b>1% MSO</b>	
60-80	3.8 oz		31 oz	
<b>GPA</b>	<b>1/16% Plateau</b>		<b>1% MSO</b>	
80-100	1.9 oz		31 oz	

