Calibration and Uniform Application

If you don’t do this right
– don’t use herbicides –
PRE Herbicides are applied on a Per AREA basis

• **YES:**
  oz per 1000 sq. ft.
  oz per gallon applied to 1000 sq. ft.

• **NO:**
  oz per gallon
  % (exception - Roundup)
  oz per backpack
Steps

• Know the Area of the bed to be treated
• Calculate the amount of Product to be applied
• Spray applications
  – Spray volume per area basis
  – Amount of herbicide product per spray mix
• Granules – apply the product uniformly
Granules: uniform spread

- Calculate area
- Pre-measure amount for area
- Spread herbicide over the area in different directions at least 3 times
Granular Herbicides -- Grams of Product, by Recommended Rate (lb Prod/A)

<table>
<thead>
<tr>
<th>Diameter (ft)</th>
<th>Area (ft²)</th>
<th>80</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>12.6</td>
<td>11</td>
<td>13</td>
<td>16</td>
<td>20</td>
<td>26</td>
</tr>
<tr>
<td>6</td>
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<td>24</td>
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<td>37</td>
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<td>59</td>
</tr>
<tr>
<td>8</td>
<td>50.3</td>
<td>42</td>
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<td>65</td>
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<tr>
<td>10</td>
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<td>65</td>
<td>82</td>
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<td>164</td>
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</tbody>
</table>
Sprays: Calibrate sprayer.

- Output per area basis!
- Maintain constant - pressure, walking speed, nozzle height. *Today pretend you are a tractor!*
- Broadcast vs. directed:
  - Broadcast is preferred;
  - Directed applications in tall trees & shrubs are generally required
% Solutions or how much in my backpack?

- Rarely do we use % by volume.
- Exceptions –
  - spot applications of glyphosate, glufosinate
  - spray adjuvants
- % = percent = # per 100
% = amount per 100

• So, 2 % = 2 ounces in 100 ounces
  – 2.5 ounces per gallon (1 gallon = 128 ounces)

• 0.25% Surfactant in 1 gallon
  – 0.25% is 0.25 per 100
  – 128 ounces x 0.0025 = 0.32 ounces
  – **NOT** 32 ounces!! That would be 25%
Calibration example

- You wish to apply Gallery 75 DF at a rate of 1 lb per acre.
- You have a landscape bed that measures approximately 12 by 100.
- How much Gallery 75 DF do you need for this bed?
Step 1. Calculate the area to be treated.

- 12 ft by 100 = 1200 sq ft.
Step 2: Calculate the amount of Gallery needed on this area

• 1 lb per acre = 16 oz per 43560 sq ft (NOT 128 oz! that is liquid measure)
• 16 oz/43560 sq ft = ? oz / 1200 sq ft
• \( \frac{16 \text{ oz} \times 1200 \text{ sq ft}}{43560 \text{ sq ft}} = 0.44 \text{ oz per 1200 sq ft} \).
Now you need to apply it uniformly:

- Your 4-gallon backpack sprayer delivers 20 gallons per acre.
- How much water do you need to treat this bed? and
- How much Gallery do you put in the tank???
How Much Water?

• $20 \text{ gal} / 43560 \text{ ft}^2 = ? \text{ gal} / 1200 \text{ ft}^2$

• $20 \times 1200 / 43560 = 0.55 \text{ gallons}$

• Put 0.44 oz Gallery in this sprayer and fill with water to 0.55 gallons
You will need “overage”

• You will need to mix at least ¾ gallon to make the sprayer work properly.
• How much do you need for ¾ gallon (this is the same as 0.75 gallons)
  • 0.44 oz / 0.55 gallons = ? oz / 0.75 gallons
  • 0.75 (0.44/0.55) = ? oz
  • = 0.6 oz per ¾ gallon spray mix
What do you do with the excess spray???

- **USE IT** in other areas.
- Gallery is labeled for turf – so you could edge the turfgrass areas.
PRACTICAL HINTS ABOUT MIXING:

• Add some water first
• Then add dry ingredients and mix well
• If liquid herbicides are also to be added, add them next and agitate
• Bring to volume with water
• When using a backpack sprayer to spray larger areas – you will sometimes need multiple tanks to cover the area.
• Divide it up in logical amounts – not a full tank then a tiny bit on the second mix.