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)

Diameter	Area	80	100	125	150	200
(ft)	($ft2_)$	----------(grams of herbicide product)----------				
4	12.6	11	13	16	20	26
6	28.3	24	29	37	55	59
8	50.3	42	52	65	78	105
10	78.6	65	82	102	123	164

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
- (16 oz * 1200 sq ft) / 43560 sq ft = 0.44 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 gal / 43560 ft^2 = ? gal / 1200 ft^2
- 20 * 1200 / 43560 = 0.55 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.**