Equipment Calibration – Spreaders

Importance of Calibration

- Properly calibrated equipment affords applicators significant value including:
  - Effective product performance
  - Reduced potential for plant injury
  - Reduction in callback/cancellations
  - Enhanced reputation
  - Environmental stewardship
  - Regulatory compliance
  - Reduction in legal vulnerability
  - Economic efficiency

Importance of Calibration

- Case Study #1
  - 450 bags of Dimension® 0.10% + Fertilizer covers 125 acres (4.13 lbs./M)
    - Cost of product at correct rate $11,250
  - Over apply product by 20% (**)
    - New rate of 4.9 lbs./M (.8 lbs./M more)
    - Cost for product is now $13,500
      - $2,250 excess product cost
      - 90 extra bags used

(**) – 20% Over/Under application rate is not unreasonable considering that there can be 1-2 lb./1,000 sq. ft. variation depending on age of spreader, application speed, etc.

Importance of Calibration

- Case Study #2
  - 450 bags of Dimension® 0.10% + Fertilizer covers 125 acres (4.13 lbs./M)
    - Cost of product at correct rate $11,250
  - Under Apply product by 20% (**)
    - New Rate of 3.3 lbs./M (.8 lbs./M less)
    - Cost for product is now $9,000
      - Savings of $2,250

(**) – 20% Over/Under application rate is not unreasonable considering that there can be 1-2 lb./1,000 sq. ft. variation depending on age of spreader, application speed, etc.

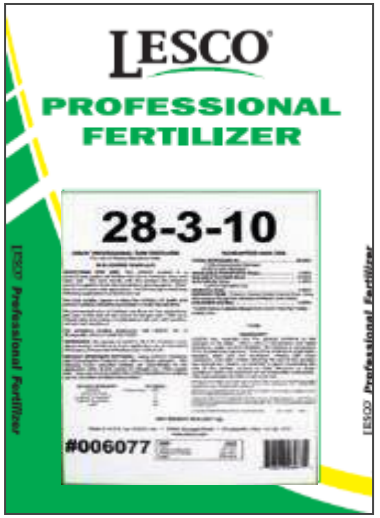
Importance of Calibration

- Case Study #2 (cont.)
  - Excessive crabgrass breakthrough
    - 37-½ acres (30% of total acreage)
    - Apply LESCO® Momentum Q™ (¥)
      - 8 pints/acre
      - Example: Cost of $5,250
  - Total application cost of $14,250
    - $9,000 + $5,250
    - Excess costs of $3,000 (over correct rate)
      - Doesn't include additional labor & vehicle expenses

(¥) – LESCO® Momentum Q™ controls over 200 broadleaf weeds including dandelions and clover plus grassy weeds like crabgrass and foxtail all with one application.

Tools Needed for Calibration

- Measuring tape or wheel
- Scale
- Bucket
- Calculator
- Turf marking paint or marking flags
- Catch Pans (12” x 12”)
- Small Vials
- Product

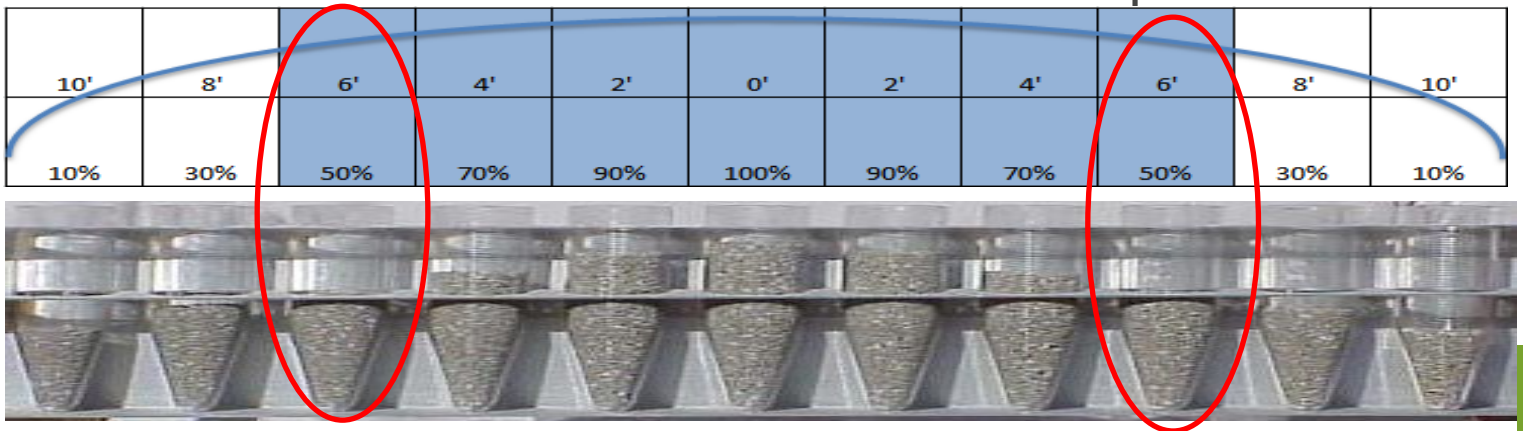


Spreader Calibration

- Step #1a – Determine effective spread width
  - Place catch pans (12” wide) on paved surface in a straight line perpendicular to spread path
    - Leave room for wheels to pass
  - Set the hopper opening to manufacturer's recommendation on product label
  - Fill hopper ½ full of product
  - Make multiple passes (same direction) over the catch pans at your normal application (3 mph)

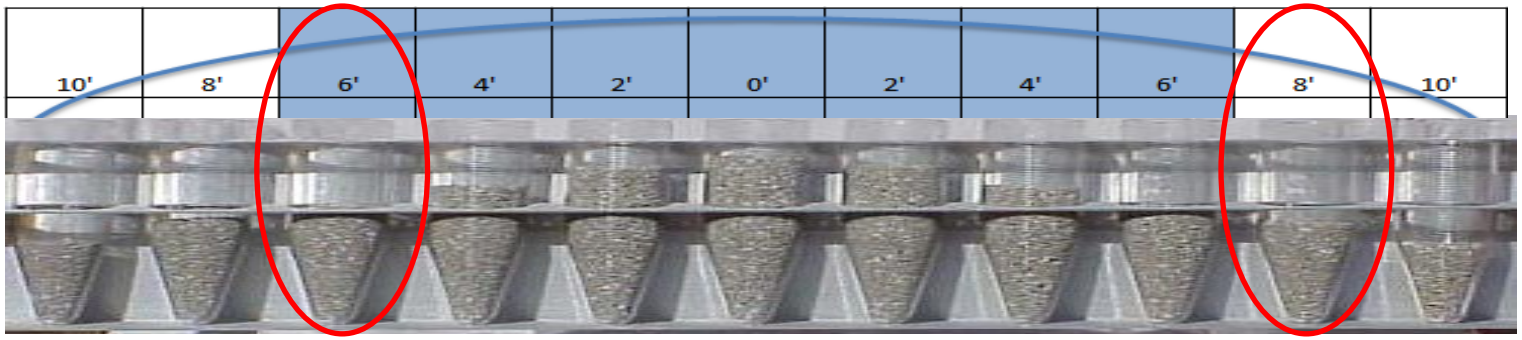
Spreader Calibration

- Step #1b – Determine effective spread width
  - Pour contents of each box into separate vials
  - Determine which vials on each side has ½ the amount of the center vial. Count the number of vials between the two end vials and this is your effective spreading width
    - 12’ would be our effective spread rate in this example



Spreader Calibration

- This is a good time to check for and address variations in the spread pattern
  - I.E. If 50% capacity of the middle vial occurred on 3rd vial on the left and 4th vial
  - Consult the spreader Owner's Manual for assistance



Spreader Calibration

- Step #2 – Determine Distance to Travel
  - Divide 1,000 by the determined effective spread width
    - Example: 1000 ÷ 8 ft. = 125 ft.
  - Using a measuring wheel, mark off the distance to travel with cones or paint
    - Example: Mark off 125 ft. start and finish

Spreader Calibration

- Step #3 – Determine Application Rate
  - Weigh out 15 lbs. of product & pour in hopper
  - Set your spreader accordingly
  - Spread over given distance (125 ft.)
  - Weigh the product left in the hopper
  - Subtract end amount from beginning amount
    - Example: 15 lbs. – 10 lbs. = 5 lbs.
    - 5 lbs. of product was applied in 1,000 sq. ft.

Spreader Calibration

- Step #4 – Fine Tuning
  - Open or close the hopper opening and repeat step #3 until the amount dispersed is equal to the amount indicated on the label
    - Example: LESCO® 24-5-11 50%PolyPlus® should be applied at a rate of 4.2# per 1,000 sq. ft.

Achieving the Correct Application Rate

- Labeled settings are approximate and should be used only as a starting point.
- Many factors can influence product delivery rate including:
  - Walking speed, Age and condition of spreader, and Weather (humidity, wind, rain, etc.)
- Always push spreader; do not pull.
- Maintain consistent walking speed throughout the day (3 mph)

Achieving the Correct Application Rate

- Always start walking before opening the operating lever and close the lever before forward motion has stopped
- Keep the spreader level (impeller) while operating
- Be sure screen is in place to prevent lumps or debris from clogging openings

Common Problems With Rotary Spreaders

- Dry products with different granule sizes and weights do not spread uniformly
- Overlapping to obtain a uniform pattern changes with each product
  - Particle size and bulk density can vary from product to product
- Turning changes the rotating plate speed
  - Shut off spreader to prevent over applying
- The drop holes often get clogged

Rotary Spreader Maintenance Tips

- Empty spreader after each use
- Wash and dry the spreader thoroughly after use
- Keep the impeller clean!
- Lubricate all moving parts on a regular basis
- Periodically check tire pressure
  - Adjust tire pressure to manufacturer's recommendation