Equipment Calibration – Drop Spreader

Importance of Calibration

- Benefits of proper calibration include:
  - Effective product performance
  - Reduced potential for plant injury
  - Reduction in callbacks & cancels
  - 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.

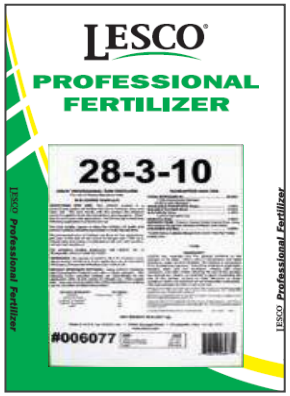
Importance of Calibration

- 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
- Product (fertilizer)



Drop Spreader Calibration

- Step #1
  - Measure the width of spreader
  - Divide 100 by spreader width (this represents 1/10th of 1,000 sq. ft.)
    - Example: 100 ft. ÷ 3 ft. = 33.3 feet
  - Measure and mark area with cones or turf marking paint

Drop Spreader Calibration

- Step #2
  - Set spreader to manufacturer's recommended setting from the product label
  - Weigh out 20 lbs. of product
  - Make sure hopper is closed and pour fertilizer in hopper

Drop Spreader Calibration

- Step #3
  - Apply product over area at application speed a total of 5 times
  - Weigh left over material
  - Subtract from the starting weight
  - Multiply by 2
    - Result will be lbs. of product applied per 1000 sq. ft.
      - 20 lbs. – 17.5 lbs. (end weight) = 2.5 lbs. (amount used)
      - 2.5 lbs. × 2 = 5 lbs.
        - » Rate applied is 5 lbs. per 1,000 sq. ft.

Drop Spreader Calibration

- Step #4
  - Increase or decrease the hopper opening and repeat step 3 until the output is equal to the rate on the label
    - Example: LESCO® 24-0-11 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:
  - Operator walking speed, Age and condition of spreader, & Weather (humidity, wind, rain, etc.).
- Always push spreader; do not pull
- Push the spreader at a consistent walking speed (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 while operating
- Be sure screen (if applicable) is in place to prevent lumps or debris from clogging openings

Common Problems With Drop Spreaders

- Under lapping
- Excessive overlap
- Non-uniform spread when turning corners
  - Shut off spreader to prevent over applying
- Clogging of openings in the bottom of the hopper when the turfgrass is moist during the application

Drop Spreader Maintenance Tips

- Empty spreader completely after each use
- Wash and dry the spreader thoroughly after use
- Lubricate all moving parts on a regular basis
- Apply grease to all fittings on a regular basis (if applicable)
- Periodically check tire pressure
  - Check manufacturer's recommendation