

THE IMPORTANCE OF CALIBRATION

Calibration of equipment by trial and error over several acres into planting can be costly in many ways and quite profitable for your seed supplier. Seed lots and species vary in their flowability. To calibrate your seeding equipment right, all you need is a calculator, measuring tape, a small accurate scale, and something to collect seed before it is planted. A postage scale or dietary scale are adequate. It really does not take a lot of time and pays off in the big picture.

SMALL SEED ESTABLISHMENT

- 1.) Note soil types (droughty, wet, etc.)
- 2.) Soil test and apply fertility before tillage. Lime should be applied ideally 6-12 months in advance.
- 3.) Control perennial weeds prior to land preparation.
- 4.) Select appropriate mixture for soil types, livestock and marketing needs and harvest management.
- 5.) Determine ideal seeding time for your local area. (Late winter to early spring or late summer is usually ideal.)
- 6.) Prepare a level, firm seedbed, or if using no-till, control vegetation prior to seeding with appropriate non-residual herbicide.
- 7.) Calibrate seeder for appropriate seeding rate and depth.
 - a. Our mixtures work best in the large box.
 - b. Check out calibration sheet. Need to collect and weigh seed over a small distance to determine seeding rate.
 - c. Seed at 1/8 to 1/4" with about 10% of seed on surface.
 - d. Press wheels and/or cultipacking are critical to a good seeding. If conditions are dry, cultipacking twice is very beneficial

PRODUCTIVE LONG LIVED STANDS

SOIL FERTILITY:

Hay crops remove a lot of fertility, which must be returned to the soil. Soil sampling should be done at least every 2 years in hay systems. We recommend labs that look beyond PH, N, P & K. We like to see calcium levels at least 70% in the soils as well. In addition, don't forget about sulfur. Soil fertility not only affects yield but also affects quality, including the palatability of the forage.

CUTTING TIMES & FREQUENCY:

Forage quality is almost always higher with more frequent harvests, but for alfalfa and red clover to persist, it is good to let the crop reach at least bud stage, and at least once a year allow the legume to come to early flower. Grasses can be cut just about anytime, with the exception of North American bred timothy and smooth bromes. Quality of grasses drops rapidly once the heads appear. Late heading varieties in our mixtures complement legumes.

CUTTING HEIGHT:

The key to grass performance! Even though grasses can be cut about anytime, most species should not be cut shorter than 3 to 4" from the soil surface, because the plant's energy reserves are in the base of the stem. In addition, forage quality in the base of forage plants is almost always the lowest. By leaving 3 to 4" of stubble, your mixture will recover from cutting much faster and end up yielding more, plus the overall quality will be higher. The biggest mistake producers make when harvesting is cutting too short.

PROPER SEEDING PRACTICES



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CALCULATION INSTRUCTIONS

Steps to Drill Calibration

1. Determine proper seed depth and rate.
 - Use calibration sheet to determine grams or Oz.
2. Measure 100 feet (add extra foot for seed drop)
3. Take hoses off of 3 to 4 rows and attach sandwich bag with rubber band.
4. Run drill 101 feet
 - Check for seeding depth on rows with seed drop
 - Weigh bags with seed
 - Average weight should be close to goal
5. If depth or rate is off, make adjustments and redo until acceptable.
6. Check for seed to soil contact. Soil needs to be firm.

Depth

- Small Grains, Sorghum Sudan– about 1”
- Small Seeds– 1/8 to 1/4 “

Equipment Needed

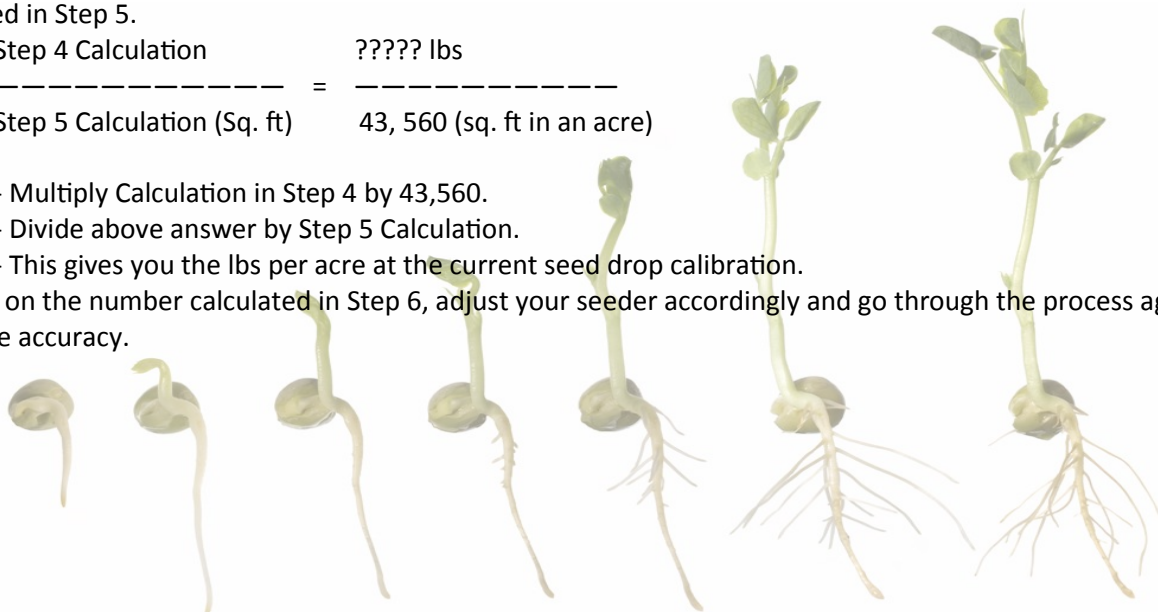
- Tape Measure or Wheel
- Seed collection
 - Drill– Sandwich Bag
 - Drop Seeder (Tarp, Half PVC Pipe)
- Postal or Dietary Scale
- Correct Calibration Chart
 - Row spacing and distance must be correct

Steps to Drop Seeder Calibration

1. Tray or Half PVC Pipe under seed dispenser.
2. Make sure the Tarp, Tray or Half PVC is attached to the drill securely
3. Engage seeder and drive 100 feet.
4. Measure the amount of seed dispensed in grams or oz.
 - Convert grams or ounces to lbs.
5. Calculate the area covered
 - Width of the Drill X Distance Traveled(100 ft)
 - On a 7’ drill, this would be 7’ X 100’ = 700’
6. Structure a proportion using 43,560’ (square feet of an acre), seed dispensed in Step 4 and the square feet calculated in Step 5.

$$\begin{array}{rcl} \text{Step 4 Calculation} & & \text{????? lbs} \\ \hline & = & \hline \text{Step 5 Calculation (Sq. ft)} & & 43,560 \text{ (sq. ft in an acre)} \end{array}$$

- Multiply Calculation in Step 4 by 43,560.
 - Divide above answer by Step 5 Calculation.
 - This gives you the lbs per acre at the current seed drop calibration.
8. Based on the number calculated in Step 6, adjust your seeder accordingly and go through the process again to ensure accuracy.



SAMPLE CALIBRATIONS

7 " Row Drill Space

Goal lbs/A	Per Row Collection oz/100 ft	Per Row Collection g/100 ft
10	0.21	6.1
15	0.32	9.1
20	0.43	12.2
25	0.54	15.2
30	0.64	18.2
35	0.75	21.3
40	0.86	24.3
45	0.96	27.4
50	1.07	30.4

7.5" Row Drill Space

Goal lbs/A	Per Row Collection oz/100ft	Per Row Collection g/100ft
10	0.23	6.5
15	0.34	9.8
20	0.46	13.0
25	0.57	16.3
30	0.69	19.5
35	0.80	22.8
40	0.92	26.1
45	1.03	29.3
50	1.15	32.6

CALIBRATION EXAMPLES

Example 1 (Gram Scale):

Need 25 lbs per acre seeding rate and have a gram scale .
 Drill with 5.5" row spacing.
 $15.2 \text{ grams} \times 5.5"/7" = 11.9 \text{ Grams}$

Example 2 (Ounce Scale):

Need 25 lbs per acre seeding rate and have an Oz scale.
 Have a packer seeder (10 ft) and will collect all 10 feet.
 $0.54 \text{ Oz} \times 120"/7" = 9.3 \text{ Oz}$