

How to Calibrate a No-till Planter

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Part A: Bulk seeding rate to be used

1. Identify desired seeding rate of pure live seed (PLS; from plan/contract): _____ **lbs PLS/acre.**
2. Calculate the pure live seed content of the bulk seed (from the bag label): _____ **% PLS.**
 - a. $Pure\ live\ seed\ content = \frac{Purity\ (\%)\times[Germination(\%)+ Hard\ seed\ (\%)+ Dormant\ seed(\%)]}{100}$
3. Calculate the actual bulk seeding rate to be used: _____ **lbs/acre.**
 - a. $Seeding\ rate\ to\ be\ used = \frac{Desired\ seeding\ rate\ of\ pure\ live\ seed\ (\frac{pounds}{acre})}{Pure\ live\ seed\ content\ (\%)} \times 100$
4. Calculate the bulk pounds of seed needed for the total area to be seeded: _____ **lbs.**
 - a. $Pounds\ of\ seed\ total = Seeding\ rate\ to\ be\ used\ (\frac{pounds}{acre}) \times acres\ planted$

Part B: Calibrating a no-till drill

1. Attach the drill to a tractor, park on a level surface, and shut off engine. Lower drill to planting position. Block the non-drive-end wheel, front and rear. Lift drive wheel off ground with a jack.
2. Measure the circumference of the drill's drive tire: _____ **feet.**
3. Calculate the number of turns of the drill's drive tire needed to drive 200 feet:
 - a. $Number\ of\ turns\ to\ drive\ 200\ feet = \frac{200\ feet}{Circumference\ of\ the\ drive\ tire\ (feet)}$
4. Make sure that the seed is inoculated and thoroughly mixed. Fill the seed box with the seed.
5. Disconnect three seed tubes and put tubs underneath the openings to collect seed.
6. Adjust the seed gate to set the rate of seed flow from the seed box into the seed tubes.
7. Turn the drill's drive tire a few times to prime the seeder. Empty the tubs of seed.
8. Turn the drill's drive tire the number of times calculated in step B2.
9. Weigh the seed that collects in the tubs (1 ounce equals 28 grams): _____ **grams.**
10. Calculate the seeding rate with equation a or b (they are identical): _____ **lbs/acre.**
 - a. $Seeding\ rate = \frac{Weight\ of\ seed\ (grams)}{454\ \frac{grams}{pound}} \times \frac{43560\ \frac{square\ feet}{acre}}{Length\ driven\ (ft.) \times tube\ spacing\ (ft.) \times \#\ of\ tubes}$
 - b. $Seeding\ rate = \frac{Weight\ of\ seed\ (grams) \times 96\ \frac{pound-square\ feet}{gram-acre}}{Length\ traveled\ (feet) \times tube\ spacing\ (feet) \times \#\ of\ tubes}$
11. Compare the seeding rate in step B10 to the seeding rate to be used in step A3.
12. Go back to step B6 and repeat the calibration twice more.
13. Re-assemble the seed tubes.

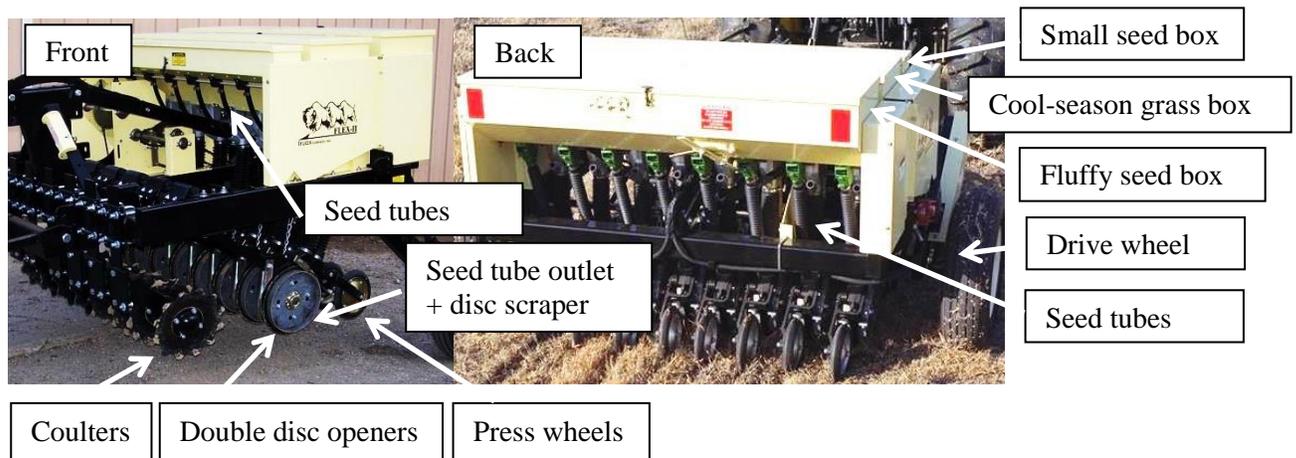


Fig. 1: Flex II drill, manufactured by Truax Company, Inc, New Hope, MN.

Part C: Calibrating a broadcast spreader

1. Calculate the amount of seed needed to cover 1000 square feet, using the seeding rate to be used that was calculated in step A3, with equation a or b (they are identical): _____ **grams.**
 - a. $Amount\ of\ seed = Seeding\ rate\ to\ be\ used\ \left(\frac{pounds}{acre}\right) \times \frac{1000\ feet^2}{43560\ feet^2/acre} \times 454\ \frac{grams}{pound}$
 - b. $Amount\ of\ seed = Seeding\ rate\ to\ be\ used\ \left(\frac{pounds}{acre}\right) \times 10\ \frac{acre-grams}{pound}$
2. Put seed in the seed hopper, push/pull/walk the spreader a few feet, and observe the effective width covered by the spreader:
_____ **feet.**
3. Calculate the length to travel so that the covered area is 1000 square feet: _____ **feet.**
 - a. $Length\ to\ travel = \frac{1000\ square\ feet}{Effective\ width\ covered\ by\ the\ spreader\ (feet)}$
4. Measure and mark the length to travel.
5. Weigh out the amount of seed calculated in step C1.
6. Empty the hopper of seed and fill the hopper with the weighed seed.
7. Push/pull/walk the spreader along the length to travel and watch to see if the seed runs out.
8. Adjust the opening of the spreader as needed: increase the size of the opening if seed remains after pushing the spreader, decrease the size of the opening if the seed runs out before the end.
9. Go back to step C5 and repeat twice more.