



2019 PLANTER PRE-SEASON NOTES

© January 30, 2019 ■ Crops, Slider

By John Fulton and Jenna Lee

Spring planting is right around the corner and one wants to ensure the planter is at peak performance. Considering current seed costs and tight margins, getting seed placed right during planting is critical. Not getting it right at planting can impact yield, with university research on corn indicating:

- 10 bushel per acre gain can be achieved from good seed-to-soil contact.



- Uneven emergence can have a 5% to 9% yield impact.
- Seeding depth and downforce management are critical for optimization of planter performance.

The goal of the planter should be to:

1. Maintain the target seeding rate within a field,
2. Obtain uniform seed spacing, and
3. Achieve adequate and uniform planting depth without compaction, supporting immediate germination and uniform emergence.

The following provides a checklist for the planter and technology to consider before spring planting, along with suggestions for evaluating stands once crops are emerged.

Planter checklist

1. Check all chains and sprockets, replace as needed. All chains should be adjusted to the proper tension. Grease and oil before heading to the field, plus regularly during the planting season.
2. Check opening disks for wear and proper spacing. Measure diameter and replace if too worn as outlined in the operator's manual.
3. Check bushings in parallel linkages that connect units to the maintain toolbar. Loose units will influence seed depth and fertilizer placement.
4. Depth wheels need to run tight against seed opening disks. Remember depth or gauge wheels control planting depth, so look them over and make sure they are properly set up.
5. Check seals on meter to ensure door seals correctly and meter outlet properly aligns with seed tube.
6. Check the wear and cracks on bottom of seed tube. Cracks and wear at the bottom impact the uniformity of seed spacing.
7. Look over row cleaners, checking for wear. Properly adjust height and remember row cleaners are intended to remove stover and residue out of the way for the opening disks and not to till the soil bed.
8. Check closing wheels to ensure they have the proper spring setting. They should not be loose or excessively tight. Also, check clearance based on the operator's manual recommendations.

Technology checklist

1. Make sure the firmware on the GPS receiver and display are up-to-date.
2. Make sure GPS receiver offsets and planter offsets are correctly input into the display for accurate ON/OFF actuation of auto-row control and that seeding rates change in the correct location for variable-rate seeding.
3. Back-up and archive past years planting data in a secure location on a farm computer, external hard drive, cloud site, or similar.
4. If purchasing a differential correction, make sure your subscription is up-to-date before the planting season.
5. Look over wiring harnesses and connectors for damage and loose connections.
6. Note final planter and display setups by crop for future reference. This ensures that setup of a new display can happen quickly without having to go through every setup process again causing more down time.

Post-emergence scouting

While still waiting on spring planting, it can also be good to plan out your scouting and evaluation of the planting operation and final stands. Here are scouting data to consider collecting once the crop is emerged. Make sure you are taking the time to scout across the entire field that includes visiting locations where unique growing conditions differ.

1. Stand counts — always good to collect stand counts to understand variability across fields and compare back to the target seeding rate.
2. Quality of seedling emergence — scout for stand uniformity and the existence of skips within rows. Note if rusting or freeze-frost damage may have occurred.
3. Leaf and stem discoloration — evaluate if any nutrient deficiencies exist such as yellowing of corn plants that may indicate nitrogen or even sulfur deficiency.

4. Wilting plants — usually a sign of frost, insect or herbicide damage. Quick investigation can help identify the cause.

Here is a list of a few APPs that can support the planting operation and post-emergence scout:

- Mobile Pioneer by Pioneer
- Plantability by Pioneer
- AgPhD Planting Population Calculator
- AgPhD Field Guide by AgPhD
- ClimateFieldview Cab
- Trimble Ag Mobile
- GoPlant by John Deere
- Planter Plus by John Deere
- Ohio State PLOTS

Find additional resources and information on planters at the Ohio State University Digital Ag website:

<https://digitalag.osu.edu/precision-ag/research-focuses/precision-seeding>

Dr. Fulton, Associate Professor, can be reached at fulton.20@osu.edu. Jenna Lee is student research associate. This column is provided by the OSU Department of Food, Agricultural and Biological Engineering, OSU Extension, Ohio Agricultural Research and Development Center, and the College of Food, Agricultural, and Environmental Sciences.