

Is Your Planter Ready? — Sjoerd W. Duiker, Penn State Soil Management Specialist

The quality of your corn stand will largely depend on planter performance. An irregular stand can easily cost you 10% of your yield. Planter performance is especially critical in no-till because of high penetration resistance, crop residue at the soil surface, and a rough soil surface. Inadequate planting will result in uneven seed depth and plant spacing. Hairpinning is common if coulters and row cleaners don't work properly. Here are some tips to prepare your planter for the new season.

1. **Meters.** Metering units have to work well or you'll get frequent skips, doubles and triples. To guarantee optimal performance, take metering units apart every winter. Remove dirt and clean the hood with soapy water (no kerosene, diesel or oil should ever be used in metering units!). Replace cracked plastic covers. Replace broken fingers in a finger-pickup meter. Seed brushes need to be replaced when worn. If a groove has formed in the chromium house of the metering unit it is time to replace it. The belt (in finger pick-up meters) should be flexible, not have cracks in it, and should be clean. Clean with soapy water and let it dry before putting it back in. Put the metering unit back together. The rubber belt should be placed back in the right direction, or your meter will malfunction. You can lubricate with graphite (NO OIL or WD-40). It is recommended to take your finger pick-up metering unit to a dealer to have it calibrated every year or every 300–400 acres. Take a bag of your own seed with you, and give him the correct speed at which you'll be driving. If you have a vacuum or air meter, check for leaks and appropriate vacuum or air pressure.
2. **Planter unit.** Accurate depth placement can be compromised if planter units are loose or wobbly. You should not be able to easily lift up your unit or move it sideways. Look across your planter units from the side. Are they all at the same height? If one unit is either up or down compared to the others, it needs work. A common problem is that some bolts are loose or additional bushings are needed. You also need to replace cracked or broken seed hoppers.
3. **Seed opener disks.** Seed opener disks need to have a minimum diameter (check operator manual) or they will not place the seed at the appropriate depth. Seed opener disks also need to come together in the front (they should usually touch for 3", but this may vary depending on planter). Stick two business cards between the openers and move them as close together as possible. If opener disks are worn too much you will get a "W" shaped seed slot instead of the desired "V" slot.
4. **Seed tubes.** The end of seed tubes may wear to the extent that they curl inwards, catching seeds. There is often a hook halfway up that can easily break off. Seed tube guards need to have their minimum width and be fastened correctly or damage to the seed tube is likely.
5. **Seed firmers.** These help to press the seed down in the furrow, guaranteeing more accurate depth placement of the seeds. The tension can be adjusted with a bolt. If the seed firmers are worn too much they need to be replaced.

6. Depth wheels. Depth wheels should run tight against disks. Change washers from in- to outside (or vice versa) of depth wheel if necessary. If this doesn't resolve the problem, the depth wheel arm needs to be replaced.
7. Coulters. Check the diameter of the coulters, and replace them if needed. You should adjust the depth of worn coulters that are still usable.
8. Closing wheels. Closing wheels need to have an intact spring, and need to be checked for damage or wear. Bearings cannot be wobbly or too tight. The bottoms of rubber or cast iron closing wheels need to be 1.5"–2" apart. The closing wheel arm cannot have too much play or bushings or the entire arm may need replaced.
9. Alignment of coulters, opener disks, and closing wheels. Take a rope and pull it straight from the front coulters to the closing wheels. The firming wheels, seed openers, and coulters should all be in line. Closing wheels should not run on top of the seed furrow.
10. Insecticide boxes. The insecticide boxes should have no holes or cracks. Tubes should be blown out with air as well as the slot on the bottom of the meter.
11. Fertilizer unit. Fertilizer opener disks should have a minimum diameter (check manual). The bearings should not be wobbly or too tight. Hang a bucket below the tube of the unit, and do a test run of 175 feet in the field. Weigh the fertilizer in the bucket, multiply by 100, and you have the fertilizer you'll put on in pounds per acre (at 30" row spacing). Adjust as needed.
12. Chains and sprockets. Check all chains and their sprockets. If they are worn too much they need to be replaced. They need to have the appropriate tension and should be greased regularly.

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