

Winter Maintenance of Farm Equipment

Dave Wilson, Research Agronomist

At King's Agriseeds we emphasize the proper **time of planting; seeding rate** and **seeding depth. Proper seed to soil contact is paramount.** Your planting equipment should be maintained and in proper order to have successful seeding applications for proper stands.

Have you seen corn rows with 'skips' in the row or drill rows of small grain forages with some heavier rows than others? Uniform stands of corn are important for achieving full yield potential. Uneven plant to plant spacing or poor emergence due to planting equipment not functioning properly can reduce our final yield perhaps 5 to 15 Bu/acre.

Over the winter months there are several steps we can take to maintain your equipment and prevent breakdowns come next year planting season and these steps will also save you money over the life of your equipment. With a good "routine" maintenance program we can possibly reduce machinery repair costs by 25%.

Consider proper storage of equipment- If farm equipment is left outside it will rust and deteriorate faster than if kept inside out of the elements. If inside storage space is not available consider investing in heavy duty tarps to cover the equipment for winter.

After seasonal use; inspect your planter well, look for worn parts that need to be replaced and to make needed adjustments. Clean your equipment off and dry moving parts well (Consider using a pressure washer and high pressure air to dry parts off) but keep water away from sealed bearings. After drying, lubricate moving parts, and get it inside; out of the elements. Treat any bare metal on all farm equipment with grease or use rust preventative solvent spray.

If we can keep moisture away from bearings and unpainted critical steel parts, this will help prevent rust. With tractors and combines remove crop residues from engine compartments. Also take time to check cutter blades and cylinder pans on forest harvesters; Check the knotters on your balers.

- I. A shop built for farm equipment pays off in the long run; consider the size of all your equipment and area inside to perform your maintenance tasks. Consider space for storage shelves and enough room around the equipment to perform maintenance and repair. Consider portable lighting and enough length of pressure air hose for air tools. A built in workbench is always a plus.

2. Keep some parts in stock in your shop, extra oil filters, chain sprockets and belts, Sheer pins and parts that are most likely in need to be replace during the year and most likely to use.
3. Make a chart or keep records for each piece of equipment you own. Schedule oil and air filter changes and other routine lubrications.
4. Identify a maintenance routine for each piece of equipment.

√ Check List

√ Thoroughly lubricate all chains and bearings. Clean disc openers and coulters; apply rust preventive "paint" to avoid rust buildup. If practical, remove the planter chains and soak in oil until the next planting season.

√ Over the winter and go over your planter with the proverbial fine-toothed comb. Use the operations manual and browse through it to refresh yourself on important pre-season maintenance activities.

√ Check and replace all worn out parts.

√ Ensure that coulters and disc openers are aligned accurately to ensure **accurate furrow opening and seed placement.**

√ With air seeders check and replace any worn seals and check the trueness of fit of the seed drum to ensure uniform air pressure and accurate seed metering.

√ Adjust or replace worn disc openers. Worn openers will cut a "W"-shaped furrow rather than "V" shaped furrow and as this gets worse it may interfere with accurate seed positioning and seed firming. Adjust the shims of the openers so that bottoms of the openers just touch each other. Completely replace the openers when it is no longer possible to adjust their closeness.

√ Replace worn planter chains or rusty, stiff chain links. When the operation of the planter chain is less than a smooth, this will decrease the seeding accuracy.

√ Inflate tires to their proper air pressure. Under- or over-inflated drive tires influence the accuracy of the planter transmission settings for seed drop.

√ Clean out seed tubes and monitor sensors. Seed treatment residues interfere with accuracy of monitor sensors. Mouse nests and/or spider webs have a bit of influence on uniformity of seed drop through the seed tubes. Usually I clean out the seed tubes prior to winter storage, place a moth ball in the tube and tape it off with duck tape.

√ Check the bottom of each seed tube for **wear** that **changes the shape of the tube opening and influences the final trajectory of the seed dropping from the seed tubes.**

√ For finger-pickup type planters, check the **finger-pickup back plates** for rust buildup and seed treatment residues. Excessive buildup of either rust or seed treatment residues may cause **jerky movement** of the finger mechanism. Excessive rust buildup can also scarify or damage the corn kernels, resulting in decreased seed quality the moment you plant the seed. Also, Check for worn down 'dimples' on the backplates. **If worn down, more double seed drops will occur.**

√ Check and adjust the tension on the fingers. Misadjusted finger pressure directly affects the ability of the unit to accurately singulate seed.

√ Check the **condition of seed conveyor belt.** **Age and lengthy exposure** to seed treatment residues results in **brittleness** that interferes with the **smooth travel of the belt.** Remember that perfect singulation by the seed metering unit may be offset by interference with the seeds' travel to the furrow.

√ Calibrate the planter according to operating manuals.