Tips for minimizing corn harvest losses

Sources: Tim Stombaugh and Sam McNeill, Biosystems and Agricultural Engineering

Corn harvest is fast approaching in many parts of Kentucky and, in fact, is well underway in some of the state’s western most counties with 2% of the crop harvested as of Aug. 30.

The National Agricultural Statistics Service estimates that the average corn yield will be 181 bushels per acre for Kentucky producers. If you consider the current cash prices, which range from $3.50 to $3.75, and account for average harvest-related losses between 2% and 5%, these losses will cost between $13 to $34 per acre. Operators who pay attention to equipment details before and during harvest and minimize their harvest losses will be rewarded accordingly.

If you haven’t already done so, now is a good time to clean all harvesting equipment. This includes not only the combine, but also grain carts or gravity wagons and truck beds. Remove all grain and residue from the previous crop where insects can thrive to avoid contaminating newly harvested corn.

Following a thorough cleaning, service the combine to assure reliable performance during harvest. Check oil levels, grease all bearings and fittings, lubricate chains, check belt tension and inspect for any signs of excess wear.

When operating a combine, the goal is to run the machine in the “sweet spot” that strikes a balance between grain quality and throughput. Hitting that sweet spot takes a combination of combine adjustments and consistent operation. When adjusting the combine, start with the operator’s manual to set adjustments according to the manufacturer’s recommendations. During operation, try to run the machine near its full capacity and adjust ground speed to assure a consistent flow of material through the machine.

When fine-tuning combine adjustments, work your way from the front of the combine to the back. The header should be delivering an even flow of cobs to the machine with as few stalks and leaves as possible. Be sure the gathering snout points are not bent or damaged and the space between stripper plates is set properly, namely a bit narrower in the front than the back to prevent plugging as stalks move through. Along with that, match the speed of the snapping rolls to ground speed (~3 mph is suggested) to minimize header losses. During harvest, be sure to stay well-centered on the rows to avoid knocking down plants before they enter the snouts, especially on tight turns and rows near drainage areas. Ears that remain on the ground and in the husk are hard to find when measuring harvest losses, but often contribute to the largest portion of machine-related losses.

Keep an eye on grain in the tank during operation and look for excess trash and broken corn. Based on what you see, adjust the threshing and/or cleaning components accordingly. Kernel damage levels above 5% can result in a 2 cent per bushel-point discount, and foreign material above 3% can result in a 3 cent discount. These can quickly add up. For example, if a producer delivers corn with 7% broken corn and 6% foreign material, the load could be discounted 13 cents per bushel. As you can see, there is clearly an economic incentive for you to make the time for proper equipment management and pay attention to details.

Aggressive threshing and low material flow through the combine will lead to kernel damage. This impacts the storability of the crop, even after drying to a safe moisture level. In addition, it can result in a price discount when you deliver the crop to the elevator. In contrast, if the threshing mechanism (cylinder or rotor) runs too slow or open, kernels will remain on the cob and most likely be thrown out the back, which can result in excessive machine loss.

The chaffer sieve, shoe and fan work together to separate shelled corn from pieces of the stalk, husk and cobs. Initially, set those according to the operator’s manual, and then adjust slightly as conditions change between fields, varieties and plant moisture levels. Most newer combines feature quick and easy adjustments to these settings in the cab so “trimming” the machine during operation can be done quickly and easily.

It is a good idea to measure harvest losses frequently, even weekly to monitor combine performance. Keep in mind that two loose kernels per square foot on the ground or two to three ears that weigh three-quarters of a pound in 100 square feet are equivalent to one bushel per acre loss. Average harvest losses generally range between 2 to 5% but can be higher if harvest is delayed or severe weather damages the crop.

For more grain harvesting tips, contact the (COUNTY NAME) office of the University of Kentucky Cooperative Extension Service.

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