Preparing storage systems for incoming corn and soybean crops

Source: Sam McNeill, extension professor, Biosystems and Agricultural Engineering

Preserving the quality of your corn and soybeans will help avoid price discounts when you deliver grain to the elevators and other markets, so it’s important that you place great care and attention on the post-harvest phase.

The National Agricultural Statistics Service estimates that Kentucky farmers will produce 258.8 million bushels of corn and 99.4 million bushels of soybeans this year. Considering the statewide average prices for January delivery are $3.85 for corn and $9.80 for soybeans, the combined value of these crops is more than $1.9 billion.

While it is financially advantageous to store the grain for this winter’s higher prices, you must carefully monitor stored grain to preserve its quality. No one wants to have a load rejected at the elevator because of insect or mold problems caused during storage. To prevent this worst-case scenario, grain pits, conveyors, dryers and bins should be thoroughly cleaned prior to harvest to avoid mixing old, potentially mold-infested grain with the incoming crop. It may take you a fair amount of time, care and energy, but it is worth it to avoid price discounts from musty or sour grain. These discounts can range from 5 to 10 cents per bushel, respectively, which translates to losses between $50 to $100 for a typical load of grain.

Older conveyors and the bottom boot of bucket elevators will likely have a small amount of residual grain in the corners of the housing, so you may have to remove a portion for thorough cleaning. A small, wet-dry vacuum is usually adequate to clean hard-to-reach corners and a disposable respirator or half-mask with clean filters is advised to protect lungs from dust and mold spores when working in close quarters and confined spaces.

Grain dryers will often have a few kernels that remain on the inside ledges, and screens should be free of foreign material and heavy dust that often accumulates during operation. Refer to the operator’s manual for a complete check list prior to harvest for each specific dryer and be sure the fans and burners are working properly. Be sure to have a fully charged fire extinguisher nearby as a safety precaution during harvest, and inspect the electrical panel and junction boxes for insect nests and rodent damage to wiring insulation.

Grain bins have a lot of cracks and crevices where broken grain can go unnoticed along with the insects and mold spores that are prone to infest them. Clean the upper side of ladder rungs and ledges above doors, along with in-floor aeration ducts, where feasible. You can use a coarse broom to remove as much material as possible and follow it up with a vacuum for more thorough cleaning. You may have to use a shovel, pipe or compressed air to remove clumps of grain that often cling to the wall. To prevent the clumps of grain from falling on or injuring you or another worker, always approach these areas from the top of the bin and make sure no one is standing below the clump before beginning. Wear dust protection and always lock-out the switch box on unloading auger motors before entering the bin for cleaning to prevent unintentional operation.

Cleaning the area outside the bin is also important. High vegetation can be a breeding ground for insects, which can migrate to and feast on your grain. Mow the area around the bin often or control vegetation with an approved herbicide. Run the aeration fan and mark any leaks along the bottom bin ring and concrete foundation. Then, turn off the fan and seal them with caulk or expanding foam. Remove any spilled grain around the bin and pit area prior to harvest and routinely during harvest as needed, as it can be attractive for rodents and insects.

Review general safety suggestions for working around grain facilities with all employees and inspect personal protection equipment for wear. Be sure to have ample supplies of PPE on hand prior to harvest and replace as needed during the storage period.

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

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