Operating Portable Augers

WHAT'S AT STAKE?

GRAIN AUGER SAFETY AND PURPOSE

A grain auger is a tube containing a solid shaft in the center with flighting on it. Flighting is a spiral of flat steel that is welded onto the center shaft. As the center shaft turns in a clockwise direction, the flighting pulls the grain in and pushes it up the shaft.

Augers of various sizes, lengths and rotational speeds are used with a variety of farm implements. Several augers may be used to move harvested, threshed grain from the grain pans of the combine up and into the grain-holding tank. When the tank is full, an unloading auger with a spout may be used to move the grain from the tank into a grain cart for transport to a truck. The grain cart also has an unloading auger for unloading grain from the cart into the truck or, in some cases, the grain may be directly unloaded from the combine into a truck.

An auger may be used to move seed grain into a grain drill, feed into a feed trough and many other applications on the farm. When the auger is placed on a frame that allows the tube to be elevated at an angle and the base end to remain on or close to the ground and wheels are added to make the whole apparatus mobile, it becomes a portable farm grain auger. Augers also move grain from trucks and grain carts into grain storage bins or move grain out of the grain bin.

WHAT'S THE DANGER?

MOST DANGEROUS MACHINES

On a per-hour-of-use basis, augers are one of the most dangerous machines farms use.

An auger in good condition is an essential tool when it comes time to move grain and feed around the farm. Per hour of use augers are one of the most hazardous machines on the farm, especially if they haven't been properly maintained.

Although Canadian Agricultural Injury Reporting statistics have identified runovers as the top cause of agriculture-related fatalities, the number of reported entanglements remain on that list and continue to be an area of concern.

Auger Accidents

Augers are among the most dangerous machines on the farmstead. Accidents resulting in injury can occur if augers are not used properly. According to a U.S. study by Schwab et al. (2000), an average of six to eight injuries related to augers occurred in Iowa

each month. The Canadian Agricultural Injury Surveillance Program reported in 2003 that auger injuries rank second after tractor injuries. Between 1990 and 2000, 602 cases of auger injury accidents (more than one case per week) with 24 deaths were reported. Entanglement in the auger was cited as a major cause in almost 80 percent of the injuries requiring hospital treatment. Many accidents occurred from contact with the auger flight, with the most common injuries to fingers, feet, arms and hands.

Causes of Auger Accidents

The majority of auger accidents are operator-caused. Auger-related injuries primarily result from one or more of the following types of incidents:

- Contact with or entanglement in the exposed screw at the intake.
- Entanglement in a drive belt.
- Being struck by an uncontrolled spinning crank used to raise or lower the auger.
- Entanglement in a PTO drive shaft.
- Electrocution while moving a raised grain auger around the farmstead and contact with an overhead electrical wire.
- Maintenance neglected or overlooked.
- Carelessness in auger handling.
- Operator’s unfamiliarity with auger safety and operation.
- Inexperienced youth labor.

Some auger-related accidents cause lacerations, fractures, amputations, electrocutions or even death. Fatal injuries result in large part from two types of accidents – electrocution and entanglement.

HOW TO PROTECT YOURSELF

TRAINING ON SAFE OPERATING PROCEDURES TO PREVENT INJURIES

Training on safe operating procedures is a must.

- New and returning workers require orientation and training on the safe operations of augers.
- If an auger hasn’t been used in a few months, take the time to review how to safely use the machine before starting it up.
- A new auger or a new-to-you auger also requires some pre-operational learning.
- When purchasing an auger, ask for training.
- It’s better for both efficiency and safety to understand the intricacies of the machine.

MINIMIZE THE RISK OF AUGER ACCIDENTS

The Centers for Disease Control and Prevention says the following about grain augers:

1. Barriers (e.g., fences) should be used to prevent persons not involved in the operation of an auger from entering the area near the auger.
2. Children under 18 should not operate augers and should not enter the area near an auger.
3. Before starting an auger, the operator should ensure that all protective shields, as supplied by the manufacturer, are in place and in good condition. The federal Occupational Safety & Health Association standard for safety of farm equipment requires placement of guards on some augers.
4. Before service or repair, power should be shut off and the auger power source “locked-out” and “tagged.” (Locking out prevents power from being restored while maintenance is in progress, and tagging the switch indicates that power is disabled.)
5. To prevent entanglement, wearing loose clothing or jewelry or who have long, untied hair should not operate augers.

6. Workers should not step or jump on or over an auger while it is in operation.
7. Grain augers always should be lowered to a horizontal position before being moved from one location to another. Workers always should observe the presence and location of power lines before raising an auger into position.
8. Whenever possible, operators should ensure good footing while working around augers. Portable augers should be placed on dry, level ground or a gravel pad. Spilled grain should be removed between loads after the equipment has been turned off.
9. Operators should never use their hands or feet to redirect the flow of grain or other materials into the auger.
10. All farm and auger operators should be educated about safe operating procedures and hazards associated with augers.
11. Augers should be clearly labeled as posing a hazard for entanglement and subsequent serious injury.
12. **NIOSH RECOMMENDATIONS**

NIOSH recommends that all farm owners/managers, farm/agricultural workers, and farm equipment manufacturers be made familiar with, and reinforce the following steps:

Hazard Awareness

A survey of the farm should be conducted to identify hazards posed by the locations of overhead electrical lines. When all such hazards are identified and documented for future reference, workers should be informed of their location and instructed in the steps necessary to safely move grain augers.

Safe Movement of Grain Augers and Other Equipment

Grain augers pose a life threatening hazard when moved in an elevated position if they contact overhead electrical lines or if they tip over. Therefore, it is essential that grain augers be lowered to a horizontal position before being moved from one location to another. In addition, all other equipment to be moved should be evaluated in order to determine the most appropriate method that will ensure worker safety during its transport. Manufacturers of grain augers are urged to consider design modifications that will prevent grain augers from being moved while in an elevated position.

Safety Signs

It is recommended that users and manufacturers of grain augers affix safety signs onto the equipment that warn the user of the potential hazards of moving the auger in its upright position. A safety sign to draw attention to avoiding electrical hazards when moving grain augers is provided with this Alert. This sign should be placed on the grain auger in a conspicuous location so that it will alert workers of life-threatening hazards.

FOUR BREAD AND BUTTER SAFETY TIPS

1. **For farmers who do not use grain augers as frequently**, it can be easy to overlook repairs or general maintenance between uses. But by performing routine maintenance, and taking the time to become reacquainted with an auger ahead use can help prevent close calls or even an injury.
2. **Before starting up the auger**, make sure to check that all guards are secured in place. Have a look at all the safety decals and get replacements for anything which is no longer legible or is missing. Some grain auger distributors make these available, free of charge.
3. **Inspect the winch system** for wear and tear, ensuring that there is enough cable to wrap around the winch drum at least three times when the auger is down. Check that the cable anchor, fasteners, belts and any chains are all sufficiently tight.
4. **Lubricate the machine** as directed in the owner’s manual and top up oil levels in

the gearbox. Several equipment manufacturers offer copies of grain auger owner’s manuals online, for farmers who never received a paper copy or have misplaced it since the previous season.

FINAL WORD

Portable grain augers are used on our farm as a fast and simple way to move grain. However, using the auger improperly or without the guards can lead to serious injury. Common injuries with augers include amputations, lacerations, broken bones and electrocutions. Taking a few precautions can help prevent these injuries.