



Harvest safety yields big dividends

Harvest is a busy time for most farm operations. Time means money when it comes to yields, production schedules, and operating costs; however, time also ensures safety at harvest. The extra time it takes to perform a task properly can determine whether the job is completed at all.

Harvest also can be a dangerous season. According to the Iowa Department of Public Health, about 500 Iowans report injuries from farm machinery, tractors, and falls every year. Nearly half of those injuries occur during the months of August, September, October, and November.

Injuries may be caused by taking shortcuts to perform routine tasks, not getting enough sleep or regular breaks, or failing to follow safety practices. Some injuries occur when operators are pulled into the intake area of harvesting machines, such as balers, combines, or corn pickers, and many injuries occur from slips or falls around these machines. This publication will address ways to avoid injuries from equipment used during harvest.

Harvest equipment

Exposure to powerful machinery is highest during the harvest season. The equipment must be powerful to effectively handle large amounts of agricultural commodities.

Operators may be less familiar with seasonal equipment used only a few days each year. They also may not be accustomed to situations that pose possible dangers or risk.

For these reasons, it is important to be familiar with harvest equipment and be able to anticipate and avoid potentially hazardous situations.

Entanglement hazard

Operators know about the dangers of the intake area on harvest equipment, but they often misjudge the speed at which injuries can occur. Operators often overestimate their ability to react in situations involving the intake area.

For example, a baler traveling at the speed of 3 miles per hour pulls in crops at a rate of about 4.4 feet per second. Snapping rolls on a cornhead pull in stalks at a rate of about 12 feet per second. Both machines move faster than an operator can react in common situations. If an operator tries to unplug a stalk in a live cornhead, the snapping rolls can pull the rest of the stalk, and the operator's arm and hand, into the machine. This can happen in about the same time it would take for the operator to release the freed stalk.

To avoid entanglements, always disengage power and turn off the engine before trying to manually clear a plugged machine. Never try to pull or remove twine or wire from a bale case or knotter when the baler is in operation. Likewise, never try to feed twine by hand. Even if the engine is on idle, twine moves through a baler faster than the operator can react.

Always keep protective shields in place. Beware of slips or falls that could place anyone near the machine intake area.

Operators can decrease the incidence of plugged machines by regular maintenance of harvest machines, late season weed control, and operating equipment during optimal conditions.

Farm machinery safety

How much do you know?

Keeping yourself and others safe during harvest is important. Test your knowledge with this quick quiz.

1. If a baler is traveling at 3 miles per hour, what is the minimum speed at which the windrow is pulled into the machine?

- a) 6 inches per second
- b) 1 foot per second
- c) 4.4 feet per second

2. There is little a machine operator can do to avoid plugging equipment during harvest. True or false?

3. The most frequent way people are injured on combines is

- a) getting caught in the corn or grain head.
- b) being crushed underneath the head.
- c) falling off the combine.

4. How tall is a combine?

See answers on back.

Before field work begins, check the operator's manual for proper maintenance. Replace all broken pick-up tines on balers and dull knife cutterbar sections on grain platforms. Check spacing on cornhead stripper bars and replace all worn belts that could cause plugging problems in the field.

Strive for good control of late season weeds to reduce plugging in harvest machines. Know which areas often have weed problems, and develop an effective weed management strategy.

Be realistic about weather conditions. When field conditions are wet, wait a few hours, or an extra day if possible, before harvesting crops. If harvest must be done in marginal conditions, expect crops to frequently plug the machine. Allow extra time to turn off the machine to unplug crops from the intake area.

Hazards of falling

Injuries caused by entanglements in the intake area of a combine are well publicized. However, reports kept by the Iowa Department of Public Health indicate that operators are more likely to be hurt by falling off the combine. Normal maintenance and operation requires mounting and dismounting the combine sometimes dozens of times a day. Tops of combines are 12 to 14 feet off the ground. Operator's platforms are usually 6 to 8 feet above the ground.

For more information

For more information about harvest machinery and equipment, get these Safe Farm publications: *Handle your grain harvest with care*, PM 1265i; *Reduce risks around big round bales*, PM 1518g; *Recognize limitations to avoid injury*, PM 1563j; and *Use SMV emblems for your safety*, PM 1265j.

Major contributing factors are ladders and platforms near the operator's station and engine. These areas often are painted metal, which can be slippery under normal conditions. They become even more treacherous in the presence of secondary hazards, such as mud, rain, crop residue, snow, or ice.

To reduce fall hazards, remember to:

- Always keep all platforms free of tools or other objects.
- Frequently clean the steps and other areas where workers stand to service, mount and dismount, or operate the machine.
- Wear well-fitting, comfortable shoes with non-slip soles.
- Use grab bars when mounting or dismounting machinery.
- Be sure your position is stable before you work on a machine.
- Recognize that fatigue, stress, drugs or alcohol, and age may affect stability.

Harvest season comes with many stresses. Exposure to dangerous situations can increase the mental pressure and your risk of injury. Follow safe practices around harvest equipment to make the most of your work time.

Prepared by Mark Hanna, extension agricultural engineer, and Charles V. Schwab, extension farm safety specialist.

These Safe Farm publications offer tips on how to prepare for emergencies: *How to respond to farm injuries*, PM 1518l, and *Farm emergency and first aid kits*, PM 1563l.

Farm machinery safety

What can you do?

A few actions can protect you and others from injuries during the harvest season.

- Always disengage power and shut off engine before leaving the operator's station.
- Before going to the field, check the condition of machine components that pull the crop into the processing area, replace worn parts, and check clearances.
- Develop a weed management plan for areas that often have late season problems.
- Frequently clean mud, crop residue, or other debris from steps and other areas.
- Inspect soles on work shoes. If necessary, replace with soles that have better traction.

Answers to quiz: 1-c; 2-False; 3-c; 4-12 to 14 ft.



Safe Farm is an Iowa State University Extension and Outreach project helping to make Iowa farms a safer place to work and live.

For more safety information, check the web at www.abe.iastate.edu.

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