

2025

## PRESS RELEASE

**For More Information:**

**ELLEN G. DUYSSEN**

**Central States Center for Agricultural Safety and Health**

University of Nebraska Medical Center

College of Public Health, Room 3035

984388 Nebraska Medical Center

Omaha, NE 68198-4388

402.552.3394

### FOR IMMEDIATE RELEASE

*By UNMC, Central States Center for Agricultural Safety and Health, Omaha, NE*

Preventing grain spoilage is the best way to avoid grain bin entrapment and death.

That's the message Bill Field, a Professor at Purdue University's Agricultural and Biological Engineering Department, is sharing with constituents and agricultural safety leaders.

Field and his colleagues have studied over 1,400 grain entrapment cases since the 1970s. He estimates that 30% of these incidents go unreported.

"Most of these incidents occur on small farms, and a very low number of those cases are documented," Field says. "About 75% of cases occur in the corn belt, with Indiana and Iowa reporting the most grain bin entrapment cases. Corn is the primary grain involved, and all our documented cases involved males."

Field, a principal in Liberty Rescue Systems, Inc., which developed the first commercial grain rescue tube sold in the United States, believes that a greater focus on keeping grain in good condition would significantly reduce the number of grain entrapment incidents in America.

"Millions of dollars have been spent on grain entrapment safety," Field says. "But the average number of incidents remains the same, about 30 per year. Indiana and Iowa are where the core number of cases occur. We need to ask whether we are conducting the right ag safety and health programming to reduce the frequency and severity of

grain-related incidents. I believe we aren't addressing the core issue we see in our research data."

The simplest solution to reducing the risks associated with out-of-condition grain is to prevent it from spoiling by adopting the best grain storage management practices. Field notes that it takes too much work to produce high-quality grain from the field and then allow excessive moisture or insects to spoil it while it is in storage.

"Damaged grain will also result in a substantial value loss or rejection at the elevator if sold," Field says. "For details on maintaining grain quality, check with your local County Extension Office or search online resources using the term 'grain quality.'"

Monitoring the air from a bin ventilation system is one way to detect the onset of grain spoilage. If the air is warm or smells sour or moldy, the grain is likely deteriorating.

"In some cases, just opening the roof hatch will help identify spoilage from the odor and appearance of the grain," Field says. "There's no need to enter the structure to know whether or not there's a problem."

If grain bin spoilage is detected, Field recommends immediately addressing the problem.

"Grain in a bin that has begun to spoil will never improve by itself," Field says. "Failing to respond quickly can result in a significant crop loss and even damage to the bin structure. Your investment is too great to ignore."

Field advocates for changes in bin engineering design. In recent years, grain bin safety groups and leaders, such as Field, have brought grain bin manufacturers together to implement design changes that improve grain bin safety. Bin manufacturing standards now require an anchor point bin workers can use to fasten a safety harness. Grain bin doors have enhanced safety features, such as Sukup's design, with new hardware that ensures inner panels are closed before the outer door closes correctly with both latches engaged.

"If attempts to remove spoiling grain become difficult or impossible due to plugging of floor wells, use of a professional grain salvage company might have to be considered," Field says. "Their crews are trained and equipped to salvage as much grain as possible while minimizing damage to the structure."

Field advises that exposure to air-borne grain dust and mold generated by spoiled grain when it is disturbed poses an additional hazard for workers who enter a grain bin.

“All workers exposed to dust during salvage operations should be equipped with appropriate respiratory protection such as properly fitted N-95 respirators,” Field says. “If dust concentrations are high, respirators must be replaced frequently to be effective. Care should be taken to avoid transporting toxic dust home on contaminated clothing. The use of disposable coveralls might be appropriate.

“In summary, there is no easy solution to removing spoiled grain from storage,” Field says. “But difficult should not translate into life-threatening. The key is storing the grain at appropriate moisture levels, continued monitoring, and acting quickly if spoilage is detected.”

Find more information on grain handling and resources at [www.agconfinedspaces.org](http://www.agconfinedspaces.org).

***Funding for this educational article comes from the Central States Center for Agricultural Safety and Health and the University of Nebraska Medical Center.***