



# MAFES Dawg Tracks

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## Grain Bin Hazards & Safety Tips



Grain bin entrapments are reminders that grain storage, especially flowing grain, may become very dangerous.

Tragedies have occurred here in Mississippi resulting in a couple of deaths in the last 4 or 5 years. According to a periodical from the University of Arkansas Agriculture Department, suffocations have occurred from handling poultry feed, cottonseed, corn, rice and soybeans.

From the Texas A&M Extension Service, over 200 farmers have died in the last 30 years from grain bin suffocation. According to Dr. Bill Fields of Purdue University, in 2009, 42 percent of grain entrapments resulted in deaths compared to 46 percent in 2008 and 74 percent from 1964 and 2005. The decrease in entrapments is a direct result of a stronger emphasis on safety practices, first responder training, and available grain rescue tubes.

### REDUCING THE RISK OF ENTRAPMENT-

#### Rule #1

- ✓ Workers entering a grain bin should have a body harness tied to a lifeline that is manned with two other workers outside the bin. One worker inside has the responsibility to watch the one entering the bin and the other outside is an aid for assistance, if needed with the one inside and to also get help in case there is an entrapment.
- ✓ Due to it being almost impossible to hear from inside the bin, it is recommended that a set of prearranged arm and hand signals should be used to aid in communication.

#### Rule #2

- ✓ You should never enter a bin of flowing grain. If you should drop a shovel or grain probe, immediately stop the flow of grain.
- ✓ Use the precautions discussed in Rule #1, and then retrieve the tool. No piece of equipment is worth a human life.

#### Rule #3

- ✓ You should know and be wary about a grain bin's history before entering.
- ✓ Get help if the grain appears moldy or caked. Refer to Rule #1 for assistance.
- ✓ Strike the grain with a long pole or tool to check the crust.
- ✓ Probe through the top layer and determine if there is a crusted surface.
- ✓ Do not lose communication with your co-workers.

#### Rule #4

- ✓ Don't fail to lockout/tagout the power equipment before entering any bin. It would be prudent for you to post a sign on the control box in case others come in. If a bin is unloaded by gravity flow, padlock the control gate to keep it closed.

#### Rule #5

- ✓ An accident response plan (Rule #1) was mentioned. Any adjustments to rescue another should not endanger a second victim. Actually a rescue should not risk the injury to any other.
- ✓ Appropriate breathing apparatus will be necessary if the victim has not been able to receive sufficient oxygen or has breathed air that contains grain toxins.
- ✓ Use adequate dust protection and get a rope to retrieve the victim. Do not place yourself in the same danger.
- ✓ Before you decide that it is necessary for you to enter the bin to help, make sure that you have adequate help available to pull you out with your harness.

#### Rule #6

- ✓ Safety prevention measures should include proper ladders or scaffolds. Newer and modern grain bins have an interior ladder. These can also be installed on the older model of bins.
- ✓ Body harness, tether, breathing apparatus should also be present, along with two other employees, if you have to enter the bin.
- ✓ Remember, it is always better to alleviate the problem without entering the bin, when possible.
- ✓ Never enter a grain bin without the recommended safety equipment and a trained crew.

#### If entrapment occurs, what should you do?

- If entrapment occurs, you must get help. Getting help and getting rescued is much easier if you have a response plan.
- Contact the folks outside the bin to help. Pulling a person out with the friction caused by the friction of the grain makes it harder to get the victim out. Do not try to retrieve a person from grain if they are in deeper than their knees. The pull from the grain could cause joint location, paralysis or other injuries.
- The grain must be from out and around the victim to remove them. One can cut holes in the side of the bin for removal.
- Another method of victim removal is to construct a cofferdam around the location of the victim. You do this by sticking 4-4x8 sheets in a square around the victim. Take a shop-vac or blower and get the grain (as much as possible from around the victim).
- Plastic barrels or commercial rescue tubes can be used for extraction as well.

Remember! Formulate a response plan for the grain bin safety. Discuss it with employees and family in the case of a family owned facility. The plan, discussed with all involved, and follow-up each year prior to the grain harvest will go a long way in reducing the potential for a grain bin accident or incident.

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