

Grain Pull

Overview

Demonstrates how hard it is to pull-out someone buried in grain. Shows how quickly the grain mass pulls one in and the difficulty in pulling a person out, even if they are not trapped very deeply in the grain.

Objective

Show the dangers of being buried in grain by demonstrating how hard it is to rescue someone that is trapped or buried in grain.

Introduction

1. Introduce yourself to the students; let them know your name, background, and anything else that may interest them and ties into the presentation.
2. Make the students aware that the information you will present to them is important and that they need to pay attention.
3. Inform the students that they will participate in an activity as time allows and they must be responsible during this activity. Stressing responsibility is especially important if you deal with a younger group of students.

Introduce the Grain Bin Safety Topic

- . Students all have their own stories and experiences to tell.
- . Introduce the grain bin safety topic, and ask the students if they know what some of the hazards of being trapped in grain might be.
- . Ask the students if they have ever played in a sand pile. Ask how many have played in piles of grain, trucks filled with grain, full grain wagons or other grain storage areas.

Activity

Materials Needed

- . Grain pull demonstration display
- . Grain pull display posters

Conducting the Demonstration

- . Discuss how flowing grain entrapments occur. Three major causes include flowing grain, collapse of a grain bridge, and the avalanche of a vertical grain wall.
- . Ask the students how strong they think they are. Ask them if they think they could pull out somebody who is trapped in grain.
- . Begin the grain pull demonstration. Hold on to the rope and pull straight up with as much force as you can, but warn students not to overexert themselves or they may get hurt.

- The electronic display shows how many pounds they could pull out of a grain bin. Record each student's display readout.
- Have students compare slips and see how many of their classmates they could pull out if they were trapped in grain.

Wrap Up

After the activity, talk to students and discuss what could happen if their body was trapped in flowing grain. Use the following discussion questions and facts:

- Have you ever heard of someone suffocating in grain?
- Will you sink if you walk on the grain in a bin or wagon when the auger is not running?
- What state of matter does flowing grain most resemble: solid, liquid, or gas?
- How deep do you think you sink when walking on non-flowing grain? (Approximately one foot into the grain.)
- How deep must you be buried to be helpless in flowing grain? (In flowing grain, once the surface of the grain is at knee level, no amount of struggling will allow you to free yourself, unless you are able to grab a solidly fixed object, such as a side of the grain wagon.)
- How long do you think it takes for a person to become helpless in flowing grain? (It takes only two or three seconds to be caught in grain up to the knee level. It may take 10 seconds or less to be completely buried in grain. Grain covers a child even more quickly.)
- Is it easy or hard to pull someone out who is submerged in grain?
- How do you rescue someone who is submerged in grain?

Re-discuss the safety rules when working with flowing grain. Go through the following list with the students and make sure they understand the importance of these rules.

- Always lock access doors to grain storage structures to keep bystanders and children out.
- Lock out power to all types of grain-handling equipment.
- Do not enter grain bins that are loading or unloading. Flowing grain can trap and suffocate you in seconds.
- Install ladders inside bins.
- Always use the buddy system when you unload or load grain, notifying a second person where you are.
- Adults should stay out of grain bins or other grain storage areas unless absolutely necessary.

- Never permit children to ride in grain wagons or enter grain storage areas. Never allow children to play in grain storage equipment—empty or full.
- Always know where ALL family members are (especially children) at all times when grain is loaded, unloaded, moved or otherwise handled.
- If flowing grain is pulling you in, yell for help and try to grab a stationary object (i.e., ladder) to prevent being sucked under the grain. If you can't grab anything and are about to go under, cup your hands over your mouth to prevent inhaling grain into the lungs. This might buy you some time during the rescue procedure.
- If someone is buried in grain, turn off the grain flow and try to do the following:
 - Make a dam around the victim.
 - Dig the victim out from the surface of the grain.
 - If the victim is buried too deeply, turn over the wagon in the opposite direction from the victim. If trapped in a bin, cut large notches in the bin at a level below the victim.