

PTO Safety

Objective

Illustrate ways farm equipment entanglements occur with the power take off (PTO). May be used with “Wheel of Misfortune” activity to illustrate the speed of equipment relative to a person’s reaction time.

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 PTO Safety Topic

- Students all have their own stories and experiences to tell.
- Introduce the PTO safety topic and ask the students if they know what the possible hazards are.

Activity

Materials Needed

- PTO display posters
- Demonstration PTO shaft

Ask the students if they have ever seen a PTO shaft such as the display model. Lead into the following questions and feel free to add more on your own.

- What makes PTOs and farm equipment dangerous?
 - Speed
 - Power
- Where is the PTO located?
- What is the PTO used for?
- Why do you think a PTO can be dangerous?
- Ask students to name three ways to prevent getting tangled in a PTO shaft
 - Shield

- Turn it off
- Stay away

Key Discussion Points

- Equipment and PTO entanglements cause some of the most serious farm injuries.
- Entanglements occur when clothing or shoestrings are caught in rotating or moving equipment.
- PTOs are designed to operate at 540 rpm or 1,000 rpm.
- It takes a human about one second to recognize an emergency situation, and up to two more seconds to take appropriate action.
- A PTO shaft (3.5" diameter) rotating at 540 rpm can wrap between 25-33 feet of shoestring during the three to four seconds it takes to react.

Discuss these following safety guidelines with the students. After each guideline, ask students why each guideline is important.

- Wear close fitting clothing. Avoid wearing sweatshirts with drawstrings and baggy or torn clothes; tie back long hair!
- Be sure that all PTO shields are in place and in good working condition.
- Start and stop the PTO only when you're sitting in the tractor seat.
- Never step over a PTO!
- Never allow young children to play near PTO equipment or work area.

Wrap Up

Discussion Questions

1. Do you know anyone who has been injured by a PTO or other farm equipment?
2. How did those injuries occur?
3. How fast do PTO shafts rotate?
4. How fast can a person react to an emergency?
5. Could you shut off a machine quickly enough to prevent an injury if you saw a friend's clothes get caught in rotating parts?

Questions to ask before using the PTO

1. Is the PTO shaft shielded?

2. Is the master shield in place?
3. Is the stub shaft shield available and in use when the PTO is not in operation?
4. Is the PTO shielding damaged?
5. Is the PTO shaft shield working properly?
6. Are all workers wearing proper clothing?
7. Is long hair tied back or under a cap?

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

- . Keep all PTO shielding (including the master shield) in place.
- . Repair or replace damaged or missing shields.
- . Stay safely away from unshielded moving parts.
- . Watch your step when walking or working around a running machine.
- . Wear work clothing with no loose ends or strings to catch on machinery.
- . Keep long hair under a cap or tied back to prevent it from catching in machinery.
- . Keep children and non-workers out of the danger zone.
- . Stop the PTO when dismounting from the tractor or servicing or unplugging equipment.