Use tractors with ROPS to save lives

Tractors are common to all farm operations. They also are the major cause of death in agriculture today. Tractors are linked to more than half of farm-related deaths, both nationally and in Iowa. The National Safety Council estimates more than 100 people were killed in 2004 while operating a tractor. About half those deaths were the result of a tractor rollover.

The high death rate associated with tractor rollovers is not a new problem. Since 1970, tractor rollover has been the leading cause of farm operator deaths, according to the National Safety Council.

Statistics from tractor rollover injuries show that about five people are killed year year for every 100,000 tractors in operation. The cumulative death toll from tractor rollovers since the development of the tractor is staggering.

What is ROPS?

ROPS, or rollover protective structure, is a cab or frame that provides a safe environment for the tractor operator in the event of a rollover. Also called anti-roll bars or ROPS cabs, all are designed to prevent death and minimize injury.

However, the first ROPS device was not marketed on new tractors until 1965. Many old tractors used today do not have ROPS.

The ROPS frame must pass a series of static or dynamic crush tests. These tests examine the ability of the ROPS to withstand various loads to see if the protective zone around the operator station remains intact in an overturn. The tests are extensive and destroy the rollover protective structure.

A homemade bar attached to the tractor axle, or simple sun shades, cannot protect the operator if the tractor overturns. Farm operators should not add their own rollover protection devices to tractors manufactured without ROPS. Without proper design and testing, homemade devices offer a false sense of security that can be more dangerous than operating a tractor without ROPS. The Society of Automotive Engineers and the American Society of Agricultural Engineers have standards on the design of rollover protective structures.

Use seat belts with ROPS

ROPS affords some safety during tractor overturns, but operators need more protection. All operators of tractors equipped with ROPS must wear seat belts. Without a seat belt, the operator will not be confined to the protective zone created by the ROPS.

During an overturn, the operator of a tractor with ROPS could be thrown from the protected area and crushed by the tractor, or even the rollover protective structure itself, if the operator is not wearing a seat belt.

Never use seat belts on a tractor without ROPS. In this case, the operator has no chance of survival because the seat belt will keep the operator in the seat as the tractor rolls over and crushes the operator. It is not certain whether the operator would be thrown clear from the tractor if seat belts were not worn, but that remains the operator’s only chance of survival.

Reduce your rollover risks

There are several ways to reduce the possibility of tractor rollovers. However, these safety practices are not a substitute for ROPS. Follow these tips, and use seat belts on tractors equipped with ROPS, to keep operators safe.

- Avoid sharp turns and reduce speed when turning. A tractor has a high center of gravity, which means it is more prone to rolling over. By reducing speed and avoiding sharp turns, you can help prevent a rollover.

Test your skill with this quick quiz.

1. Tractors cause a number of deaths every year in the United States. What percentage of those are from tractor rollovers?
   a) 25 percent
   b) 50 percent
   c) 75 percent

2. If your tractor does not have ROPS, it’s a good idea to make and install your own out of heavy metal bars to protect you in an overturn. True or false?

3. Which action(s) will reduce the chance that your tractor will roll over?
   a) increasing speed when making sharp turns
   b) heading up a steep slope
   c) hitching higher than the drawbar to increase traction
   d) none of the above

4. If your tractor is equipped with a rollover protective structure, you cannot roll the tractor over. True or false?

See answers on back.
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.

Other fact sheets in the Safe Farm series are available. Ask for:
- Extra Riders Mean Extra Dangers
- Reduce Risks Around Big Round Bales
- Reduce Farm Accident Risk on Roads
- Use SMV Signs for Your Safety

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For more information

Other ISU Extension and Outreach publications may help you develop guidelines for working with animals, or address other related issues. Go to https://store.extension.iastate.edu. This publication covers only some aspects of farm safety.