

August 1, 2016

PRESS RELEASE

For More Information:

ELLEN G. DUYSEN

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

BE AWARE: Farming is a Dangerous Occupation

America's farm industry has some of the nation's highest death and injury rates of any other national industry.

Farm safety is so important that National Farmers Union (NFU) spent about 18 months developing videos that every state can use to raise farm safety awareness.

Harley Danielson, part-time consultant to NFU, says video topics were identified through focus groups made up of farmers from the states of North Dakota, South Dakota, Colorado, Kansas and Nebraska.

"We know the farm industry has some of the highest death and injury rates of any other American industry," Danielson says. "In addition to the loss of life and disability issues arising from those accidents, farm death and disability has a huge impact on our farm economy. We wanted to find out from farmers themselves what safety issues they believed were of the highest importance."

Topics coming out of the focus groups include machinery accidents since a 2013 U.S. Bureau of Labor Statistics study revealed that machinery accidents account for approximately 25% of all farm accidents. Other topics include safety measures for livestock handling, grain hauling and storage, chemical use and keeping kids safe on the farm.

"The videos will be used in a wide variety of venues chosen by each state's Farmer's Union organization," Danielson says. "Dr. Charles Schwab, Agricultural and Biosystems Engineering professor at Iowa State University reviewed and edited all our video footage. Video production also involved a number of Extension specialists and risk management insurance personnel. One

of the safety issues that really stood out during this process is the fact that 40% of the older tractors on American farms are not equipped with rollover protective structures.”

Eight out of 10 times, it's experienced tractor operators who experience a rollover. And 7 out of 10 times, after a rollover, the farm goes out of business.

That's why safety experts like Nationwide Insurance Professor of Agricultural Safety & Health at PennState Department of Agricultural and Biological Engineering, Dennis Murphy, are so passionate about promoting the use of Rollover Protection Structure (ROPS) and a seat belt. It's estimated that 99 out of 100 tractor operators using a ROPS and will avoid death or serious injury if they experience a rollover.

“Before 1967, no tractors made in the U.S. had a ROPS or seatbelt. Between 1967 and 1985, U.S. farm tractor manufacturers provided ROPS as optional equipment on most tractors,” Murphy, says. “This meant that new tractor purchasers had to add the cost of a ROPS onto the base price of a tractor. Because most farmers are cost conscious, few added ROPS as an option.”

Beginning in 1985, American tractor manufacturers began voluntarily adding ROPS on all farm tractors with more than 20 HP that were sold in the United States. Of approximately 4.8 million tractors in use on U. S. farms, the National Institute for Occupational Safety and Health (NIOSH) estimates that around half of them are without rollover protection for the operator.

“The percentage of tractors in use and manufactured before the voluntary ROPS agreement is high because farm tractors are often in use for 30 to 40 years or more,” Murphy says. “Many newer tractors originally sold with ROPS have been stripped of the protective roll bar or roll cage because some farmers claim the ROPS structure blocks their view during normal tractor operations. Another reason often given for removing a factory-installed ROPS is that the tractor won't fit into some smaller spaces with a bulky roll bar. Today, foldable ROPS are available to reduce this problem.”

ROPS are roll bars or roll cages designed for wheel- and track-type agricultural tractors. ROPS are designed to create a protective zone around the operator when a rollover occurs. When used with a seat belt, the ROPS will prevent the operator from being thrown from the protective zone and crushed from an overturning tractor or from equipment mounted on or hooked to the tractor.

ROPS are engineered to mount on specific tractor models and designed to operate with the tractor's mounting brackets and frame. This provides a flexible structure that is rigid enough to withstand the loads produced during a tractor overturn. Prototype ROPS must pass crush, static and dynamic tests to insure they meet the standards set by the Society of Automotive Engineers (SAE).

The dynamic testing involves hitting the tractor ROPS in a prescribed manner with a 4,410 pound pendulum weight from behind and from both sides.

“In order to pass the dynamic test, the ROPS protective zone must remain intact and maintain the specified distances from the operator,” Murphy says. “The ROPS can be made of any material as long as the material meets temperature requirements and passes the tests set forth by the standards. Typical ROPS provided by manufacturers are made of steel that will not fracture in cold temperatures and are precision welded. The goal of the ROPS is to absorb the impact energy without excessive deformation to create a zone of protection for the operator.”

ROPS designs include two-post, four-post and ROPS with an enclosed cab. Two-post ROPS are the most common and are available in either rigid or foldable models. A rigid ROPS has upright posts that are vertical or slightly tilted and mounted to the tractor’s rear axle. The foldable ROPS was designed with hinges to allow the ROPS to fold to fit into low clearance areas.

A four-post ROPS is mounted onto both axles and onto the frame in front of the operator. The ROPS with an enclosed cab (Figure 7) is typically installed by the manufacturer and the structure acts as a ROPS.

After installation, a ROPS should be periodically inspected and serviced to check for extreme rust, cracks or other signs of wear.

“If there are signs of wear, the manufacturer or dealer should be consulted to determine the suitable course of action,” Murphy says. “ROPS can be abused or misused. You should never drill holes into the ROPS frame, nor should a piece of steel be welded onto the frame. If lighting or other light attachments are needed, they should be clamped onto the ROPS.”

A ROPS should never be used as a point of attachment for a chain, hook or cable. Pulling with the ROPS could damage it and result in a rear overturn. If a tractor fitted with a ROPS does overturn, the ROPS should be replaced because ROPS are only designed and certified to withstand a single overturn.

A listing of ROPS retrofits for farm tractors manufactured since 1967, “The Kentucky ROPS Guide,” has been compiled by the College of Agriculture at the University of Kentucky. The guidebook is available at <http://warehouse.ca.uky.edu/rops/ropshome.asp>. Local equipment dealers should also have ROPS information for retrofitting their tractor brands.

“ROPS for some older models of tractors may not be available even though one is listed by a ROPS manufacturer,” Murphy says. “That’s because a ROPS manufacturer often won’t produce a specific ROPS for an older tractor until an order has been placed. An order for just one ROPS may mean the cost will be prohibitive for the tractor owner.”

Because of the severe impact and dynamic forces present during a rollover, it's important that a ROPS be properly designed, manufactured and installed. If the ROPS is too rigid or too flexible, the operator could be injured during a rollover.

"Homemade ROPS are not recommended because they may not be properly designed, built or installed," Murphy says. "Poor welds and undersized bolts could fail under the impact and stress of a tractor overturn. Farmers, local hardware stores and welding shops don't have the special steels, bolts or welding supplies required for an approved ROPS. They don't have the necessary testing equipment to certify that a ROPS meets design standards. A homemade ROPS also exposes the owner and builder of the ROPS to liability damages if a tractor overturns and the homemade ROPS fails."

In combination with a seat belt, ROPS gives tractor rollover victims a 99% better chance to survive. The seat belt used with a ROPS provides the highest degree of safety.

"Without a seat belt, the operator won't be confined to the protective zone and may be crushed by the tractor or even the ROPS itself," Murphy says. "Many farmers dislike wearing the seat belt and don't bother to install a ROPS. While the ROPS and seat belt don't guarantee survival, they provide significant protection. While roll bars and seat belts together are the most effective system for protecting operators in a tractor overturn, the ROPS portion of the system provides the bulk of the protection. Installing a ROPS on all tractors is an important step toward agricultural injury prevention."

NFU's videos are available for viewing at www.NFU.org/farmsafety and are recommended for farm and ranch families, agriculture workers, consumers who visit a farm and members of the public who desire to learn more about hazards and proper safety procedures to avoid farm-related accidents or casualties.

Danielson hopes the NFU videos will help reduce farm deaths and accidents. He knows they will serve as an important educational tool across the nation well into the future.

"NFU operates as a triangle, and education is an important element of that," Danielson says. "Through our focus groups, we learned that hands-on projects are the most effective way to share safety information with the farming community. Providing training for youth is also effective because the kids take what they learn and share it with their parents. We expect the information in these videos to trickle down through those who view them to many members of the farm community."