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PRESS RELEASE

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FOR IMMEDIATE RELEASE

Reduce Your Risk

A few minutes spent recognizing risks related to operating today's farm tractors could save lives and avoid serious injury.

They're big, powerful and efficient. But operating today's four-wheel drive tractors requires all the same attention to safety as tractor models of the past.

Tractor overturns continue to cause serious tractor accidents across the United States. However, as Theresa Zaluckyj and her family discovered, simple missteps on any tractor can result in serious injuries.

"We farm in southwest Michigan," Zaluckyj says. "In 2014, just before we started planting, our son Jeremy was working on equipment, getting it ready. Our two tractors were parked next to each other and Jeremy was walking down the steps of one of them. He slipped on the step and as he started to fall he caught a finger in the tractor weight. As a result, he broke his finger."

Theresa had no idea she would be the next family member to experience a serious incident involving a tractor.

"In the fall of that same year we were working to finish harvest before a rain," she says. "We had worked one night until 4 a.m. and were headed back to the field at 8 a.m. the next morning."

Theresa's job at harvest time is driving the tractor that pulls the grain cart. After putting in another long day, working until about 9 p.m., she and her family finished combining corn just before the rain started. It was raining as she prepared to head to the pickup and go home.

“I had my purse with me along with some bags and water bottles I wanted to put in the trash,” she recalls. “With the purse in one hand and trash in the other, I started making my way down the tractor steps.”

Climbing out of the tractor, in the dark, Theresa missed the last two steps. She went tumbling to the ground, her head hitting the tractor wheel, the contents of her hands flying across the ground. Catching her breath, she attempted to get to her feet and found she couldn’t stand. She had torn her MCL (medial collateral ligament) on the inner part of her knee and was unable to get up.

“Jeremy quickly came to help me,” Theresa says. “Ironically, he threw the trash I’d been so intent on cleaning up back into the tractor cab. Wearing a knee brace, it took me 8 months to heal up. Jeremy’s advice was to throw any trash down to the ground and pick it up once I was safely down off the tractor. I know, too, that I was in too much of a hurry that night. We need to slow down and not rush when we work around tractors.”

Nationwide Insurance Professor of Agricultural Safety and Health and Extension Safety Specialist Dr. Dennis Murphy at PennState Department of Agricultural and Biological Engineering says most farmers become very accustomed to the tractors they’ve used for some time, purchasing a new tractor only every 10-15 years or so. It takes time to thoroughly understand how to operate a new rig. Practice can help.

“Make sure you know your tractor,” Murphy says. “Practice driving it and using its different features. Modern tractor cabs resemble the inside of an airplane cockpit with joy sticks and buttons where levers used to be. Many other design changes may give tractor operations a very different feel. Practice backing up, hitching equipment and thoroughly learning what every button and knob is for. If you’re using a feature you haven’t used in a while, refresh your memory about how it operates beforehand.”

Operator age is always important, and tractor operators who are either too young or well advanced in age may not possess the necessary physical stature or capabilities to safely operate any type of tractor.

“It’s key to ensure that anyone who’s going to drive the tractor can reach everything, can see and hear well and has the same understanding of operating it as you do,” Murphy says. “When tractor operators reach their 70s and 80s, slowed reaction times could result in hazardous situations. Set the tone for expecting that all operators are well trained and take time to teach everyone who operates the tractor how to do so safely.”

Modern tractors are safer than older models, due to additional weighting options and wheel settings or even dual wheel and track capability. However, tractor stability and potential instability remains very important.

The central concept in tractor stability/instability is Center of Gravity (CG). A tractor's CG is the point where all parts balance one another. CG for a two-wheel drive tractor sitting with all wheels on level ground is typically about 10 inches above and two feet in front of the rear axle when looking from back to front, and in the center of the tractor body when looking left to right. In this setting approximately 30% of the tractor weight is on the front axle and 70% on the rear axle. For four-wheel drive and center-articulated tractors, the CG is located slightly more forward. Added weights to a tractor can affect the CG.

To stay upright, a tractor's CG must stay within the tractor's stability baselines, imaginary lines drawn between the points where the tractor tires contact the ground. Details about identifying a tractor's CG and how to safely operate it to maintain stability can be found at www.extension.psu.edu.

Because the tractor is the leading cause of death on the farm, Rollover Protective Structures (ROPS) and seatbelts are a standard feature on late-model tractors. Use of ROPS is key to surviving a rollover accident. A ROPS with an enclosed cab gives tractor operators the most protection from common hazards of tractor operation.

The Occupational Safety and Health Act (OSHA) requires an approved ROPS for all agricultural tractors over 20 horsepower that were manufactured after October 25, 1976 and which are operated by a hired employee. A ROPS normally limits the degree of rollover thereby reducing damage to the tractor. When using a seatbelt, ROPS with enclosed cab also prevents tractor operators from being knocked out of their tractor seat from rough ground or low hanging tree limbs, provides protection from the sun and other weather hazards and reduces risk for the unsafe practice of extra riders on tractors. In 80% of all tractor rollovers, victims are experienced operators.

Thinking about the terrain where the tractor will be used before arriving at a site is an important safety practice. Even relatively flat farmland is likely to include areas of pasture and roadways with rolling hills or steep inclines. Soil erosion and animals can create unstable ground conditions in places that were safe in previous years.

"Does the person who will operate the tractor in that terrain understand the center of gravity and how it changes?" Murphy asks. "Do they realize how centrifugal force is affected with a sharp turn of the tractor? Are they able to make quick decisions if a crisis situation develops?"

Drawbar leverage is a critical concept to understand. Equipment hitched to a tractor may not always be on wheels or be an object that rolls easily.

"For safety purposes, all tractor operators should be trained in drawbar leverage," Murphy says.

“High hitching” is an unsafe practice every operator should avoid. Any hitch point higher than the drawbar will tend to pull the front wheels up, potentially resulting in a back-flip and a crushed operator. The high hitch issue can occur in pulling vehicles stuck in the mud, dragging downed trees or removing shrubs for landscaping purposes.

Because the power-take-off can be the most dangerous tractor feature, it is fitted with a master shield. The master shield should always be in place and operate easily so it can be quickly flipped up and pushed back down. An unguarded PTO, running at 1,000 rpm, can wrap clothing around it at the rate of 8 feet per second. It can’t be shut down that quickly.

Maintaining every aspect of the tractor is a key safety practice. Newer model tractors typically feature lights with turning lamps and flashers. However, if the lights aren’t in working condition they’re of little use in terms of safety.

“Every time you get on the tractor, it’s a good practice to check all the lights and flashers to make sure they’re working,” Murphy says. “Maintaining the quality of a slow moving sign is also key. The sign should be washed frequently and evaluated to make sure it hasn’t faded, detracting from its visibility. For tractors capable of road speeds of more than 25 miles-per-hour, a speed indicator symbol (SIS) can be used.”

Tractor brakes should be carefully serviced and regularly tested to ensure proper operation. As much as possible, it’s recommended to avoid parking a tractor in areas where brakes are relied upon to keep the tractor from rolling. If brake instructions are not completely clear, consult the manufacturer or someone experienced in using them to thoroughly learn how your tractor brakes operate.

As an operator, if you’re off the tractor and it begins to roll, DO NOT try to get back on. Such action frequently results in death. Machines are replaceable, people aren’t.

Seat belts, also a standard feature on late-model tractors, are ineffective until they’re used. Youth shouldn’t be allowed to ride in or operate a tractor unless they are protected by a ROPS and seat belt.

“The worst thing that can happen to a tractor owner is that they take a risk and get by with it,” Murphy says. “The more times you take the risk, the more likely it is that you’ll end up the loser.”

Tractor safety training events are available through Extension offices across the nation. Numerous online resources are also available, including www.extension.psu.edu and the National Agricultural Tractor Safety Initiative at www.nasdonline.org.

PHOTO CUTLINES:
TRACTORSAFETY1: While tractor overturns remain the deadliest type of tractor accident in the U.S., power takeoffs also pose potential for life-threatening incidents.

TRACTORSAFETY2: Maintaining tractors so all features – such as lights, tires, seatbelts and steps - is an important aspect of tractor safety.

TRACTORSAFETY3: Small things, such as deteriorating Slow Moving Vehicle signs, could significantly increase tractor accident potential.