

Farm Vehicles – Don't get knocked

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There were 16 fatal farm accidents last year, up from 13 in 2022 and nine in 2021. We offer some pointers on preventing farm vehicle-related injuries

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Driven by the need for productivity, farm vehicles have been getting dramatically larger and faster in recent years. Their greater capacity to get work done is matched, however, by increased potential to kill or seriously injure. Being crushed or struck by farm machinery causes 80% of vehicle-related farm deaths.

These farm vehicles must move and operate within the relatively small areas of Irish farmyards, roads and fields. Farmers require high levels of skill and experience to operate them safely. Family members and neighbours need to be aware of these work areas, avoid them when possible and understand the limits of farmers' visibility and control when operating these large machines.

To help reduce farm vehicle-related injuries, Dr Aswathi Surendran at the School of Psychology, University of Galway has carried out PhD research to develop a new vehicle safety intervention in association with Teagasc Athenry and Kildalton. The research was funded by the Department of Agriculture, Food and the Marine (DAFM) through the Teagasc Be Safe Research Project.

Farmers were recruited (our thanks go out to these volunteers) and they helped develop a pilot training course.

The training focuses on using farm vehicles safely, including identifying blind spots and recognising the

influence of farm vehicle speed on accidents. After taking the course, the participants were given resources to deliver the course themselves to their families and workers.

What does H.S.A. data on vehicle-related incidents tell us?

The Health and Safety Authority (H.S.A) carried out a detailed analysis of vehicle related incidents as part of A Review of Work-Related Fatalities in Agriculture in Ireland from 2011-2020. The H.S.A found that the most common type of vehicle incident was striking of people on foot or, in one case, a cyclist.

These led to 39 work-related fatalities (42% of all vehicle fatalities in Agriculture). Of the 39 fatalities where a vehicle struck a person, 23 involved parked vehicles rolling out of control, either because the vehicle's handbrake was faulty or had not been engaged properly. Six fatalities involved people on foot being struck by reversing vehicles. A further nine fatalities resulted from people on

down; you might not get up again

foot being struck by vehicles and, as already mentioned, one cyclist was struck by a vehicle.

Blind spots

'Blind Spots' are areas around a tractor or farm vehicle where the driver's vision is impeded, so that people who are close to the vehicle cannot be seen by the driver. Short people and children in particular are at higher risk as they are difficult to see when in a blind spot. Blind spots are particularly hazardous to the front or rear of a vehicle. Blind spots are also hazardous at the side of a vehicle as they may conceal an approaching person.

Vehicle design and equipment

Cab frames, exhaust pipes, loader headstocks and in-cab devices such as display screen equipment can all impede the driver's view. Mirrors and cameras help to reduce blind spots, however their effectiveness depends on their design, positioning and cleanliness.

Poorly positioned vehicle work lights or low level sunlight can also result in very low visibility levels. Correctly adjusted work lights, clean windows and sun visors help reduce the risk of an incident or injury.

Managing vehicle movement

Pro-active management of vehicles on the farm is important. Develop safe routines and procedures. Ensure bystanders are always segregated from areas where farm vehicles are operating.

Vehicle noise as a signal of danger

A hearing impairment, a mobile phone or ear piece in use, multiple vehicles operating in close proximity at the same time; sheds that have high background noise levels during animal feeding or periods of wind or heavy rain; can all reduce awareness of vehicle noise.

Where there is the possibility of impaired visual or audio awareness of working machines, physical safety control measures must be in place to prevent accidents.

Slow down

Vehicle speed is a major factor in the risk of being struck by a farm vehicle.

A tractor travelling at just 10km/hr will cover 2.82m/second. This gives a person near the vehicle little or no time to get out of the way. The higher

Farmer testimonials

John Fitzgerald, Dairy Farmer Portlaoise, Co Waterford: took part in a training course at Kildalton College as part of the research project.

"I found the course very interesting. The dangers associated with farm vehicles and the importance of identifying vehicle blind spots was highlighted. Following the training I demonstrated the hazards associated with farm vehicles, speed and blind spots to my own family members and workers. "I feel it greatly increased safety on our farm. After doing the course I was conscious that on my industrial loader the beeper wasn't working so I got it replaced and that small improvement may save somebody's life down the road."

Thomas Moloney, Agricultural Contractor, Cohen, Co Tipperary.

"Farm vehicle movement is safest when the vehicle can be driven in a forward direction where there is a clear view and no obstructions. Designing a farmyard to have wide turning circles and clear views makes tractor operation less hazardous. Having to reverse tractors around tight corners is a lot more dangerous than driving forwards. Fitting cameras on the front or rear of vehicles can help reduce the danger associated with visibility issues."

the speed the greater the risk of striking someone and causing injury.

Manage vehicle movement for visibility

This involves having dedicated vehicle movement routes with maximum driver visibility and bystanders segregated from vehicles.

Good farmyard design allows adequate space for turning circles that eliminate or reduce the need for reversing. This allows the operator to have a clear forward view to see persons or obstructions.

Farm work often takes place in early morning or late evening during dark periods of the year so adequate lighting must be in place. Good signage will also highlight and remind all on the farm of the risks that exist.

The researcher's view

Aswathi Surendran

"Though farmers understand that blind spots exist and that tractors take time to stop, they often did not realise how much they couldn't see and how far a tractor can move after braking'.

"By sitting on the tractors themselves and experiencing the limitations of visibility and blind spots first hand, participants gained a deeper understanding of the safety risks

associated with operating a tractor. This experiential learning process was a critical element that heightened safety awareness and equipped participants with the knowledge and skills needed to address these risks effectively in their everyday farming practices."



Further Information

A video related to the content of this article is available at: <https://www.teagasc.ie/rural-economy/farm-management/farm-health-safety/videos/>

Dr Aswathi Surendran and her colleagues will be publishing her research in high level open-access scientific journals which will be freely available on the web.