Power Take Off (PTO) Safety for Tractors Stats and Facts

FACTS

1. Power Take Off (PTO) is a term used to describe the process of transmitting power from one point to another. A PTO shaft is a cylindrical metal rod that attaches to a power source, such as a tractor, at one end and an attachment, such as a brush hog mower, at the other. When the tractor’s engine is running, power flows along the shaft. The shaft rotates at engine speed, transferring energy from the engine to the attachment. The PTO shaft can rotate at a speed of nine times per second.
2. Many tractors, especially older models, lack PTO shields or have damaged or ineffective shields.
3. PTOs may be engaged without operator input. If a PTO shaft is attached to a moving tractor, for example, but is not also attached to an accessory, the rotating shaft may catch on’ clothing, limbs or hair, dismembering, scalping, or mutilating them.
4. Some farm equipment must be running in order for to make adjustments or correct malfunctions. Since PTO shafts rotate when the equipment they are attached to is operated, may be exposed to the rapidly spinning PTO shaft while examining their equipment.
5. Work practices such as clearing crop plugs may expose operators to PTO shafts.
6. Defective PTO shafts can disconnect from the machinery they are attached to. If so, they may swing and/or break off, striking anyone within range.
7. In just one second, a PTO can wrap an arm or leg around a shaft nine times.
8. Entanglements are also relatively common, either in power take-off (PTO) drivelines or attached machines.

STATS

- Statistics from the federal government estimate 40 fatalities and 150 amputations and countless other serious injuries such as broken bones, scalping, etc. occur each year due to entanglement.
- During a 12-year period of 739 patients admitted to a Wisconsin referral Trauma Centre with injuries incurred whilst farming, the injury mechanisms in 7% of cases involved a power take-off (PTO) shaft. Illustrative of the severity of this injury was the fact that three of the 16 deaths in the series occurred as a result of this device.
- Of the 47 accidents involving a PTO device in the Wisconsin trial, 32 resulted in upper limb trauma; there were six major amputations; 10 patients sustained serious injury to the branchial plexus and peripheral nerves; one patient had a severe degloving urogenital injury; and there were 3 near strangulations.
- Additionally 20 patients had residual significant permanent disability. In this paper, five case summaries of PTO injuries collected from the admissions to two West Dublin City hospitals over a 2-year period are presented and the injury precipitating factors are explored in relation to this type of injury.
- According to the Farm Injury Resource Center, Power Take-Off (PTO) injuries are common on a farm, with most occurring when clothing and/or limbs are entangled in the rotating PTO shaft.