2006 Farm and Ranch Safety

By Pamela K. Kanagy

There were an estimated 2.5 million tractors in use on farms in the United States (U.S.) that were equipped with Roll-Over Protective (ROPS) in 2006. This represented 59 percent of the tractors used on U.S. farms. This finding was based on a random telephone survey of 25,000 farm operations conducted by the National Agricultural Statistics Service (NASS) for the National Institute for Occupational Safety and Health (NIOSH), an agency of the Centers for Disease Control and Prevention. Farm operators were asked questions about farm tractors and other safety and health issues associated with their farm in 2006. These issues ranged from questions about tractors and other machinery used on their operations in 2006 to the use of hearing protection and other protective equipment used by farm operators while working on their farms.

Farms or ranches located in the South region (see table 1) of the U.S. reported the highest percentage of tractors with ROPS protection (65 percent), followed by the West, which reported 60 percent of their tractors being protected by a ROPS, and the Midwest with 56 percent of tractors having a ROPS. The lowest use of ROPS was found in the Northeast at 51 percent. ROPS represent the best available protection to tractor operators from serious or fatal injuries in the event of a tractor overturn. There were an estimated 6,700 tractor rollovers in the U.S. between September of 2005 and September of 2006 based on this study. The majority of these overturn events (4,200) involved tractors with no ROPS.

About 900,000 operators had all-terrain vehicles (ATVs) on their operations, for a total of 1.2 million ATVs, with the majority of the ATVs (1.1 million) being used for farm work tasks at least some of the time by the farm operator. For other farm machinery, the study asked farm operators about the presence of guards and shields on the implements. For power take-off driveline shields, farm operators reported that 93 percent of hay balers on their farming operations in 2006 had the shield in place. For brush-cutting mowers, 86 percent were reported to have the PTO driveline shield in place, while 84 percent of sickle bar-type mowers were reported to have these shields.

Only 40,000 operators were estimated to have manure pits on their operation in 2006, accounting for 57,000 manure pits in total. Of the farm operators with manure pits, 63 percent reported never entering the pits during the 12-month period prior to this study, while 19 percent reported entering the pit 1-5 times, with 19 percent stating they entered their pit 6 or more times in the previous 12 months. About 60 percent of the manure pit openings were covered with grates, concrete lids, or some other type of guarding. Only 35 percent of the manure pits were reported to be equipped with powered ventilation systems.

For farm structures, the survey estimated 430,000 operators used tower silos on their farms. These farms accounted for 1.5 million silos, for an average of 3.4 silos per operation. About 90,000 of these tower silos were the oxygen-limiting type. Nearly 1.1 million (75 percent) of the silos had permanent external ladders attached to them; however, only 360,000 (33 percent) had restricted access (padlock on the ladder entry or pull down ladder system to enter the ladder cage) to these attached ladders. Enclosed cage system ladders comprised 22 percent (250,000) of the total attached ladders.

Nearly 980,000 farming operations had underground power lines. Of these operations, about one-third (320,000) reported all of their power lines were underground. An additional 30 percent (290,000) reported that around half of their power lines were underground, with the remaining farms (37 percent) reporting less than half of their power lines being underground.

Portable PTO-driven grain augers have been identified as serious hazards due to both contact with overhead power lines and for PTO and chute guarding issues.

Operators on 270,000 farms reported having 420,000 portable PTO-driven grain augers. The average auger height when fully extended was 41 feet, with the highest auger height reported of 120 feet. About 40 percent of all augers were 20-39 feet; 26 percent between 40-59 feet; 24 percent 60 feet or higher; and 10 percent less than 20 feet in height. Farm operators reported that 92 percent of the augers had the intake chute guard and 92 percent had the PTO shaft driveline guard.

On questions related to personal protective equipment use, only 37 percent (780,000) of the operators reported using a respirator or dust mask on their operations during the 12-month period prior to this study. The most common reason given for using a respirator or dust mask was for working in dusty environments (550,000 positive responses). With regards to noise exposure, 1.3 million (64 percent) farm operators reported working around loud noise on their operation at some point during the 12 months prior to the study. Of these operators self-reporting exposure to loud noise, 880,000 (66 percent) responded that they wore ear plugs or ear muffs at least some of the time while working in these noisy environments.

Table 1 - 2006 Farm and Ranch Safety Survey

Region [2]	Tractors			ATVs	Manure Pits	Tower Silos	Underground Power Lines
	Total	ROPS	% ROPS				
Northeast	302,000	155,000	51	57,000	6,000	54,000	47,000
South	1,432,000	932,000	65	478,000	8,000	198,000	327,000
Midwest	1,970,000	1,099,000	56	480,000	38,000	1,067,000	456,000
West	532,000	319,000	60	220,000	6,000	142,000	151,000
U.S.	**4,236,000**	**2,505,000**	**59**	**1,236,000[1]**	**57,000[1]**	**1,463,000[1]**	**980,000[1]**

[1] Estimates do not add to total due to rounding.

[2] Northeast CT, ME, MA, NH, NJ, NY, PA, RI, and VT.
South AL, AR, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, and WV.
Midwest IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, and WI.
West AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, and WY.