

1991

Wisconsin Farm-Related Fatalities

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Farm-Related Fatality Occurrences and Rate

Forty fatalities occurred during 1991 in Wisconsin related to farm activities. This is a decrease of six from 1990 and the lowest number of farm-related fatalities reported in Wisconsin since thirty-eight were reported both in 1984 and 1981. In Wisconsin the average number of farm-related fatalities of the past 20 years is 54 as shown in **Figure 1**.

However, the size of the agricultural production workforce in Wisconsin decreased by 38 percent since 1972. Death rates, which are expressed relative to a constant number of individuals (ie. Per 100,000) provide a better estimate for determining whether farm-related fatalities are increasing or decreasing in comparison to previous years.

Figure 1. Number of Fatal Farm Injuries in Wisconsin

1972	79	1982	51
1973	59	1983	45
1974	60	1984	38
1975	71	1985	48
1976	61	1986	67
1977	69	1987	63
1978	48	1988	46
1979	60	1989	41
1980	43	1990	45
1981	38	1991	40
		Average	54

The rate of farm-related fatalities in Wisconsin was **36.4 per 100,000** workers in 1991. The 1991 rate exceeded the Wisconsin average for the 1980-1990 period of 35 fatalities per 100,000 workers. Fatality rates for each year between 1972 and 1991 are shown in **Figure 2**.

The most recent estimate from the U.S. Centers for Disease Control placed the average fatal work injury rate for all occupations in the nation at 7.9 per 100,000 workers. According to the National Safety Council, farming is one of the three most hazardous occupations in the nation. Rates of occupational-related deaths in agriculture are surpassed only by mining and construction.

The National Safety Council estimates that 1,400 deaths occurred during agricultural work activities in the U.S. in 1991. The death rate per 100,000 agricultural workers in the U.S. was an estimated 44.

Figure 2. Rate of Fatal Farm Injuries in Wisconsin

Year	Rate/100,000 Workers	Year	Rate/100,000 Workers
1972	41	1982	34
1973	31	1983	35
1974	31	1984	27
1975	36	1985	34
1976	31	1986	55
1977	35	1987	54
1978	26	1988	42
1979	33	1989	37
1980	24	1990	38
1981	23	1991	36.4
		Average	35

Farm-Related Fatality Definition

Farm-related fatalities were defined as unintentional injury deaths occurring to adults or children involved in farm work activities or due to an agricultural work hazard during off-the-job activities. Fatalities resulting from recreational, home, or motor vehicle injuries were not included in this report. All fatal farm work-related injuries that occurred in Wisconsin were counted, without regard for the state of residence of the decedent or the state in which the death was formally declared.

Estimates for the size of the Wisconsin workforce were developed from data collected by surveys conducted by the U.S. Department of Agriculture. In the fatality rate calculation, the Department of Agriculture's definition of a farm worker was adopted. Their definition of a farm worker includes farm owner operators, paid family members, hired help, and family members who worked without receiving cash wages.

Type of Farm-Related Fatalities

Farm tractors and machinery accounted for 68 percent of the total farm fatalities during 1991. Seventeen of the fatalities involved farm tractors as shown in Figure 3, an increase of two from 1990. Ten of the fatalities involved farm machinery or equipment other than tractors.

The number of fatalities caused by falls decreased by 50 percent from 1990. The falls involved a victim falling down a silo chute, a fall off a scaffold and a fall in a barn. Animal-related fatalities remained the same as the number reported in 1990, three fatalities. Two of the animal-related fatalities involved a horse and the other fatality involved an attack by a bull. The other fatalities noted in **Figure 3** include a falling object (two: a fuel tank and a tree), a drowning in a watering tank, a gun discharge, an electrocution, a truck crash into a tractor, and an asphyxiation by silage.

Figure 3. Wisconsin Farm – Related Fatalities

Incident	Number of Fatalities
Tractor	17
Machinery	10
Fall	3
Animal	3
Other	7
Total	40

Farm Tractor-Related Fatalities

Farm tractor overturns were the most common cause of tractor-related fatalities with nine fatalities, an increase of two from 1990, in Wisconsin during 1991 as shown in **Figure 4**. Other fatality data suggests that these fatalities occurred on tractors not equipped with rollover protective structures (ROPS). Fatalities caused by victims falling from or run over by the tractor decreased by two from 1990. Victims of tractor run overs are typically extra riders. The other fatalities involved a victim struck by a front-end loader of a tractor, a fence pole that struck driver of tractor, and the inhalation of heated gases caused from a tractor that overturned and burned.

Figure 4. Farm Tractor – Related Fatalities Incident

Incident	Number of Fatalities
Overturn	9
Fall or Run Over	5
Other	3
Total	17

Farm Machinery-Related Fatalities

Farm machinery, excluding farm tractors, fatalities increased by one from 1990. These involved a victim being pinned between farm machinery and another object were the most common as shown in **Figure 5**. The number of victims who were caught in farm machinery increased by two from 1990. These fatalities involved entanglement on a power take-off driveline. Run overs decreased by two from 1990.

The farm machinery commonly involved in these fatalities included an elevator (three), skid steer loader (two), manure spreader, grain wagon, forage wagon and a disc. The type of machine in one of the fatalities was not determined.

Figure 5. Farm Machinery – Related Fatalities

Incident	Number of Fatalities
Pinned Between	4
Caught In	3
Run Over	1
Fall	1
Other	1
Total	10

Age and Sex of Farm Fatality Victims

Eighty-five percent of the fatality victims were male in 1991. In 1990, 89 percent of the victims were male and in 1989, 100 percent of the victims were male.

Victims who were 65 years of age and older continually represent the largest number of fatalities, 20 percent of the fatalities, in comparison with the other age groups as shown in **Figure 6**. The number of fatalities involving those 65 years of age and older decreased by five from 1990. Victims in the group between the age of 55 and 64 increased by three and there was an increase of one fatality in the 25 to 34 group from 1990. The age group of victims who were between the age of 16 and 24 decreased by one from 1990. The number of fatalities in the remaining age groups remained the same from 1990.

Fatalities involving children under the age of 16 represented 18 percent of the reported fatalities in 1991. Fatalities involving children in the group under the age of five included a fall from a tractor while riding on a tractor, a fall against a moving wagon while trying to jump onto the wagon, and a drowning in a livestock watering tank. Fatalities involving children between the age of 5 and 15 included two where a horse fell on a child, a child pinned between a hay elevator and a barn support beam, and a child fatally injured by a tractor rollover. Two of the seven children fatally injured were females.

Figure 6. Farm – Related Fatalities by Age

Years	Under 5	5-15	16-24	25-34	35-44	45-54	55-64	65-over
Number	3	4	5	5	4	4	6	8

Month when Fatalities Occurred

The greatest number of fatalities occurred in October during 1991 when seven were reported, as shown by **Figure 7**. The second highest number of farm-related fatalities occurred during June when six were reported fatalities with seven and six, respectively.

Figure 7. Farm – Related Fatalities by Month

Month	Number of Fatalities	Month	Number of Fatalities
January	3	July	3
February	1	August	3
March	1	September	4
April	2	October	7
May	3	November	4
June	6	December	3

Time of Day when Fatalities Occurred

Farm fatalities in Wisconsin commonly occurred in 1991 during the afternoon or early evening hours as shown in **Figure 8**. This probably suggests that these were peak work activity times, although sometimes, fatigue may have been a factor. The early morning hours were also a common time for the occurrence of farm fatalities.

Figure 8. Farm – Related Fatalities by Time of Day

Time	Number of Fatalities	Time	Number of Fatalities
8:00am	2	4:00pm	3
9:00am	3	5:00pm	3
10:00am	1	6:00pm	3
11:00am	0	7:00pm	4
12:00pm	2	8:00pm	0
1:00pm	4	9:00pm	1
2:00pm	2	10:00pm	1
3:00pm	3	Unknown	8

County of Fatality Occurrence

The highest number of farm-related fatalities was reported in Dane and Dodge County with three. Counties with two reported fatalities included: Calumet, Crawford, Fond du Lac, Manitowoc, St. Croix and Waushara. One fatality was reported in the following counties: Adams, Barron, Burnett, Chippewa, Clark, Columbia, Grant, Green, Green Lake, Iron, Jefferson, Juneau, Kenosha, Marathon, Marinette, Marquette, Pierce, Polk, and Shawano.

Data Collection

In 1945, the University of Wisconsin-Madison Agricultural Engineering Department started a statewide surveillance system for farm-related fatalities that relied on reports published in Wisconsin's daily and weekly newspapers. Beginning in 1985, the State of Wisconsin Center for Health Statistics provided lists of farm fatalities obtained from its death certificate registry.

Since 1990, Additional sources of data have been added to the surveillance system. Agricultural fatalities identified by the Census of Fatal Occupational Injuries in the State of Wisconsin Worker's Compensation Division are forwarded to the university monthly. Reports of fatal work injuries are also provided by the Fatal Accident Circumstances and Epidemiology project in the State of Wisconsin Bureau of Public Health. In collaboration with the State Center for Health Statistics, the Agricultural Engineering Department solicits the death investigation reports completed by Wisconsin county coroners and medical examiners as fatalities occur.

Collecting information on all the injury deaths that take place on farms each year is difficult because reporting is not centralized as it is for most other occupations. Most farms are exempted from federal requirements to report work injury deaths. The many sources of data used in Wisconsin reduce the chance that a farm-related death will be missed by the surveillance system.

The increases in the number of data sources since 1985 have probably resulted in a more complete surveillance of farm-related fatalities and may partially account for increases in fatality rates since 1985. However, all injury surveillance systems routinely underreport and misclassify some cases. As a result, the actual number of fatalities that fit the farm work-related definition are likely to be some-what higher than what was included in this report. Studies of surveillance systems similar to Wisconsin's have noted that deaths can be underreported by 10 to 40 percent.

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