

Purdue University

Agricultural Safety and Health Program

2003 Indiana Farm Fatality Summary

Compiled by the Purdue University Agricultural Safety and Health Program

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The 2003 Indiana farm fatality report was compiled by Purdue's Agricultural Safety and Health Program through a variety of sources, including two separate news clipping services, voluntary reporting from Extension educators, individuals, personal interviews, and a nationwide farm injury surveillance report provided by the Great Plains Center for Agricultural Health at the University of Iowa. No cases were identified using official death certificates due to the lack of access to these records at the Indiana Department of Health.

The report includes a summary of 18 farm work-related fatalities¹ that occurred in 2003. This is one less fatality than the 19 fatalities reported in 2002, and only two more than in 1998, the year that the lowest number of fatalities were recorded since Purdue began keeping records in the 1940's. For over 30 years there has been a steady downward trend in the number of farm work-related fatalities. With the slight decrease in the number of documented fatalities in 2003 as compared to 2002, the trend in the frequency of identified farm-related fatalities continues to go down.

The average age for farm work-related fatality victims in 2003 was approximately 55 (table 1); similar to the average age over the past eight years. All but two documented cases involved males. Two (11.1%) of the fatalities identified involved a child or adolescent under the age of 18; the same number as the previous year.

Incidents involving tractors accounted for ten (55.6%) of the recorded fatalities. This is a slightly higher percentage than that recorded in 2002, but lower than some years in the past when over 75% involved tractors. Five of the ten tractor-related incidents were roadway collisions. In four of these, the victim was operating a vehicle that collided into a tractor or tractor-implement combination.

Tractor roll-overs were the leading type of fatal farm-related incident in the state accounting for 16.7% of all identified fatalities. (Roll-overs continue to be the leading cause of farm work-related fatalities nationally accounting for approximately 25% of all fatalities.)

¹ A **farm work-related fatality** is defined as any fatal injury to a farm or ranch worker (or bystander) occurring in the course of performing an agricultural work-related task, or as a result of exposure to hazards in the agricultural workplace. Motor vehicle incidents not clearly involving agricultural equipment or vehicles are excluded.

Gender	Age Distribution					Total	%
	1-17	18-35	36-59	60+	Unkown		
Males	2	1	4	8	1	16	88.9
Females	-	-	2	-	-	2	11.1
Total	2	1	6	8	1	18	100
%	11.1	5.6	33.3	44.4	5.6	100	
Average Age	7.5	23	48.5	76.6	-	55.4	

Table 1. Age distribution of Indiana farm work-related fatalities in 2003.

Type of Incident	Fatalities	
Entrapments or suffocations	Grain entrapments	2
	Drownings	1
	Gas asphyxiation (manure pit)	-
Livestock-related incidents	Trampled by livestock	1
	Kicked by horse	-
	Horse-drawn wagon incidents	-
Machinery-related incidents	Entanglements	-
	Crushings/pinnings	-
	Runovers	1
Tractor-related incidents	Roll-overs	3
	Runovers	1
	Crushings/pinnings	1
Roadway collisions	While on tractor	1
	With tractor	2
	With pull-behind machinery	2
	With agricultural truck	1
	With livestock	1
Other incidents	Building collapse	1
Total		18

Table 2. 2003 Indiana farm work-related fatalities by specific type of incidents.

Table 2 summarizes the specific types of incidents associated with Indiana’s farm fatalities in 2003. Several types of fatalities that have been historically common to Indiana agriculture did not occur during the year, or none were identified, including those associated with falls and machinery entanglements. It is important to note that five of the seven roadway collisions involved a tractor or tractor-pulled machinery, but were not included in the tractor or machinery-related incident categories. Figure 1 displays a distribution of farm-related fatalities by general types of incidents.

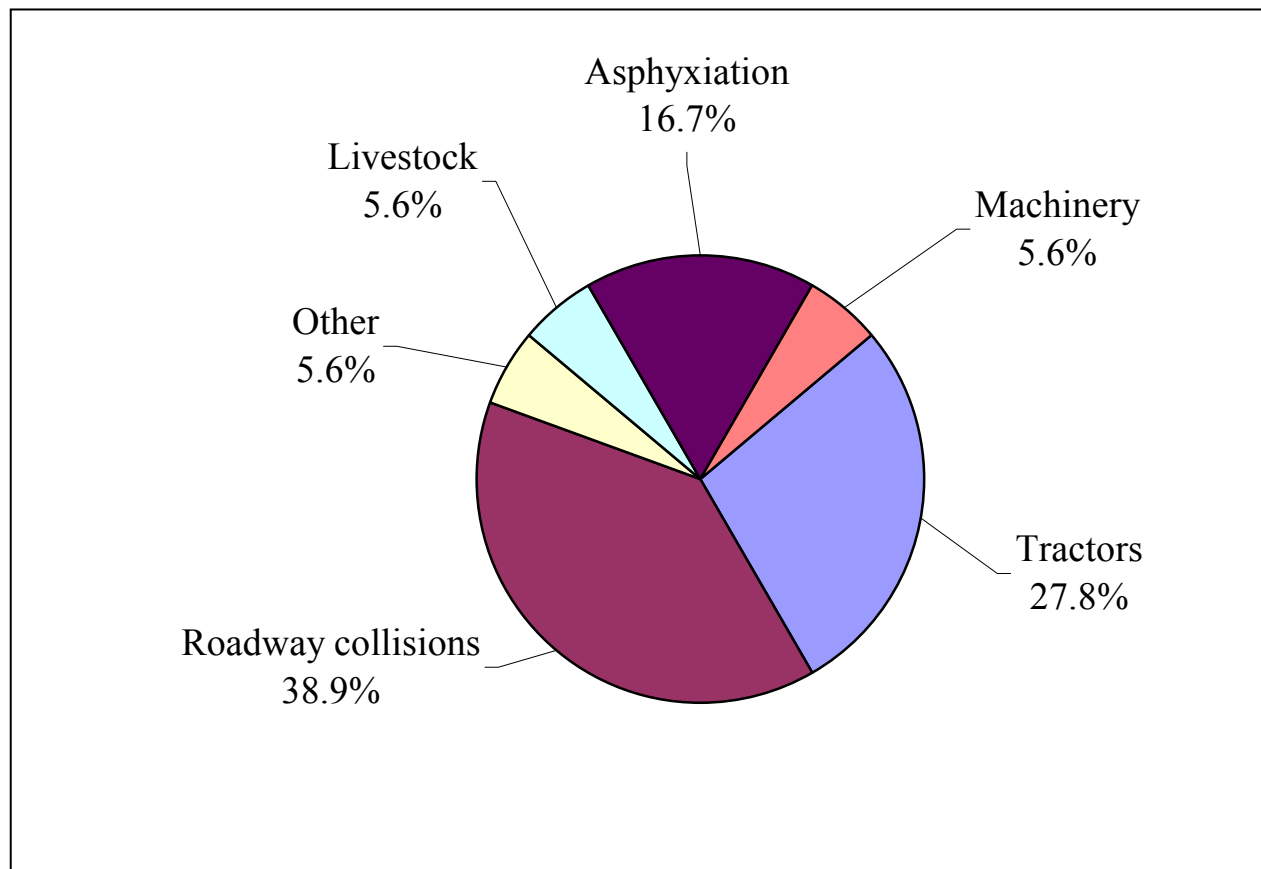


Figure 1. Distribution of 2003 Indiana farm work-related fatalities by general type of incidents.

Table 3 provides a more detailed listing of fatalities occurring in Indiana counties in 2003. Fatal farm work-related incidents are described here by (1) date of incident, (2) county of report, (3) age of victim, (4) gender of victim, (5) description of circumstances surrounding the incident, and (6) the Farm and Agricultural Injury Classification (FAIC) Code. The FAIC code is used to facilitate consistent and accurate classification of farm and agriculture-related injuries. Additional information on the FAIC code is available from the American Society of Agricultural Engineers² or by contacting Purdue's Extension Safety Specialist.

The FAIC code system:

- parallels, to the extent appropriate, current nationally established methods for classifying and assigning work-related injury cases to an industry;
- provides a systematic scheme for separating farm production work cases from non-farm-production work cases; and
- permits the identification of cases that uniquely reflect the situational exposures predominate to the agricultural industry.

² ASAE Standard S575.1, 2002. ASAE, 2950 Niles Road, St. Joseph, MI 49085. Tel: 616-429-0300

	Date	County	Age	Sex	Description of incident	FAIC ³
1	May 26	LaGrange	1	M	Victim drown in horse trough.	7
2	May 26	Adams	88	M	Victim driving vehicle collided into the rear of tractor-implement combination.	9
3	May 27	Daviess	14	M	Victim driving ATV collided into the rear of tractor-trailer combination.	9
4	June 06	Wabash	46	F	Victim trampled by a bull and 3 cows.	1
5	June 15	Perry	74	M	Tractor roll-over while hauling large round bale.	1
6	July 25	Steuben	43	F	Victim riding on motorcycle collided into oncoming tractor-grain wagon combination	9
7	July 29	Gibson	65	M	Tractor roll-over in wooded area. Tractor had front-end loader attached.	-
8	Aug. 04	Miami	52	M	Barn collapsed on victim trapping him.	-
9	Aug. 09	Tippecanoe	73	M	Victim run over by mower after falling off tractor.	1
10	Aug. 15	Harrison	23	M	Victim driving vehicle on interstate collided into a cow that had fallen off trailer.	9
11	Sept. 08	Wabash	47	M	Victim run over by tractor after falling off.	-
12	Sept. 23	Boone	77	M	Victim driving tractor turned left and was struck by a semi tractor-trailer attempting to pass.	-
13	Oct. 06	Rush	-	M	Victim driving pickup truck collided into oncoming loaded bulk fertilizer truck.	9
14	Oct. 31	Daviess	69	M	Tractor roll-over while hauling concrete with front-end loader.	-
15	Nov. 03	Monroe	75	M	Victim driving motorcycle attempting to pass collided into tractor-grain cart combination.	9
16	Nov. 04	Jefferson	92	M	Victim pinned underneath front wheel of tractor.	1
17	Nov. 17	Daviess	49	M	Grain entrapment inside bin.	1
18	Dec. 24	Wayne	54	M	Grain entrapment inside bin.	1

Table 3. Listing of 2003 Indiana farm work-related fatalities.

Figure 2 represents a geographic distribution of Indiana’s documented farm-related fatalities in 2003. Daviess county had three fatalities and Wabash county had two. Figure 3 represents a geographic distribution of 646 of Indiana’s 719 documented farm-related fatalities in the years 1980 through 2003 where the county of residence was known. The four counties with the most identified fatalities over the past 24 years were Elkhart with 20, LaGrange with 19, and Greene and Dubois with 15.

³ FAIC-1 Farm production work.
FAIC-7 Farm hazard exposure, non-workers: structures and landscape.
FAIC-9 Farm hazard exposure, roadway collision.
No FAIC It could not be determine if the incident occurred during a farm work activity or not.

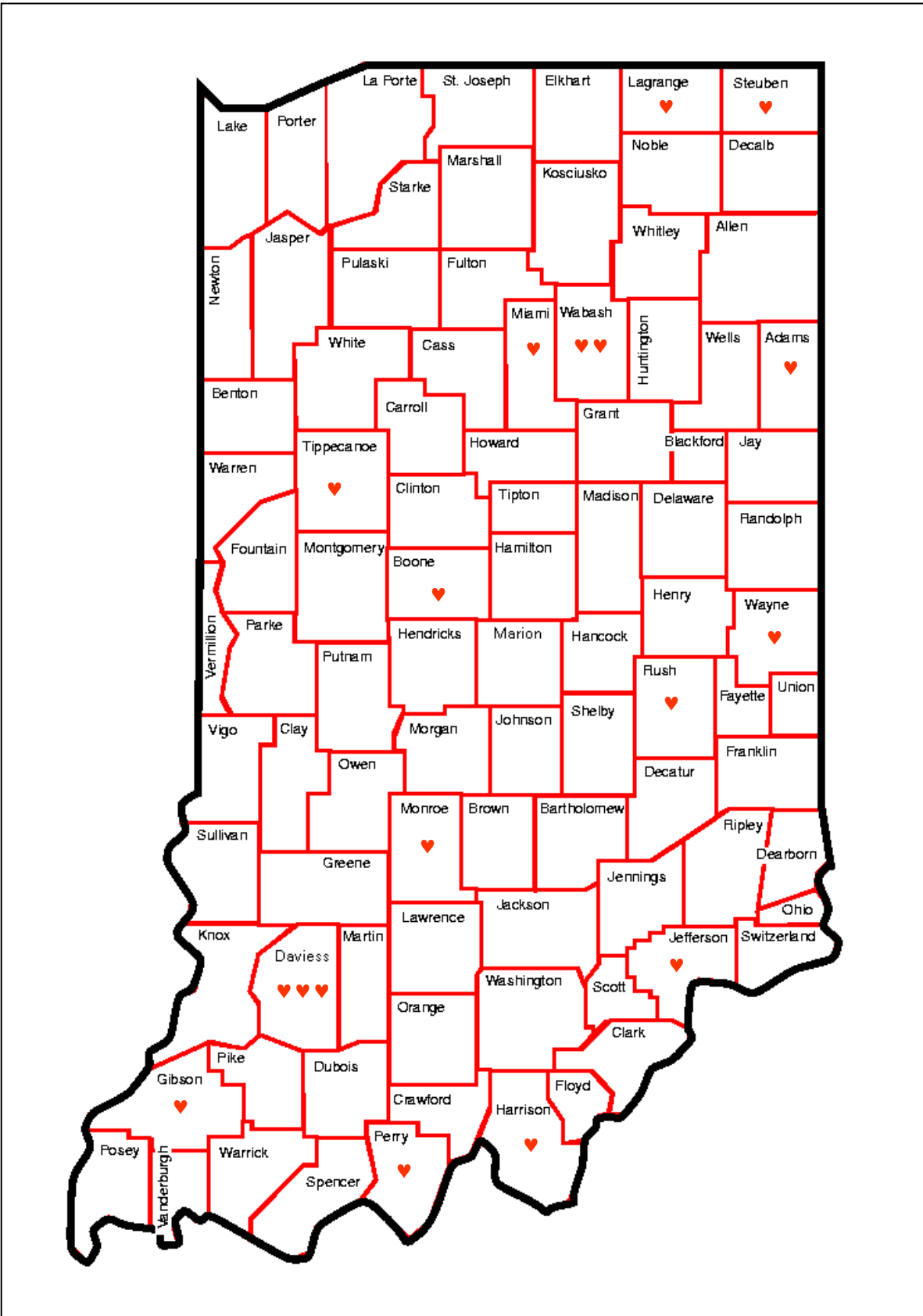


Figure 2. Geographic distribution of 2003 Indiana farm work-related fatalities.

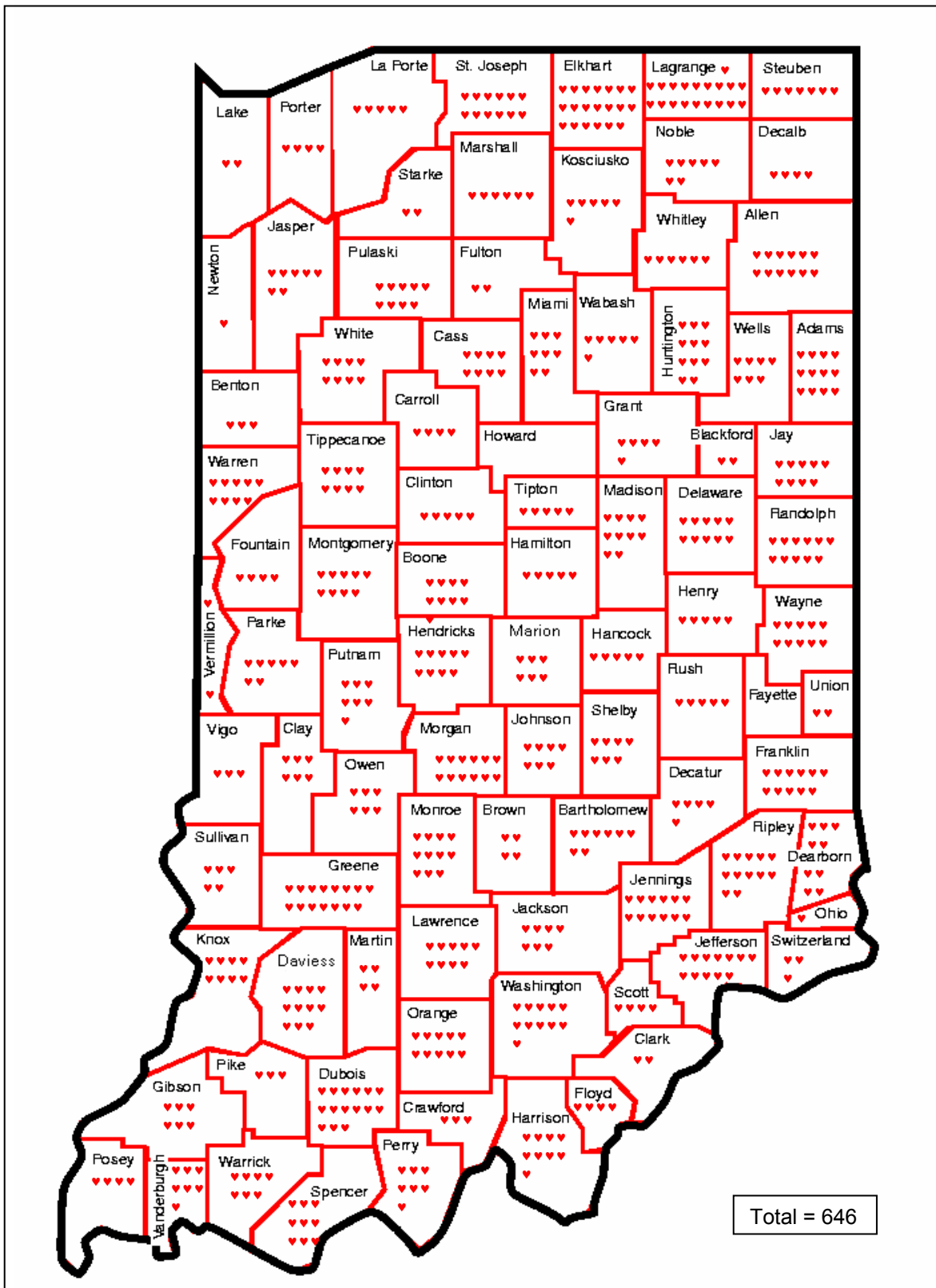


Figure 3. Geographic distribution of Indiana’s farm work-related fatalities from 1980 through 2003.

Figure 4 presents a trend of identified farm-related fatalities over the past 34 years. It is believed that 1998 recorded the lowest number of fatalities of any year since Purdue’s Agricultural Safety and Health Program has been keeping records. Through 1999 and 2000, identified fatalities increased but the trend continued to be decreasing. Fatalities again decreased in 2001, 2002, and 2003.

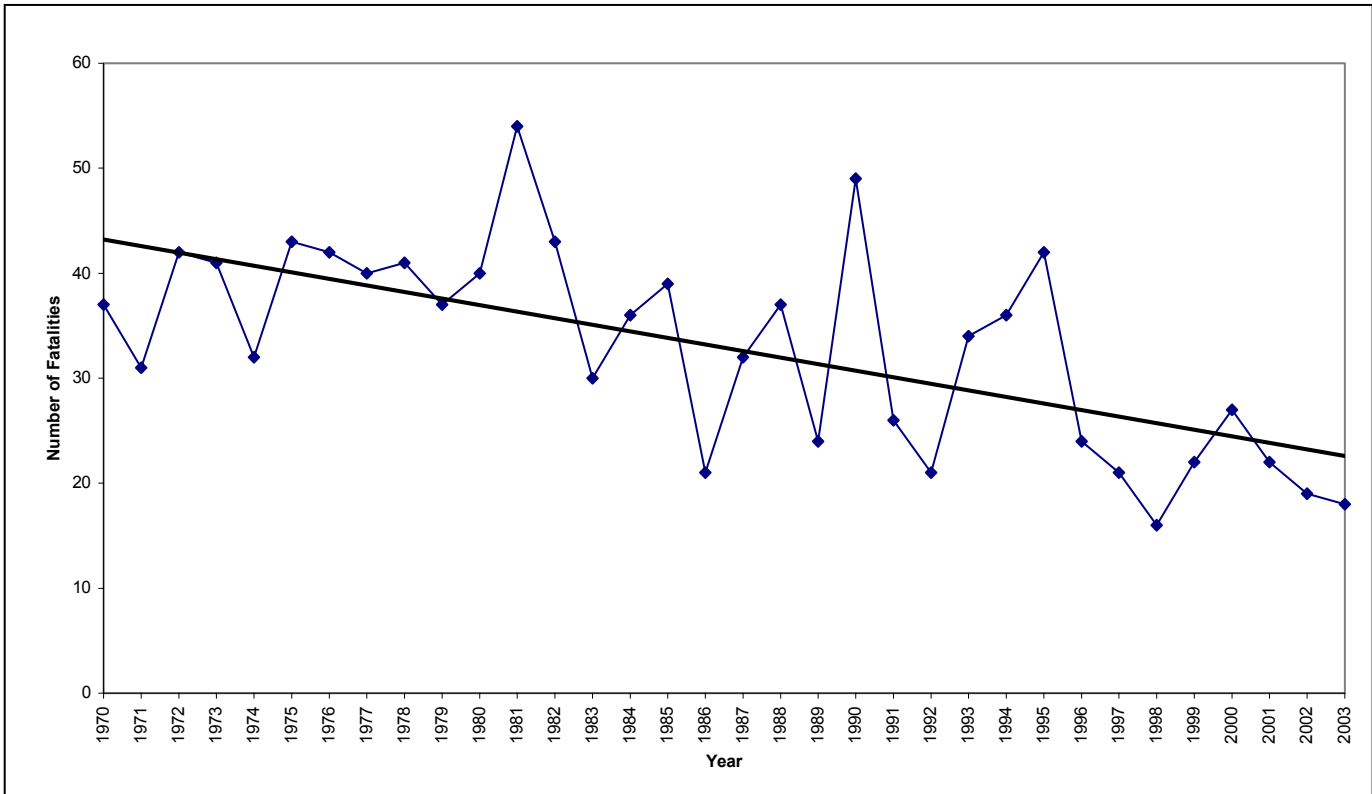


Figure 4. Annual summary of farm work-related fatalities.

Using the number of 60,271 productive farms in Indiana with a sales of over \$1,000, it was estimated for 2003 that 1 out of every 3348 farms experienced a farm-related fatality.⁴ Using an estimated population of 120,000 who operate or earn a wage employed on a farm in Indiana, the death rate was approximately 15 per 100,000 farm workers.⁵ The rate compares to an estimated national death rate of 3.9 per 100,000 for workers in all industries and 21.3 per 100,000 for those engaged in agricultural production.⁶ It is believed, however, that the Indiana rate would be lower if unpaid family labor was included in the population of those exposed to farm hazards on a regular basis. Furthermore, the National Safety Council data does not include children under 16 in their calculation of rates while Purdue’s

⁴ The **estimated number of farms** comes from the preliminary report of the 2002 US Census of Agriculture.

⁵ The **estimated farm population** who operate or earn a wage employed on a farm was approximated using US Census of Agriculture data from the 1997 report and the preliminary 2002 report.

⁶ The **estimated death rates** come from the National Safety Council Injury Facts, 2002 ed.

Agricultural Safety and Health Program does if the children were involved with or exposed to farm work activities.

Summary of Reported Fatalities Not Included in the Farm Fatality Report

Several of the fatalities that were reported by the clipping services in 2003 were not included in the Indiana farm fatality report because they were determined to be non-farm-related. Two cases involved men who apparently had a heart attack while driving a tractor. One man was between the age of 45 and 50, and the incident occurred in June in Gibson county. The other man was 71, and the incident occurred in July in Vermillion county.

Six other reports were received that were also determined to be non-farm-related. One was a report about a grain elevator reopening after the death of the owner. Two were reports about lawnmower roll-overs in non-farm settings occurred to a 46-year-old man and a 52-year-old man. One case reported the death of a man in September due to complications from burns that he had received that summer. He apparently was involved in a gas explosion caused by static electricity while refueling his lawnmower. Another case was a 20-year-old man who drowned while swimming in a farm pond. The remaining case was a 32-year-old female who was struck by a semi tractor-trailer when she stopped to help a motorist parked in the emergency lane.

Also reported by the clipping service were four incidents that did not occur in Indiana. In one case, a 66-year-old Michigan farmer was trapped between a plow and a mower deck when he was trying to remove clogged weeds. In another case, a 9-year-old Kentucky boy died when his tractor flipped while he was attempting to free another tractor. Two Ohio cases were reported - both as farm-related mowing incidents. One case was a 7-year-old boy who was struck by a mower, and the other was a 78-year-old man involved in a tractor roll-over.

Summary of Indiana's Farm-Related Injuries and Their Economic Impact

Farm-related injuries are not comprehensively documented by any source in the state. Therefore, there is little data on the frequency and severity of injuries occurring during farm work. However, many of Indiana's farm-related injuries that were identified through clipping services in 2003 were severe. The incidents reported included tractor roll-overs, grain auger entanglements, being crushed by farm equipment, being crushed by animals, gun shots, and several roadway collisions. Commonly, the victims had to be airlifted to hospitals. These incidents resulted in the following severe injuries: hand and leg amputation, skull and other bone fractures, severe internal injuries including punctured lungs and ruptured blood vessels, and severe burns. Four of the victims were females and known ages of recorded victims ranged from 2½ to 78. Three of the roadway collisions resulting in fatalities also resulted in severe injuries to others involved.

It is estimated, based upon prior research, that approximately 1 out of every 9 farms annually experiences a farm-related injury requiring medical attention. Based upon the estimated 60,271 farms in the state, it can be projected that in 2003 there were approximately 6,700 treated injuries. Prior research

by the National Safety Council suggests that 2% of reported farm injuries result in permanent disabilities which indicates that approximately 130 such cases occurred in the state in 2002.

To gain a perspective of the potential economic impact of farm injuries to the state, a conservative estimated medical treatment cost of \$1,000 per injury would result in an economic loss of \$6.7 million excluding the costs of transportation to receive medical services, replacement labor, property damage, emergency services, and long-term rehabilitation services. This estimated total, however, would be substantially increased if both the direct and indirect costs associated with the 19 fatalities and the 130 permanent disabilities were included. For example, the estimated cost of medical and rehabilitation care for a person experiencing a permanent spinal cord injury now exceeds \$1 million.

Even though the total number of fatalities and injuries have been on the decline, it is believed that the economic impact on the state is on the rise due to the significant increase in medical and rehabilitation costs. This is especially problematic considering that a disproportionate number of farm families do not carry or cannot afford sufficient health care insurance. A single serious injury can result in almost unsurmountable financial disaster for an otherwise successful farm family.

Another issue that can create significant hardships for both Indiana farm families and hired farm labor is that most are not covered by or are not eligible for coverage by state workers compensation programs that nearly all employees of other industries have available to them. Therefore, an on-the-job injury can result in both excessive personal debt due to medical costs and long-term loss of income. The lack of both affordable health care insurance and insurance for lost wages due to injury are complex issues that need attention to ensure that the economic impact of work-related injuries on the state's farm families and agricultural workforce is minimized.

The Changing Agricultural Workforce

Over the past 25 years, the agricultural workforce in Indiana has changed dramatically. In 1978, when the Occupational Health and Safety Act (OSHA) was passed by Congress, there were fewer than 100 farm operations in Indiana that were required to comply with the workplace safety and health provisions of the Act due to their workforce exceeding 10 non-family member employees. In 2002, the estimated number that could be interpreted as needing to be in compliance has grown to around 850. Many of the farms have grown slowly and quietly, and their owners may not even realize that they should be in compliance with OSHA.

Another major change has been the rapid growth in the number of Hispanics that are now employed in agricultural production operations on a full-time basis. This trend is especially notable on dairy, poultry, and hog operations. Many of these workers have limited English speaking skills and lower literacy levels that make traditional agricultural safety and health resources ineffective. To address the workplace safety and health needs of this new workforce, attention will have to be given to developing new and innovative instructional material that addresses the hazards of newer and more complex farm operations, that are culturally sensitive and delivered in a format that can be interpreted by the target audience.

For additional information, contact 765-494-1191 or visit www.farmsafety.org.