

# Purdue University

## *Agricultural Safety and Health Program*

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# 2019 Indiana Farm Fatality Summary with Historical Overview<sup>1</sup>

Compiled by the Purdue University Agricultural Safety and Health Program

Agricultural and Biological Engineering Department  
225 S University St.  
West Lafayette, IN 47907

For additional information contact:

Yuan-Hsin Cheng, Ph.D. at [cheng140@purdue.edu](mailto:cheng140@purdue.edu)  
Dr. Bill Field at (765) 494-1191 or [field@purdue.edu](mailto:field@purdue.edu)  
Edward Sheldon, M.S. at [ejsheldo@purdue.edu](mailto:ejsheldo@purdue.edu)

### Abstract

Purdue University's Agricultural Safety and Health Program has been monitoring farm-related fatalities in Indiana for nearly 60 years. The earliest identified summary of cases, published in 1966, examined 76 fatalities reported during 1963.<sup>2</sup> Purdue's fatality database, though acknowledged as not being comprehensive of all farm-related deaths, provides a unique capacity to explore trends that have occurred over several decades, during which time agricultural production experienced considerable transformation in technology and practices. Analysis of only recent fatality data, for example, fails to recognize that during the 1940's and early 1950's the leading identifiable cause of death was livestock, primarily horses and bulls. These animal-related causes of injury and death largely have been replaced, at a much lower frequency, with tractors and machinery. The fatality data continues to show a general downward trend that parallels the decline in the number of farm operations, which has likely contributed more to the reduction in farm-related fatalities than any other single factor.<sup>3</sup> The farm-related fatality rate, however, remains one of the highest of all Indiana occupations.

Publication of the annual summary is viewed as a tool in keeping the public aware of the fact that our food comes at a cost that is not included in the prices we pay at the grocery store or farmer's market.

The 21 documented cases in 2019 is a significant decrease from the 33 fatalities identified in 2018, and reflects the continuing historical trend of a declining number of annual fatalities. However, five of the previous six years actually exceeded the 10-year average of 27 fatalities per year. Three victims were children 5 years of age or younger, and 11 victims were age 60 and older, including 6 over the age of 70. Incidents involving those 60 and older now account for nearly half of all documented cases over the past five years, including 52% in 2019. Tractor-related incidents still comprise the largest portion of fatalities, representing as

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<sup>1</sup> Appreciation is extended to Executive Director Stacy Wart, BLS Coordinator Joseph Black, and Survey Assistants Richard Clark and Rhapsody Owens with the Indiana Department of Labor Quality Metrics & Statistics Division for contributing to this report.

<sup>2</sup> Mitchell, Bailey W. (1966) Indiana Farm Accident Report 1963-1965. Purdue University, West Lafayette, IN.

<sup>3</sup> Data from USDA National Agricultural Statistics Service

[https://www.nass.usda.gov/Quick\\_Stats/Ag\\_Overview/stateOverview.php?state=INDIANA](https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=INDIANA)

[https://www.nass.usda.gov/Statistics\\_by\\_State/Indiana/Publications/Annual\\_Statistical\\_Bulletin/index.php](https://www.nass.usda.gov/Statistics_by_State/Indiana/Publications/Annual_Statistical_Bulletin/index.php)

many as 75% of all documented cases in some years. Over the past 50 years, tractor overturns have accounted for the single largest category of farm-related deaths, even considering that Rollover Protection Structures (ROPS) have been standard equipment on new tractors since 1985. In 2019, there were 8 documented fatalities that involved tractors or skid steer loaders, of which 3 (37.5%) were related to an overturn and 3 involved a tractor or skid steer rollover. Findings suggest that over the last decade the diversity of agents involved in farm-related fatalities has been increasing, Males continue to comprise a large majority of farm-related fatalities, and the average age of all victims was 50.7, younger than the current average age of Indiana farmers of 55.5.<sup>4</sup> No female fatalities were documented in 2019, after 5 females lost their lives on Indiana farms in each 2017 and 2018. Amish/Old Order communities in the state still account for a disproportionate share of farm-related deaths. Hazards identified as needing special attention include the use of older, non-ROPS equipped tractors and self-propelled mowers on steep grades; working in wood lots and tree felling on farms; ATV and UTV operation on farms; working with livestock, including horses and bulls; and extra riders on equipment. Findings are being used to guide the allocation of injury prevention resources.

### **Methods of Data Collection**

The 2019 Indiana Farm Fatality summary was compiled by Purdue's Agricultural Safety and Health Program from a variety of sources, including published news reports, web searches, voluntary reporting from Extension educators and others, and voluntary feedback from witnesses, family, or responders. No additional cases were identified from sources outside of the state, including federal government sources such as the Census of Fatal Occupational Injuries or Bureau of Labor Statistics. Data were compared with findings by the Indiana Department of Labor and adjusted to reflect differences due to data interpretation, data collection sources, and occupational classification. There is no claim made that the presented data are comprehensive but rather represent the best assessment currently available.<sup>5</sup>

There is no requirement to report farm-related injuries or fatalities to a central location, as is mandated for most other industry classifications under the provisions of the Occupational Safety and Health Administration (OSHA). Currently, there are no known efforts being made nationally to enhance the quality of Indiana farm-related fatality and injury statistics beyond the level of reporting found in these annual summaries. The Bureau of Labor and Statistics maintains records on fatalities in farming for all states, but that set of data combines farming, fishing, forestry, and hunting fatalities, and often excludes incidents on smaller farm operations, children involved in farm-related activities, or unpaid family workers. In other words, the actual frequency of these incidents continues to be underreported.

It should be noted that several other Midwestern states no longer have the capacity to document and report on these incidents beyond the limited data available from the Census of Fatal Occupational Injuries, which has historically underreported farm-related fatalities. Some key agricultural states have eliminated or diminished their land grant university-based farm safety efforts and, due to prohibitions in federal appropriation language, federal and state OSHAs have generally maintained a hands-off approach to most agricultural production sites.

There were slight differences in reporting of fatalities between Purdue and the Indiana Department of Labor due to variances in how workers and events are classified. For example, the Purdue summary has traditionally excluded most motor vehicle crashes which do not involve transport of agricultural equipment or crops, or that could be specifically linked to farm work-related activities. Children involved in farm work have also been historically included in the Purdue report, whereas they may not be in the Department of Labor summary due to their classification as non-employees. As noted by the annual Census of Fatal Occupational Injuries, deaths on Indiana farms have had a long history of representing a disproportionate share of the state's workplace fatalities. The Indiana Department of Labor documented 30 fatalities in 2018 and classified agriculture as the state's second most hazardous industry.<sup>6</sup>

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<sup>4</sup> Data from Indiana State Department of Agriculture <https://www.in.gov/isda/3555.htm>

<sup>5</sup> Differences may be found in reporting of prior years due to the addition of previously unidentified cases to the database.

<sup>6</sup> <https://www.bls.gov/iif/oshwc/foi/tgs/2018/iiffw18.htm>

## Description of 2019 Farm-related Fatalities

Description, dates, and locations of the 21 fatalities documented as agricultural workplace incidents are provided in Table 1. Again, it should be noted that the list may not be comprehensive due to the lack of consistent reporting requirements, Indiana residents transported to and dying at medical facilities in neighboring states, and victims dying after the injury event due to related medical complications. The list does not include fatalities to farmers due to motor vehicle crashes involving farm vehicles (unless determined to occur when conducting farm work tasks), conditions such as heart attacks or heat stress that were not directly attributed to work activities, or medical complications from workplace health hazards such as chronic pesticide exposure. Little or no data exists on the impact these agents, including agricultural chemicals, have on Indiana farmers and farm workers.

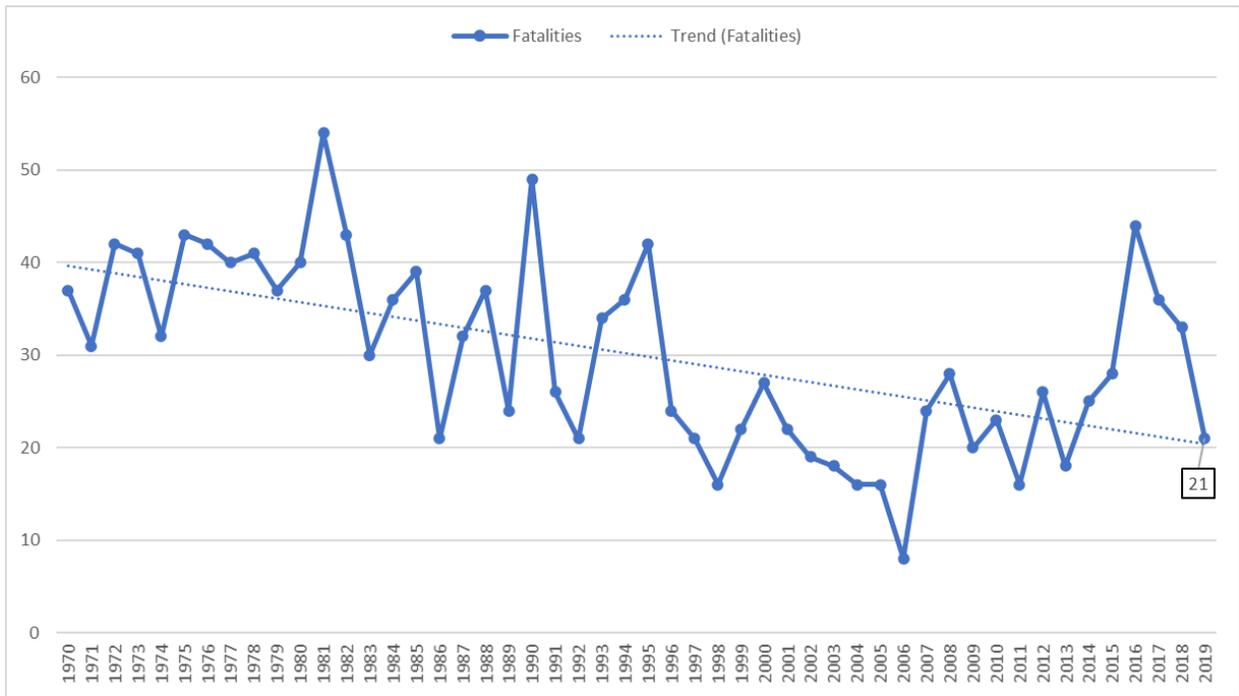
**Table 1. Description of Documented 2019 Farm-Related Fatalities**

Date	County	Age	Sex	Description
2/9	Daviess	M	37	Tree limb fell and hit him in head
3/25	Elkhart	M	68	Tractor rollover at dealership while unloading
3/28	Vigo	M	82	Fell from tractor “platform”
4/24	Lawrence	M	61	Jack collapsed while victim was repairing tractor
5/16	Grant	M	75	Tractor runover
5/30	Putnam	M	68	ATV crash on farm
6/26	Harrison	M	62	Tractor rollover resulting from crash with motor vehicle
8/6	Vigo	M	81	Tractor rollover ravine - drowning
8/23	Wabash	M	65	Farming incident, died on 9/4
9/1	Ripley	M	47	Bucked off horse
9/16	Marshall	M	22	Dairy farm explosion
10/19	Elkhart	M	3	Accident blunt force trauma death on farm property
10/20	Orange	M	88	Tractor runover
10/23	Hamilton	M	47	Runover by combine after falling while attempting to climb onto machine
11/5	Tippecanoe	M	32	Motor vehicle crash while working
11/10	Monroe	M	80	Struck by log while repairing pasture fence
11/19	Kosciusko	M	3	Runover by grain semi
11/19	Kosciusko	M	5	Runover by grain semi
11/22	Montgomery	M	18	Grain entrapment
11/26	Sullivan	M	71	Single vehicle crash of grain truck hauling corn
12/10	Knox	M	50	Kicked or stepped on by horse

## Summary of Findings

A total of 21 farm-related fatalities were documented in Indiana during 2019. This is 30.5% lower than the average number of fatalities documented annually since 1970 (30.2). The lowest number ever documented in the last 48 years was 8 in 2006. The highest numbers documented in the last 50 years were 54 in 1981, 49 in 1990 and 44 in 2016. Though the total average number of annual fatalities over that 50-year time span has continued downward, a spike in numbers in 2016, 2017, and 2018 slowed that encouraging trend.

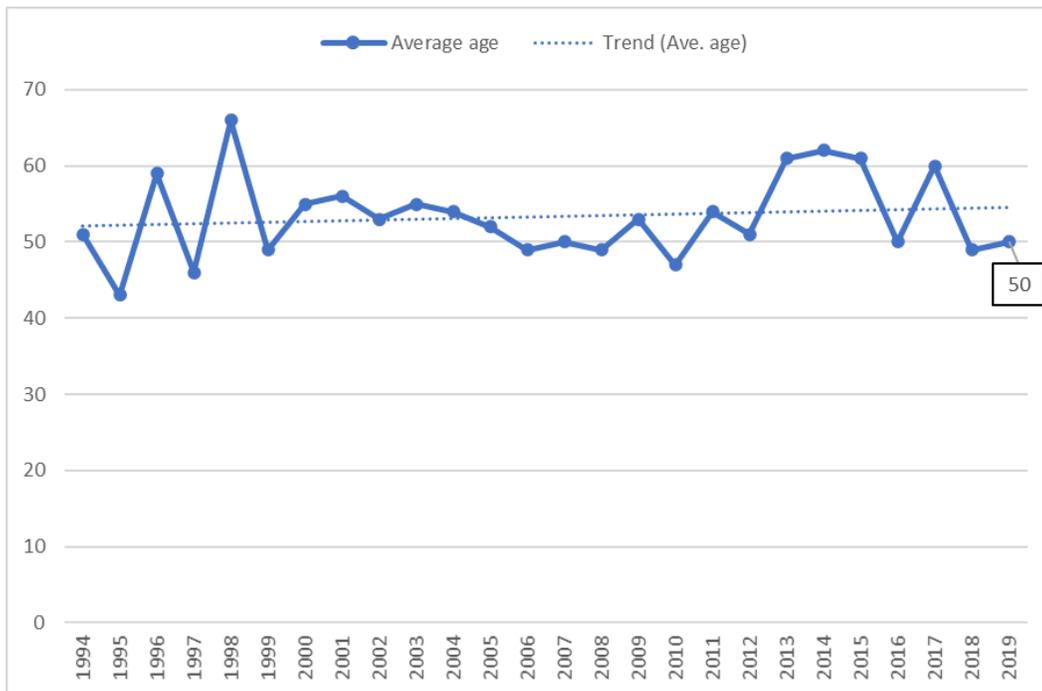
Figure 1 provides a 50-year historical look at the frequency of documented fatalities since 1970. The frequency of these events has been rather erratic over the years, but as previously indicated, there has been an overall decline in the average annual number of fatal incidents. It should be recognized that during early years incidents were less likely to be documented, making the decline even more noteworthy.



**Figure 1. 50 year summary of farm-related fatalities: 1970-2019**

No specific factor(s) has been identified that has contributed to the reoccurring spikes (or declines) in frequency. Other than incidents involving tractors and farm machinery, agents of injury have varied widely. This lack of consistency makes targeting limited prevention resources difficult, except for tractor-related incidents. The continued incidence of tractor rollovers indicates that a greater focus on the value of Rollover Protection Structures (ROPS) - especially on tractors used for mowing - could prove beneficial. The continued occurrence of children and youth involved in fatal incidents in 2019 highlights the importance of injury prevention educational programs targeting those under the age of 18.

The age of the victims in 2019 ranged from 3 to 88 and averaged 50.7, which is lower than the average age of Indiana farmers, currently at 55.5. A true comparison cannot, however, be made since the pool of farmers included to determine the average age does not include children under the age of 18. Historically, farmers over the age of 60, including many who work only part time, have accounted for a disproportionate number of farm-related injuries.



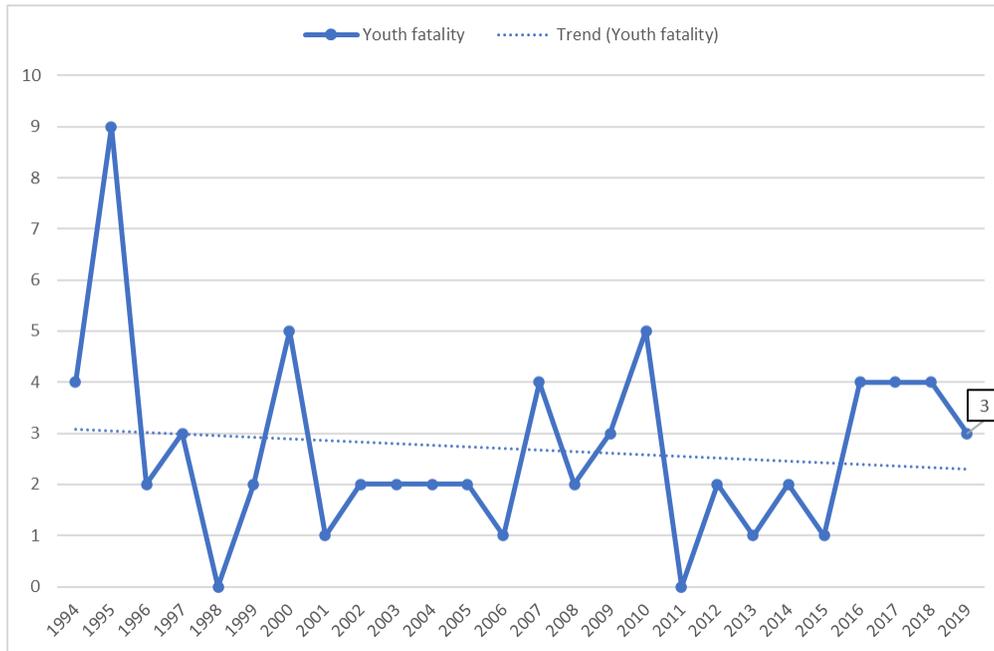
**Figure 2. Average Age of farm-related fatalities 1994-2019**

The 3 fatalities involving children and youth accounted for 14.3% of the total fatalities and contributed to the lower average age of victims in 2019. Figure 2 shows an upward trend in the average age of fatality victims over time, reflecting the increasing average age of farmers and generally fewer fatalities involving children and youth.<sup>7</sup>

The historical data do show an overall decline in the frequency of farm-related fatalities involving children and youth under the age of 18, who have historically accounted for a disproportionate share of total farm deaths. In some early years nearly one third of fatalities were children and youth.

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<sup>7</sup> [https://www.nass.usda.gov/Quick\\_Stats/Ag\\_Overview/stateOverview.php?state=INDIANA](https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=INDIANA)



**Figure 3. 50 year summary of youth farm-related fatalities: 1970-2019**

The overall historical decline in the number of children being reported as dying in agricultural workplaces is extremely encouraging. As such, it is hoped that the slight increase in the number of younger victims over the past four years is a statistical outlier. It is believed that the changing expectations of parents and the general public towards having children and youth employed in some types of farm work considered especially hazardous has had a significant influence on the continuing downward trend in fatalities involving this group. There may also be greater compliance with child safety related regulations, including the Hazardous Occupations Order for Agriculture. The introduction of larger, more complex and expensive equipment has also made many producers less comfortable using young or inexperienced workers to operate it.

Table 2 summarizes documented incidents during the period 1994 to 2019 involving youth and those 60 and older. During those 26 years, there were no fewer than 629 fatalities of which 70 were under the age of 18 and 302 were age 60 and older. Again, these two groups have historically represented a disproportional share of the total deaths, accounting for nearly 59% of the total. In 2019, these two age groups also accounted for 59% of documented fatalities.

**Table 2. Analysis of "youth" and "over 60" fatalities as percent of total farm-related fatalities**

Year	Deaths	Youth Deaths as % of Total	Deaths	Over 60 Deaths as % of Total	Deaths of Both Youth & Over 60	Percent of Both Youth and Over 60 Deaths	Average Age of Victim	Total Farm-Related Fatalities
	Ages		Age					
	1-17		60+					
2019	3	14%	11	52%	14	67%	51	21
2018	4	12%	16	48%	20	61%	49	33
2017	4	9%	18	50%	22	61%	60	36
2016	4	11%	15	33%	19	42%	50	44
2015	1	4%	16	57%	17	61%	61	28
2014	2	8%	17	38%	19	76%	62	25
2013	1	6%	10	56%	11	61%	61	18
2012	2	8%	9	35%	11	42%	51	26
2011	0	0%	8	50%	8	50%	54	16
2010	5	22%	9	39%	14	61%	47	23
2009	3	15%	12	60%	15	75%	53	20
2008	2	7%	11	39%	13	46%	49	28
1994-2007	39	17%	150	42%	189	58%	53	311
<b>Total/ Average</b>	<b>70</b>	<b>11%</b>	<b>302</b>	<b>48%</b>	<b>372</b>	<b>59%</b>	<b>53</b>	<b>629</b>

Table 3 highlights 26 years of tractor-related fatality data. During these years, tractors accounted for 278 or 44% of the total of all Indiana fatalities. The most frequent incident involved tractor upsets or overturns followed by runovers.

**Table 3. History of Indiana tractor-related fatalities**

<b>Year</b>	<b>Number of Tractor-Related Fatalities</b>	<b>Number of All Farm Fatalities</b>	<b>Percent of Tractor Related Fatalities in Total Fatalities</b>
<b>2019</b>	<b>8</b>	<b>21</b>	<b>38%</b>
<b>2018</b>	12	33	36%
<b>2017</b>	13	36	36%
<b>2016</b>	16	44	36%
<b>2015</b>	11	28	39%
<b>2014</b>	13	25	52%
<b>2013</b>	6	18	33%
<b>2012</b>	12	26	46%
<b>2011</b>	6	16	38%
<b>2010</b>	11	23	48%
<b>2009</b>	11	20	55%
<b>1994-2008</b>	159	339	47%
<b>Total</b>	278	629	45%

With approximately 56,000 productive farms in Indiana it was estimated that in 2019 one out of every 2,667 farms experienced a farm-related fatality.<sup>8</sup> Using a population of 139,000 operators and hired workers on farms in Indiana, the death rate was approximately 15.1 per 100,000 farm workers.<sup>9</sup> Indiana is often referred to as an agricultural state, although less than 1% of the workforce is employed in production agriculture. However, the agriculture industry has traditionally been responsible for one of the highest annual number of work-related fatalities in the state (Indiana Department of Labor, 2018). The estimated fatality rate of 15.1 per 100,000 Indiana farm workers in 2019 compares to an estimated national death rate of 3.5 per 100,000 for full-time workers in all industries and 22.8 per 100,000 for those engaged in agricultural production nationwide.<sup>10</sup>

It is believed, however, that the Indiana and national agricultural farm-related fatality rates would be lower if unpaid family laborers were included in the population classified as being exposed to farm hazards on a regular basis. For example, older family members may still be engaged in farm work but are not considered as employed labor in order to meet Social Security eligibility requirements. As noted, those 60 and older accounted for 52% of the reported fatalities in 2019. Furthermore, the National Safety Council data and the Census of Fatal Occupational Injuries historically have not included children under 16 in their calculation of rates, while Purdue’s Agricultural Safety and Health Program does if the child was involved with or exposed to farm-work activities.

<sup>8</sup> Estimated number of farms from the final report of the USDA/NASS 2019 State Agriculture Overview for Indiana.

<sup>9</sup> Estimated farm population of producers and hired workers on farms from the final report of the 2017 U.S. Census of Agriculture. This number does not include unpaid family labor such as retired family members and children.

<sup>10</sup> Estimated death rates from the U.S. Bureau of Labor Statistics (2018). <https://stats.bls.gov/iif/oshcfoi1.htm>

Figure 4 shows the distribution of all farm-related fatalities over the past 40 years when the county of location was known. Every county in the state has experienced multiple documented farm fatalities. Counties with the highest number of documented cases are as follows:

- Elkhart-35
- LaGrange-31
- St. Joseph-24
- Greene-23
- Dubois-22
- Franklin-20
- Adams-19
- Daviess-19
- Dearborn-19

Elkhart and LaGrange counties are home to the state’s largest Amish/Old Order populations. These groups have historically accounted for a disproportionate share of farm-related fatalities. In one recent annual summary, Amish/Old Order farmers and family members accounted for approximately one-third of all documented fatalities.

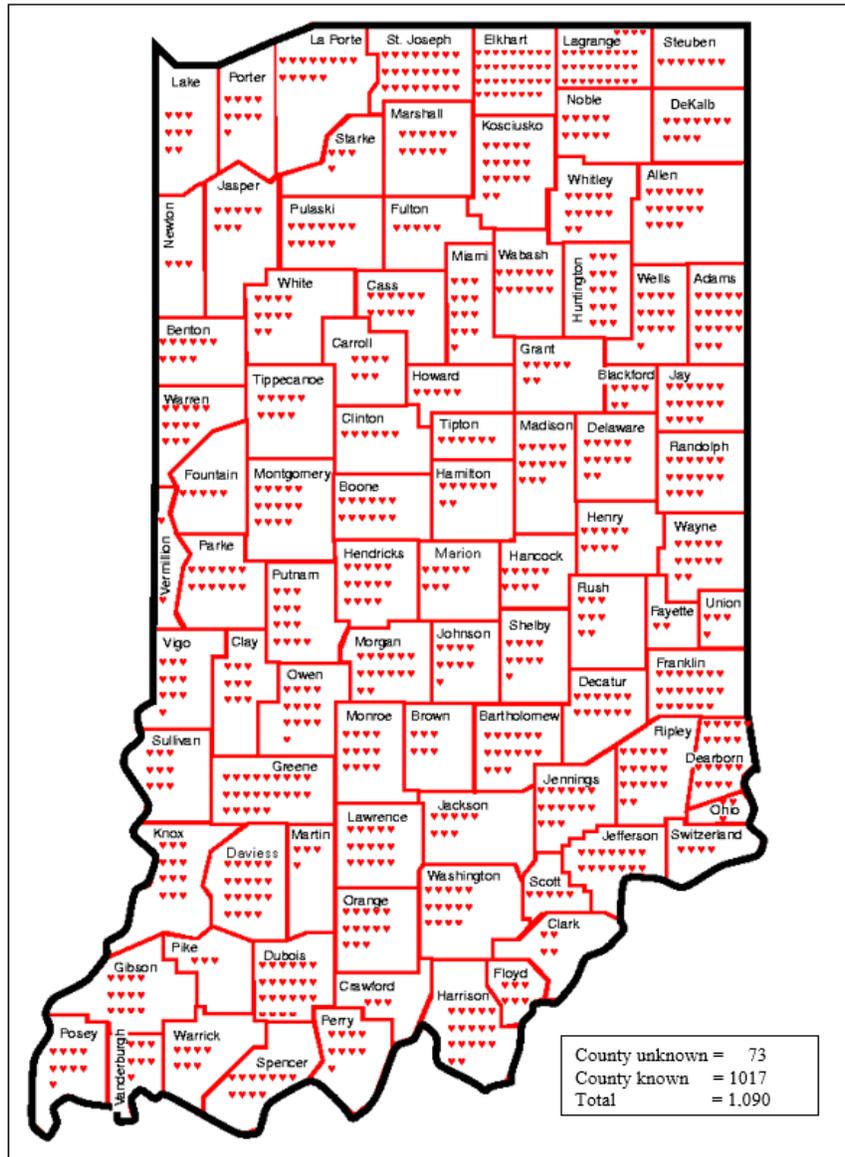


Figure 4. Geographic distribution by county of Indiana’s farm-related fatalities from 1980 through 2019

## **Monthly Distribution of Farm Fatalities**

During the 1970's and 1980's, the clear peak month for farm work-related fatalities was October.<sup>11</sup> More recently, the monthly distribution of fatalities has flattened. Over the past ten years, the months with the highest number of fatality incidents have been June and September. This is a shift from the trend during the 1970's and 1980's when there was a dramatic peak in fatalities later in harvest. It appears that the push for earlier harvest, possibly coupled with changing technology and work practices, has resulted in an earlier peak in the number of fatalities.

## **Summary of Indiana's Farm-Related, Non-Fatal Incidents and Their Economic Impact**

While the Purdue Agricultural Safety and Health Program attempts to be thorough in its surveillance of farm work-related fatalities, farm-related non-fatal injuries are not well documented by any source in the state. As a result, there is little data on the frequency, severity, and causes of injuries that occur annually during farm work. However, the relatively few Indiana non-fatal farm-related injuries that were identified in 2019 as part of the fatality surveillance efforts were generally severe. Several of the incidents resulted in loss of a limb, spinal cord or head injuries, and/or involved the use of medical helicopters for transport to a trauma center.

It is estimated, based upon prior research, each year approximately one out of every nine Indiana farms experiences a farm-work-related injury that requires medical attention. Based upon the estimated 56,000 farms in the state, it can be extrapolated that in 2019 there were approximately 6,222 treated injuries. Prior research by the National Safety Council indicated that 2% of reported farm injuries result in permanent disability. Applying the 2% estimate to Indiana's estimated 6,222 injuries, approximately 124 such cases occurred in the state in 2019. Most non-fatal farm injuries, however, are never reported in the media, and there is no requirement to report such incidents, including severe injuries, to any official agency. The need remains for a more comprehensive trauma registry that includes farm-related injuries. Such a record would be helpful in targeting prevention efforts toward high-risk activities.

An issue that creates significant hardships for both Indiana farm families and hired farm labor is that most are not covered by, nor can they afford, state workers compensation insurance programs that nearly all employees of other Indiana 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. In some cases, the anticipated costs may discourage injured workers from seeking needed medical attention.

The lack of both affordable health care insurance and insurance for lost wages due to injury in the agricultural sector are complex public policy issues that still need attention to ensure that the economic impact of work-related injuries on the state's farm families and agricultural workforce is minimized. Recent legislative changes have increased access to affordable health care insurance options for some farm families.

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<sup>11</sup> Summary of Indiana's Farm Work-Related Fatalities for 1980-1989 with Comparisons to 1970-1979, National Institute for Farm Safety presentation, June 17-21, 1990, Wilkinson and Field

**Table 4. Description of Documented 2019 Farm-Related Injuries (Non-Fatal)**

Date	County	Age	Sex	Description
4/29	Hancock	M	N/A	Barn fire
5/17	Newton	M	51	Tractor-Semi collision
5/20	Grant	M	75	Tractor runover
6/3	DeKalb	M	25	Tractor-motor vehicle collision
6/3	DeKalb	M	20	Tractor-motor vehicle collision
6/11	Benton	M	N/A	Tractor-motor vehicle collision
6/11	Benton	M	N/A	Tractor-motor vehicle collision
6/11	Benton	M	N/A	Tractor-motor vehicle collision
6/26	Harrison	F	45	Tractor-motor vehicle collision
6/26	Harrison	F	3	Tractor-motor vehicle collision
9/18	Franklin	M	72	Runover by silage wagon
10/24	Bartholomew	F	33	Tractor-motor vehicle collision
11/15	Elkhart	M	N/A	Leg got caught in corn picker

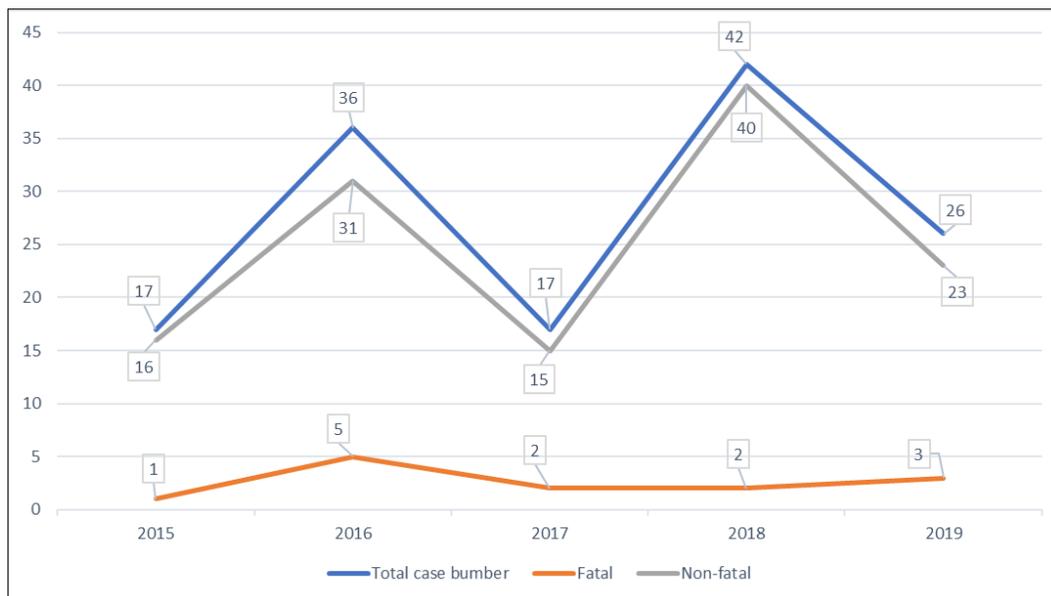
**Summary of Amish/Old Order Buggy-related Incidents**

Table 4 describes nine documented collisions between Amish buggies and motor vehicles in 2019. These events resulted in at least three fatalities and 23 injuries, several of which were life-threatening. Five incidents involved two or more injuries each. Individuals involved ranged from 2 to 42 years of age.

**Table 5. Description of 2019 Amish buggy-related incidents**

Date	County	Description	Injury	Fatality
1/7	Parke	Buggy and motor vehicle collision	1	0
1/9	Parke	Buggy and motor vehicle collision	2	0
2/19	LaGrange	Buggy and motor vehicle collision	1	0
3/27	Elkhart	Buggy and motor vehicle collision	1	0
7/17	Parke	Buggy and motor vehicle collision	1	0
7/18	Wayne	Buggy and motor vehicle collision	2	0
8/3	Carrol	Buggy and motor vehicle collision	9	0
11/2	Parke	Buggy and motor vehicle collision	2	2
11/26	Allen	Buggy and motor vehicle collision	4	1
<b>Total</b>			<b>23</b>	<b>3</b>

From 2015 to 2019, 138 buggy-related accidents were documented in Indiana, resulting in 13 fatalities. Most of the incidents involved a collision between a motor vehicle and a buggy, and many resulted in multiple injury victims. Documented ages of victims ranged from 1.5 months to 82 years, with victims under the age of 21 accounting for 59.3% of the cases where victim ages were reported. It should be noted that this type of occurrence is under reported and access to incident reports may be difficult to obtain. There is a need to give more attention to incidents involving Amish/Old Order horse-drawn vehicles on public roadways, as well as farm work-related injuries among these populations.



**Figure 5. Amish buggy-related incidents, 2015-2019**

### Fatal Injuries Involving Wood Cutting on Farms

Farmers over 55 years of age are at high risk of both fatal and non-fatal injuries related to occasional wood cutting activities, such as trimming, cutting and removing of trees and tree limbs. From 1988 to 2017, there were 40 documented wood cutting related fatalities involving farmers 55 year or older, which represented 10.3% of all farm-related fatalities to individuals over 55 years old. During 2019, at least two wood cutting fatalities were documented on Indiana farms, with victim ages of 37 and 82.

Historically, 65% of wood cutting fatality victims were over 64 years old. All fatalities have been male with the average age of 67.4. The majority of fatalities were caused by cutting and trimming of trees (27 cases or 67.6%) and operating tractors during wood cutting activities with 12 cases (30%). The most common specific cause of injury was being crushed by a tree or tree limb with 16 cases (40%). These types of incidents are preventable, and the role of aging should be considered as one of the most significant contributing factors. Prevention strategies should address: 1) the factors associated with aging, 2) the risks of tree felling, 3) the use of personal protective equipment, and 4) the hazards involved with operating tractors in wooded areas.

### The Changing Agricultural Workforce

The increasing number of small farms is an important change occurring in rural communities. These audiences of part-time “hobby” or small highly-diversified farmers have very different educational needs as compared to larger commercial operations. A review of fatality data over the last few years suggests that these smaller operations account for a disproportionate share of all documented fatalities, as compared with larger or full-time operations. A significant contributing factor is the use of older, less safe machinery on these smaller operations, especially older tractors without ROPS. In some cases, horses are being considered as a “greener” alternative to tractors, without recognition that horses were once the leading cause of farm-related fatalities.

The recent claims regarding the increasing numbers of women engaged as owner/operators of Indiana farms cannot be proven by any significant increase in the number of women dying or being injured as the result of being involved in farm work. Historically over 95% of all farm workplace fatalities have been male. Considering that an estimated 5,600<sup>12</sup> principal farm operators in Indiana are female, it could be expected that there would be a larger number of fatalities or work-related injuries involving women, if these women were engaged in production-related activities. Of the 187 total documented fatalities over the past five years only 16

<sup>12</sup> [https://www.nass.usda.gov/Quick\\_Stats/Ag\\_Overview/stateOverview.php?state=INDIANA](https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=INDIANA)

(8.6%) were female. There were no documented female fatalities in 2019. However, there were four female fatalities in 2016, 5 in 2017, and 5 in 2018, each representing an unusually high number of incidents when compared with historical data.

### **Incidents Involving Agricultural Confined Spaces**

Since 1978, Purdue University has been documenting agricultural confined space incidents throughout the United States. Over 2,100 cases have been documented and entered into Purdue's Agricultural Confined Spaces Incident Database. For a summary of these incidents visit [www.agconfinedspaces.org](http://www.agconfinedspaces.org).

Indiana ranks number one historically in the number of documented grain entrapments. In 2019 there was one documented entrapment fatality. It is believed that Indiana's high national ranking for this type of fatality has more to do with the aggressive nature of Purdue's surveillance efforts in the state over the past 40 years rather than the actual number of incidents that occur in other states.

### **Farmer Suicides**

In recent years, there has been considerable media attention focused on the issue of farmer suicides. Given the precarious farm economy, especially in the crop and dairy sectors, many farm families are undoubtedly facing severe financial stress. However, no definitive data exist to indicate whether or not Indiana farm operators are at a significantly higher risk of suicide than the general population. The position taken by some media reports that farming is the most stressful of all occupations cannot be substantiated. A recent CDC study did indicate that workers in the farming, fishing, and forestry industries (as opposed to farm operators) do have an elevated suicide rate. However, this research was withdrawn due to statistical errors. Regardless, it is evident and appropriate that stress and/or behavioral health issues among the rural population are being recognized and addressed during this challenging time.

### **Conclusion**

Farm safety and health is not, nor will it ever be, a topic that will make the front page of the paper, turn the heads of legislators, or generate an outpouring of public support. However, the no fewer than 1500 Indiana farm families who have experienced the loss of a family member since 1970, including the 20 in 2019, know personally the effects these events last a lifetime.

If you are interested in learning more or supporting the work of Purdue's Agricultural Safety and Health Program, please feel free to call 765-494-1191 or visit [www.farmsafety.org](http://www.farmsafety.org).

Other online resources that may be helpful include:

- [www.agrability.org](http://www.agrability.org)
- [www.agconfinedspaces.org](http://www.agconfinedspaces.org)
- [www.youtube.com/USagCenters](http://www.youtube.com/USagCenters)
- [www.eXtension.org](http://www.eXtension.org)
- [www.necasag.org](http://www.necasag.org)
- [www.inprepared.org](http://www.inprepared.org)