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2021 Summary Report: Agriculture-, Forestry-, and Fishing-Related Fatalities in Florida[1]

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Introduction

Agriculture, Forestry, and Fishing (AgFF) is one of the most hazardous industrial sectors in the United States. According to the US Bureau of Labor Statistics (BLS) annual Census of Fatal Occupational Injuries (CFOI) data, the fatal work injury rate was 25.3 deaths per 100,000 full-time workers in farming, forestry, and fishing occupations, compared to a rate of 3.4 deaths per 100,000 full-time workers for all industries (total) (BLS 2022). Agricultural operations are not only hazardous for the workers, but also for the nonworkers such as family members, visitors, and other drivers sharing the same roads with farm equipment. These injuries usually are not captured by the traditional injury surveillance methods.

The purpose of this report is to summarize Florida's AgFF-related fatalities for 2021. This report helps to identify hazards and risks associated with agriculture, forestry, and fishing. The information from this report may be used by Extension educators, researchers, agricultural employers, and anyone interested in injury statistics. This report can contribute to the development of prevention plans that reduce the impacts of incidents in the Agriculture, Forestry, and Fishing sector.

Method

The data used in this report were from news clippings, obituaries, and death certificates. The death certificates were obtained from the Bureau of Vital Statistics at the Florida Department of Health (DOH). Fatalities included in this report are:

- Accidents
- Accidental drug overdoses (if the place of injury was the worksite)
- Workplace homicides
- Workplace suicides

The BLS's Occupational Injury and Illness Classification System (OIICS) (BLS 2012) was utilized to classify each fatality according to the primary source of injury, the secondary source of injury, and the event or exposure associated with the injury. The primary source of injury or illness identifies the object, substance, bodily motion, or exposure that directly produced or inflicted the injury. The secondary source of injury identifies the object, substance, or person that generated the source of injury or contributed to the event or exposure. The event or exposure describes the way the source of injury or illness produced or inflicted the injury or illness. This report only shows primary injury sources.

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Results

There were 36 fatalities recorded in Florida in 2021 (24 agriculture-, three forestry-, and nine fishing-related). Table 1 lists the summary characteristics of the fatalities and demographics of the victims.

Types of Fatalities

The Farm and Agricultural Injury Classification (FAIC) coding scheme (ASAE S575.3) is used to separate occupational work-related incidents (ASABE 2020). FAIC codes allow the identification of work cases as well as unique situational exposures in production agriculture, such as nonworkers in work environments. In many cases, there was not enough detailed information to make the code assignment; for those cases, we used the "Undeterminable" category (e.g., when a tractor in a roadway crash injuring the tractor operator could be coded as "undeterminable" because it is not clear if the operator was traveling for agricultural work at the time of the incident). Additionally, workplace suicides, homicides, and accidental overdoses were classified under the "Undeterminable" category (Table 2).

Agricultural Fatalities

Figure 1 shows the injury sources for agricultural fatalities. Vehicles caused 42% of the injuries. Seven fatalities were farm tractor-related. Other vehicles included passenger vehicles, pickup trucks, and tractor-trailers. Four victims were killed in incidents caused by horses. Environmental heat caused two fatalities. Two victims died of drug overdose. Two victims were killed in a machinery-related incident.

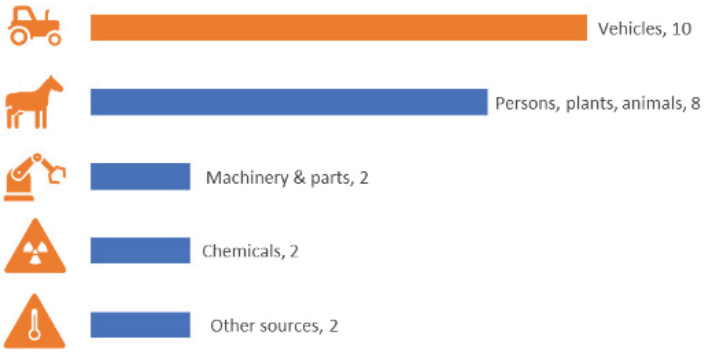

Figure 1. Fatalities by injury source.
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The following event/exposure categories contributed to the agricultural fatalities.

1. **Transportation incidents (n=14, 58%):** These incidents cover events involving vehicles, animals used for transportation purposes, and powered industrial vehicles or powered mobile industrial equipment. Transportation-related fatalities were:

- Roadway incidents (n=4)
- Non-roadway incidents (n=4)
- Animal transportation incidents (n=4)
- Pedestrian incident (n=1)
- Rail vehicle incident (n=1)

2. **Exposure to harmful substances and environments (n=5, 21%):** Two fatalities were related to drug abuse, and two fatalities were related to environmental heat exposure. One victim died after direct contact with high-voltage electricity.

3. **Violence and other injuries by persons or animals (n=4, 17%):** Two of these fatalities were intentional self-harms. One victim was killed after being attacked by a bull, and one victim was shot by a coworker.

4. **Contact with objects and equipment (n=1, 4%):** One victim died after being trapped in agricultural machinery.

Forestry- and Logging-Related Fatalities

We identified three forestry-related fatalities in 2021, two of which involved transportation incidents. One involved machinery-related contact. The injury sources for these fatalities were logging trucks and a stump cutter.

Fishing-Related Fatalities

In 2021, nine victims were killed in fishing-related incidents. Five of these victims had a drug/alcohol overdose while either working or onboard. Two victims drowned. Two victims were killed after being caught in or coming in contact with some machinery.

Summary and Recommendations

These findings indicate a wide range of causes for AgFF fatalities in Florida. These fatalities did not involve only workers, but also nonworkers such as people on roadways. A few recommendations and resources to prevent AFF-related injuries are listed below.

Transportation incidents were responsible for more than half of the fatalities. When using tractors or agricultural vehicles on roadways, operators must check the lighting and marking features of their vehicles and make sure they meet the lighting and marking standards (ANSI/ASAE 279.14). Safety tips for agricultural vehicles on public roads are available at http://www.abe.ufl.edu/agsafety. Ask IFAS publication ABE302 provides a summary of the ANSI/ASAE 279.14 standard (https://edis.ifas.ufl.edu/publication/AE175).

Tractors were the primary source of non-roadway transportation incidents. Tractor operators must wear seat belts if tractors are equipped with rollover protective structures (ROPS). Additionally, when operating near canals, operators should leave enough space between the tractors and the edge of canals. For more information on safe tractor and farm machinery operation, check the OSHA manual (https://www.osha.gov/sites/default/files/2018-12/fy11_sh-22318-11_Mod_5_ParticipantManual.pdf).

To prevent heat stress-related injuries, employers should follow the recommendations from the National Institute for Occupational Safety and Health (NIOSH) (https://www.cdc.gov/niosh/topics/heatstress/recommendations.html) and the Occupational Safety and Health Administration (OSHA) (https://www.osha.gov/heat-exposure/prevention).

Mental health- and opioid use-related training sources and links are available through the Southeastern Coastal Center for Agricultural Health and Safety (SCCAHS) (http://www.sccahs.org/index.php/ag-health-safety-topics/opioid-abuse/).

References

ASABE. 2020. "Farm and Agricultural Injury Classification (FAIC) Code." Accessed April 12, 2021. https://elibrary.asabe.org/abstract.asp?aid=51197&t=3&dabs=Y&redir=&redirType=

Bureau of Labor Statistics (BLS). 2022. "Number and Rate of Fatal Work Injuries, Civilian Workers, by Major Occupational Group 2020." Accessed May 28, 2022. https://www.bls.gov/charts/census-of-fatal-occupational-injuries/number-and-rate-of-fatal-workinjuries-by-occupation.htm

Bureau of Labor Statistics (BLS). 2012. "Occupational Injury and Illness Classification System (OIICS) Code Trees v2.01." https://wwwn.cdc.gov/wisards/oiics/Trees/MultiTree.aspx?Year=2012

Gorucu, S., and C. Brown. 2021. "Agricultural Safety Hits the Road: Safety Tips for Agricultural Vehicles on Public Roads." https://abe.ufl.edu/agsafety/program-areas/

Table 1. Summary characteristics of AgFF fatalities in Florida in 2021.

Variables*		Agriculture (n=24)	Forestry (n=3)	Fishing (n=9)	Total (n=36)
Manner of death	Accident	19 (79%)	3 (100%)	4 (44%)	26 (72%)
	Accidental overdose	2 (8%)	-	5 (56%)	7 (19%)
	Homicide	1 (4%)	-	-	1 (3%)
	Suicide	2 (8%)	-	-	2 (6%)
Age	18–64	18 (75%)	2 (67%)	8 (89%)	28 (78%)
	65 and older	6 (25%)	1 (33%)	1 (11%)	8 (22%)
Gender	Female	3 (13%)	1 (33%)	-	4 (11%)
	Male	21 (88%)	2 (67%)	9 (100%)	32 (89%)
Hispanic origin	Hispanic	9 (38%)	-	1 (11%)	10 (28%)

*Sum of percentages may not add up to 100% due to rounding.

Table 2. Fatalities by Farm and Agricultural Injury Classification (FAIC) in Florida in 2021.

FAIC Category	Agriculture (n=25)	Forestry (n=3)	Fishing(n=9)	Total(n=36)
Occupational work-related	14 (54%)	2 (67%)	5 (56%)	20 (56%)
Roadway collision—nonworkers	3 (13%)	1 (33%)	-	4 (11%)
Undeterminable	8 (33%)	-	4 (44%)	12 (33%)