Analysis of Agricultural Injuries in Florida

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Purpose

To analyze fatal and non-fatal injuries in AgFF industry in Florida to identify characteristics of farm- and agriculturally related injuries.

Methods

Study years: 2015-2019
Data sources:

(1) Occupational Safety and Health Administration (OSHA) Severe Injury Database: Database was filtered for NAICS 11XXXX and Florida.
(2) OSHA – Information Management Information System (IMIS): was searched for NAICS code 11XXXX. The search was filtered for Region 4 (includes FL). The injury cases was coded by the author for OIICS nature, body part, source, secondary source (if applicable), and event exposure categories.
(3) AgInjuryNews.org (AIN): Agricultural fatal and non-fatal injury incidents were filtered for the study years and FL, and exported as an Excel file.

The injury cases were combined in a spreadsheet and checked for duplicates. There were 6 matching cases between AIN and OSHA. After removing the duplicates, there were 51 fatal and 199 non-fatal injuries.

Findings

- Total 250 injuries (51 fatal and 199 non-fatal)
- 'Age' was only populated for 85 cases (34%).
- Average age was 43 years old for fatal and 37 years old for non-fatal injuries
- "Sex" was populated for 97 cases (39%, 18 females, 79 males)

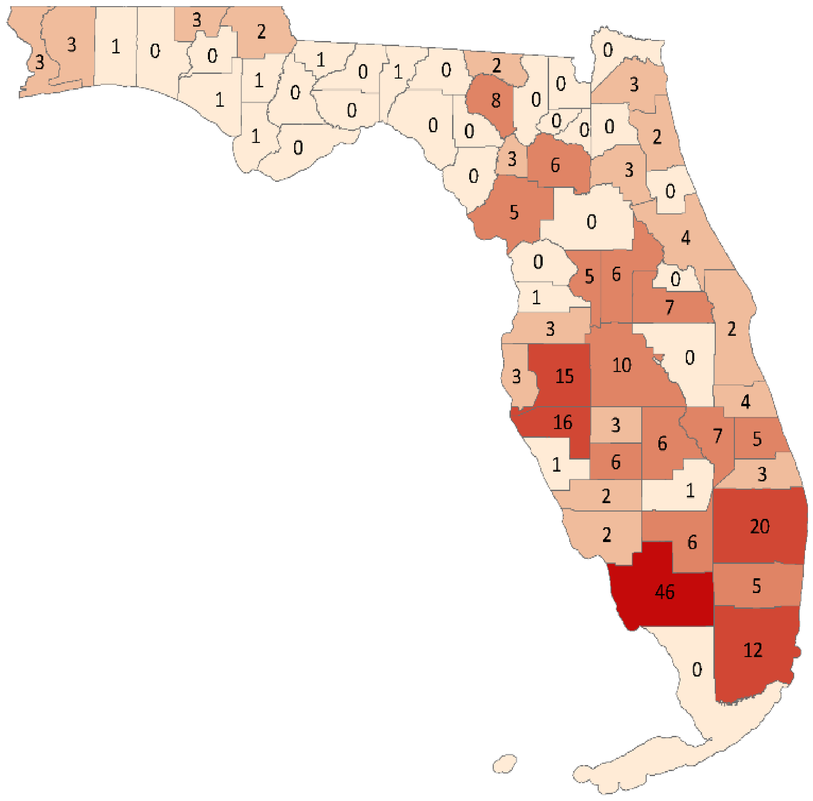

Figure 1. Number of injuries in FL counties, 2015-2019

Table 1 displays cases grouped by their three-digit NAICS industry group code as coded in IMIS, and FAIC codes assigned by the author. Crop production workers (NAICS 111) and support activities for agriculture and forestry sector workers saw the highest numbers of injuries. Within NAICS 115, 90% of the injured workers were working for crop production as contracted laborer. FAIC shows that most of the injuries were occupational related (FAIC-1 through FAIC-4, n=215, 86%).

Table 1. Injuries by industry group as coded in IMIS and FAIC assigned by the author

Industry (3-digit 2017 NAICS)	**N**	**%**
111 – Crop production	90	36.0%
112 – Animal production	20	8.0%
113 – Forestry and logging	8	3.2%
115 – Support activities for agriculture and forestry	40	16.0%
Unknown	92	36.8%
Farm and Agricultural Injury Classification (FAIC)		
FAIC-1: Farm/Ranch Production Work	157	62.8%
FAIC-2: Forestry and Logging	8	3.2%
FAIC-3: Fishing, Hunting & Trapping	4	1.6%
FAIC-4: Support Activities for Agriculture and Forestry	46	18.4%
FAIC-6: Farm/Ranch Hazard Exposure, Non-workers: Equipment, Tools, Objects & Products	9	3.6%
FAIC-7: Farm/Ranch Hazard Exposure, Non-workers: Structures and Landscape	1	0.4%
FAIC-9: Farm/Ranch Hazard Exposure: Roadways	13	5.2%
FAIC-10: Undeterminable	12	4.8%

Fractures (25%) were the most prevalent nature of injury, followed by heat related injuries (13%) (Table 2). In terms of body parts injured, almost 33% of injuries involved body systems. Body systems were the most prevalent body parts coded for drownings, heat related injuries, electrocutions, poisonings.

Table 2. Injury characteristics

Characteristic	N	%
Nature[a] (n=174)		
Fractures	43	24.7%
Effects of heat	22	12.6%
Amputations	21	12.1%
Electrocutions, electric shocks	16	9.2%
Soreness, pain, hurt—nonspecified injury	12	6.9%
Traumatic injuries and disorders, unspecified	8	4.6%
Drownings	8	4.6%
Crushing injuries	7	4.0%
Others[b]	37	21.3%
Body part injured[a] (n=156)		
Body systems	50	32.1%
Upper extremities	33	21.2%
Lower extremities	27	17.3%
Trunk	22	14.1%
Head	14	9.0%
Multiple body parts	10	6.4%

Vehicles (n=114, 45.6%)
- Trucks (n=50)
- Farm tractor (n=28)
- Passenger vehicles (n=13)
- ATVs, UTVs (n=7)
- Forklifts (n=7)
- Other vehicles (n=9)

Other sources (n=32, 12.8%)
- Heat—environmental (n=22)
- Lightning (n=7)
- Others (n=3)

Machinery (n=28, 11.2%)
- Agricultural and garden machinery (n=11)
- Conveyors-powered (n=5)
- Machinery, unspecified (n=4)
- Logging and wood processing machinery—specialized (n=3)
- Loaders (n=2)
- Other machinery (n=3)

Persons, plants, animals, and minerals (n=23, 9.2%)
- Animals: horses, reptiles, insects, cattles (n=15)
- Trees, logs, limbs (n=3)
- Bodily motion or position of injured, ill worker (n=2)
- Others: person-injured or ill worker, infectious and parasitic agents (n=2)

Tools, instruments, and equipment (n=20, 8.0%)
- Ladders (n=14)
- Handtools-nonpowered (n=4)
- Handtools-powered (n=2)

Transportation (n=104, 41.4%)
- Roadway incidents involving motorized land vehicle (n=52)
- Nonroadway incidents involving motorized land vehicles (n=26)
- Pedestrian vehicular incident (19)
- Animal and other non-motorized vehicle transportation incidents (n=5)
- Rail vehicle incidents (n=2)

Contact with objects and equipment (n=50, 19.9%)
- Struck by object or equipment (n=27)
- Caught in or compressed by equipment or objects (n=19)
- Struck against object or equipment (n=2)
- Contact with objects and equipment, unspecified and n.e.c. (n=2)

Exposure to harmful substances and environments (n=46, 18.7%)
- Exposure to temperature extremes (n=23)
- Exposure to electricity (n=19)
- Exposure to other harmful substances (n=4)

Falls, slips, trips (n=30, 12.0%)
- Falls to lower level (n=22)
- Falls on same level (n=7)
- Slip or trip without fall (n=1)

Summary and Conclusions

- Majority of injuries were occupational (86%).
- Vehicles were the major source of injuries (46%). Among vehicles, trucks and farm tractors were the two leading injury agents.
- Heat exposure and lightning were also unique hazards to FL farm workers.
- Most frequent event or exposure associated with fatalities and severe injuries was transportation incidents (41%) including both roadway and non-roadway incidents, followed by contact with objects and equipment (20%), and exposure to harmful substances and environments (19%).
- The numbers presented in this poster may not reflect the actual agricultural injuries due to limitations of the OSHA and AIN database.
- To fill the surveillance gap, additional data is needed.

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