

UF/IFAS Extension
Solutions for Your Life



Farm Safety is No Accident

Agricultural Injuries

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- Current Farm Situation
- Farm Injury Statistics
 - Nation
 - Florida
- Major Contributing Factors to Worker Injury
- Responder Safety
- Case Studies
- Mitigation Strategies
 - Farm Safety Education/Messages
 - Responder Training
- Recap

Overview

- Approximately 1,783,000 full-time workers were employed in production agriculture in the U.S. in 2009.
- Small family farms (annual sales less than \$250,000)—
 - 88 percent of U.S. farms in 2007
 - Small farms accounted for 76 percent of the land enrolled by farmers in USDA land-retirement programs, largely in the Conservation Reserve Program.

Farming Status – Workers

- Participants will understand the current trends in farming in the US and Florida
- Participants will increase knowledge of Farm Accidents, their causal agents and mitigation strategies.
- Participants will increase their knowledge on educational safety programs for farmers and first responders.
- Participants will add to their list of resources and network for farm safety education

Learning Objectives

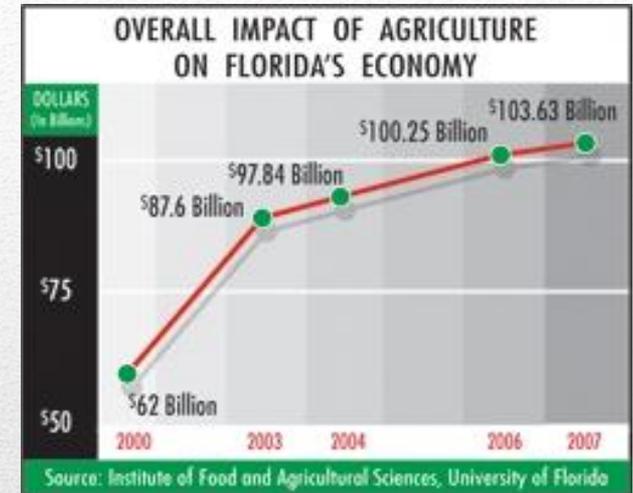
- An estimated 1.03 million children and adolescents under 20 years of age resided on farms in 2009, with about 519,000 of these youth performing work on the farms
- In addition to the youth who live on farms, an additional 230,000 children and adolescents were hired to work on U.S. farms in 2009.



Youth on Farms

The industries are categorized into seven major groups:

- Crop
- Livestock
- Forestry and fisheries production
- Mining
- Agricultural inputs and services
- Food and kindred products manufacturing
- Forest products manufacturing
- Food and kindred products distribution
- Nature-based recreation.



Economic Impact of Farming

Excluding the sectors for food and kindred products distribution, such as restaurants, food stores and wholesalers, total economic values were as follows:

Output	\$62.67 billion
Exports	\$33.13 billion
Output impacts	\$103.63 billion
Direct employment	418,003 jobs
Employment impacts	763,065 jobs
Direct value added	\$21.29 billion
Value-added impacts	\$44.77 billion
Labor income impacts	\$28.04 billion
Property income impacts	\$13.16 billion
Indirect business tax impacts	\$3.58 billion

Economic Values

- Approximately 1,783,000 full-time workers were employed in production agriculture in the U.S. in 2009.
- During this same year, 440 farmers and farm workers died from a work-related injury for a fatality rate of 24 per 1000 workers.
- Of the 64,813 nonfatal injuries, about 32 percent were to farm operators and family members, a rate of about 10.6 injuries per 1,000 farms. Hired workers suffered about 64 injuries per 1,000 farms with labor costs.
- The total number of injuries amounted to 1 for every 29 farms.

Farm Injuries

Table 1. Types of accidents resulting in agricultural-related fatalities in Florida in 1992

Type of Accident	Number of Fatalities
Tractor-Machinery	13
Motor Vehicle	5*
Logging - Tree Service	3
Aircraft	2
Shooting	1
Burns	1
Natural Causes or Unknown	10
Totals	35

An Analysis of Agricultural Accidents in Florida -- 1992¹
William J. Becker²

Florida Farm Fatalities

- Tractor accidents on farms cause the highest number of fatalities with tractor overturns accounting for 44 percent of all tractor fatalities.
- Fruit farms have the highest work injury rate among various specified agricultural operations (233 injuries per million hours of exposure). The 1989 rate for all farms is 20.0 compared with 4.2 for all industry.
- Males have a higher injury rate than females and hired workers have higher injury rates than family members.
 - Source U.S. Department of Labor OSHA 91-39

Farm Injury Trends

- Tractors
- Other Machinery
- Animal
- Falls
- Environmental



Contributing Factors to Farm Injuries

- Emergency Preparedness
- Age of Workers
- Protective Equipment
- Remote Response/Access
- Age of Equipment and Safety Features - [Video](#)

Additional Factors

- Tractor Overturns- [Video](#)
- Starting
- Overloads - [Video](#)
- Carrying Passengers - [Video](#)
- Chemical Protection

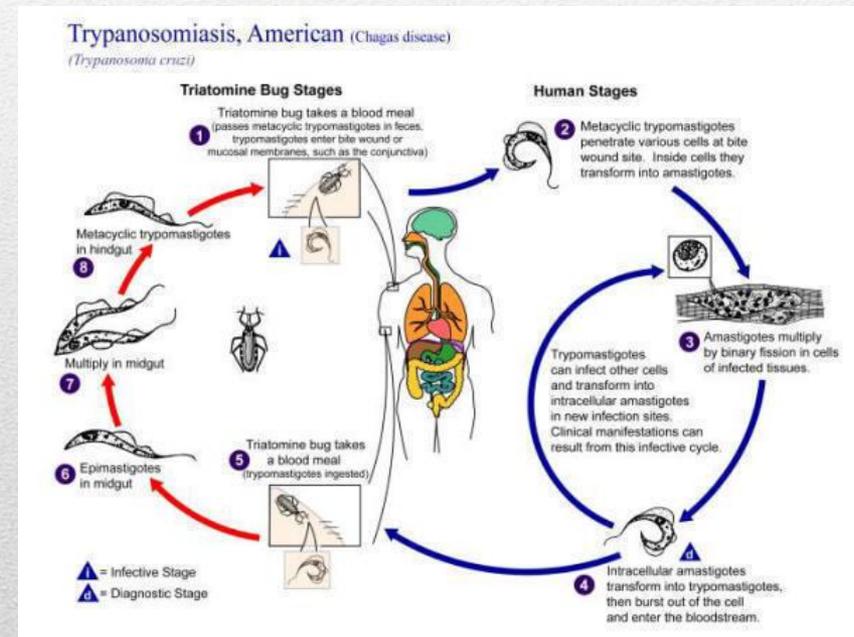
Tractor Injuries

- Transportation- [Video](#)
- Fall From
- Entanglement/Caught In
- Loading/Unloading
- Fire
- Chainsaws/Hand Equipment

Other Machinery



- Large Animal Issues- Contained Spaces
 - Physical Trauma
 - Gases- Swine Confinement
 - Carbon Monoxide, Carbon Dioxide, Ammonia, Hydrogen Sulfide, Dusts
- Zoonotic Diseases
- Manure Management Issues
 - Ponds
 - Methane
- Insects
- Wildlife



Animals

- Falls from Equipment
- Falls from Structures
- Slip and Falls
- Struck by Objects

Falls

- Heat
- Sun/Wind/Rain
- Fire
- Chemicals
- Terrain
- Sound



Environmental

- A 13 year old boy became entangled on an unguarded PTO shaft. He was one of two young people milling grain and shoveling it into bags. The farmer's son was looking for some string to tie the bags and as he approached the machine he somehow became entangled and wrapped around the PTO shaft. The other boy realized what had happened and leaned into the tractor to disengage the PTO. The child's left hand was amputated and he subsequently lost his left lower leg (below the knee). He also received trunk and head injuries.

Case Study

- An employee fractured his leg and pelvis after falling from an unsecured potato box that was being used as a work platform on the forks of a raised forklift truck (FLT). The box toppled from the forks and landed on the employee.

Case Study

- According to a Polk County Sheriff's Office report, Velasquez was on a ladder picking oranges while DeLeon stood on the ground, also picking. At some point, Mitzy left the truck's cab. Ruben sneaked out behind her and wandered between the truck and the trailer. Moments later, Velasquez yelled from the tree for Salvador to pull the truck forward. Those were the last words Ruben would ever hear as the trailer moved forward and rolled over him. 2007, *Citrus Grove Accident Torments Family*

Case Study

- On the day of the incident, the two victims went to the barn to milk the cows. Although the incident was not witnessed, evidence suggests the following sequence of events.
- When the victims arrived at the barn, the pit contained about 3 feet of waste. The victims turned on the waste pump, but it did not remove any of the waste. Realizing that the suction line inside the pit was blocked, they decided to enter the pit to clear it. The initial victim put on rubber chest waders, entered the pit with a pipe wrench, disconnected the end pipe section and manually removed the blockage. The rescuer victim stood on the edge of the pit providing assistance to the initial victim as he worked in the pit. The victim soon collapsed inside the pit due to the lack of oxygen. (It is presumed that a high concentration of gases [hydrogen sulfide, carbon dioxide, methane, etc.] produced by the decomposition of the waste material, displaced the oxygen in the air inside the waste pit.) In a rescue attempt, the rescuer victim entered the pit and collapsed on top of the initial victim.
- When the victims failed to return to their homes 4 hours after they were last seen, other family members began a search for them. An hour later they found the victims submerged in the waste pit. The local volunteer fire department and the emergency medical service (EMS) were notified by family members and arrived at the scene in 10 minutes. Fire fighters put on self-contained breathing apparatus (SCBA), entered the waste pit, and removed the victims.
- Efforts to resuscitate the victims were unsuccessful and they were pronounced dead at the scene by the county coroner.

Case Study



The benefits of accident prevention include

- reduced work injury and illness costs such as worker compensation insurance premiums,
- lost production and medical costs.
- safer more healthful workplace
- Improved worker production and morale

Farm Injury Mitigation Strategies

- Strategies
 - Communications
 - Education
 - Safety Training
 - Response Training
 - Physical Controls
 - Guards
 - Exclusion

Mitigation Strategies

- Farm Environment
 - Equipment Hazards
 - Animal Hazards
 - Electrical Hazards
 - Confined Space
 - Fire Hazards
 - Environmental Hazards
 - Chemical Hazards
 - Access Hazards
- Training Issues



Responder Safety

- Importance of Farming to our Economy
- Agriculture Injuries
- Contributing Factors to Farm Injuries
- Mitigation Strategies
- Responder Safety
- Partnerships for the Future

Recap

- Write out an emergency plan.
- Post emergency numbers next to telephones.
- Have farm maps and detailed directions to all locations easily accessible.
- Make sure family and employees know how to disengage or shut down equipment and the location of fire extinguishers and first aid kits.

*Maine Farm Safety
Program*

Preplanning for Farm Emergencies

- Contact: Mike Jensen, jensenm@ufl.edu
- Office: 863-402-6540

- Sources:
- Agricultural Safety Center for Disease Control and Prevention, Workplace Safety and Health Topics
<http://www.cdc.gov/niosh/topics/aginjury/>
- Worker Safety on the Farm NIOSH Publication No. 2010-137 (April 2010) <http://www.cdc.gov/niosh/docs/2010-137/>
- USDA CSREES Farm Safety website. See the 'Resources' pages for some good statistics on farming and safety related issues.

Contact Info/Sources
