



UNIVERSITY OF
FLORIDA

IFAS EXTENSION

An Analysis of Agricultural Accidents in Florida -- 1992¹

William J. Becker²

INTRODUCTION

The agricultural work force in the United States totals 3.2 million, which equates to 2.7 percent of our total work force. However, there are 1,300 deaths and 120,000 disabling injuries annually, or 12.5 percent of all workplace deaths and 7.1 percent of all disabling injuries. Both of these rates -- in deaths and disabling injuries -- exceed the rates of the construction and transportation industries, and only mining has a higher death rate. Unfortunately, agriculture is one of the more hazardous occupations in the United States.

Florida contributes to this problem. Over the seven past years there have been over 140 confirmed deaths due to work-related agricultural accidents, an average of twenty per year. During this seven-year period there has been an average of 3,340 serious injuries per year. (A serious injury is one in which the injured person misses a week or more of work.) This report analyzes the work-related deaths and injuries in Florida agriculture during 1992. The data for this analysis are from the Division of Workers' Compensation, supplemented by newspaper clippings and from dialogue with county extension personnel.

The fatality data are for all known agricultural-related deaths. The information on serious injuries is incomplete, since injuries reported only to the Division of Workers' Compensation are included. Many small family farm operations are not required to provide workers' compensation insurance; therefore, these injuries go unreported. It is estimated that 25 percent of all serious agricultural injuries go unreported.

FATALITIES

A total of 35 individuals were identified who were killed in some type of agricultural accident or who died as a result of natural causes during hours while employed in an agricultural occupation. Only one fatality was to an individual not employed or directly involved in agriculture. This was a female passenger who was killed when the pick-up truck in which she was riding ran into a feed wagon being towed by a tractor on a public road.

Ten of the fatalities were listed as natural causes or unknown when the original notice of injury, the source of most fatality data, was completed. Subsequent investigation may conclude that some of these fatalities might have had a work-related cause.

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 2. William J. Becker, professor and extension safety specialist, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

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If these ten fatalities are not determined to be work-related and the five motor vehicle fatalities are considered (counted) as traffic fatalities, there were twenty fatalities which were agricultural work-related fatalities in Florida during 1992.

Thirteen of these fatalities were tractor-machinery accidents. Five were from tractor-equipment overturns, five were runover type accidents and three were crushed between a moving and fixed object.

The three fatalities in tree service or logging operations were one crushed by a falling log, the second by a falling tree and the third fell from a tree. The remaining four included two aircraft crashes, one died of burns and the other was shot by a co-worker.

Table 1 summarizes the agricultural, work and non-work fatalities during 1992 in Florida. Table 2 provides some information on each of these fatal accidents.

SERIOUS INJURIES

The Division of Workers' Compensation collects data on all serious injuries incurred by employees provided with workers' compensation insurance. In 1992, they reported 2,393 such injuries to agricultural workers. While this number is unacceptable by most standards, it is the lowest total in ten years. Serious injuries are those which cause an employee to miss a week or more of work.

Landscape and Horticultural Services, primarily those employed in lawn and garden maintenance, continue to "lead the industry" in the number of serious injuries. They accounted for 610 of these injuries in 1992, over 25 percent of all the reported serious injuries in agriculture.

This occupational area was followed by Crop Services, those employees primarily involved in crop harvesting. This area reported 407 serious injuries, 17 percent of the total.

These two areas were followed by Fruit, Berry, Grape and Nut Production -- in Florida this is primarily citrus production; and Livestock Production

-- primarily beef production. These four areas; Landscape and Horticultural Services, Crop Services, Fruit Production and Livestock Production accounted for 1,684 or over 70 percent of the serious work related injuries in Florida agriculture during 1992. Table 3 provides information on these and other serious injuries by type of agricultural business.

Forty percent of all serious injuries occur to employees under the age of thirty (see Table 4). This would indicate that more effective safety training and supervision is needed for younger employees. After age thirty there is a steady decline in the percent of serious injuries to the level of only 1.5 percent of all serious injuries occurring to employees 60 years of age or older.

These figures may also account for the high number of injuries in Horticultural Services and Crop Services; two occupational areas with a large percent of younger employees.

In previous years the male to female ratio was provided. It is estimated that there were four males injured for each female. The Division of Workers' Compensation did not provide information by sex for 1992.

If you have an object or perform a task at a work-site, it is capable of causing injury. As Table 5 indicates, thirty percent of all serious injuries are due to improper or excessive bodily motion or working surfaces. Bodily motion injuries are generally associated with lifting, pulling, pushing activities; working surfaces with slips, trips and falls.

Containers of all types are the only other agent of injury associated with more than five percent of all serious injuries. The twenty-five percent for miscellaneous or unknown agents is to be expected since the notice of injury form, from which this data is collected, does not specifically ask for the agent of injury.

Anyone who is truly concerned about controlling serious injuries must solve the problem of sprains and strains and slips, trips and falls. These types of accidents account for 58 percent of all serious injuries.

We need to consider any and all available means and methods to prevent heavy and repeated lifting, pushing, pulling and reaching -- those bodily motions which lead to sprains and strains. We need to study our working surfaces -- outdoors, indoors, on ladders, platforms, trucks, machines, etc. -- which lead to slips, trips and falls. These are the accidents which often result in sprains, strains, bruises, lacerations and fractures. We need to solve these problems.

The Notice of Injury Report, on which this analysis is based, does not adequately address the nature of most injuries. It may just say "The employee fell and injured his back." Therefore, many of the injuries are recorded as "All other or unknown" It would probably be a safe judgement to distribute this forty percent among the other listed nature of injury categories in proportion to the percent of each injury.

Nevertheless, it is clear that sprains and strains are the major problem with most of them being caused by improper bodily motion -- lifting, pulling and pushing and by slips, trips and falls.

The lower back is the body part most frequently injured. Back injuries are among the most costly injuries. The type of injury is most often a sprain or strain which are also the most frequent type of injury to the major joints of the body, the ankle, knee and hip, wrist, elbow and shoulder.

SUMMARY

Fatalities to agricultural workers in Florida continue to be associated with motorized vehicles and machinery. Tractors and machinery, motor vehicles and aircraft accounted for 21 of the 35 reported fatalities. Ten fatalities were either from natural causes or the cause was undetermined. While all unsafe conditions should be corrected, special

attention must continue to be given to tractor, machinery and motor vehicle safety.

Since over 40 percent of all serious injuries to agricultural workers occur to those employees in their teens and twenties, it is imperative that extensive safety training be provided at the time of employment and whenever a young employee is assigned a new task. We must improve safety training and safety supervision young and new employees.

Any analysis of Tables 5, 6 and 7 should clearly identify the weaknesses of our agricultural safety program. Our major problems are sprains and strains caused by improper or excessive bodily motions -- lifting, pushing and pulling and slips, trips and falls. Review the agents of injury in Table 5. What are the problems? Bodily motion and working surfaces are two. Review the other agents of injury listed. Notice how many of these are objects which we need to lift, pull or push. Table 6 confirms our analysis of Table 5. Bodily motion -- lifting, pushing and pulling and working surfaces lead to strains and sprains, slips, trips and falls which account for nearly 60 percent of all serious injuries.

Then review Table 7, Percent by Nature of Injury. Note that in Table 6 sprains and strains accounted for 38 percent of all serious injuries, while Table 6 reports that only 24 percent are sprains and strains. Why? Because the Notice of Injury Reports are not designed to effectively report the Nature of Injury; therefore many of the sprains and strains end up being recorded in the All other or Unknown category.

Finally, review Table 8, Percent by Body Part Injured. The back and our arm and leg joints account for a total of 42 percent of all injuries. And the most frequent injury to the back and joints are sprains and strains.

The author is not recommending that we forget the importance of safety training and supervision in the areas of tractors, machinery, motor vehicles, pesticides and other chemicals, hand or power tools, animals or in any other area. These safety programs must continue and improve. However, until our safety leaders, extension personnel, owners, managers, supervisors and workers in agriculture recognize that

our number one safety problem is sprains and strains caused by lifting, pushing and pulling or slips, trips and falls, our serious injury problems will continue. Workers will continue to suffer, medical costs will continue to climb, lost work days and lost productivity will be a problem, and an effective safety program will remain a dream.

We must continue to PUT MORE SAFETY IN OUR PROGRAMS and a major emphasis must be: **TO PREVENT IMPROPER LIFTING, PUSHING AND PULLING, TO PREVENT SLIPS, TRIPS AND FALLS, TO PREVENT SPRAINS AND STRAINS, AND TO PREVENT BACK AND JOINT INJURIES.**

Table 1.

| 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 |
| * While four of these motor vehicle accidents were work-related, they are not considered to be agricultural accidents; rather, they are classified as accidents. | |

Table 2.

| Table 2. Agricultural Fatalities in Florida -- 1992 | | | |
|--|--------------------------------|-----------------|--------------------------------|
| CountyDate | Employer | Employee | Cause |
| Taylor01-10-92 | T & M LoggingPerry | Fred Weaver | Crushed -- logrolled off truck |
| Hendry01-11-92 | D & K HarvestingLa Belle | Jean Monpremier | Motor vehiclepublic road |
| Polk01-11-92 | Maxime Air, Inc.Frostproof | Harry McCollum | Airplane crash |
| Palm Beach02-20-92 | Talisman Sugar Corp.South Bay | Unknown | Cane truck overturnpublic road |
| Martin03-04-92 | Waldrep & Legg DairyIndiantown | James Smith | Natural causes |

Table 2.

| Table 2. Agricultural Fatalities in Florida -- 1992 | | | |
|---|-------------------------------|------------------------------|---|
| CountyDate | Employer | Employee | Cause |
| Pasco04-27-92 | P & H DairyZephyrhills | Deborah Nealnon-employee | Truck hit tractor & feed wagon -- public road |
| Suwannee05-01-92 | Jym Seago LoggingMadison | Willie Morgan | Natural causes |
| Hernando05-06-92 | Orange Kare, Inc.Brooksville | David Gonzalez | Thrown from tractor, hit a tree |
| Sarasota05-28-92 | Cadys Grove ServiceSarasota | Jessie Stanley | Motor vehiclepublic road |
| Escambia06-09-92 | Carl PetersonByrnesville | Bruce McCurdy | Tractor overturnroad embankment |
| DeSota06-16-92 | Arthur L. SmithNocatee | Arthur L. SmithSelf-employed | Tractor passengerknocked off, runover |
| Polk06-17-92 | Dan WeatherfordLakeland | Dan WeatherfordSelf-employed | Jump-startingtractor, runover |
| Lake06-24-92 | Golden GemGrovers Umatilla | James Simmon | Between tractor & mower -- runover |
| Hendry06-26-92 | ABC Farms, Inc.Immokalee | Alonzo CurryManager | Helicopter crash |
| Dade07-01-92 | Bruce GroupEnterprisesGoalds | Orlando Williams | Natural causes |
| Dade07-15-92 | J & V FarmsMiami | Apello Baldolado | Natural causes |
| Hillsborough07-15-92 | Apopka Tree ServiceApopka | Victor Broome | Citrus topperoverturned |
| Hillsborough08-14-92 | Tampa Farm ServiceTampa | Raymond Barton | Crushed between tractor & dumpster |
| Santa Rosa08-27-92 | Alabama LoggingCo. | Henry Bush | Crushed by fallingtree |
| Dade08-31-92 | Jackies Parnel Sod Co.Miami | Jacqueline Kogerco-owner | Motor vehicle |
| Polk09-01-92 | Etoile Altman GrovesFt. Meade | L.D. Moreland | Tractor overturnNatural causes? |

Table 2.

| Table 2. Agricultural Fatalities in Florida -- 1992 | | | |
|--|--|-------------------------------|---------------------------------|
| CountyDate | Employer | Employee | Cause |
| Polk09-02-92 | Davey Tree Expert Co.Winter Park | Damlton Rush | Fell from tree |
| St. Lucie09-09-92 | Phillip HoeffnerFt. Pierce | Phillip HoeffnerSelf-employed | Tractor overturncanal bank |
| Manatee10-08-92 | Whisenate FarmsParrish | Jose Aquilar | Natural causeschoked on food |
| St. Lucie10-27-92 | Stewart HarvestingFt. Pierce | Willie Mitchell | Natural causes |
| Palm Beach11-05-92 | Osceola FarmsPahokee | Llewelyn Lemonious | Crushed byoverturned cane wagon |
| Palm Beach11-18-92 | U.S. Sugar Corp.Clewiston | Charles Marshall | Tractor overturncanal bank |
| Palm Beach11-25-92 | New Hope South, Inc.South Bay | Mackie West | Crushed byequipment on lowboy |
| Broward11-25-92 | B & S Tree ServiceDavie | Richard BenaOwner | Natural causes |
| Orange11-30-92 | Roper Grove Coop.Winter Garden | Bobbie Davis | Natural causesbanking trees |
| St. Lucie12-02-92 | SoutheasternAgricultural ServiceFt. Pierce | Robert Cade | Shot by co-worker |
| Palm Beach12-07-92 | Talisman Sugar Corp.South Bay | Lamar Phillips | Tractor overturncanal bank |
| Collier12-08-92 | Redi-PlantsNaples | Ralph Brown | Natural causes |
| Hendry12-28-92 | U.S. Sugar Corp.Clewiston | Jorge Hernandez | Burns |
| Hendry12-29-92 | D & K HarvestingLa Belle | James Gilbert | Natural causes |

Table 3.

| Table 3. Number of Serious Agricultural Injuries by Type of Agricultural Business -- 1992 | | |
|--|-------------------------|------------------|
| Type of Business | Number Serious Injuries | Percent of Total |
| | | |

Table 3.

| Table 3. Number of Serious Agricultural Injuries by Type of Agricultural Business -- 1992 | | |
|--|-------------------------|---------------------------|
| Type of Business | Number Serious Injuries | Percent of Total Injuries |
| Landscape and Horticultural Services:-Primarily lawn & garden maintenance | 610 | 25.5 |
| Crop Services:-Primarily crop harvesting | 407 | 17.0 |
| Fruit Production:-Primarily citrus production-Includes berry, grape and nuts | 373 | 15.6 |
| Livestock Production:-Primarily beef and hogs-Excludes dairy and poultry | 294 | 12.3 |
| Horticultural Production:-Primarily ornamental nursery products | 205 | 8.6 |
| General Crop Production:-Includes cash grains, cotton, tobacco,sugar cane and potatoes | 152 | 6.4 |
| Vegetable and Melon Production: | 93 | 3.9 |
| Horse Farms-Production, training | 82 | 3.4 |
| Animal Services:-Including veterinary services | 72 | 3.0 |
| Dairy Farms:-Milk production, young stock | 57 | 2.4 |
| Timber Production and Services:-Nursery and pulpwood only | 19 | 0.8 |
| Poultry Production:-Broilers and eggs | 18 | 0.8 |
| Fishing and Fish Hatcheries | 11 | 0.5 |
| TOTALS | 2,393 | 100.2* |
| *Variation due to rounding off of numbers | | |

Table 4.

| Table 4. Percent of Serious Injuries by Age - 1992 | |
|---|---------|
| Age | Percent |
| Under 20 | 5.0 |
| 20-24 | 18.0 |
| 25-29 | 17.5 |

Table 4.

| Table 4. Percent of Serious Injuries by Age - 1992 | |
|---|---------|
| Age | Percent |
| 30-34 | 13.5 |
| 35-39 | 12.0 |
| 40-45 | 10.5 |
| 45-49 | 10.0 |
| 50-54 | 7.0 |
| 55-59 | 5.0 |
| 60 or over | 1.5 |

Table 5.

| Table 5. Percent by Agent of Injury | |
|--|---------|
| Agent of Injury | Percent |
| Bodily motion | 18.0 |
| Working surfaces | 12.0 |
| Containers, boxes, bags, etc. | 9.0 |
| Motor vehicles | 4.5 |
| Sharp objects | 4.0 |
| Trees or limbs | 4.0 |
| Animals | 3.5 |
| Machines | 3.0 |
| Hand tools | 2.5 |
| Heavy objects, unnamed | 2.5 |
| Skids, Pallets | 2.5 |
| Poisons, Infectious agents | 2.0 |

Table 5.

| Table 5. Percent by Agent of Injury | |
|--|---------|
| Agent of Injury | Percent |
| Miscellaneous or unknown | 25.0 |
| Hand trucks | < 2.0 |
| Thorns | < 2.0 |
| Power tools | < 2.0 |
| Food Products | < 2.0 |
| Ladders | < 2.0 |
| Metal objects | < 2.0 |
| Cable-Rope | < 2.0 |
| Pipe | < 2.0 |
| Lumber | < 2.0 |
| Brick-Blocks | < 2.0 |
| Ditch | < 2.0 |
| Door-Gate | < 2.0 |
| Tires-Wheels | < 2.0 |
| Wire | < 2.0 |

Table 6.

| Table 6. Percent by Accident Type | |
|--|---------|
| Accident Type | Percent |
| Strains-sprains | 38.0 |
| Slips-trips-falls | 20.0 |
| Struck by falling, flying or moving object | 16.0 |
| Striking-falling into-against object | 8.5 |

Table 6.

| Table 6. Percent by Accident Type | |
|--|---------|
| Accident Type | Percent |
| Caught in-under-between object | 5.0 |
| Motor vehicle collision | 2.5 |
| Stepping on sharp object | 2.0 |
| Miscellaneous-Unknown | 8.0 |

Table 7.

| Table 7. Percent by Nature of Injury | |
|---|---------|
| Nature of Injury | Percent |
| Sprains - Strains | 24.0 |
| Lacerations | 8.5 |
| Fractures | 8.5 |
| Bruises - Contusions | 4.5 |
| Amputations | 2.5 |
| Crushing | 2.0 |
| Hernias | 2.0 |
| Punctures | 2.0 |
| Respiratory and Occupational Diseases | 2.0 |
| Infections | 1.5 |
| Dislocations | 1.5 |
| All other or Unknown | 40.0 |

Table 8.

| Table 8. Percent by Body Part Injured | |
|--|---------|
| Body part | Percent |
| Back | 22.0 |
| Lower extremities: | 30.0 |
| Knee | 8.0 |
| Ankle | 7.0 |
| Foot | 6.5 |
| Lower leg | 4.5 |
| Hip | 1.5 |
| Multiple parts | 1.5 |
| Toes | 1.0 |
| Upper extremities: | 23.0 |
| Fingers - Thumb | 7.5 |
| Hand | 6.0 |
| Upper arm | 4.5 |
| Elbow | 2.0 |
| Wrist | 1.5 |
| Multiple Parts | 1.5 |
| Multiple Body Parts | 16.0 |
| Head: | 3.5 |
| Eyes | 1.5 |
| Skull | 1.0 |
| Face | 1.0 |