

# **A Study of Current Efforts at Minimizing the Occurrence of Agricultural Child-Related Injuries and Fatalities**

by

Josette M. LaForte

A Research Paper

Submitted in Partial Fulfillment of the  
Requirements for the  
Master of Science Degree  
With a Major in

Risk Control

Approved: 3 Semester Credits

---

Investigation Advisor

The Graduate School

University of Wisconsin-Stout

May, 2003

**The Graduate School  
University of Wisconsin-Stout**

**Menomonie, WI 54751**

**Abstract**

<b>(Writer)</b>	LaForte <b>(Last Name)</b>	Josette <b>(First)</b>	M <b>(Initial)</b>
<b>(Title)</b> A Study of Current Efforts at Minimizing the Occurrence of Agricultural			
Child-Related Injuries and Fatalities			
<b>(Title)</b>			
M.S. Risk Control <b>(Graduate Major)</b>	Brian Finder <b>(Research Advisor)</b>	May, 2003 <b>(Month/Year)</b>	58 <b>(No. of Pages)</b>
APA 5 <sup>th</sup> Edition			
<b>(Name of Style Manual Used in this Study)</b>			

Farming has been recognized as one of the most dangerous occupations in the United States and has been found to be especially dangerous for children. Research has documented the statistics of agricultural injuries and fatalities to children and found that the occurrence of these types of injuries does not appear to be declining. Currently there is no state or federal regulations that govern farm family operations but there are agricultural safety agencies and other educational resources available to assist farmers in their efforts to protect their children.

The purpose of this study was to identify, via survey to Dunn County farmers, where the failure may exist between the efforts of the present system to provide the necessary resources to farmers in the reduction and prevention of child-related farm injuries and the impact that is actually being observed.

## TABLE OF CONTENTS

<b>Abstract</b> .....	ii
<b>Table of Contents</b> .....	iv
 <b>Chapter One: Statement of the Problem</b>	
Introduction.....	1
Purpose of the Study.....	5
Objectives.....	5
Definition of Terms.....	5
Assumptions and Limitations.....	6
 <b>Chapter Two: Literature Review</b>	
Introduction.....	7
History of Farm Safety.....	7
Most Frequent Child Fatalities.....	9
Most Frequent Child Injuries.....	12
Knowledge and Awareness of Child Farm Safety.....	14
Agencies and Outreach Programs Involved in Child Farm Safety.....	15
National Agencies.....	16
Wisconsin Outreach Programs.....	17
Difficulty in Capturing True Statistics.....	18
Prevention Measures.....	18
Possible Legal Efforts.....	20

**Chapter Three: Methodology**

Introduction.....	23
Purpose.....	23
Subject Selection and Description.....	23
Instrumentation.....	24
Data Collection.....	24
Data Analysis.....	25
Limitations.....	25

**Chapter Four: Results**

Introduction.....	26
Demographic Information.....	26
Survey Analysis.....	27
Research Objectives.....	34
Discussion of Data.....	35

**Chapter Five: Discussion, Conclusions, and Recommendations**

Introduction.....	37
Discussion.....	37
Conclusion.....	39
Recommendations for Farm Parents.....	39
Recommendation for Agricultural Safety Agencies.....	40
Recommendations for Further Research.....	41
Summary.....	42

<b>References.....</b>	<b>43</b>
------------------------	-----------

**Appendix A**.....46

**Appendix B**.....49

**Appendix C**.....51

## CHAPTER ONE

### Statement of the Problem

#### Introduction

Farming is one of the most dangerous occupations in the United States (Reynolds, 2002, p. 1). In 1999, there were a total of over 2.19 million farms in the United States (NCCRAHS, 2002a, p.1). Farmers are exposed to mechanical, chemical, and environmental hazards daily (Reynolds, 2002). The occupation of farming encompasses tasks that may be routine and others that may not be routine. In one sense, this can create an attitude of false confidence, due to a high familiarity with the process at hand. In another sense, it may place farmers in the face of a new, unsuspected hazard.

The stressors of time, finances, and environmental conditions are major contributors for people in agriculture to succumb to unnecessary risks. Studies by the National Institute for Occupational Safety and Health (NIOSH) indicate that farmers have the highest rate of death as a result of stress-related conditions with artery disease, hypertension, ulcers, and nervous disorders topping the list (NSC, 2001). In attempts to remain profitable and ensure deadlines are made, farmers will take risks that are considered to be hazards of the trade. They may subject themselves to many forms of heat and cold stress, which leads to injuries such as frostbite, heatstroke, and skin cancer. They may take unnecessary shortcuts in an attempt to save time. This may involve not disabling machinery to work on it, exposing themselves to chemical hazards because their respirator or safety glasses were left in the house, or even worse, allowing their young child to drive the tractor to free themselves up for something else.

In a lot of cases, there is no outside source of income for farmers; therefore, the farm provides the livelihood for the entire family. Unlike other businesses, a fatality or injury may be enough to disable the entire farming operation. This is especially true if the injury or fatality occurs to a crucial member of the working family. The death of a child on a farm is equally devastating to the family because they cannot escape the constant reminder of the death as they live, work, and play on the farm (ASM, 1998).

As is the case for many occupations, there is no specified retirement age for farmers. Farmers, by choice or by necessity, have been observed to operate their farms well into their seventies. Consequently, the level of physical and mental exertion required places elderly farmers at risk while operating equipment or of making poor judgments while under the influence of prescribed medication. Hearing loss and other physical disabilities may also contribute to decisions that are unsound, especially as they relate to the exposures their children or grandchildren may be faced with.

Farming is especially dangerous for children. In 1998, an estimated 1,264,000 youths under 20 years of age lived on farms (NCCRAHS, 2002a, p. 1). Nationally, an estimated 300 boys and girls under 20 years of age die each year in farming accidents. Children under 16 years old account for 20% of farm fatalities in the United States. Farm children are twice as likely to be killed in an accident than urban children. Young people living on, working on, or visiting a farm suffer 100,000 injuries each year. Unfortunately, these injuries result in nearly 1,000 permanent disabilities (Webster & Mariger, 2002). According to the national statistics, the greatest risks to young people in agriculture are tractors, farm machinery and livestock (Webster & Mariger, 2002).

Farm children are not able to come and go as with the normal workplace. The working environment of the farm is the farm child's home, therefore, the child may be exposed to different types of hazards twenty-four hours a day. Exposure for these children begins at a young age with working and playing around farm buildings, equipment, and animals being common-place. Children become involved with the working processes of the farm long before they can legally obtain other employment. They are often needed and expected to help with chores and are often given responsibilities that exceed those given to urban children of their same age (HI-CAHS, 2002).

Children do not have the cognitive capabilities or the problem solving skills to anticipate and abate hazards. Some farm children begin working in farm environments by age 10, many times without adequate training (Reynolds, 2002). Unintentional injury can occur when adults and children mistake physical size and age for ability and underestimate levels of risk and hazard (NAGCAT, 2000). Because children have been exposed to certain environments since a very young age, what would be identified as a potentially hazardous situation to their non-rural counterparts would not be viewed as hazardous to them. An example of this would be operating a complex machine such as a tractor.

Currently there is no state or federal regulations that govern family farm operations. In non-agricultural industries, there are regulations and work standards that indicate appropriate work for both adults and children. In agriculture, there are no such standards and children are often assigned farm jobs based on parents' past practices, need for "extra hands" to get the job done, and preferences of the child and/or parent

(NAGCAT, 2000). Regulations such as the Hazardous Occupations Order for Agriculture (HOOA), which is part of the U.S. Department of Labor's hazardous occupation regulations that restrict youth working in construction, mining, and agriculture before 18 years of age, don't apply to children who are working on their home farms (NCCRAHS, 2002b). There are few Occupational Safety and Health Administration (OSHA) standards for agriculture. OSHA enforcement is limited to farms with more than ten hired employees (Wilk, 1993). Consequently, it is the parents, older siblings, or the children themselves, who are making decisions as to what is appropriate given a certain situation.

Wisconsin is among the states with the highest numbers and population-based rates of childhood agricultural injuries and fatalities (Lee, 2002). Wisconsin averages about 30 farm fatalities each year (Lee, 2002). Of these, up to 20% are children younger than 20 years old (Lee, 2002). A study of agricultural injuries in central Wisconsin revealed an overall incidence rate of 18.3 injuries per 1,000 farm resident children (NASD, 1996). In almost every case of a fatal or serious farm injury to a child, an adult made a poor decision regarding a child's presence in a dangerous location or there was insufficient adult supervision (Lee, 2002).

Farm injuries are not accidents. Research performed suggested that farm accidents aren't random occurrences nor randomly distributed (Bird, 1993). Ninety percent of all farm injuries are predictable and preventable (NCCRAHS, 2000, p. 1). Resources are available, especially in the form of agencies which solely concentrate on agricultural children's health and safety. However, the statistics involving injuries and fatalities concerning farm children do not appear to be declining to the degree one would expect. Consequently, it would appear that current efforts aimed at minimizing the occurrence of

child-related injuries on agricultural operations do not appear to be effective at preventing such losses.

### **Purpose of the Study**

The purpose of this study is to determine the extent to which a breakdown occurs between efforts made to provide educational resources and assistance to farm families and the impact one would expect it to have on prevention of child-related farm injuries and fatalities.

### **Objectives**

The objectives of this study will be to:

1. Determine the current level of child safety awareness among the farmers of Dunn County.
2. Determine which are the most frequently occurring accidents and reasons for this frequency.
3. Determine whether Dunn County farmers welcome intervention/assistance from outside sources.
4. Determine the shortcomings, as defined by Dunn County farmers, of the outreach efforts by agricultural child safety agencies.

### **Definition of Terms**

For ease of comprehension, the following terms have been defined:

**Accident-** an unfortunate event occurring casually (Patterson, 2001, p. 6).

**Hazard** – to risk, to put in danger of loss or injury (Patterson, 2001, p. 127).

**Incidence Rate** – the number of injuries or fatalities per department or job for a specific time period ( Putz-Anderson, 1998).

**Assumptions and Limitations:**

It is assumed that the farmers of Dunn County will respond in an honest manner to the surveys. Some limitations to this study would be that some farmers may not be willing to discuss sensitive issues or be willing to participate in the surveys. This study is also limited to the practices and perspectives of agriculture-based operations within Dunn County, Wisconsin.

## **CHAPTER TWO**

### **Literature Review**

#### **Introduction**

The purpose of this study is to determine the extent to which a breakdown occurs between efforts made to provide educational resources and assistance to farm families and the impact that these efforts have on the reduction and prevention of child-related farm injuries and fatalities. This chapter will discuss the history of safety as it relates to agricultural operations outlining some reasons why safety was not an integral part of family farm operations. The accidents with the highest incidence rates involving children will be discussed, along with perspectives on why these accidents occur. Present day studies of farmers' attitudes and knowledge concerning child safety and the limited progress made in incident reduction will be reviewed. Agencies involved in the safety effort to reduce child fatalities and injuries will be discussed, along with their findings as to why there is a minimal decline in these fatalities and injuries. A section will also be dedicated to the difficulties involved in capturing true figures for injury rates. Some prevention options recommended by agencies that have performed studies on child farm safety will be reviewed. This chapter will conclude with a report of possible legal efforts being instituted as a last ditch attempt to offer proper protection in the effort toward child farm safety.

#### **History of Farm Safety**

“Farm Safety” was a phrase that didn't have real meaning until about 50 years ago. The evolution of safety in farming has been one of slow progression. Some safety efforts occurred in the late 1800's because of high accident rates. These were mainly

regarding fire prevention efforts due to the significant death toll in a small number of fires. The year 1912 marked the beginning of organized safety on a national scale with the formation of the First Cooperative Safety Congress which formed a permanent body devoted to the promotion of safety among the nation's industries. The following year, the National Safety Council was created. More safety congresses followed, along with the publication and distribution of the National Safety News, safety pamphlets and films. Safety legislation continued with the creation of the Bureau of Labor Standards in 1934 (NIFS, 2002, p. 1). Although the efforts toward safety had a slow beginning, there was obviously a growing concern that safety initiatives were necessary.

The first real push for organized farm safety occurred with the formation of a farm program as a part of the 1937 National Safety Congress. It was noted that agriculture, the nation's oldest and largest industry, had yet to develop any forms of safety practices. At the time, statistics indicated that disabling injuries and fatalities for agriculture far outnumbered that for other industries (NIFS, 2002). The 1937 Safety Congress passed a resolution asking the National Safety Council to organize a national farm safety program. The first Farm and Home Safety Conference was held by the National Safety Council in 1942. In 1943, the Wisconsin Agricultural Extension appointed the first state farm safety specialist (NIFS, 2002). Agriculture had finally been noticed for the dangerous occupation that it is and given the attention it was due in regard to promoting a safer work environment for farmers.

Even with the advent of powerful legislation which promoted a more organized approach to farm safety, it would take a considerable amount of time for agencies, such as the National Safety Council, to have any significant impact on injury and fatality rates.

As with any other tactic, the safety process improvement approach can only have an impact when put into action. The agriculture industry is enormous and encompasses large numbers of people from many different locations with a variety of backgrounds. To implement safety practices on farms, it is probable that farmers have to view them as beneficial and not a hindrance to their daily routine or their finances.

It is likely that time is precious to a farmer because there are only so many hours in the day to perform what needs to be accomplished. There are deadlines for planting and harvesting, and not meeting these deadlines may mean the loss of the years produce for a certain crop. This may result in the farmer having to purchase this crop or that this particular crop won't be there to bring in revenue. Either way, it is lost income for them. Daily chores such as gardening or baling hay have to be done at critical times of the day and missing these critical times may mean working in the dark, or loss of produce. To employ specific safety practices or measures takes time, a commodity the farmer may not be willing to sacrifice. The lack of safety practices may ultimately put the farmer or the farmer's family at risk.

### **Most Frequent Child Fatalities**

As previously stated, farming is one of the most dangerous occupations in the United States and the high risk of fatal or disabling injury has been well documented. Tractors are the leading cause of farm fatalities for adults and children. Researchers have found that 50% of all fatalities on the farm involved tractors (HI-CAHS, 2002, p. 1). The most frequent types of tractor accidents are rollovers, run-overs, collisions with other vehicles on roads, crushing accidents, and falls (HI-CAHS, 2002). One of the major reasons why tractor fatalities are so prevalent is because some farmers are using tractors

that were manufactured before 1985. These particular models were not manufactured with a rollover protection structure and seatbelt (HI-CAHS, 2002). If the tractor were to roll over, there is nothing in place to keep the passenger in the seat or to protect the passenger from getting crushed by the tractor.

In addition to the engineering-based causes of tractor-related fatalities, a second reason for the prevalence of tractor fatalities is that tractor operators may not have been trained in appropriate operational guidelines regarding on-and-off road activities (HI-CAHS, 2002). Driving through an open field or on the farm grounds requires different knowledge and skills as compared to driving on a road with automobile traffic. Speed limits and signage requirements may be different, especially if the tractor is pulling some other piece of equipment, such as a loaded hay trailer. Impatient automobile drivers may cause additional stress on the driver of the tractor causing foolish decisions to be made by both. A third reason for the frequency of tractor fatalities is that tractor drivers aren't always cognizant of where other family members are when machinery is being moved (HI-CAHS, 2002). Tractors and other farm machinery are large and noisy, making it difficult for the driver to see or hear a person who comes within the vicinity of the machine. Leaving the keys in the ignition or performing activities while the tractor is running are two other reasons for tractor fatalities (HI-CAHS, 2002). Shortcuts may frequently be taken in an effort to save time. A simple, routine task can result in a fatality if the tractor should move or fall into the hands of a child who is curious.

The last reason for the prevalence of tractor fatalities is that tractor drivers allow riders to accompany them on the tractor (HI-CAHS, 2002). A tractor is equipped with a single seat that is designed for the driver and only the driver. Whether for work or for

play, many times farmers allow their children to sit along side of them, stand on the tow bar or even drive the tractor. The tractor driver may also be a child, allowing his/her younger siblings to ride along. Equipment failure, operator error, or holes in the terrain may cause passengers to fall off and get crushed. A tractor should be revered for the dangerous piece of farm machinery that it is and used strictly for the purpose it was made for with all safety precautions adhered to.

Farm accidents involving machinery are the second leading cause of fatalities and injuries in children. Farm machinery has moving parts that may pinch, wrap, shear, crush or pull-in a curious child (HI-CAHS, 2002, p. 1). Children may not have the proper training to use certain pieces of equipment. They also may not be aware of the hazards involved. Machine guards may be missing or perhaps the machine has a few home made parts. Augers and power take off shafts are common ways for children to lose arms and legs. Loose fitting clothing and long hair can get caught in moving machine parts. This is especially serious when a person is working alone. Working without the assistance of another person is common on the farm and renders the person extremely vulnerable in case of an accident. Many accidents happen because tasks become routine. People take calculated risks, such as stepping over power take off shafts or removing the jammed hay from the baler while it is running (HI-CAHS, 2002).

Livestock is the third leading cause of fatalities to farm children. Some farm animals such as bulls and horses are large, therefore injuries to children are severe. The most common types of fatalities result from crush accidents, kicks, and falls from horses (HI-CAHS, 2002). Children may not be capable of understanding animal behavior. Instinctive reactions, irritability, and mating rituals are sometimes not taken into

consideration by children. Animals can be unpredictable and move too close to or step on children. Children may not recognize that they can become pinned or trapped between the animal and some immovable object. Many children are allowed to work or play unsupervised in the areas where animals are located. Farm parents rely on their children as an integral part of the work force and too often, children are given responsibilities and chores that do not match their mental and physical capabilities (HI-CAHS, 2002). . Fatalities occur to children around livestock because of these reasons.

### **Most Frequent Child Injuries**

Children are an integral part of the workforce and necessary to maintain a profitable performance in agricultural operations. The hazards that are encountered daily by these children have been well documented, and yet an estimated 27,000 children under the age of 20 years who live on farms and ranches are injured each year. In a recent review of fatal and nonfatal childhood farm injuries in the United States, the injury rate has risen by 10.7 percent over the last decade (Zietlow & Swanson, 1999, p. 3). A study of agricultural injuries in children in central Wisconsin revealed an overall incidence rate of 18.3 injuries per 1,000 farm resident children (NASD, 1996, p. 1). The annual societal cost of childhood deaths and injuries on farms and ranches is around 3 billion dollars. This total includes direct medical costs, value of lost future earnings and quality of life (NASD, 1996, p. 1). With these statistics being readily available, farmers should, no doubt, be alarmed and concerned as to why injury rates are not declining.

Different studies show that there is a common pattern or theme to agricultural injuries involving children, suggesting that these injuries are not random occurrences. The pattern of injury in children is typical of males outnumbering females three to one.

The pattern of injury is also seasonal with two-thirds occurring between the months of May and October and nearly all of the injuries occurred during the daytime between the hours of 1 and 9 pm (Zietlow & Swanson, 1999). Children are most likely to be injured during the summer when adults are distracted by their involvement in multiple farm tasks (Lee, 2002). This reflects the work pattern and workload associated with farming in the United States (Zietlow & Swanson, 1996). Nearly 40% of injuries among males are between the ages of 15 and 19 and among females is between 0 and 4. The highest injury rate for all farm children were those children that were less than ten years of age and those that were in between 12 and 13 years old (NCCRAHS, 2002a). Fifty-six percent of injuries occurring to children on farms are non-work related and of children less than 16 years of age, 64% of work-related injuries occur to children working on family owned farms (NCCRAHS, 2002a). Almost half of nonfatal injuries include contusions, abrasions and lacerations and the most common injury resulting in death is to the head or brain (NCCRAHS, 2002a, p. 2). These statistics indicate that there are clearly certain ages and seasonal time periods when injury prevention for farm children is most critical.

As stated earlier, tractors are the leading cause of farm fatalities in adults and children, therefore it comes as no surprise that farm machinery, specifically tractors, is the leading cause of injury accounting for 36% of deaths to children less than 20 years of age. A study of 460 Wisconsin and Indiana childhood farm injuries and fatalities found that 50% were associated with tractors (NASD, 1996). Thirty percent of farm machinery-related injuries are among children less than five years of age. Machinery is the leading agent of agricultural injuries in 29 states among youths and, discounting tractors, accounts for 24.2 % of the occupational injuries among farm workers 10-19 years old as

compared with the 19.3% of the injuries to farm workers in all age groups (NCCRAHS, 2002a). Although manufacturers of farm equipment have voluntarily developed and installed different safety features, there are few mandatory requirements applicable to agricultural machinery, therefore, equipment without the safety features are still available for purchase (Cogbill, Busch, & Stiers, 1985). Farm equipment is usually very expensive and kept for long periods of time. It is not uncommon to find machinery on farms that is more than 20 years old that had been manufactured before safety features were available, thus, they won't possess these features. The seriousness of the dangers of farm machinery and how they continue to be the number one means of injury to children makes one wonder why there aren't mandatory installation and enforcement of safety features (Cogbill et al. 1985).

Other leading mechanisms of injury to children are associated with livestock, falls, off road transportation incidents, small tools, building structures, moving machinery parts and being struck by objects (NCCRAHS, 2002a). This is an indicator that much needs to be accomplished to reduce agricultural injury conditions starting with examining the current status of knowledge and awareness of child safety by present-day farm parents.

### **Knowledge and Awareness of Child Farm Safety**

Researchers have found a discrepancy in what parents believe about child safety and what parents actually practice on the farm, specifically concerning the use of farm machinery. Seventy-nine percent of parents believed it was acceptable to let children ride a tractor, but 90% were actually allowing their 7-9 year old children to ride. Only thirteen percent believed that 7-9 year olds should be able to operate tractors, yet 29% of

the 7-9 year olds operated tractors. Sixteen percent of parents thought children 7-9 shouldn't be within 10 feet of rotating machinery, but 27% were allowing this behavior (Bird, 1993, p. 1). What are the reasons for these discrepancies and further, are farm parents aware of them?

Many farmers live in rural environments located long distances from medical facilities. Nearly half of injured children are transported to facilities by private vehicle, where they can receive medical treatment. This may reflect an under-appreciation of the severity of injuries, a lack of understanding of pre-hospital care available, or the understandable desire for a parent of an injured child to "rush" them to the emergency room (Zietlow & Swanson, 1999, p. 3). Many times, the first person to arrive at the scene of a farm accident is a family member. Appropriate action may save a life, yet, how many farm parents are trained, or willing to be trained in first aid (Dopson & Gates, 2002)?

Farming requires a delicate balance between providing the livelihood for the family unit, which is very labor intensive, while also providing the environment where farmers and their families must live and play. A general perception exists among farmers that safety, while important, is somewhat less of a concern than other issues (Bird, 1993). This is not an uncommon theme amongst farmers as they cope with many time-sensitive, stress-related activities that are essential to keep their agricultural operation successful.

### **Agencies and Outreach Programs Involved in Child Farm Safety**

There are many agencies and outreach programs available to provide recommendations and support to farm families in their effort to educate their children about the many hazards involved in agricultural operations. Following is a compendium

of Federal as well as State agencies and outreach programs that provide farm safety support.

### **National Agencies**

- Farm Safety 4 Just Kids is an organization dedicated to promoting child safety on the farm and provides a variety of services and materials to support community-based initiatives (NCCRAHS, 1999).
- The National Agriculture Safety Data Base (NASD) is a national central repository of agricultural health, safety, and injury prevention materials whose mission is to identify and disseminate prevention information to agricultural workers on occupational hazards associated with injuries, death and illness and promote the consideration of safety and health issues into the management of farm operations for the purpose of reducing agricultural work-related injuries and illnesses (NASD, 2003).
- The National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS) provides injury facts and safety resources related to youth operated All Terrain Vehicles, equestrian care and riding, and other rural activities (Lee,2002).
- The National Committee for Childhood Agricultural Injury Prevention promotes the health and safety of children exposed to agricultural hazards.
- The National SAFE KIDS Campaign is an organization committed to the prevention of unintentional injuries to children and works to raise awareness and make childhood injury a public policy and education priority (NCCRAHS, 1999).

- The National Safety Council (NSC) Agriculture Division aids, supports, implements, and assists policies and programs to promote safety, protection, and health among all persons in agriculture (NCCRAHS, 1999, p. 2).
- The North American Guidelines for Children’s Agricultural Tasks (NAGCAT) is an agency that assists parents in making decisions about their child’s readiness to contribute to the many jobs on the farm. The guidelines cover 60 different jobs (Lee, 2002).

### **Wisconsin Outreach Programs**

- “Agriculture Safety Management” is a program that promotes the application of safety management techniques as well as designating one individual on the farm to have ultimate managerial responsibility for the safety and health of employees and family members (NCCRAHS, 2003, p. 1).
- “Farm Machinery/Systems Safety” is a program that endorses hazard control on farm machines as well as safe operation (NCCRAHS, 2003).
- “Wisconsin Safe Operation of Tractor and Machinery Certification Program” meets the requirements of Wisconsin Act 455 which requires children under the age of 16 to hold a certificate of training in order to operate a tractor on a public road (NCCRAHS, 2003).
- “Youth Agricultural Safety and Health” is a community-based program that allows many organizations, agencies, and businesses to be involved in promoting safety to the youth of their community (NCCRAHS, 2003).

### **Difficulty in Capturing True Statistics**

It is reported that farm accidents claim about 200-300 children's lives and cause thousands of injuries annually, however, this figure is felt by some safety agencies to be inaccurate because injuries such as drowning, firearms, falls and truck accidents on farms may not be readily cited as agricultural. Consequently, it is felt that research is needed to address the question of farm child death and injury rates, their causes, and prevention (Bird, 1993, p. 1). Another part of the problem is how these deaths are coded. If a child happens to be run over by a piece of equipment or a vehicle, it may be coded as a death from a pedestrian-motor vehicle crash. Therefore, it is very difficult to ascertain exactly which ones are farm deaths causing difficulty in capturing representative statistics for fatalities and injuries (Zietlow & Swanson, 1999, p. 7).

### **Prevention Measures**

Child fatalities and injuries should not be referred to as "accidents" because they are not "acts of God" or "freak events". While many people believe that the benefits of living and/or working on farms far outweigh the risk of injuries, these beliefs are now being challenged by injury prevention specialists who are concerned about the slow reduction in childhood agricultural fatalities and injuries when compared to other types of fatalities and injuries (Lee, 2002, p. 14).

An important fact to ponder is that ninety percent of all farm injuries are predictable and preventable (NCCRAHS, 2000). There is much debate on whether prevention programs should be aimed at parents, children, or pre-hospital care personnel. Many safety specialists believe that the best audience is a combination of all three (Zietlow & Swanson, 1999). Currently available, there are such prevention activities as

school programs for kids, safety fairs, instructional classes in safe equipment use for adults and children, and case workers that visit farms of injured children and do safety inspections (Zietlow & Swanson, 1999). In addition, there are classes aimed at emergency personnel to provide improved pre-hospital care. Preventive measures, however, must begin with specific advice for parents and children. Formal classes, similar to driver education classes, should be included in the curriculum of rural schools to stress proper operation and safety features of farm machinery and farm processes (Cogbill et al. 1985). Even with the help that is currently available, children are still dying or being injured on farms at an alarming rate and the question must be asked, “What more can be done?”

There is a benefit that can be derived from analyzing statistics of previously injured children. From these statistics, sound prevention measures may be ascertained. After reviewing 24 fatal and 259 hospitalized agricultural machinery injuries to children, researchers recommended four prevention measures:

- Encourage and/or subsidize the construction of barriers on farms to prevent children from entering particularly hazardous areas.
- Work with governments and farming organizations at all levels to develop programs which could provide adequate child care for rural residents.
- Work with government and farming organizations to develop and enforce standards for the safeguarding of all agricultural equipment.
- Lobby the government to prohibit children from operating any farm tractor before the age of 14 and to institute formal training requirements for their operation (NASD, 1996, p. 2).

### **Possible Legal Efforts**

With statistics being what they are, there appears to be movement underway to “get serious” about preventing childhood agricultural injuries (Lee, 2002). Questions are being raised as to whether parents should be allowed to put children in dangerous situations because the family farm operation is their way of life. Parents working in other dangerous occupations such as manufacturing or construction can’t bring their children on the job site. Questions are also being raised about double standards and special privileges for farm parents. In urban settings, parents are being prosecuted for leaving children home alone or for short periods in parked vehicles, when at the same time, children are being seriously or fatally injured on farms when left unsupervised (Lee, 2002, p. 15). Losing a child as a result of a farm injury is devastating and may cause long-term, negative consequences for the family (NCCRAHS, 2000). In some cases, the loss may be so traumatic that it may separate family members and dissolve the entire farm operation. One can not help but to react sympathetically towards parents when they experience the death or injury of a child, however, when children’s rights to personal protection conflict with agricultural work and parents’ desire for children to experience the positive attributes of farming, the issues get complicated (Lee, 2002).

There have been cases where charges have been filed against parents for criminal child neglect because it was felt that injuries to farm children were the result of adults whose lack of supervision or poor judgment put the child at risk (Lee, 2002). No one wants to see it come to this, yet, the same types of accidents keep happening over and over again. Mark Purschwitz, UW-Madison Agricultural Engineer and Safety Specialist, states that “Clearly, agriculture has a long way to go to become safer. We see many of

the same types of serious and fatal injuries year after year, even though we know how to prevent them” (Fykse, 2002, p. 1). Mark is wondering how much longer the citizens of Wisconsin, especially nonfarmers, and public health officials are going to tolerate these kinds of things and believe the time has come for Wisconsin’s farm community to start engaging in “free and open discussion” regarding this issue of farm-related injuries and deaths to children (Fykse, 2002, p. 2). Purschwitz realizes that this is a tender issue, as farmers like to be left alone, and thinks that agriculture would be better off to open discussions within its own ranks and try to come up with innovative ways to end such tragedies than to have fingers pointed in blame from outside of agriculture. Purschwitz warns of momentum in the public health sector nationally to “take a closer look at farm injuries and outside intervention”. “I’m raising the alert, this is what’s coming!” (Fykse, 2002, p. 2). As difficult as the topic is to discuss, the issue of agricultural fatalities and injuries to children is still as prevalent as ever and needs to be dealt with. Farmers work hard, have a lot of pride in what they do and certainly don’t deserve to pay the price with their children. Current efforts aimed at the reduction and prevention of child-related injuries doesn’t appear to be working and the question is “Why not?” If there is any solution to be found it should come from those that live and breathe the agricultural way of life.

It has been established that farming is one of the most dangerous occupations in the United States, especially for farm children. The hazards which are most commonly associated with child-related injuries and fatalities have also been identified, yet, the rate at which farm children are still suffering injuries doesn’t appear to be declining. There is a significant amount of documentation from research performed in the area of child-

related farm injuries by physicians, safety specialists and other experts in the field. With all the resources available and all the prevention measures that have been recognized, why hasn't there been an equivalent amount of progress in reducing the number of injuries to farm children? Where is the breakdown occurring between the support that is provided to farmers in their efforts to protect their children and the results that are being realized? What response would our farmers offer if asked? The purpose of this study is to try to determine the answers to these and other questions.

## **CHAPTER THREE**

### **Methodology**

#### **Introduction**

This chapter will provide a reiteration of the purpose of the study and include information on the criteria set forth for determination of the sample. The process of subject selection will be given. Instrumentation used to conduct the study will be detailed. Data collection and data analysis procedures will also be given. The chapter will conclude with a discussion of methodological limitations.

#### **Purpose**

The purpose of this study was to determine, via survey to Dunn County farmers, the extent to which a breakdown occurs between efforts to provide educational resources and assistance to farm families and the family's efforts to keep their children safe. There are a considerable number of resources available to assist in the prevention and reduction of farm-related injuries with children and yet statistics prove that these numbers don't appear to be decreasing. Responses provided directly from the farmers may offer some insight as to where the shortcomings are being encountered.

#### **Subject Selection and Description**

Farmers of Dunn County, Wisconsin, were asked to participate in a survey concerning farm-related injuries to children and child farm safety. Dunn County was chosen because it is located in Wisconsin and counties within this state have a high incidence rate of injuries and fatalities. Dunn County was also chosen because it has a large population of farmers and because the person conducting the study is familiar with the area.

In order to identify the subjects who could participate in the study, a list of local farmers' names was requested from the Dunn County Agricultural Office. Upon receipt of this list, a systematic sample was selected to determine those that would be sent surveys. The original list consisted of 280 names and every other name was selected until 150 names were chosen. Envelopes were addressed with the farmer(s) names exactly as they appeared on the list in an attempt to contact only the Head of Household. The survey requested that only those farmers that were 18 years of age or older were to fill out the survey, to protect those younger than 18.

### **Instrumentation**

Permission was sought from the UW-Stout Institutional Review Board to administer a survey through the mail. An original survey was designed for the study as existing instruments did not meet the needs of the study. The survey consisted of 25 questions, 14 of which simply required a "yes" or "no" response; the others asked for short explanations. A copy of the survey is located in Appendix A. The survey was sent along with a letter of explanation and consent form which is located in Appendices B and C respectively. Because the survey was constructed specifically for this study, there are no measures of reliability or validity.

### **Data Collection**

The surveys were sent and collected through the mail and recipients were given approximately two weeks to respond. Survey recipients were asked to respond to the survey and return it in the pre-addressed, postage-paid envelope, which was included with the survey. Their anonymity was guaranteed in this manner. This occurred in April,

of 2003, before farmers entered into the busy planting season allowing for greater participation and response to the survey.

### **Data Analysis**

Data analysis was initiated with a review of the returned surveys. The responses to the separate questions from the survey were compiled in a matrix format depicting percentages within each question. Certain responses were also compared against others to locate inconsistencies as well as correlations. A discussion of the results will be detailed in Chapter Four.

### **Limitations**

Only one county participated in the study therefore results cannot be assumed to be representative of other counties in Wisconsin. The instrument that was used has no measures of reliability or validity. Farmers may not have answered the questions to the survey honestly or may have chosen to omit sensitive items.

## CHAPTER FOUR

### Results

#### Introduction

The purpose of this study was to determine where the failure may exist between the efforts of the present system to provide support to farmers in the reduction and prevention of child-related farm injuries and the ability to have an impact on the occurrence of these injuries. The method by which data was collected for this study was by obtaining input from the farmers, via survey, concerning their experiences with child-related farm injuries, and knowledge of farm safety and safety-related agencies. This chapter will include the results from the data collection and analysis as outlined in Chapter Three. Demographic information and survey analysis will be discussed. The chapter will conclude with the research objectives under investigation and a discussion of the data collected.

#### Demographic Information

There were 150 farmers that were mailed a survey. Of those, 46 surveys were filled out and returned representing 30.7 % of the total possible participants. Due to the anonymous nature of the survey process, it was impossible to tell the age and gender of the participants, however all respondents were to be over the age of 18. Ninety-one percent of the survey respondents indicated that they currently have children, of which 43.5% have anywhere from 3 to 6 dependants. The results of the survey questions are discussed in the next section.

## Survey Analysis

The individual questions to the survey are restated in this section along with the results obtained for each.

<b>1. How long have you been farming?</b>	8.7% < 15 Yrs	30.4% - 15 to 25 Yrs	26.1% - 26 to 35 Yrs	34.8% > 35 Yrs
<b>2. What type of farm operation is it?</b>	93.5 % Dairy	4.3% Dairy and Beef	2.2% No response	
<b>3. Would you define your farming operation as having high risk situations?</b>	73.9% Yes	21.7% No	4.3% No response	
<b>4. What type of risks are the most prevalent?</b>	63% Livestock	54% Machinery	34.8% Tractors	6.5% Silos
<b>5. Do you have children?</b>	91% Yes	6.5% No	2.2% No response	
<b>6. How old are they?</b>	19.6% < 15 Yrs	39.3% - 15 to 25 Yrs	29.5% - 26 to 35 Yrs	11.6% > 35
<b>7. Do/Did your children assist with Farm operations?</b>	80.4% Yes	13.1% No	6.5% No response	
<b>8. How?</b>	37.0% Milk cows	34.8% Field work	23.9% Barn chores	19.6% Drive tractors
	19.6% Care for cattle	15.2% Do everything	10.9% Don't assist	6.5% Operate machinery
<b>9. Do/Did your children operate heavy machinery?</b>	67.4% Yes	23.9% No	8.7% No response	
<b>10. If so, what type?</b>	41.3% Tractors	21.8% Don't operate	19.6% All types	19.6% Balers
	19.6% Tillage machines	15.2% Choppers	10.9% Combines & Haybines	8.7% Spreaders

	2.2% Elevators & Silo unloaders	2.2% Endloaders	2.2% Hay rakes	2.2% Trucks
<b>11. What age were they when they were allowed to operate this machinery?</b>	4.3% < 10 Yrs	60.9% - 10 to 15 Yrs	4.3% > 15 Yrs	23.9% Not allowed
<b>12. Do/Did you have a child that has been injured in a farm-related activity?</b>	21.7% Yes	71.8% No		
<b>How were they injured? (Responses as listed on survey)</b>	Kicked by cattle	Hand caught in blower belt	Caught in manure spreader	Charged by a bull
	Fingers lost in roller mill	Hand crushed between auger & wall	Engulfed by corn in gravity box	Cut head open on silage wagon
	Leg run over by wheel of tractor	Stabbed by a pitchfork		
<b>13. How old were they when they were injured?</b>	40.0% - 10 Yrs or Less	60.0% - 11 to 15 Yrs		
<b>14. What was determined to be the cause of the injury? (Responses as listed on survey)</b>	Don't know	Didn't allow machine to stop	Miscommunication	Bull didn't like females

	No shield on roller mill	Hand on auger while in motion	Immaturity	Became afraid while driving down a hill
	Carelessness	Flighty animals		
<b>15. What have you done differently since the injury to prevent the reoccurrence of such incidents? (Responses as listed on survey)</b>	More careful and conscientious	Dad drives on the hills	No one allowed on a wagon being emptied	No longer mixing feed with mixer
	Roller mill company now puts on a safety shield	Sold all of the bulls	Become more aware	Learn from others mistakes
	Stop machines before fixing them			
<b>16. Do you still farm?</b>	93.5% Yes	4.3% No	2.2% No response	
<b>17. Have you experienced any “close calls” that could have resulted in an injury to your child?</b>	34.8 Yes	58.7 No	6.5% No response	

<b>Please explain? (Responses as listed on survey)</b>	Fell off combine	Draw pin jumped out of the chamber going down a hill. The wagon came up on the wheel of the tractor	Chased by a bull	Brakes went out on the tractor and rolled forward
	Shoe cut off on corn planter	Moving machinery parts	Being tired	Tractor came out of gear and rolled down the hill
	Hitching up machines	Slipped and fell on elevator while it was running	Electrocuted by a wet plug-in	Rolling wagons
	Silo gas	Falling on the concrete	Other drivers on county roads	Young child starting up the tractor
	Young children walking into the cow yard	Child became lost in a corn field	Rolling wagons	
<b>18. Do you know of someone that has experienced a farm-related injury involving their child?</b>	60.1% Yes	26.9% No	13.0% No response	

<b>19. Have you been provided the opportunity to participate in any farm safety programs?</b>	56.5% Yes	32.6% No	10.9% No response	
<b>20. Do you or your children participate in any of these programs?</b>	21.7% Yes	69.6% No	8.7% No response	
<b>Which ones? (Response as listed on survey)</b>	FFA Tractor Safety Course	FFA Alumni Farm Safety	All safety courses offered	Extension programs
	Hospital programs	Tractor Safety	Public school Ag classes	4H
	Weren't any programs available back then			
<b>21. Are you aware of any farm safety agencies?</b>	28.3 Yes	65.2% No	6.5% No response	
<b>Which ones? (Response as listed on survey)</b>	Farm Safety for Kids	UW Extension	OSHA	Tractor, ATV, Snowmobile
	Local agencies	Tractor Driving Safety	School	Heard of them, but not researched them
<b>22. Have you ever had any contact with these agencies?</b>	4.3 % Yes	87% No	8.7% No response	

<b>Which ones? (Response as listed on survey)</b>	4H	Farm Bureau		
<b>23. Were you satisfied with the information and/or services provided by this/these agencies?</b>	6.5% Yes	4.3% No	89.2% No response	
<b>Why or why not? (Response as listed on survey)</b>	Don't know	Too busy		
<b>24. Would you welcome a farm safety consultant to help determine high risk areas on your farm?</b>	21.7% Yes	67.4% No	10.9% No response	
<b>25. What type of assistance, program etc would you consider beneficial as it relates to child farm safety? (Response as listed on survey)</b>	Tractor driving safety	None- All people have to do is use common sense	Magazine articles on safety	Use your own common sense and try not to hurry when working

	Mandatory farm safety programs	School safety programs	County Agent or Farm Program- provide safety materials or show videos to remind people about farm safety	Farm safety program
	Proper teaching by parents	Teaching courses through school	Teach kids to look out for themselves	Written warnings about possible farm dangers
	Tractor safety and safety using other farm machinery	Let the children help the parents and learn from their experiences	Classes at school or field trips that demonstrate high risk areas around the farm to young children	

Participants were also asked to give comments and/or suggestions which could encompass any information that they would like to contribute. The following are those comments and/or suggestions as they were listed on the survey.

- “If a person uses common sense, doesn’t take unnecessary risks, turns off/stops machinery before putting fingers/limbs into it, doesn’t let young children ride on tractors- all helps minimize risks.”
- “Our children don’t like to help, so they don’t. They do not plan to go on to farm.”
- “We have grandchildren now and hope to keep them safe.”
- “My children have come home after courses or field trips and pointed out things to me that could be hazardous. They get ideas from a different perspective.”
- “Just use common sense. The biggest part of farm accidents is due to a lack of money to fix broken machinery.”

- “Children should not be allowed around machinery until they have had their farm safety courses. Then they must be supervised.”
- “Try to have parents stress safety and practice it themselves, because kids watch and learn from being around you when you are working.”
- “You are aware of how busy farmers are. Who has time for someone to bother you when you have way too much work to do?”
- “Most people don’t know of the danger of bulls and cows. We must learn to respect all animals regardless of sex or age.”
- “Accidents can happen to anyone. I’ve had kids on my farm. They always think they can do anything better and faster than adults. Everyone learns the hard way. I or my wife has always been very close by or even on the tractor with them until they can handle what they are doing very well and we were lucky we never had any bad accidents.”
- “Like most farm families, we do not care to have someone come to the farm and tell us what we should or should not be doing. We do not have the money to make a lot of safety changes and we need our children to help us with chores. We do try to be aware of safety issues and read in the farm magazines and papers what we can do to avoid injuries. We generally work with our children and only give them jobs they can handle.”
- “God is in control, all things happen for a reason to draw us closer to Himself. We are to learn to be dependent on God for all things.”

### **Research Objectives**

- Research Objective #1 – Determine the level of child safety awareness among the farmers of Dunn County. Survey items 1, 3, 4, 7, 9, 11 and 15 addressed this question and responses to these particular items are detailed in the survey analysis matrix from the previous section.
- Research Objective #2 – Determine which are the most frequently occurring accidents and reasons for this frequency. Survey items 2, 12, 13, 14, 17 and 18 addressed this question and responses to these particular items are detailed in the survey analysis matrix from the previous section.

- Research Objective #3 – Determine whether Dunn County farmers welcome intervention/assistance from outside sources. Survey items 20, 24 and 25 addressed this question and responses to these particular items are detailed in the survey analysis matrix from the previous section.
- Research Objective #4 – Determine the shortcomings, as defined by Dunn County farmers, of the outreach efforts by agricultural child safety agencies. Survey items 19, 21, 22 and 23 addressed this question and responses to these particular items are detailed in the survey analysis matrix from the previous section.

### **Discussion of Data**

From the data collected it was found that 91% of the farmers that participated in the survey had been farming for fifteen plus years with 61% that had been farming for 26 years or more. Ninety-four percent of these farmers were dairy farmers and 63% of the respondents did acknowledge that livestock was one of the most prevalent risks. The second most prevalent risk was defined as machinery at 54% with tractors listed separately at 35%. When asked if they would define their farming operation as having high risk situations, almost a quarter (22%) of the farmers responded “No”. Yet, 80% of the respondents had children that assisted them with farm operations, 67% of which operated heavy machinery, tractors being listed with the highest percentage at 41%. Sixty-one percent of these children that were allowed to operate heavy machinery were between the ages of 10 and 15. Twenty-two percent of the farmers that participated in the survey had a child injured in a farm-related activity and 35% experienced a “close call” that could have resulted in an injury to their child. Sixty-percent of the children that

were injured were between the ages of 11 and 15 and 40% were 10 years old or younger. When asked if they knew of someone that had experienced a farm-related injury involving that person's child, 60% of the respondents replied "Yes". Again, 22% wouldn't define their farm as having high risk situations.

Fifty-seven percent of the survey participants claimed they were given the opportunity to participate in farm safety programs, yet, less than half (22%) of these actually participated in any of these programs. Only 28% of the respondents were aware of any farm safety agencies and an even smaller percentage (4%), two people, had any contact with these agencies. Once again, when asked if they would define their farm operation as having high risk situations, 74% of the participating farmers said "Yes", yet when it was inquired if they would welcome a farm safety consultant to help determine high risk areas on their farms, 67% of the farmers said "No". When asked what type of assistance or program they would consider beneficial, only 33% of the respondents replied, the others left the area blank. One respondent returned the entire survey with accompanying paperwork back blank. Further discussion on the results, conclusions and recommendations will be discussed in Chapter 5.

## CHAPTER FIVE

### Discussion, Conclusions, and Recommendations

#### Introduction

The purpose of this study was to determine, via survey to the farmers of Dunn County, the extent to which a breakdown may occur between efforts made to provide educational resources and assistance to farm families and the impact one would expect it to have on the prevention of child-related farm injuries and fatalities. The objectives developed for this study include the determination of the current level of child safety awareness among farmers and to establish which are the most frequently occurring accidents among children and the reasons for their frequency. The objectives also include the determination of whether the farmers of Dunn County have recognized any deficiencies on behalf of the agricultural child safety agencies and the outreach efforts provided by these organizations, and whether farmers welcome the intervention and/or assistance from these outside sources. The function of this chapter is to discuss the results obtained in Chapter 4 and develop conclusions that align with the objectives of the study and the study results. This chapter will conclude with recommendations based on these conclusions.

#### Discussion

Farming has been determined to be one of the most dangerous occupations in the United States. Currently, a major percentage of Dunn County farmers believe that their farming operation has high risk situations. The farmers defined the most prevalent risks to be livestock, machinery and tractors, in that order. This is consistent with research in that the leading causes of injuries and fatalities have been determined to be the same

except that the order has typically been tractors, machinery and livestock. From this study it has been found that the highest injury rate occurred among children that were between the ages of 11 and 15 with the second highest occurring among those children 10 years or less. These statistics are quite comparable with research that depicts the highest injury rate among children less than 10 years and between 12 and 13, but realizing the major percentage of all children injured being less than 16 years old.

According to research and consistent with this study, children are viewed as an integral part of the work force with 80% of Dunn County farm children assisting with agricultural operations. It has been determined from this study that two-thirds of these children have operated heavy machinery, a large percentage of which have been tractors, at the extremely young ages of 10 to 15 years. Research has indicated that there was a discrepancy found in what parents believe about child safety and what they actually practice on the farm specifically concerning the use of farm machinery. This may still be the case as these ages would appear to many people as being very young to operate such dangerous machines. Consistent with research, the perception that safety is somewhat less of a concern than other factors related to agricultural operations still exists as Dunn County farmers indicated that time and money continue to be an issue where safety-related concerns coincide with efforts to be successful and profitable.

The results from this study indicate that most farmers are not conscious of the resources available to them in the form of farm safety programs and agencies. Of those that were aware of these resources, a significant percentage of them chose not to take advantage of the assistance offered by these programs and organizations. Of the organizations listed earlier, only one was mentioned specifically in the survey results.

Results also indicated that very few children have attended the safety courses that may have been accessible to them.

### **Conclusion**

From the survey results it can be deduced that although the percentage of injuries occurring to farm children in Dunn County may be less than the national average, they continue to occur with the same predictable patterns and modes of injury. It is evident that there is still a good distance to travel with regard to the implementation of farm safety practices and the alteration of the mindset of farmers as to the importance of safety in the prioritization of agricultural operation efforts. As long as children continue to be an integral part of the farm workforce, statistics of resultant injury to them necessitate the intervention of a more advanced coordination of efforts to ensure that they are protected. The next section will provide some recommendations for the continued endeavor to reduce and prevent injury to children of farm operations along with some recommendations for further research.

### **Recommendations for Farm Parents**

- Recognize that as with other occupations, training, specifically with safety, is an integral component of an employee's orientation and many times considered a condition of employment. These employees however have the advantage of being of legal working age, therefore children younger than that should be given extra attention.
- As funds are delegated for farm machinery and other purchases necessary to operate the business, funds should also be delegated to the safety necessary for the protection of children working on the farm.

- Take advantage of the services that agricultural safety agencies and outreach programs provide.
- Realize 90% of injuries are preventable and safeguard every high risk area to the degree that is feasible.
- Analyze the injuries or close calls that may have already occurred to prevent such adverse events from reoccurring.
- Establish a farm safety network with other farmers to determine how injury rates to children can be reduced implementing programs and standards that would be determined by farmers to be beneficial and not burdensome to agricultural operations. Don't wait for the possibility of outside intervention.

#### **Recommendations for Agricultural Safety Agencies**

- Have a representative from the agency visit rural elementary schools and high schools.
- Promote the outreach programs and activities available in the community by advertisements and/or postings in rural schools.
- Offer a lecture or seminar that can be taught in conjunction with a particular subject in school, such as Agriculture or Health.
- Offer subscriptions to farm safety magazines to all farmers in the county.
- Provide a monthly newsletter with information regarding the agency and tips on health and safety such as those provided to other occupations.

- Distribute brochures in hospitals, medical clinics, eye clinics and dental offices to detail the safety organization and include literature on farm health and safety.
- Present a booth or display at county events or sponsor a float in a local parade to acquaint the community with farm safety related agencies.
- Provide farmers with some form of incentive to be associated with each agency.
- Lobby for government funding to subsidize day care expense for farm children or expenses incurred by securing outside farm labor assistance.

### **Recommendations for Further Research**

The following are several questions that could have provided additional necessary information. The manner in which it could have contributed to the study results is offered in parentheses.

- What was the approximate date and time of the injury sustained by your child?  
(Responses to this question could have established whether seasonal patterns of injury are consistent with research.)
- Was your child male or female? (Responses to this question could have helped to determine whether male children are still being injured at a higher rate than female children.)
- Would you be willing to be trained in first aid if it were offered as a free service?  
(Responses to this question could have given an indication as to whether farm parents considered the medical facilities and personnel in their area adequate in providing emergency care for their injured child or if pre-hospital care could be better initiated with first aid on their part.)

- Do you believe that farm “accidents” are predictable and preventable? (Responses to this question could have given insight to the mindset of farmers concerning whether injuries to their children are avoidable or viewed as hazards of the trade.)

### **Summary**

From this study, it appears that there is a definite lack of communication between agricultural safety agencies and the farmers that these groups were created to assist. Either these organizations are not getting the message out to the targeted audience or farmers have not been receptive to the assistance these agencies have been willing to provide. Organizations such as Farm Safety 4 Just Kids and The National Children’s Center for Rural and Agricultural Health and Safety should be as widely known to agricultural operations as the Occupational Health and Safety Organization and the National Institute for Occupational Safety and Health are to general industry, yet this doesn’t appear to be the case. Farm children are still being injured at an alarming rate which necessitates the need to strengthen the association between these two groups of people. After all, farm families work hard and are essential not only to the economy but also to the preservation of one of America’s oldest and most respected occupations.

## REFERENCES

- Agricultural Safety Management (ASM). (1998). *Preventing accidents to children in agriculture*. Retrieved October 29, 2002 from:[http://www.safetyline.wa.gov.au/institute/level2/course26/lecture116/1116\\_05.asp](http://www.safetyline.wa.gov.au/institute/level2/course26/lecture116/1116_05.asp)
- Bird, D. A. (1993). *Averting the tragedy: Children's farm accidents*. Retrieved November 7, 2002 from:<http://www.joe.org/joe/1993/f3.html>
- Cogbill, T. H., Busch, H. M., & Stiers, G. R. (1985). Farm accidents in children. *Pediatrics*, 79, 562-566.
- Dopson, L., Gates, T. (2002). Stopping farm child accidents that needn't happen. *Farmers Weekly*, 136, 86-88.
- Fykse, J. (2002, September 19). Is ag too accepting of farm fatalities? *Agri-View*, pp. 1, 8.
- High Plains Intermountain Center for Agricultural Health and Safety (HI-CAHS). (2002). *Children on the farm*. Retrieved September 24, 2002 from:  
<http://www.hicaahs.colostate.edu/pdf%20files/childrenfarmpdf.pdf>
- Lee, B. C. (2002, August). Protecting children from agricultural injuries. *Wisconsin Medical Journal*, 14-15.
- National Ag Safety Data Base (NASD). (1996, September). *Childhood agricultural injury*. Retrieved October 29, 2002 from:  
<http://www.cdc.gov/nasd/docs/d000901-d001000/d000985/d000985.html>
- National Ag Safety Data Base (NASD). (2003). *Mission*. Retrieved April 4, 2003 from:  
<http://www.cdc.gov/nasd/about2.html>

- North American Guidelines for Children's Agricultural Tasks (NAGCAT). (2000, January). North American guidelines for children's agricultural tasks. *Fact sheet*.
- National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS). (1999). Agricultural safety and children. *Resources*.
- National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS). (2000, Winter). Farm injuries are not "accidents"; Frustration builds among farm safety specialists. *Quarterly Newsletter*, 3, 4.
- National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS). (2002a). *Fact sheet-Agricultural safety and children*. Retrieved October 31, 2002 from:<http://research.marshfieldclinic.org/children/Resources/Agriculture/FactSheet.htm>
- National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS). (2002b, Fall). Taking HOOA seriously. *Quarterly Newsletter*, 5, 1.
- National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS). (2003). *Current extension outreach activities*. Retrieved April 4, 2003 from:<http://bse.wisc.edu/wiscash/Pages/Outreach.html>
- National Institute for Farm Safety (NIFS). (2002). *Early development of farm safety*. Retrieved November 27, 2002 from: <http://www.ag.ohio-state.edu/~agsafety/NIFS/earlydev.htm>
- National Safety Council (NSC). (2001, December). *Coping with farm stress*. Retrieved November 5, 2002 from: <http://nsc.org/issues/agri/stress.htm>

- Patterson, R. F. (2001). *New webster's expanded dictionary*. Weston, FL: Paradise Press, Inc.
- Putz-Anderson, V. (1998). *Cumulative trauma disorders: A manual for musculoskeletal diseases of the upper limbs*. Bristol, PA: Taylor & Francis Inc.
- Reynolds, D. (2002). *Farming is one of the most dangerous occupations in the United States*. Retrieved September 24, 2002 from:  
<http://www.aces.edu/dept/extcomm/newspaper/dangerousjob.html>
- Webster, J., & Mariger, S. (n.d.). Risks for children in agriculture. *Agricultural Health and Safety Fact Sheet*, 7, 1.
- Wilk, V. A. (1993). Health hazards to children in agriculture. *American Journal of Industrial Medicine*, 24, 283-290.
- Zietlow, S., & Swanson, J. (1999). Childhood farm injuries. *American Surgeon*, 65, 693-700.

Appendix A  
Survey Questionnaire

## Survey Questionnaire (Respond only if you are 18 or older)

1. How long have you been farming? \_\_\_\_\_
2. What type of farm operation is it (i.e. dairy, beef cattle etc)? \_\_\_\_\_
3. Would you define your farming operation as having high risk situations? **Yes** or **No**
4. What types of risks are the most prevalent (i.e. tractors, livestock etc.)?  
\_\_\_\_\_
5. Do you have children? **Yes** or **No**
6. How old are they? \_\_\_\_\_
7. Do/Did your children assist with farm operations? **Yes** or **No**
8. How? \_\_\_\_\_
9. Do/Did your children operate heavy machinery (i.e. tractor, hay balers etc)? **Yes** or **No**
10. If so, what type? \_\_\_\_\_
11. What age were they when they were allowed to operate this machinery? \_\_\_\_\_
12. Do/Did you have a child that has been injured in a farm-related activity? **Yes** or **No** .  
How were they injured? \_\_\_\_\_  
\_\_\_\_\_
13. How old were they when they were injured? \_\_\_\_\_
14. What was determined to be the cause for the injury? \_\_\_\_\_  
\_\_\_\_\_
15. What have you done differently since the injury to prevent the reoccurrence of such incidents? (In other words, how had the event changed the course of the way your farm operates?) \_\_\_\_\_  
\_\_\_\_\_

16. Do you still farm? **Yes or No**
17. Have you experienced any “close calls” that could have resulted in an injury to your child? **Yes or No**  
Please explain? \_\_\_\_\_  
\_\_\_\_\_
18. Do you know of someone that has experienced a farm-related injury involving their child? **Yes or No**
19. Have you been provided the opportunity to participate in any farm safety programs? **Yes or No**
20. Do you or your children participate in any farm safety programs? **Yes or No**  
Which ones? \_\_\_\_\_
21. Are you aware of any farm safety agencies? **Yes or No**  
Which ones? \_\_\_\_\_
22. Have you ever had any contact with these agencies? **Yes or No**  
Which ones? \_\_\_\_\_
23. Were you satisfied with the information and/or services provided by this/these agencies? **Yes or No**  
Why or why not? \_\_\_\_\_  
\_\_\_\_\_
24. Would you welcome a farm safety consultant to help determine high risk areas on your farm? **Yes or No**
25. What type of assistance, program etc would you consider beneficial as it relates to child farm safety? \_\_\_\_\_  
\_\_\_\_\_

Comments/Suggestions

## Appendix B

### Letter of Explanation

Dear Farmers of Dunn County,  
April 08, 2003

I am a graduate student currently working towards obtaining a Masters Degree in the Risk Control Program at the University of Wisconsin Stout. I am in the process of writing my thesis titled "A Study of Current Efforts at Minimizing the Occurrence of Agricultural Child-Related Injuries and Fatalities". Unlike other occupations, the statistics involving injuries and fatalities concerning farm children do not appear to be declining to the degree one would expect even with the availability of resources provided by agricultural safety agencies. The purpose of my research is to determine the extent to which a breakdown occurs between efforts made to provide educational resources and assistance to farm families and the impact that it actually has in the reduction or prevention of child-related farm injuries. My intention is in no way to further burden farm families and farm operations with outside intervention, but only to ascertain how the system may better serve our farmers in the protection of their children with ideas and suggestions supplied directly from you.

**Growing up on a farm in Dunn County, I understand the time, stress, and dedication of the entire family that is involved in making a farming operation successful. The injury or death of a child is eternal and has devastating repercussions. The information that you provide could have a tremendous impact in the continued research for the reduction of farm-related accidents to children.**

I have enclosed a short survey and consent form along with a postage-paid return envelope. Your responses will be strictly confidential as there is no return address on the envelope and I will not know who the returned surveys are from. Could you please fill out the survey and mail it back to me by April 23, 2003 so that I may compile the acquired information in a timely manner?

Your help is sincerely appreciated!

Josette M. LaForte

Appendix C  
Consent Form

Consent Form for Participation in the Survey for the Study of Current  
Efforts at Minimizing the Occurrence of Agricultural Child-Related Injuries  
and Fatalities

I understand that by returning this survey, I am giving my informed consent as a participating volunteer in this study. I understand the basic nature of the study from the enclosed letter of explanation and agree that any potential risks are exceedingly small. I also understand the potential benefits that might be realized from the successful completion of this study. I am aware that the information is being sought in a specific manner so that only minimal identifiers are necessary and so that confidentiality is guaranteed. I realize that I have the right to refuse to participate and that my right to withdraw from participation at any time during the study will be respected with no coercion or prejudice.

**NOTE:** Questions or concerns related to the research study should be addressed to **Josette M. LaForte**, the researcher, at **N7993 588<sup>th</sup> St, Menomonie, WI 54751**, phone **(715)-232-0554**. Questions about the rights of research subjects can be addressed to Sue Foxwell, Human Protections Administrator, UW-Stout Institutional Review Board for the Protection of Human Subjects in Research, 11 Harvey Hall, Menomonie, WI 54571, phone (715)232-1126.