



# Western Dairy News

for the West, about the West, from the West

## Development of a comprehensive dairy safety training program

by G. Robert Hagevoort, Ph.D.  
Extension Dairy Specialist, NMSU, Clovis, NM

The number of fatal occupational injuries in agriculture has been declining at a rate of about 30 percent since the early 1990s and has reached a level of 3.5 fatalities per 100,000 Full Time Equivalents (2011 U.S. Bureau of Labor Statistics). However, the number of deaths in agriculture, forestry, fishing and hunting is still disproportionately large (Figure 1). The absolute number is not as high as in transportation and construction, but the rate per 100,000 employed (26.8) is the highest because there are far fewer people employed in agriculture than other comparable occupations.

About 25 percent of fatal injuries in agriculture occur in animal production, of which a very large percentage (81 percent) occurs in Cattle Ranching and Farming. A high percentage (63 percent) occur among Hispanic or Latino workers, 60 percent of whom were born outside the U.S. Fatal work injuries involving such workers continued to decrease in 2010 after reaching a high in 2006.

In terms of nonfatal injuries and illnesses, the U.S. Bureau of Labor Statistics reports the average across all industries was 3.5 per 100 employees. The rate in agriculture, forestry, fishing and hunting was 4.5. Crop production and animal production were 4.5 and 4.4, respectively. But this does not include farms with 10 employees or less, which may underestimate these numbers substantially.

### Farming has high fatality rate

Of all occupations, farmers and ranchers have the fourth highest fatality rate (41.4 per 100,000), trailing only fishers, logging workers, and aircraft pilots and flight engineers (Figure 2). One of the most common causes of death and serious injury on farms is related to the use of heavy equipment. A high number of fatalities are due to tractor turn-overs. Other causes include silage bunker collapse,

manure pits, tractor power take-offs, and large animals, such as dairy bulls.

Recent research studies show that the two main causes of workers' injuries (fatal and non-fatal) are machinery incidents and animals. Machine-related accidents include tractor rollovers, being run over by tractors, and being entangled in rotating shafts. Animal-related injuries include kicks, bites, and workers being pinned between animals and fixed objects. Other causes of injuries include chemical hazards, confined spaces, manure lagoons, use of power tools, and improper use or lack of personal protective equipment.

A study analyzing 2000-2004 workers' compensation claim data in Colorado indicated that injury rates were higher than nationally reported numbers, especially in sectors involving interaction with animals or livestock. Injuries related to animals, strains, machinery, and falls or slips were the most frequent among all occupations analyzed.

In a later study it was determined that of livestock handling injuries among dairy workers, nearly 50 percent were associated with milking parlor tasks. Furthermore, they determined that claims associated with livestock handling represented the highest percentage of high-cost and high-severity injuries of all animal production sectors.

It can safely be postulated that the steady decline in fatalities the last two decades is most certainly a result of increased emphasis on job site safety measures and training. However the lack of information regarding agriculture injuries or fatalities has been recognized as an obstacle for effective injury prevention. Because of the limited research addressing work injuries associated with livestock handling, little is known about the risk factors that might lead to the development of safety interventions. Data presented in 2009 show that major risk factors on a dairy are tasks in the milking parlor and behind cows.

The increased size of many Southwestern dairies actually presents a unique opportunity for the

development of safety interventions, since daily duties and tasks on dairies have become highly specific and specialized. In the past, the task of training and supervision of employees typically was that of management (owner or manager). With increasing employee numbers, this task is often delegated to employees with seniority. Formal training, including basic and theoretical study and explaining the rationale or the science behind particular work related activities, is not common. Often employees will know what to do (the task or activity) but may lack the knowledge of why.

Insufficient understanding of the task can impact the outcome of the task in many ways: job motivation and hence job performance, thoroughness, expedience, accuracy, and finally, but not any less important, job safety. The organizational support to implement a successful training program has to be developed, and operational and managerial commitment to such a program is required.

Given the earlier observation that many work related injuries occur with workers from different geographical and cultural origins, it is imperative and appropriate that any safety training program developed be based on understanding of linguistic and cultural barriers and attitudes towards working with animals and/or equipment.

### Safety training video has been made

The primary objective of this project was to develop a Comprehensive Dairy Safety Training program using video material that would categorically highlight the safety concerns on a typical open lot dairy in the Southwestern U.S., and visually train observers how to avoid the risks and provide an intervention. The overall goal was to empower employees with a better understanding of animals, animal behavior, equipment, and equipment safety, in order to reduce and better manage the risk factors identified in earlier research.

This has led to the development of a comprehensive dairy safety training program consisting of a

Western Dairy News is a collaborative effort of Dairy Specialists from:



**Utah State  
UNIVERSITY  
EXTENSION**

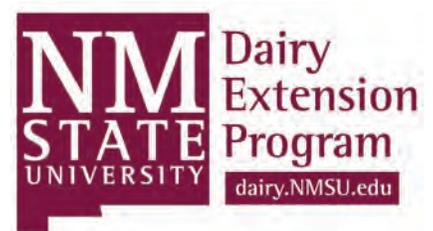


**Colorado  
State  
University**

*Knowledge to Go Places*



Extension Service



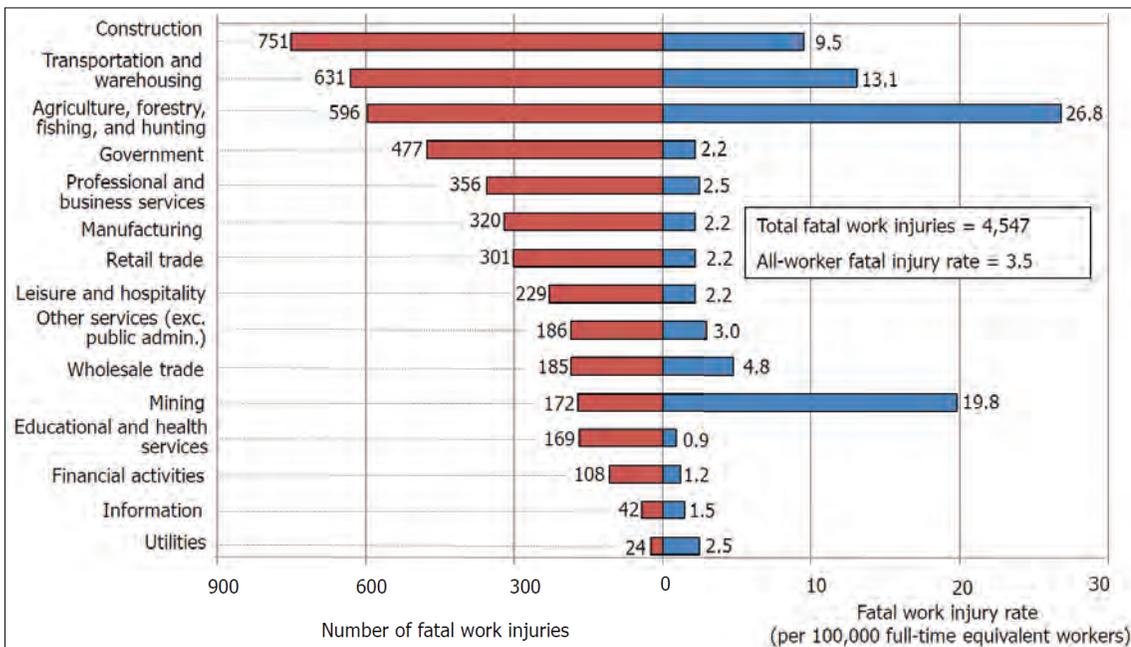


Figure 1. Number and rate of fatal occupational injuries by industry sector, 2010. (U.S. Bureau for Labor Statistics, U.S. Department of Labor, 2011).

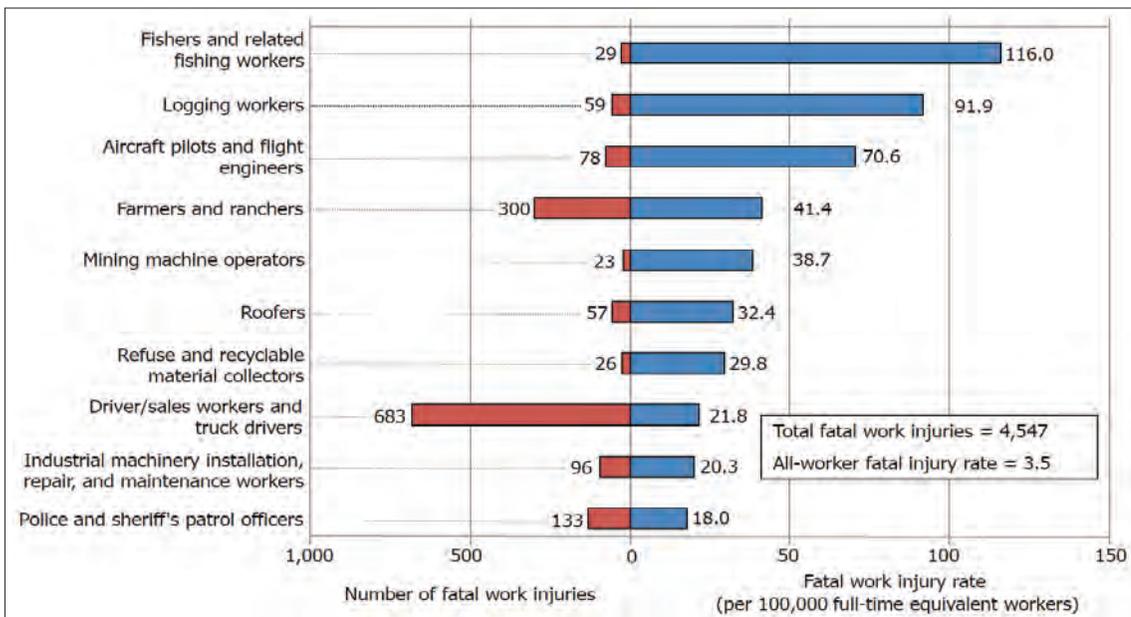


Figure 2. Fatal work injury rates for fishers, logging workers, and aircraft pilots and flight engineers in 2010. (U.S. Bureau for Labor Statistics, U.S. Department of Labor, 2011).

DVD and a manual (in English and Spanish) for on-dairy training purposes entitled "Considering Human and Animal Safety: Dairy Safety Training for Dairy Producers." The format allows supervisors and managers to establish safety protocols for their individual farms. The program is based on the concept that well-trained workers have high regard for their own safety as well as that of others, and the safety and well-being of the animals in their care.

The program can be regarded as an essential part of an overall Quality Assurance Program. It raises awareness of unsafe or potentially harmful working conditions, which with early detection may take minimal correctional action. By presenting guidelines on how to safely handle dairy cows in various common situations on the farm, as well as how to work with heavy equipment in a safe manner, management can train both new and current employees. Emphasis is placed on understanding animal behavior as the basis for safely working with and around animals.

The first DVD was developed in 2010 and released in early 2011. Copies were distributed to producers in Oklahoma, Texas, New Mexico, and Arizona. In addition, all attendees of the 2011 Western Dairy Management Conference received a copy. To date, over 3,000 copies have been distributed to producers and allied industry. A companion Safety Guide is being developed as a teach-

ing aid for producers and employees who desire to provide additional instruction of the material presented in the DVD.

(For additional information, or a copy of the DVD, contact Robert Hagevoort at dairydoc@nmsu.edu or 806-786-3421.)

### Video covers many topics

A series of questions are being added to the guide to aid producers in evaluating employees' understanding of the material. Producers can keep copies of these evaluations in their employee files to document training records and efforts. The DVD has two menu options, either English or Spanish, and every area has a recap section which reiterates the key points for the viewer. Specific areas covered in the DVD are:

- Animal handling in treatment chutes
- ATV safety
- Cattle flight zone
- Cattle point of balance
- Chemical safety
- Eye and ear protection
- Milking barn safety
- Moving cattle safely
- Properly immobilizing cattle
- PTO safety
- Safety around bulls
- Safety around electricity
- Safety around heavy equipment

- Safety around the silage pile
- Safety in the machine room
- Understanding how cattle see
- Waste lagoon safety
- Working with self-locking stanchions

Crucial in the development of the DVD was coverage of specific risk areas on the dairy and highlighting areas of need and care, while at the same time leaving room for producers to use their own dairy specific procedures and protocols. It was also imperative that the approach be both from a human and an animal well-being perspective, since safety on the dairy is best served when and where the human caretaker understandingly and humanely interacts with the animal and mistakes in terms of caretaking are minimized and prevented. Illustration and documentation of this aspect of animal production is becoming increasingly important to consumers and retailers at large, and can help to instill an image of a quality dairy product produced in a safe environment; both from a human as well as from an animal perspective.

### Second video is underway

While developing the first DVD, it was soon realized that the material covered was extensive, yet of a general nature, and that for specific positions on the dairy more in-depth and specific safety training was required. With input from producers who had worked with the first DVD, it was decided to develop a second safety training DVD to be added to the Producer Training Package that would extensively cover issues pertaining to each one of the major positions on the dairy: outside cow caretaker, calf caretaker, milker, and feeder.

In this way a new employee will be able to receive general training on safety issues across the dairy, as well as specific safety training for the position or positions they hold. Current employees can uniformly be trained or cross-trained for different positions on the dairy, and that training can be standardized without personal interpretation or procedural drift.

Additionally, as was mentioned previously, the training can be documented, which is a benefit for the producer, as well as employee. A menu option will allow selecting the specific position. The second Dairy Safety Training DVD is currently in the editing phase, and release of it and the total Producer Safety Training Package is anticipated in the summer/fall of 2012.

*This article was condensed from a presentation made at the 2012 High Plains Dairy Conference in Amarillo, Texas.*

Western Dairy News is published as a service to people interested in the health and welfare of the Western dairy industry. Archives of this publication may be found at:  
<http://animalscience-extension.tamu.edu/dairy/wdn.html>

For further information contact:  
 Dr. Ragan Adams, Editor  
 ILM, CSU-VTH  
 300 W. Drake Road  
 Fort Collins, CO 80523  
 970-297-0371  
 radams@lamar.colostate.edu

Material published in Western Dairy News is not subject to copyright. Permission is therefore granted to reproduce articles, although acknowledgement of the source is requested.

*Cooperative Extension programs are available to all without discrimination.*