Observational Needs Assessment
of Dairy Farm Workers
in New York State

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A partnership between: The Worker Justice Center of New York; Finger Lakes Occupational Health Services, a University of Rochester Medical Center Program; and Cornell University, School of Industrial and Labor Relations

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Observational Needs Assessment of Dairy Farm Workers in New York State

Executive Summary

Purpose:
In conjunction with the Worker Justice Center of New York (WJCNY), the Finger Lakes Occupational Health Services (FLOHS) of the University of Rochester Medical Center and Cornell University’s School of Industrial and Labor Relations (ILR), Extension Division, have taken several approaches to assessing the need for occupational health and safety training among Upstate New York farm workers. The fatality rate among New York’s agricultural workforce is approximately 24 per 100,000, which compares to the national average of 3.9 per 100,000 for all U.S. workers. The approach leading to this report involved visits to working dairy farms in Upstate New York where the conditions under which workers perform their duties could be actually observed. In order for FLOHS and ILR representatives to have access to the dairies, farm owners were unaware of the purpose of the visits; this limited our ability to speak freely with workers about their workplace experiences and concerns. However, other, earlier approaches to needs assessment did involve conversations with workers about their work environments, health and safety training, and daily work roles and responsibilities. This observational needs assessment was a useful supplement to what we had previously gleaned from workers themselves as our “outsiders” perspective allowed us to see the work environment with a more objective eye than can those who work in that setting day after day.

Our Observations:
A team of three staff members from the WJCNY, FLOHS at the U of R, and Cornell ILR made site visits to dairy farms in New York State for the purpose of assessing the occupational health and safety training needs of farm workers. We observed five operations within the dairy farms: an automated milking parlor, a robotic milking parlor, a heifers division, a feed and silage division, and an equipment maintenance division. The farm workers we observed worked primarily with farm equipment and the livestock. Additionally, we consulted with an agricultural safety specialist and an agricultural health nurse specialist.

Site Visit Outcomes:
We made determinations about the health and safety training needs of dairy farm workers in New York State based on our observations. We first considered all the possible needs that could be addressed with further study and future training and then narrowed the list to the highest priority issues that we could make specific recommendations about.
We also met with an agricultural safety specialist and an agricultural health specialist to discuss their experiences with farm workers and the dairy farm industry in New York State. Information from these meetings was used along with our observations to help us make recommendations about how to best ensure healthier, safer workplaces for those employed on New York’s dairy farms.

**Our Recommendations:**
Based on our observations of the dairy farm environment, we have made a number of recommendations concerning topics on which dairy workers should receive training, including OSHA rights, proper use of equipment, needle safety, chemical safety, electrical safety, eye safety, combating muscular-skeletal hazards, and handling livestock. Additionally, we found several areas about which little has apparently been researched and written, including the use of steel-toed shoes in dairy work, the podiatry effects of working regularly in wet environments, the impact of long, irregular hours on a worker’s well-being, and the precautions a worker might take to mitigate the muscular-skeletal effects of dairy work. For these areas, we recommend additional study.

**Needs Assessment Report**

**Purpose:**
In conjunction with the Worker Justice Center of New York (WJCNY), Finger Lakes Occupational Health Services (FLOHS) of the University of Rochester Medical Center and Cornell University’s School of Industrial and Labor Relations (ILR), Extension Division, have taken several approaches to assessing the need for occupational health and safety training among Upstate New York farm workers. The approach leading to this report involved visits to working dairy farms in Upstate NY where the conditions under which workers perform their duties could be actually observed. In order for FLOHS and ILR representatives to have access to the dairies, farm owners were unaware of the purpose of the visits; this limited our ability to speak freely with workers about their workplace experiences and concerns. However, other, earlier approaches to needs assessment did involve conversations with workers about their work environments, health and safety training, and daily work roles and responsibilities. This observational needs assessment was a useful supplement to what we had previously gleaned from workers themselves as our “outsiders” perspective allowed us to see the work environment with a more objective eye than is possible by those who work in that setting day after day.

**Introduction:**

A team of three staff members from the WJCNY, FLOHS at the U of R, and Cornell ILR made site visits to dairy farms in New York State for the purpose of assessing the occupational health and safety training needs of workers employed in that environment. Visits were made to a very large dairy farm, a moderately-sized dairy farm, and a smaller dairy farm. We observed five operations within the dairy farms: an automated milking parlor, a robotic milking parlor, a
heifers division, a feed and silage division, and an equipment maintenance division. The farm workers we observed worked primarily with farm equipment and the livestock.

During the visit to the very large dairy farm (approximately 6500 cows) we had the opportunity to consult with an agricultural safety specialist who has performed on-farm safety surveys and on-farm safety trainings with hundreds of farms across New York State. Additionally, we have had the benefit of consultation with an agricultural health nurse specialist who has worked with hundreds of farms across New York State to provide health and safety training as well as health care to injured farm workers.

Information from those meetings supplemented our observations to help us assess the work environment of dairy farm workers in New York State and make recommendations for appropriate training to maximize safe and healthful work practices for those employed as dairy farm workers.

**Background of the Dairy Farming Industry in New York State:**

The following information comes from NYS Department of Agriculture & Markets Dairy statistics: [www.farmskeepnygreen.org/toolbox/statistics.html](http://www.farmskeepnygreen.org/toolbox/statistics.html)

The dairy farming industry is an important contributor to the economy of New York State. New York ranks third in the US for overall production of milk and dairy is the number one agricultural industry in New York State.

New York State has 1.4 million dairy cattle on nearly 6,000 dairy farms producing 12 billion pounds of milk on an annual basis. Dairy farms contribute $1.9 billion annually to the state’s economy, providing some of the highest economic multipliers in the state. For example, every new farm job creates 1.24 new jobs in the community. It is reported that the state’s dairy industry directly supports a full-time workforce of 22,000 people.

The average herd size on a US dairy farm is 135 mature cows. The majority of dairy farms, 77 percent, have fewer than 100 cows. However, dairy farms with more than 100 cows produce 77 percent on the milk. The trend of dairy farms across the US is that they are not increasing the number of cows, but rather production per cow is increasing, which indicates the health of these cows. Healthy cows give healthy milk. Increased production per cow enables farms to reduce their carbon footprint. Using fewer cows and feed resources to produce the same amount of milk improves environmental sustainability and reduces the demand on natural resources.

To meet USDA dietary recommendations for three 8 ounce glasses of milk per person each day, US milk production will have to increase to 5.62 billion gallons by the year 2040.

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The BOCES Geneseo Migrant Center estimates that 47,000 migrant farm workers and their family members arrive in New York State annually. The fatality rate among New York’s agricultural workforce is approximately 24 per 100,000, which compares to the national average of 3.9 per 100,000 for all U.S. workers. Data for dairy farm-related injuries and illnesses is not available, but it is evident that farm safety warrants attention.

In a paper entitled *Dairy Farm Safety and OSHA - Approaches for effective management and worker training*, the author, David Douphrate, discusses the most common safety hazards on dairy farms:

- **Heavy Equipment**: One of the most common causes of death and serious injury on farms is related to the heavy equipment required to run a dairy farm. A high number of farming fatalities are due to tractor turnovers. Other serious equipment hazards include being run over by tractors, tractor power take offs (PTO), and becoming entangled in rotating shafts. Other causes of fatalities include silage bunker collapse, manure pits, tractor power take offs (PTO) and large animals such as dairy bulls.
- **Livestock**: According to researchers Mitloehner and Calvo (2008), animals are a leading cause of dairy worker injuries. Being kicked, stepped on, or crushed between a cow and an immovable object can result in impairment or even death.
- **Other**: Chemical hazards, confined spaces, manure lagoons, use of power tools, and improper use or lack of personal protective equipment.

Douphrate also documents the most common citations that resulted from 736 diary inspections between 2000 and 2010:

- Lack of proper injury and illness prevention program
- Lack of work injury recording and reporting
- Failure to mount or properly tag portable fire extinguishers
- Inadequate communication program about hazardous chemicals
- Inadequate safety management process for highly hazardous chemicals
- Inadequate hazardous waste operation management and emergency response
- Inadequate respiratory protection
- Lack of roll-over protective structures (ROPS)
- Inadequate guarding of floor and wall openings/holes
- Inadequate eye and face protection
- Inadequate medical services and first aid
- Inadequate guarding of field and farmstead equipment

**Assessment of our Observations:**

Working on a dairy farm involves long hours of intensive labor. In assessing the health and safety aspects of dairy work, we took an approach that presumes that the workers are not able to...
influence the farm owners’ business decisions. This approach is in recognition of what workers have told WJCNY representatives about the relative powerlessness they believe they have over farm operations. Language barriers, immigration status, and obstacles to alternative employment combine to leave this workforce in a vulnerable state. Thus, our recommendations are primarily concerned with giving the workers themselves knowledge and skills that will maximize their health and safety without assuming that their employers will cooperate.

The occupational health and safety hazards cited below could be addressed by further study and training. The observed training needs fall into the categories of:

- **Safety:**
  - Working with large livestock in large numbers and crowded spaces
  - Working with machinery
  - Working with needles
  - Long, irregular work hours

- **Health:**
  - Working with veterinary drugs and other substances
  - Stress of working long, irregular hours

- **Ergonomics:**
  - Repetitive work using awkward postures

**Factors Impacting Learning:**

A number of barriers exist to providing effective health and safety training, among them is the very nature of farm work which requires temporary labor during which the worker is required to work long hours, in adverse environmental conditions, and requiring intense physical exertions. Field workers are often in the geographic area for a very short period of time, moving frequently from farm to farm to plant, tend, and harvest crops. Training for field workers requires the training to be intense, provided immediately upon encountering the workers, and provided during the evening hours after the workers have spent many hours in the field.

In many ways training of dairy workers allows for more comprehensive training. Dairy workers have a more stable living situation, are not transitory, and have schedules that are consistent from day to day. Training on multiple topics can be spread out over days or weeks. Evaluation of the training session is also more likely to occur given the stability of the work environment. Schedules for dairy workers usually include a mid-morning and/or mid-afternoon break which may be lengthy (2 or more hours), allowing for outreach workers to set up trainings during the day, when workers are more likely to be more rested and thus more attentive.

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The make-up of the dairy farm workforce has changed dramatically over the past decade. Once consisting of workers from the local geographic area, most dairy workers now migrate from Mexico and Central America. This presents a challenge when training workers. Most employers do not speak the language of their workers, relying on other workers to train newer workers.

**Our Recommendations**

It is important to note that our team of observers had no farming background to bias our assessment of farm worker training needs in either a positive or negative way. We are making observations from the perspective of individuals who are unfamiliar with dairy farming and farming in general. We believe this provides an unbiased outside perspective from which to draw an objective assessment of needs.

We wanted to look at not only what is required under OSHA, but also at the observed factors that need to be addressed to keep dairy farm workers healthy and safe. This approach will shed light on where there are gaps between the training required under OSHA and what is needed for those trainings to translate into safety and health for dairy farm workers. It is also important to note that while farms employing fewer than ten workers do not fall under OSHA’s jurisdiction, the needs that we have identified below apply to all dairy farm workers, regardless of the size of the dairy farm they work on.

**Training for Dairy Farm Workers:**

A primary need we observed, which applies to all training recommendations, is that training be delivered in the worker’s primary language. It is common to find non-English speaking workers on dairy farms in New York State. Additionally, workers’ literacy rates, even in their first language, can be quite low. Training and materials should avoid lofty terms, should utilize imagery, and should involve participants in discussion as much as possible as they are likely to know more about the hazards of their jobs than the person conducting the training. In order to ensure that all workers understand the material presented to them we recommend that pre- and post-testing or some other form of learning evaluation be administered at all trainings.

We recommend that training be presented to dairy farm workers on the topic of Worker Rights under OSHA. Although these rights cannot be enforced on farms employing fewer than ten workers, the basic principles of a healthy, safe workplace do apply. A modified version of the training conveying the basic principles of a healthy, safe workplace can be presented to farm workers on farms employing fewer than ten workers. It is imperative that workers understand that there is risk associated with making a complaint about job hazards, but that OSHA has tried to mitigate that risk by making it possible for workers to remain anonymous when filing a complaint with that agency. The Whistleblower protection for workers who file a complaint is

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important when training workers who come from countries where there may be no protection for workers who make a complaint about health and safety on the job.

We recommend that farm workers receive training on working with chemicals (OSHA Hazard Communication), including training on material safety data sheets/safety data sheets (MSDSs/SDSs), proper storage of chemicals (including not mixing chemical and food storage), and good hygiene practices. Training should include information about what resources are available to help identify proper handling, storage, and first aid if the farm does not make MSDSs/SDSs available. This will require research on the part of trainers – for example, it is very difficult to find out what a worker should do if s/he is stuck with a needle containing animal hormones. If people familiar with doing basic research find it difficult to locate such information, it will be impossible for farm workers to find the information. They need to know who they can call and what information they’ll need to provide in order to learn how to reduce the effects of exposure.

We recommend that farm workers receive training on eye safety. Eye hazards from both chemical and mechanical exposures exist in the dairy farm environment. Awareness of the hazards present and the importance of eye protection to prevent injuries should be conveyed to dairy farm workers, including what kind of eye protection is most effective and where they can obtain such eye-wear. They also should be aware of the importance of having eye washes available in the barns and how to properly use an eye wash. If an eye wash is not provided, workers should know what they should do if an irritant gets in their eye.

We recommend that farm workers receive training on the use of needles. Dairy farms administer veterinary drugs to livestock. This presents a hazard to dairy farm workers. The workers should be educated on the proper use and storage of needles, the proper disposal of needles, the hazards of the drugs to the workers and what to do if a needle stick occurs.

We recommend that farm workers receive training on animal handling. Dairy farm workers regularly work with large livestock in crowded conditions. Dairy farm workers should be educated on the hazards of working with livestock, such as the possibility that cows might enter the milking pit and panic or that workers should always avoid standing between a cow and a fence or wall as they can be crushed. A case study approach could help workers learn to respond appropriately if they encounter a dangerous situation. They can then discuss what measures can be implemented to make working with livestock safer, such as installing a barrier to prevent cows from entering the milking pit.

We recommend that farm workers receive training on the proper use of farm equipment. Various types of powered equipment are in use in the dairy farming environment, including manure scrapers, skid steers, tractors and other vehicles. It is estimated that half of all dairy farm fatalities involve vehicle accidents, so whether the workers are actually operating the equipment or merely working nearby, it behooves them to know how to work safely so they can recognize an accident before it happens. And they should know enough that they can avoid being hurt
themselves if they try to assist someone who is involved in an accident involving equipment or machinery.

We recommend that dairy farm workers receive training on electrical safety. Many electrical hazards are present in the dairy farm environment such as make-shift wiring, outlets and wiring in wet areas, old electrical appliances in use (such as refrigerators), etc. Workers should be informed about how to avoid electric shock and what to do if they or someone else is shocked or electrocuted.

We recommend that breaks to perform stretching activities be incorporated into the training sessions as a way to promote muscular-skeletal injury prevention. Dairy farm workers were observed to be at risk of muscular-skeletal injuries. The best way to prevent muscular-skeletal injuries is with the implementation of engineering controls. Since farm workers themselves do not have the ability to implement engineering controls they are therefore exposed to muscular-skeletal hazards while performing their work tasks. Regular stretching exercises are helpful in muscular-skeletal injury prevention; practicing some exercises during the training sessions will help familiarize workers with ways they can avoid injury and discomfort as a result of repetitive motions or sedentary positions.

Summary of training recommendations:

- Training is done in the language and literacy level of the worker.
- All workers receive training about their rights under OSHA and the Whistleblower protection
- Training regarding chemicals, their proper storage and good hygiene practices is included in the training about OSHA Hazard Communications.
- Training regarding eye safety, the use of eye protection, and the how to properly use an eye wash.
- Training regarding the use of needles to administer veterinary drugs, the proper disposal of needles and what to do in case of an accidental needle stick.
- Training on animal handling.
- Training on electrical safety.
- Incorporating stretching exercises in existing training sessions to show workers how to prevent muscular-skeletal stresses.
- Evaluation measures, such as pre- and post- tests be utilized to insure worker comprehension of the material presented

Areas for Future Study:

We recommend that research be done on the use of steel toed boots in the dairy farm environment. Some workers we encountered said steel toes were necessary to avoid foot-crushing injuries when livestock step on workers’ feet. Others believe their toes could be cut off

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by the steel if an animal’s hoof forced the metal into their foot. This question should be researched and answered. Accurate information on this issue should then be conveyed to dairy farm workers.

We recommend that research be done to address the fact that dairy farm workers are standing on their feet in wet and slippery conditions, often for hours and hours. Are dairy farm workers at greater risk of problems with their feet as a result of wet conditions? If so, what steps can be taken to mitigate these risks? Are dairy farm workers suffering injuries from slipping in the wet conditions they work in? If so, what steps can be taken to mitigate these risks? Accurate information on these issues should then be conveyed to dairy farm workers.

We recommend that research be done on the effects of long, irregular work hours on farm worker health such as the impact on quantity or quality of rest, alertness, blood pressure, etc. Accurate information on the results of this research should then be conveyed to dairy farm workers.

We recommend that research be done on muscular-skeletal disorders in dairy farm workers. Dairy farm workers perform repetitive tasks over long hours. Are these workers experiencing muscular-skeletal disorders as a result of the work they do? Accurate information on the results of this research should then be conveyed to dairy farm workers.

Biography of Participating Staff:

Peg Billyard
Peg Billyard received her Bachelor of Arts degree from the State University of New York at Geneseo and a Masters of Business Administration at Medaille College, and has had extensive coursework at the Simon School of Business at the University of Rochester. Peg has worked for legal services for 18 years, first at Monroe County Legal Assistance Corporation (now called Legal Assistance of Western New York) and then at Neighborhood Legal Services in Buffalo New York. She has an extensive background in information systems, networking, database analysis and design, and organizational structure and development. Her association with WJCNY began 15 years ago as the technologist for the Rochester area co-located legal services program. She is project coordinator for WJCNY’s Workplace Health & Safety Project and consultant to the human trafficking project and the domestic and sexual violence project.

Linda H. Donahue
Linda H. Donahue is a Senior Extension Associate with Cornell University’s Labor Relations School. She developed and is the director of the School’s On-Line Labor Studies Program and coordinates a web-based series of seminars on workplace-related topics. Additionally, she conducts workshops and teaches courses on a variety of subjects including women and work, labor history, and building effective committees. Among her publications are the 2007 report

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“The Cost of Worker Misclassification in New York State” and the book *All These Years of Effort: Rochester New York’s Central Labor Unions*. Donahue’s graduate work was in Social Policy Studies and Labor Relations. She has served as a consultant to the Worker Justice Center’s Workplace Health and Safety Project.

**Donna L. Lawrence**

Donna L. Lawrence is the Senior Industrial Hygienist for Finger Lakes Occupational Health Services, a University of Rochester Medical Center Program and a Member of the New York State Occupational Health Clinic Network. FLOHS is a regional resource for high quality occupational medicine services in a nine county area. FLOHS works with businesses and workers to prevent work-related injuries and illnesses by providing preventive services, medical screenings and educational programs. Donna has worked in the health, safety and environmental field since 1989, is a Certified Worksite Wellness Program Manager, and serves on a variety of community boards and councils to promote worker health and safety. Donna received her Bachelor of Science Degree in Biology from the State University of New York, College at Brockport and her Master of Science in Environmental Studies from the School of Medicine and Dentistry at the University of Rochester.