MODULE THREE

Hazard Identification and Risk Assessment

Learning Objective

Upon completion of this unit you will understand how to identify hazards and assess risks for your dairy operation.

Learner Outcomes:

1. Understand that behind each fatality or serious injury there are thousands of at-risk behaviors and unidentified hazards that contributed to the incident.
2. State the definition of a hazard and explain how to identify hazards in the workplace.
3. Determine methods for controlling hazards in the workplace.
4. Complete a Job Hazard Analysis for a typical dairy worker task.

Instructional Notes

Slide 1:

Slide 2: Objective

Slide 3-4: Outcomes

Slide 5:

Introduction

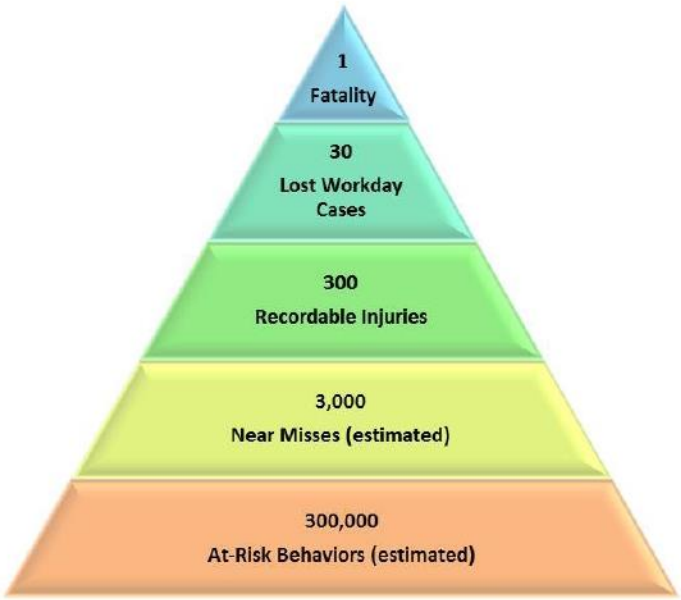
Safety in any operation works best if the person or people in charge take a leading role in managing safety and health.

Many business enterprises have proven that good safety management leads to increased productivity, and the same works for farms.

By having a good safety management program, you can avoid not only farm injuries, but also other incidents that are costly, time consuming, stressful and inconvenient. This makes good economic sense.

Slide 6:

Safety Pyramid



Trainers may share their own at-risk behaviors they have identified and ask participants to share their own.

Slides 7-8:

In 2003, ConocoPhillips Marine conducted a study demonstrating a large difference in the ratio of serious accidents and near misses. This study was built on the original work of H.W. Heinrich back in 1931. The Conoco study found that for every single fatality there are at least 300,000 at-risk behaviors, defined as activities that are not consistent with safety programs, training and components on machinery. These behaviors may include bypassing safety components on machinery or eliminating a safety step in the production process that slows down the operator. With effective machine safeguarding and training, at-risk behaviors and near misses can be diminished. This also reduces the chance of the fatality occurring, since there is a lower frequency of at-risk behaviors.

Slide 9 & 10 :

Definition of a hazard

A hazard is simply a condition or a set of circumstances that present a potential for harm. Hazards are divided into two broad categories:

- Health hazards (cause occupational illnesses)
- Safety Hazards (cause physical harm - injuries)

Slides 11-15:

Hazard Identification

Hazard identification is the process of identifying all hazards in the workplace. There is no set method for grouping agricultural injury and illness hazards. Most production agriculture hazards overlap into different hazard categories. One way to group them would be by major hazards listed in the OSHA
Dairy Local Emphasis Program:

- Manure storage facilities and collections structures
- Dairy bull and cow behavior/worker positioning
- Electrical systems
- Skid-steer loader operation
- Tractor operation
- Guarding of power take-offs (PTOs)
- Guarding of other power transmission and functional components
- Hazardous energy control while performing servicing and maintenance on equipment
- Hazard communication
- Confined spaces
- Horizontal bunker silos
- Noise

Toolbox Item: Hazard Prevention and Control

Examples include by building, by task, etc.

Class Question: What other ideas do you have for ways of grouping or identifying hazards?

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Hazards are the main cause of occupational health and safety problems. Therefore, finding ways of eliminating hazards or controlling the risks is the best way to reduce workplace injury and illness.

Slide 17-19:

How to Start

To assess safety management on your farm, check whether you have:

- Regular hazard assessment surveys of operations, equipment, substances and tasks
- A system of recording injuries, near misses and identified hazards
- Safe procedures for dairy farm tasks
- Safety training and supervision for new and young employees
- Protective clothing and equipment (PPE)
- Safety training and practice for each new piece of equipment
- Safety discussions between employers, contractors and employees
- Safety information readily available for hazardous substances
- Copies of the regulations

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Develop a plan

Develop a written safety and health program covering the points listed above. (This will be covered in more detail in Module 8 - Safety and Health Programs). Keep it with other safety information about operations, equipment and substances on the farm.

- Discuss the program with others on the farm during development to assure their safety concerns are met. Incorporate a system for hazard identification, risk assessment and risk control.
- Make sure employees and others on the farm are familiar with the plan, safe work procedures, and current legal safety and health requirements.
- Other components include providing farm workers with safety information, orientation for new employees, safety training for new procedures, special safeguards for young workers, and keeping a record of injuries, near misses and potential hazards.

Slides 24-26:

Ask participants to identify hazards they have encountered in these example areas.

Slides 27-29

Ask participants to identify hazards they have identified and corrected.

Identify the hazard

The best safety outcomes on farms are achieved by a 24-hour approach to identifying and dealing with hazards.

Hazards may be identified in:

- Environments (light, noise, rain, heat, sun)
- Substances (pesticides, fuels, dusts)
- Workplace layout (parlor designs, cattle passes)
- Work organization (unnecessary manual handling)
- Equipment (ladders, squeeze chutes, crowd gates)
- Farm animals (that bite, kick, butt, crush, toss, infect)
- Heights (roofs, vertical and horizontal silos, manure pits)
- Electricity (switches, cables, leads, power tools, connections)

Hazards may be identified by:

- **Observation** - use your senses of sight, hearing, smell and touch - combined with knowledge and experience.
- **Material Safety Data Sheets (MSDSs)** - obtain them from manufacturers and suppliers. Read them carefully to identify possible harm from hazardous substances and precautions that need to be taken.
- **Hazard and risk surveys** - conduct hazard spotting surveys of main work areas. Talk to others about their safety concerns.
- **Children and visitors** - include in your surveys areas and activities in which children or visitors could be at risk.
- **Record analysis** - keep records of identified hazards, near misses, injuries and workers' compensation claims to help identify possible trends.
- **Discussion groups** - are useful for identifying hazards and recommending solutions.
- **Safety audits** - consider creating a safety committee to investigate safety and help prepare a management plan.
- **Information** - keep informed of hazards in the industry through the latest available information.
- **Consumer information** - carefully read and follow consumer guidelines on equipment and substances.
- **Regulations and best practices**

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Assess the Risk

Once a hazard has been identified, the likelihood and possible severity of injury or harm will need to be assessed before determining how best to minimize the risk. High risk hazards will need to be addressed more urgently than low risk situations.

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You may decide that the same hazard could lead to several different possible outcomes. For each hazard consider how likely each possible outcome is, and record the highest priority.

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Make the changes

Consider the following control measures, listed in order of importance:

a) Remove the hazard at the source - e.g. get rid of it or replace it.

b) Substitute it with something less hazardous.

c) Isolate the hazardous process, item or substance from people.

d) Add engineering controls, such as safety barriers or exhaust ventilation.

e) Adopt safe work procedures, training and supervision to minimize the risk.

f) Where other means are not sufficient or practicable, provide personal protective equipment.

g) Implement and monitor the controls you decide upon.

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One or more of the controls recommended above should be agreed upon and the changes made as soon as possible before the hazard causes an injury. Sometimes it will require more than one of the risk control measures above to effectively reduce exposure to hazards.

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Checking the changes

To make sure risk has been minimized, and a further hazard has not been created, the new safety measures may need to be carefully tested before work begins again. Consultation between the employer and others at the workplace will help to reach a safe decision.

In some cases, a new set of safe work procedures may be necessary, possibly even another period of training and supervision, until the improvement can be shown to be working safely. Safety improvements should be reviewed periodically, to make sure they continue to be effective.

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Job Hazard Analysis (JHA)

A job hazard analysis is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after you identify uncontrolled hazards, you will take steps to eliminate or reduce them to an acceptable risk level.

Slides 37-38:

A JHA can be conducted on many jobs in your workplace. Priority should go to the following types of jobs:

- Jobs with the highest injury or illness rates;
- Jobs with the potential to cause severe or disabling injuries or illnesses, even if there is no history of previous accidents;
- Jobs in which one simple human error could lead to a severe accident or injury;
- Jobs that are new to your operation or have undergone changes in processes and procedures; and
- Jobs complex enough to require written instructions.

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Where do I begin?

1. **Involve your employees**. It is very important to involve your employees in the job hazard analysis process. They have a unique understanding of the job and this knowledge is invaluable for finding hazards. Involving employees will help minimize oversights, ensure a quality analysis, and get workers to "buy in" to the solutions because they will share ownership in their safety and health program.

Slide 40:

2. **Review your accident history**. Review with your employees your farm's history of accidents and occupational illnesses that needed treatment, losses that required repair or replacement, and any "near misses" -- events in which an accident or loss did not occur, but could have. These events are indicators that the existing hazard controls (if any) may not be adequate and deserve more scrutiny.

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3. **Conduct a preliminary job review**. Discuss with your employees the hazards they know exist in their current work and surroundings. Brainstorm with them for ideas to eliminate or control those hazards.

If any hazards exist that pose an immediate danger to an employee's life or health, take immediate action to protect the worker. Any problems that can be corrected easily should be corrected as soon as possible. Do not wait to complete your job hazard analysis. This will demonstrate your commitment to safety and health and enable you to focus on the hazards and jobs that need more study because of their complexity. For those hazards determined to present unacceptable risks, evaluate types of hazard controls.

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4. **List, rank, and set priorities for hazardous jobs**. List jobs with hazards that present unacceptable risks, based on those most likely to occur and with the most severe consequences. These jobs should be your first priority for analysis.

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5. **Outline the steps or tasks.** Nearly every job can be broken down into job tasks or steps. When beginning a job hazard analysis, watch the employee perform the job and list each step as the worker takes it. Be sure to record enough information to describe each job action without getting overly detailed. Avoid making the breakdown of steps so detailed that it becomes unnecessarily long or so broad that it does not include basic steps. You may find it valuable to get input from other workers who have performed the same job. Later, review the job steps with the employee to make sure you have not omitted something. Point out that you are evaluating the job itself, not the employee's job performance. Include the employee in all phases of the analysis -- from reviewing the job steps and procedures to discussing uncontrolled hazards and recommended solutions.

Sometimes, in conducting a job hazard analysis, it may be helpful to photograph or videotape the worker performing the job. These visual records can be handy references when doing a more detailed analysis of the work.

After reviewing your list of hazards with the employee, consider what control methods will eliminate or reduce them. The most effective controls are engineering controls that physically change a machine or work environment to prevent employee exposure to the hazard. The more reliable or less likely a hazard control can be circumvented, the better. If this is not feasible, administrative controls may be appropriate. This may involve changing how employees do their jobs.

Discuss your recommendations with all employees who perform the job and consider their responses carefully. If you plan to introduce new or modified job procedures, be sure they understand what they are required to do and the reasons for the changes.

Toolbox Item:

Job Hazard Analysis Form

Class Activity:

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Completing a Job Hazard Analysis Form for a typical dairy farm job.

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OSHA Consultation Program

OSHA offers a free consultation program providing the following benefits:

- professional advice and assistance to correct workplace hazards
- on-site training and assistance
- OSHA inspections may be deferred during the course of the consultation
- make safety and health activities routine rather than crisis oriented

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OSHA consultants will:

- Help employers recognize hazards in the workplace.
- Assist employers in developing or maintaining an effective safety and health system.
- Suggest general approaches or options for solving a safety or health problem.
- Identify resources available if an employer needs further assistance.
- Provide employers with a written report summarizing findings.
- Provide safety and health training.

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OSHA consultants will not:

- Issue citations or propose penalties for violations of OSHA standards.
- Guarantee that a workplace will "pass" any OSHA inspection.

The Consultation Visit

Consultation is a voluntary activity conducted at the request of a business. The employer's only obligation is to correct serious, unsafe or unhealthful working conditions discovered by the consultant within a reasonable time frame.

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Request for services: The consultant discusses specific needs and sets a date for a visit that is convenient to both the employer and consultant.

Initial meeting: The consultant arrives at the worksite for the scheduled visit and conducts an opening conference with the employer to explain the consultant's role and the obligations of the employer.

Walkthrough: Together, the employer and the consultant examine conditions in the workplace and the consultant evaluates potential hazards, physical work practices and the employer's job safety and health program. The consultant will also request employee participation in the walkthrough.

Closing conference and follow-up: The consultant reviews detailed findings with the employer in a closing conference. The employer will learn not only what improvements are needed but what is being done right, as well.

Following the closing conference, the consultant sends the employer a detailed written report explaining the findings and confirming any abatement periods. The consultant may follow up to check on the employer's progress. Likewise, the employer may contact the consultant at any time for assistance.

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Correcting hazards: In rare instances, where the consultant finds an "imminent danger" situation during the walkthrough, the employer must take immediate action to protect employees. When a situation is judged as a "serious violation," the consultant will assist the employer to develop a specific plan to correct the hazard within a reasonable time frame.

If the employer fails to eliminate or control serious hazards, the situation must be referred from consultation to enforcement for appropriate action. However, this type of referral is infrequent.

WisCon OSHA Consulting in Wisconsin:

1-800-947-0553

http://www.slh.wisc.edu/wiscon/

Slide 50:

Review:

1. Identify a hazard from each section of the Dairy LEP that may be found on your farm:

Examples should reflect specificity to their farm and reflect the following LEP areas:

- Manure storage facilities and collections structures
- Dairy bull and cow behavior/worker positioning
- Electrical systems
- Skid-steer loader operation
- Tractor operation
- Guarding of power take-offs (PTOs)
- Guarding of other power transmission and functional components
- Hazardous energy control while performing servicing and maintenance on equipment
- Hazard communication

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2. List the steps necessary to conduct a Job Hazard Analysis on your farm:

1. Involve employees

2. Review accident history

3. Conduct preliminary job review

4. List, rank, and set priorities for hazardous jobs

5. Outline the steps or tasks