

# SAFE WORK PRACTICES ON DAIRY FARMS



MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA  
AGRICULTURE

UNIVERSITY OF MINNESOTA  
DOCUMENTS

JAN 25 1990

ST. PAUL CAMPUS  
LIBRARIES

Larry D. Jacobson

The frequent handling of animals on dairy farms makes dairy workers extremely vulnerable to animal-related accidents. Many of these accidents can slow down a dairy operation and cause serious economic losses as well as human grief and suffering. Results of a Minnesota farm accident survey of nearly 2,000 farms indicate:

- About 15 percent of all work-related accidents involved animals.
- Two-thirds of the animal-related accidents took place on dairy farms.
- Many of the victims were stepped on, kicked, fallen on and crushed by cows, or mauled and gored by dairy bulls.

## Sources of Potential Hazards

### HANDLING DAIRY ANIMALS

**Milking in stall barns.** Most animal-related injuries reported in the Minnesota farm accident survey took place when dairy workers were milking in stall barns. Since a majority of Minnesota dairy producers have stall barns they have a greater risk of injury than some other states. A group of dairy farm veterinary practitioners surveyed in Minnesota concurred with the survey findings.

**Keeping dairy bulls.** Recent statistics indicate that in Minnesota about 40 percent of the dairy farms rely on dairy bulls for all or some of the breeding of cows. When you keep dairy bulls for breeding purposes, you are risking serious animal-related accidents if your farm lacks sufficient bull confinement and restraining facilities. During the last 10 years, 12 farmers in Minnesota were mauled and gored to death by dairy bulls.

**Other activities.** Examination and medication of animals are among the most hazardous dairy farm activities, especially if a treatment stall and sufficient animal restraining facilities are not available. Animal handling

activities such as hoof trimming, shipping, dehorning, and artificial insemination are hazardous, too, unless proper animal restraining methods are applied and you have the necessary animal restraining equipment and facilities on the farm.

### ZOONOSES

Zoonoses are all illnesses which can be transmitted between humans and animals. Leptospirosis, rabies, brucellosis, salmonellosis, and ring worm are especially important on dairy farms. You can contract one of these zoonotic illnesses by handling an infected animal or disposing of infected tissues without taking basic hygienic measures.

### HANDLING AND STORING ANIMAL FEED

**Moldy forage.** As a result of handling moldy forage, you can be exposed to an airborne fungi and contract farmer's lung disease.

**Dangerous gases.** You can be exposed to dangerous gases such as nitrogen dioxide (NO<sub>2</sub>), which is produced as a result of the fermentation process of silage, and carbon dioxide (CO<sub>2</sub>), which is produced in the grain bin if grain is stored with a high moisture content.



Accidents often occur while dairy workers are milking cows in stall barns.

## HANDLING PESTICIDES

You can be exposed to dangerous chemicals when applying pesticides, unless you use proper personal protective equipment and handle the pesticides with caution.

## ELECTRIC SHOCK HAZARDS

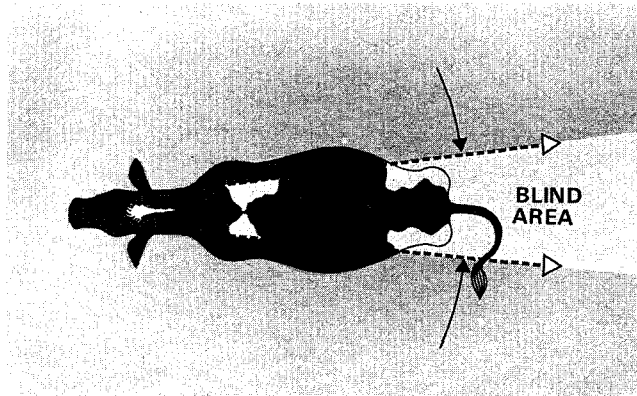
The risk of electric shock exists when you are working in the wet or damp environment of a barn and milking parlor.

# Reducing Accident Risks

Management of a dairy farm involves animal handling activities such as milking, feeding, and providing health care. This constant close contact with the animals increases your chance of having an animal-related accident. How can you reduce the accident risk?

## ANIMAL BEHAVIOR

It will help if you understand dairy animal behavior, which is a combination of both inherited and acquired components. The following are tips for becoming acquainted with certain behavioral aspects of animals on your farm.



Cattle have a panoramic field of vision.

**Panoramic vision.** Cattle have a large panoramic field of vision, which means they can see everything around them except what is immediately behind their hindquarters. Approaching from the side or front can be less startling to these animals than approaching from behind.

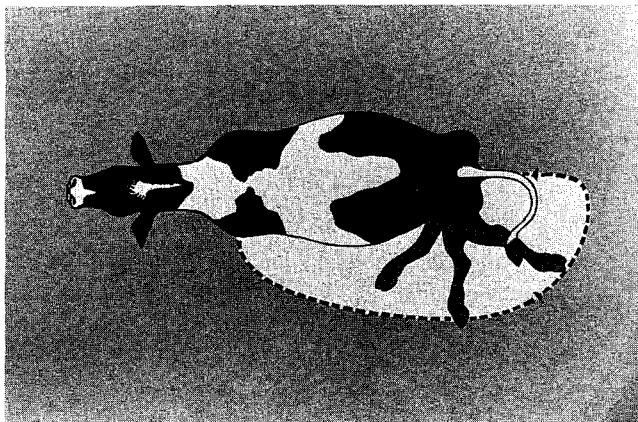
**Cows with new calves.** A cow with her new calf is usually more defensive and more difficult to handle. Let her calf stay as close to her as possible.

**Dairy bulls.** Dairy bulls are much more aggressive by nature than cows. Although some dairy bulls appear gentle and calm, they may react at unexpected moments, inflicting serious injuries or death onto the bull handler. Never consider a bull safe, and do not let your children play with a bull even if you have raised him.

**Noise and crowds.** Sudden exposure of dairy cattle to noise and crowds, especially in a barn, may make the animals nervous and difficult to handle.

**Horned animals.** Horned cows or bulls are more prone to attacking handlers. Make sure all cattle on the farm are dehorned.

**Kicking.** Cows commonly kick forward and out to the side. They also have a tendency to kick toward the side where they have pain from inflammation or injuries. Therefore, if a cow is suffering from mastitis of only one quarter, you may want to consider approaching her from the side of the non-affected udder when examining or milking.



Cows commonly kick forward and out to the side.

**Dry cows.** Dry cows usually exhibit more aggressive behavior after coming back from the pasture. It may take them a week or so before they get used to barn life again.

## RESTRAINING EQUIPMENT AND FACILITIES

In a recent dairy farm accident survey among veterinarians in Minnesota, over three-quarters of the participants attributed animal-related human injuries to a lack of sufficient restraining equipment and facilities on most dairy farms. Proper application and the right choice of restraining equipment and facilities are very important considerations for reducing potential injuries to the dairy farmer.

Before selecting the animal restraining equipment and/or the facility, ask yourself: Will it be safe for the animal handler? Will it be safe for the animal? Will it accomplish the intended purpose?

**Equipment for various activities.** When milking in the barn or cleaning or examining the udder use anti-kicking devices on cows that are chronic kickers. Use a rope halter, squeeze chute, and headgate when you engage in major animal handling activities such as hoof trimming, breeding, and applying medication. Use a squeeze chute with a headgate to protect yourself from the animal's violent movements. Use a tail holder to prevent eye injuries when milking or examining the animal.

**Mangates.** Many veterinarians recommend mangates in cattleyard pens. Mangates are small passages between two posts about 14 inches apart in the fence around a yard pen, through which a person can easily



A treatment stall with a headgate, an anti-kicking device, a halter, and a nose lead are examples of restraining equipment that reduce exposure to accidents.



A treatment stall should be considered an essential part of dairy farm facilities.

escape from unexpected, dangerous situations without having to open the animal gate or climb the fence.

**Dairy bulls.** If you keep a dairy bull on your farm for breeding purposes, have all the necessary restraining equipment and facilities. An ideal confinement unit for a dairy bull should be designed so you never come in direct contact with the bull for feeding or breeding.

**Treatment stall.** Maintain a treatment stall on your farm to reduce the risk of injuries to yourself as well as the veterinarian during activities such as pregnancy examination, vaccination, medication, deworming, and artificial insemination.

## PERSONAL PROTECTIVE EQUIPMENT

Farm safety experts estimate more than half of farm injuries can be prevented by using some type of personal protective equipment, depending on the work activity.

Use safety glasses, gloves, long trousers, steel-toed work shoes, and a bump hat for activities such as handling bulls, hoof trimming, and shipping the animals. This type of equipment will reduce the injury potential to the head, feet, hands, and other parts of the body.

Use a chemical respirator, eye goggles, hard shell hat, rubber gloves, trousers, and a long-sleeved shirt when preparing and applying pesticides. Exposure to pesticide

chemicals through breathing, swallowing, or skin contact is a significant health hazard and may lead to poisoning or serious skin problems.

Use a dust respirator when working in areas that generate dust. Avoid breathing any dust generated by moldy forage or grain because it may cause farmer's lung disease.

## HUMAN FACTORS

**Stress.** When you are under physical or psychological stress, try to avoid major animal handling activities. Fatigue and stress can predispose you to serious farm accidents.

**Training.** Teach your new or young workers how to work safely on a dairy farm. In your training session, emphasize all known animal behavior problems. You may also want to point out the use and efficiency of all animal restraining equipment and facilities available on the farm.

**Sure footing.** To reduce the hazard of falls, provide slip-resistant footing for you and your livestock with a roughened surface on concrete ramps and floors in animal facilities.

**Lifting.** Use a hip lifter to lift or assist a downed cow, and have a co-worker help you with handling to prevent any strain or back injuries.



Personal protective equipment protects the worker from pesticide exposure and other work related injuries.



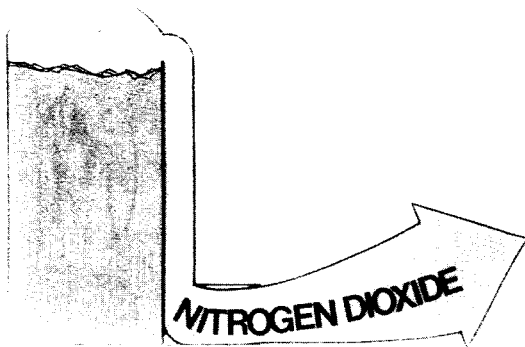
A roughened surface provides sure footing for humans and livestock.

## ZOONOSES

Although most zoonotic illnesses such as anthrax and bovine tuberculosis have been eradicated from many parts of the country, the risk of exposure to diseases such as leptospirosis, rabies, and ring worm may still exist on some dairy farms. Recent epidemiological studies indicate that an increase in the incidence of leptospirosis among dairy workers is possibly associated with elevated milking parlors, which increase the possibility of exposure to splashing urine from infected animals. Use splash guards in elevated milking parlors. Since leptospira organisms can enter the body through eyes and open wounds, consider using eye protection and gloves if splash guards are not available. Infected animals should be vaccinated.

In general, you can reduce the risk of exposure to most zoonotic problems by taking basic hygienic measures such as promptly and adequately disposing of infected animals and tissues, properly cleaning contaminated sites, using personal protective equipment, and handling and processing milk in a sanitary manner.

Call your veterinarian for diagnosis and professional advice on the problem.



Nitrogen dioxide gas levels may be dangerous up to three weeks after filling the silo.

## POISONOUS GASES

Handling and storing animal feed can expose you to additional farm hazards.

**Nitrogen dioxide (NO<sub>2</sub>).** NO<sub>2</sub> is produced during the fermentation of silage in a silo. Dangerous levels of the gas may be present in and around the silo for up to two or three weeks after filling. If at all possible, do not enter the silo during this time. If you must enter a newly filled silo, run the filler blower at least 20 to 30 minutes, open the doors down to the level of the silage, and then run the blower again for another 20 to 30 minutes. If possible, keep the blower running while you are in the silo.

**Carbon dioxide (CO<sub>2</sub>).** Exposure to CO<sub>2</sub> can occur when you enter a bin containing grain with a high moisture content. This gas is the byproduct of wet grain fermenting in a grain bin. CO<sub>2</sub> is heavier than air and normally replaces the air, which can cause suffocation. In order to avoid dangerous exposure to CO<sub>2</sub>, open all side doors and manhole covers and use forced ventilation to restore fresh air.



Maintain a sturdy fence at least five feet tall around all lagoons.

## LAGOON HAZARDS

If you have a lagoon on your farm, surround it with a sturdy fence to protect children and animals from drowning.

## ELECTRIC SHOCK HAZARDS

Electric shocks are always a risk when you are working in wet or damp areas of the barn and milking parlor. To avoid exposure to electric shocks:

- Use an electrical system and equipment grounding that meet requirements in the national electric code.
- Use a ground fault circuit interrupter with stock water heaters, power tools, and other equipment.
- Make sure fuse boxes, switches, and electrical outlets in wet areas are moistureproof.
- Avoid using homemade electric fence controllers. Use only those that have been listed by a recognized testing agency such as Underwriter Laboratory.

## ELECTRIC FARMSTEAD EQUIPMENT

To avoid being entangled, make sure power switches are padlocked in the "off" position when you are repairing electric farmstead equipment such as feed augers. Keep all electric equipment in good repair.

Larry D. Jacobson is an extension agricultural engineer.

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Patrick J. Borich, Dean and Director of Minnesota Extension Service, University of Minnesota, St. Paul, Minnesota 55108. The University of Minnesota, including the Minnesota Extension Service, is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, color, sex, national origin, handicap, age, veteran status, or sexual orientation.