

Livestock Handling and Confinement Safety¹

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Production agriculture consistently ranks as one of the most dangerous of all American industries. A recent National Safety Council study ranks beef cattle farms and dairy operations as second and third respectively among all agricultural enterprises in the number of injuries per hour of work. Animals are involved in 17 percent of all farm injuries, equivalent to the number of accidents involving farm machinery.

Animal characteristics and typical animal environments in combination result in a high potential for accidents when a wrong combination of events occurs. Farmers and farm workers must always be on guard when working with or around animals.

"Good housekeeping" practices and respect for animals play major roles in reducing hazards and risks to both humans and animals. Clutter, messes, and disrepair often set the stage for accidents and contribute to the seriousness of many injuries.

Where production and handling of animals is a day-to-day occurrence, safety must be an ongoing consideration and a primary concern. Taking simple precautions may take a few extra seconds, but removing or reducing hazards can save time, pain and suffering, property, resources and lives.

WORKING WITH ANIMALS AND THEIR CHARACTERISTICS

Animals' senses function much like those of humans; however, animals may detect and perceive their

environments very differently as compared to the way humans detect and perceive the same surroundings.

A better understanding of animals is gained by observing their structure, learning their composition, and contemplating the effects of the differences between them and humans.

For example, human eyes are positioned approximately 2.5 inches apart on the front of the head. Most farm animals have their eyes located more to the side rather than to the front of their heads. Humans are adapted for "telephoto" vision capabilities whereas most animals have superior "wide-angle" vision. As a result of eye positioning and spacing, humans have superior ability to judge distances and to see in 3-D (three dimensions--seeing height, width, and depth).

Animals, with their wide-angle vision, have a reduced ability to perceive depth and to judge distances.

Cattle and horses have panoramic vision, which means they can see everything except something that is directly behind them, giving them a viewing range of 270 degrees while humans have a range of about 180 degrees. Sudden movements behind cattle will "spook" them because they can see a quick movement but cannot distinguish how close the perceived "threat" is nor can they determine the seriousness of the movement. In response to sudden movements, fear may develop in the animal's mind sufficient to trigger a "flight" or "fight" response.

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While most animals are colorblind, their hearing is extremely sensitive relative to humans, especially to higher frequency sounds.

Knowing these characteristics of animal vision and hearing, we can understand why animals are usually skittish and/or balky in unfamiliar surroundings.

Experienced animal handlers should recognize that animals perform and or produce best when their lives are as tranquil and their environment is as comfortable as reasonably possible. Avoid extremes in temperature, humidity, lighting, and other environmental conditions such as loud noises, rapid motions, excitement, and harsh treatment. Not only do tranquil animals produce and perform better, they are more predictable than their "high-strung" counterparts.

Animals with histories of traumatic exposures are more likely to overreact to changing surroundings or when confronted with unfamiliar circumstances. Be extra cautious when animals are being medically treated or examined, loaded, moved, or during other handling operations.

People who work with animals recognize the ability of animals to communicate despite an inability to speak. Most species have and display characteristic signs of fear, aggression, and contentment. Astute handlers are sensitive to warnings evidenced by:

1. raised or pinned ears,
2. raised tail,
3. raised back hair,
4. barred teeth,
5. pawing the ground, and/or
6. snorting.

Specific handling methods, like warning signs, vary with species. However, some general handling rules for all animals include the following:

1. Most animals respond favorably to routines having calm, deliberate responses.
2. Avoid loud noises and quick movements.
3. Be patient, never prod an animal when it has no place to go.
4. Move slowly and deliberately around livestock.
5. Touching animals gently can be more effective than shoving and/or bumping them.

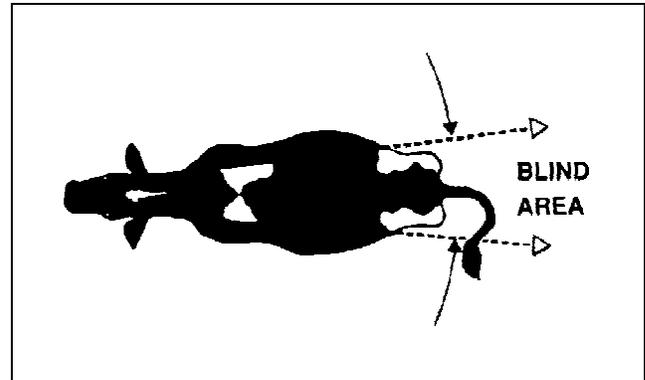


Figure 1. Cattle have panoramic vision; they can see everything except what is directly behind them

6. Respect rather than fear livestock. Breeding stock are highly protective and often irritable. Disposition deteriorates with age and parturition. Old breeding stock can be cantankerous, deceptive, unpredictable, and large enough to be dangerous.
7. Special facilities should be provided for breeding stock (especially for large males). Most animals are highly protective of their young. Be especially careful around newborn animals.
8. Male animals should be considered potentially dangerous at all times. Proper equipment and facilities are necessary to assure safety. Extreme caution should be practiced when handling male animals!
9. The size, mass, strength, and speed of both individual animals and herds of animals should never be taken lightly. Animals will defend their territory and should be worked around keeping in mind that there is always the potential for harm.
10. Always provide an escape route (always leave yourself a way out), especially when working in close quarters, with sick or injured animals, and/or under adverse conditions (i.e., severe storms etc.).
11. Exercise extra care around strange animals and enforce extreme care if strangers must be around your animals.
12. Maintain equipment and facilities in good repair and exercise "good housekeeping" practices.

13. Some animal handlers believe that animals are responsive to soothing talk, singing, and/or hand signals.

ANIMAL FACILITIES

Many injuries related to livestock handling can be directly attributed to inadequate facilities, equipment failures, and poor building structures. Most agricultural producers recognize that poor facilities, equipment, and buildings adversely affect everyday operations, production efficiencies, and also increase the risk of accidental injuries to livestock and humans.

Older facilities usually do not include many of the efficiencies, conveniences, low maintenance, and safety features designed and built into more modern livestock facilities.

Additional problems may occur when old buildings have been altered to function in ways that were not included in the design of the original structures.

Hazards that may exist in older structures or structures that have been altered are discussed below.

- Tripping hazards are encountered at high door sills, in narrow or cluttered alleyways, and on uneven walking surfaces. A recent U.S. study found that falls accounted for 18 percent of all animal-related accidents.
- Concrete floors are best for livestock. Floor, ramp, and step finishes should be roughened to prevent slips under wet conditions. High traffic areas, such as alleyways, should be grooved. Floors should be constructed to allow water to drain quickly. Slatted floors are used to keep animals dry in a confinement system.
- Fencing and gates should be strong and durable enough to contain crowded livestock. Alleys and chutes should be wide enough to permit animals to pass, but not wide enough for the animal to turn around. Animals are less likely to balk in chutes constructed with solid walls instead of fencing materials.
- Any protruding surface or point (e.g., edge or corner of a beam, board, box, cabinet, container, or nail, bolt, etc.) can cause painful and/or infectious injuries. Slipping, falling, being backed or pushed, or simply bumping into or stepping on these objects can cause a variety of serious injuries that can lead to or result in disabilities and/or death.

- Lighting should be even and diffused to eliminate glare. Animals generally move readily from dark areas into well-lighted areas but are reluctant to move from lighted areas into dark areas. Bright spots and shadows tend to make animals skittish, especially in and near crowded areas or loading areas. Animal facility layouts should be designed so that animals do not look directly into the sun.
- Appropriate handling equipment can reduce injuries to animals and humans and save labor and time during various phases of production. For example, adequate equipment can reduce time needed for feeding, medical care/treatment, loading animals for market, "housekeeping", and data recording and processing and record generation.

ANIMAL HEALTH AND HYGIENE

Good animal management requires careful attention to health, hygiene, and good "housekeeping". Maintenance of a well ventilated, clean, dry, and a relatively dust-free environment is critical. Improper care and maintenance of confinement facilities can lead to the rapid spread of diseases with the possible loss of an entire herd.

All feed materials should be checked carefully before being fed to animals. Feed-borne molds can cause severe respiratory and digestive disorders to the herd and even to human handlers. On-farm feed mills and storage facilities can be effective in attaining quality control, but they also require careful management. Purchase feed only from dealers and merchants known to be reliable. Any suspect feed materials should be tested.

CONFINED SPACE HAZARDS IN LIVESTOCK CONFINEMENT AREAS

Gases in confined spaces can be dangerous to animals and humans. Toxic or poisonous reactions affect both humans and animals.

Agitation of the contents of manure pits causes the release of great quantities of heavier-than-air gases that are sufficient to displace oxygen-containing air in an adjacent confinement building. Unless adequate ventilation is provided, conditions potentially fatal to humans and animals can develop very quickly.

Properly designed buildings with adequate ventilation will prevent the accumulation of toxic gases under normal operating conditions.

Additional precautions may be necessary whenever contents of manure pits are being agitated or when manure pits are entered for maintenance.

1. Provide for extensive ventilation during agitation of pit contents (provide standby backup power for mechanical ventilation).
2. Be sure no humans are in confinement buildings during agitation and remove animals (if possible).
3. Always keep at least one foot (not less than 12 inches) of clear space between the highest manure level and the floor slats.
4. Avoid entering a manure pit--even when empty; potentially fatal hazards may still exist.
5. If a manure pit must be entered,
 - a. use a self-contained air supply,
 - b. use a lifeline and harness with adequate retrieval equipment (hoist, etc.), and
 - c. have sufficient personnel standing by to effect a safe rescue.

Dusts are common in livestock operations and present a hazard to animals and humans. All dust represents potential health problems, but some dusts may cause permanent health damage, permanent disability and/or death.

Use and store only dry grain and dry, well-cured forage. Animal areas should be kept as clean and dust-free as possible. Stale dust and feed accumulations attract and absorb moisture (from humid barn air), creating a perfect environment for mold and other microorganisms.

People can wear a dust mask when exposed to dusty conditions; animals cannot. Whenever possible, move animals outdoors or to other areas when "housekeeping" chores are in process. Provide adequate ventilation whenever movement of animals is not possible or practical.