

Safety on the farm

Getting your Apprentice started with good safety habits



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Safety on dairy farms is an important component of training an apprentice. With 26 fatalities/100,000 workers, Agriculture (including fishing and forestry) is the most dangerous occupation, followed by mining. Most family farms with under 10 non-family farm employees are exempt from OSHA inspection, which makes the job of safety training even more important. Many Apprentices are new to the dairy farm environment and know NOTHING about potential hazards. Safety is one of the most important elements of orienting your new Apprentice to your farm.

Creating Safety Protocols

- Communicate about hazards
- Remove and correct hazards when possible
- Adopt and teach safe procedures
- Utilize protective controls and equipment: machinery shields, goggles, ear protection, Steel-toe boots, appropriate gloves, dust masks or respirators
- Clearly communicate **where to go** and **who to call** for help

Major Hazards on Dairy Farms

The primary categories of safety hazards on dairy farms include chemicals, tractors and machinery, farm structures, and livestock handling. Below are tips for handling these.

CHEMICALS

Chemicals used in both field crops (pesticides and herbicides) and milk house cleaning (detergents and acids) can be hazardous if not handled with care. During safety training, discuss with your Apprentice the hazards unique to each chemical (explosive, gas inhalation, flammable liquids and solids, oxidizers, toxins, corrosives, etc.). Go over Material Safety Data Sheets (MSDS), safety measures for handling, and what to do if exposed.

- Create a written inventory of all hazardous chemicals on the farm, including both pesticides and herbicides as well as milk house chemicals.
- Make sure a Material Safety Data Sheet (MSDS) is on hand for each chemical.
- Place warning signs in chemical storage and use areas.
- If your Apprentice will be responsible for application of chemicals, consider sending them to pesticide applicator training offered through your local Extension office.

Causes of injury and fatalities on dairy farms

Most common causes of injuries:

Animals 28%
Slips, trips, and falls 19%
Struck by an object 13%

Most common causes of fatality:

Tractors 37%	Enclosed spaces 4%
Machinery 26%	Vehicles 2%
Animals 11%	Other 12%
Falls 8%	

Safety Tip Sheet, p. 2: TRACTORS AND MACHINERY

TRACTORS AND MACHINERY

More than 60% of all farm fatalities involve tractors and machinery. Make sure your Apprentice is trained on safe use of machinery and make sure your machinery has safety equipment installed such as Rollover Protection Structures (ROPS), safety shields, slow moving vehicle signs or strobe lights for driving on public roadways.

One-third of all tractor accidents occur on public roadways

- Keep all machinery in good working condition with safety shields and equipment in place.
- Teach safe driving habits. A tractor has different weight distribution and handling compared to a car.
- Your Apprentice may be inexperienced in backing a trailer or towing a piece of equipment.
- A ROPS provides protection only when a seatbelt is worn.
- Do not start a tractor while standing on the ground. Always get into the driver's seat.
- Do not operate tractors on public roadways at dusk or at night without head and tail lights, clean SMVs, and amber flashers.
- Be careful when making left turns to watch for vehicles attempting to pass.

Power Take Off Drivelines

Power take off (PTO) accidents can result in significant injury, disablement, or death. Following safety procedures around PTOs is critical. Most PTO accidents occur when loose clothing is caught in a moving PTO shaft.

- Do not wear loose clothing, scarves or other dangling garments around the PTO.
- NEVER remove PTO guards and shields from equipment.
- ALWAYS shut off the PTO before dismounting the tractor.

Common Machinery Hazards

- Pinch and crush points are areas where two or more parts move together such as when raising, lowering, attaching or detaching equipment.
- Wrap (entanglement) point hazards include any type of rotating shaft. PTO drivelines are examples of wrapping or entanglement hazards (see box).
- Pull-in point hazards include combine headers, windrow pickups, forage chopper headers, and grinders.
- Shear and cutting point hazards include windrower cutter bars and grain augers are examples of cutting and shear points.
- Thrown objects such as metal, sticks, or rocks may be picked up by a machine such as rotary mowers and propelled with extreme force.
- Burn point hazards are associated with tractors and self-propelled and pull-type machinery. Hot mufflers, engine blocks, pipes, and hot fluids are examples of burn points.
- Stored energy hazards are present in pressurized systems such as hydraulics, compressed air, and springs. Sudden depressurization or high-pressure leaks can cause injury.

Machinery Hazards

- **Batteries: avoid sparks by identifying positive and negative terminals. Take ground cable off first and put on last.**
- **Hydraulics: Be aware of high pressure pin hole leaks, which can penetrate the skin.**
- **Never work under equipment supported by Hydraulics without blocks or safety stops.**
- **Lower parked equipment to the ground.**

Safety Tip Sheet, p. 3: FARM STRUCTURES

FARM STRUCTURES

Older buildings on farms can present a whole host of hazards to you and your employees. To you, avoiding the hole in the floor of the haymow or the loose step on the staircase are second nature because you know where they are, but for a new Apprentice, these may be an accident waiting to happen. Consider making minor repairs around the farm before your Apprentice arrives.

Manure Pits

Manure pits represent drowning and inhalation hazards.

Open air pits should be enclosed by a fence. Most accidents occur during the summer months, when pits are being emptied or agitated. It is always best to presume that the pit contains hazardous gases or lacks oxygen. Producers need to take protective measures to protect themselves and others working in or around the pit.

- Enter only with a harness, lifeline, and a standby person.
- Make sure the work can be done with good ventilation.
- Install emergency railings to reduce the risk of skid steer driving into the pit.
- Consider investing in testing equipment to monitor for hydrogen sulfide, combustible gases, methane, and oxygen in the pit area prior to working in the area.

Silos

Fermenting silage produces nitric oxide compounds that are respiratory irritants. Concentrations of these gases are highest in the first 48 hours of the ensiling process but can be present for up to a month. Whether using an upright or bunker silo, maintaining good ventilation while putting up and working with silage is important. Handling and feeding out silage also presents some hazards.

Upright silos:

- Nitric oxides are heavier than air and accumulate at the base of the chute or in the silo room.
- Make sure silo ladder is caged.
- Turn off unloader before you enter the chute.

Bunker silos:

- Use wide wheelbase tractor with RPS (wearing seatbelt) when constructing the pile.
- Keep slope to no greater than 3-foot horizontal fill to 1-foot vertical fill.
- Avoid creating an overhang when removing silage for feeding.

Grain Bins

Suffocation in grain bins usually occurs while the bin is being emptied. After the grain starts flowing, a person entering the bin will be carried to the center and quickly drawn under in this column of grain. The flowing grain behaves similarly to quicksand, making escape very difficult.

- Never enter a bin when the unloader is running.
- Always wear a safety harness and work with at least one other person on the outside.
- Lockout or tag the unloading equipment before entering to avoid it accidentally being turned on.
- Invisible crusts can form and break off under the weight of a worker.

General Hazards:

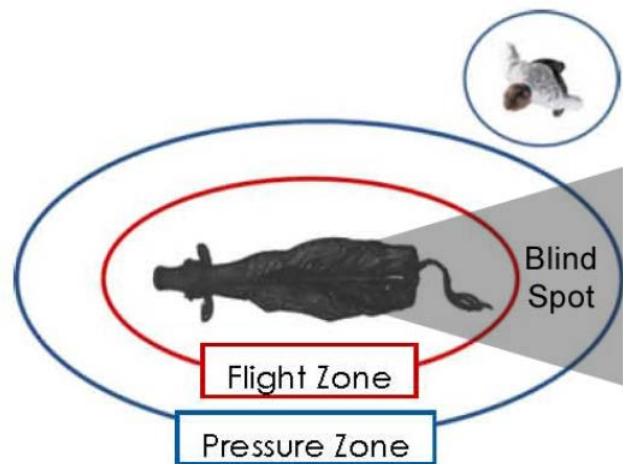
- **Walking and working on slippery or uneven surfaces**
- **Holes and floor openings**
- **Missing handrails**
- **Stairs and ladders in disrepair**
- **Unprotected electrical equipment**

Safety Tip Sheet, p. 4: ANIMAL HANDLING

ANIMAL HANDLING

Please review with your Apprentice the DGA Stockmanship Tip Sheet, available in the Master Resources section on the DGA website. Cattle are prey animals, so they are wary of unexpected changes in their environment or quick movements. Your behavior strongly influences their behavior.

- Always move SLOWLY and QUIETLY around cattle. Let them get used to your presence.
- Cattle rely primarily on their excellent hearing and sense of smell. Loud noises may startle them.
- Cattle are color blind and have poor depth perception. A shadow may appear as a hole, so they sometimes balk at sharp contrasts in light.
- Cattle can see 300 degrees around their bodies and are particularly responsive to movement. Avoid approaching them in their blind spot directly behind them.
- Cattle sometimes kick when startled. The kicking motion is almost always forward, then out and back in a swinging motion. Be aware of this to avoid injury.
- Avoid positioning yourself between a moving animal and a wall, post, or gate. Even if they are not aggressive, getting pinned is a risk. Avoid getting pinched between railings/posts and cattle.
- Be aware of where the animal's feet are when you are standing near them. Getting stepped on is a common cause of injury.



Working with Bulls

If you use bulls on your farm, make sure your Apprentice is aware of the particular dangers in handling them. Even if the bull is generally calm and docile most of the time, be wary—their behavior is unpredictable. Signs of aggression include turning broadside with his back arched, lowering or shaking head, pawing the ground, and hair standing up along the back.

- Never work bulls alone.
- Never turn your back on a bull.
- Respond to aggression by slowly backing away.
- Create a “man gate” or narrow opening (14”) in your handling facilities as an escape route.
- Consider culling older bulls. They may get more aggressive as they mature.

Livestock Diseases and Animal Health Protocols

There are a number of safety hazards associated with livestock diseases and animal health care practices. Take precautions when handling synthetic hormones (this is especially important for pregnant women). In addition, some livestock medications can be toxic to humans, so take care when administering injections.

Livestock diseases that are transmissible to humans include ringworm and E. Coli, brucellosis (also called undulant fever), leptospirosis, cryptosporidiosis, salmonellosis, and tuberculosis.