



SAFETY MANAGEMENT

Agriculture is probably the most dangerous job in the United States. According to the National Safety Council “They <farmers> also face health and safety dangers, from exposure to chemicals and the operation of machinery to tending livestock. In 1999, the agriculture industry suffered more than 770 deaths and 150,000 disabling injuries. Of these victims, many were children and young people injured or killed in preventable farm and ranch accidents.”

Farm Buildings

- A. Lock buildings or sheds containing pesticides or other hazardous chemicals and display a warning signs where appropriate**
- B. Working surfaces should be**
 - Dry
 - Free of clutter
 - Floors should be roughened to prevent slips
 - High traffic areas should be grooved
- C. Assure appropriate lighting**
 - Bright spots can make animals skittish
- D. Install handrails where ever possible**
- E. Keep facilities in good repair**
 - Well ventilated to prevent toxic gas build up
 - Clean to prevent the spread of disease
- F. Secure dangerous areas**
 - Liquid manure holding facilities should be secured against entry**
 - Deadly gases generated from the decomposition of animal urine feces (*The concentration of gases is dependent on the type of animal, how they are fed, how wastes are handled and how well the facility is managed.*)
 - Dangerous gases are trapped within manure
 - Gasses are released when manure is agitated
 - Sealed silos should be off limits unless entered with a self-contained breathing apparatus (SCUBA)**
 - Inhalation of Nitric Oxides released by fermenting silage can cause severe lung irritation called Silo Filler’s Disease
 - ✓ Extremely toxic and sometimes deadly
 - ✓ Can cause permanent lung damage
 - Nitric oxide build up begins within 2 hours of filling a silo
 - Reaches a maximum in two to three days and continue at a decreasing rate for 7 to ten days.
- G. Doors to hay lofts and grain and feed silos should be secured**



H. Never enter a grain or feed bin when unloading is in progress or could accidentally start up

Equipment and Machinery

A. Tractors (*Leading cause of death on farms*)

Fasten seat belt if tractor is equipped with ROPS

Avoid operating near ditches and embankments if possible

Slow down when turning, crossing slopes or on slippery surface

Do not allow other riders! Children should never be allowed on tractors

Stay off steep slopes

Hitch only to the drawbar and hitch points (*loads hitched to the rear axle or rear lift arm can cause the tractor to flip backwards.*)

Do not tow loads too heavy for the tractor

When stopped engage the brakes securely and use the parking lock

Always shut off the tractor when leaving the seat

On public roads

Turn on the lights and flashers when operating on a public road

Display SMV sign appropriately

Keep the bucket low to the ground when driving on front-loaders

B. What are Roll over protective structure ROPS?

Cab or frame that provides a safe environment for the driver. Equipped on all tractors since 1985 (*1/3 of today's tractors have ROPS*) are mandatory on all qualifying tractors (*Note: A few low profile tractors are exempt. e.g. tractors used in orchards, vineyards or greenhouses.*) *If you are unsure, check with OSHA or ASAE*

Designed to prevent death and minimize injury

- Must pass a series of crash tests
- Must be certified by the Occupational Safety and Health Administration (OSHA) and the American Society of Agricultural Engineers (ASAE)

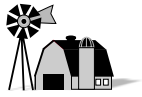
Some older tractors can be retrofitted with ROPS

- Check models
- Manufacturers
- Cost

Never attempt to attach a make-shift ROPS-like system

- Too many variables in metals and mounting
- Offer a false sense of security
- May be worse than nothing at all
- Will not protect a driver in an overturn

Need to wear a seat belt in conjunction with ROPS (*Note: A seat belt should NOT be worn on a tractor that does not contain ROPS! This would prevent a person from being thrown in a rollover and the person could be crushed*)



C. Display the Slow Moving Vehicle (SMV) emblem

It's the law! (For all vehicles traveling less than 25 MPH on a public road)

Warns other traffic that you are a SMV

Cautions other drivers to slow down

SMV emblem law

- Must be an equilateral triangle
- At least 14 inches high
- Fluorescent orange material
- Red reflective border
- Clearly displayed rear and center
- Placed point up
- Lower edge must be at least 2 feet and not more than 6 feet above ground

D. Develop a Lockout/Tagout protocol

Lockout: Placement of a lock over the energy-isolating device to prevent the operation of equipment until maintenance is complete. (Note: This may be an actual lock or anything that blocks or holds the energy device in place. Push buttons or selector switches are NOT energy isolating devices!)

Tagout: Attachment of a tag to a switch, valve or energy isolating device to prevent the operation of equipment until maintenance is complete.

What is the purpose of a lockout/tagout procedure?

- Defines protocol for appropriate shut-down of equipment
- Prevents injury from unexpected release of energy while work is being performed machinery or equipment

What are the steps involved in a lockout tagout procedure

- Notification that procedure is scheduled
- Locate the isolating device
- Place a device in an "off" position (*shut down machinery*)
 - ✓ Manually operated disconnect switch or valve
 - ✓ Manually operated circuit breaker
 - ✓ Any mechanism used to block or isolate energy
- Check condition of locks and tags
- Affix lock and tag
- Attempt to restart
- Ready for servicing

E. Power Take-Off Systems (Mechanism for transferring power between tractors and implements (e.g. hay balers, choppers, rotary mowers))

Responsible for 15-20% of all farming injuries

Often result in the amputation of fingers, toes or limbs

Tips to prevent PTC injuries

- Engage power gradually
- Start equipment from the cab
- Make sure there is no one standing near the PTO when starting it up, including children
- Never allow a child to operate a PTO



Wear job-appropriate clothing

- Loose clothes have a greater chance of becoming entangled so wear snug fitting clothes.
- Synthetic materials tend to be worse because they don't tear and pull arms and legs in more easily.

Shields and guards

- Keep all PTO systems shielded and guarded. Check these as part of routine maintenance.
- Always replace shields that have been removed after having made appropriate adjustments or repairs. *(One study indicated that 70% of the time an injury from a PTO occurred, the safety shield was damaged or missing!)*
- Test driveline guards *(by spinning or rotating them)* to make sure they have not become stuck to the shaft.

Always disengage the PTO and turn off the tractor before

- Dismounting
- Cleaning
- Repairing
- Adjusting

Never step over a rotating shaft, even if it's guarded!!

Always walk around the tractor and machinery

- Stay far enough away from a PTO Shaft to prevent falling into it.

Don't use the wrong driveline. Specific drivelines are recommended for certain machines.

Make certain the drawbar is positioned properly to prevent stress

Animal Handling

A. 1 in 6 accidents involve animals.

B. Animals are the second leading cause of farm injuries

C. Animal dangers

Bites

Kicks

Being pinned between fixed objects like buildings or machinery

D. Handling animals

Be calm and deliberate Speak gently – do not startle animals

- Extremely sensitive hearing
- Animals have a reduced ability to perceive depth and judge distances because their eyes are located more to the side.
- Cannot see something directly behind them

E. Animals respond to routine

Avoid extremes

- Temperature
- Humidity
- Lighting



Be cautious anytime you deviate from routine!

F. Approaching animals

Announce your approach

Touch an animal's front or side (*avoid their blind spot near the hind quarter*)

Avoid the common kicking region

G. Use caution when approaching with animals that are

Frightened

Hurt

Sick

Protecting their young

H. Always provide and escape route when working in close quarters with animals

Avoid being in small, enclosed areas with animals

Use adequate restraining and handling facilities (*All holding pens should be equipped with a man gate!*)

Work outside chutes when possible

Personal Protective Equipment

A. Respirators

Respiratory hazards

- Particulate contaminants from
 - ✓ Silage
 - ✓ Feed
- Other hazards (vapors/gases)
 - ✓ Painting
 - ✓ Pesticide application
- Oxygen-deficient atmospheres
 - ✓ Sealed silos
 - ✓ Manure pits

B. Respirators consist of three components

Face piece/Head Harness "The Respirator"

Filter/Pre-filter which traps dusts, mists and fumes

- Filters or block substances that may be harmful to lungs
 - ✓ Silage
 - ✓ Feed
 - ✓ Dusts from grains

Chemical Cartridge removes the gas and vapor

- Purchase one that is task specific. Different cartridges for respirators are required for different activities.
- The wrong type of respirator or cartridge could cost you your life!

Educate yourself before purchasing a respirator!



C. Eye Care Protection

How can I protect my eyes while farming?

- Goggles protect against chemicals and/or foreign objects
- Safety glasses provide with side shields provide enough protection in some instances
- Splash goggles should be worn when handling or working with chemicals or liquids
- Face shields should be worn when there is a possibility of flying particles or objects, especially welding
- Sunglasses
 - ✓ UV absorbent (blocking 99 – 100% ultraviolet light)
 - ✓ Sturdy frames
 - ✓ Impact resistant lenses

D. Clothing

Never wear baggy or loose fitting shirts or pants when operating machinery (*Loose clothes can become entangled in machinery*)

Rubber gloves should be worn

- Applying pesticides
- Assisting the birth of an animal
- Treating a sick animal

Safety shoes should have a metal toe cap and skid-resistant soles for better traction

Protecting Yourself and Your Family From Animal Diseases

A. Zoonoses are diseases that are transmitted between humans and animals

120 known Zoonoses

Risk of contracting disease varies depending on the disease and situation

Animals may appear to be healthy but may be carrying an infectious disease.

Almost all animals can be a potential carrier e.g. cattle, swine, cats, dogs, ticks etc.

How are diseases transmitted?

- Every day contact
- Transporting carcasses
- By-products (*feces/urine*)
- Scratches or bites
- From milk and from milking
- Contaminated soil
- Contaminated meats

Prevention

- Prevent food contamination
 - ✓ Cook red meat 160 degrees
 - ✓ Poultry to 180 degrees
 - ✓ Don't allow juices from meat to drip on other foods
 - ✓ Wash hands before and after handling food
- Avoid contact with diseased animals
 - ✓ Dispose of carcasses properly



Partners in Agricultural Health PowerPoint Summaries

- ✓ Vaccinate pets
- ✓ Wash hands after handling animals
- Prevent tick bites
 - ✓ Wear repellent,
 - ✓ Wear appropriate clothing
- Treat animal scratches and bites seriously (*bites can be more serious than you think!*)

Selected Resources:

Agsafe, Coalition for Health and Safety in Agriculture “Safely Working With and Around Farm/Ranch Animals” website: <http://www.cdc.gov/niosh/nasd/docs/as33700.html>

Ayers, Paul D. “Tractor Overturn Protection and Prevention” Colorado State University Cooperative Extension website: <http://www.cdc.gov/niosh/nasd/docs2/as28200.html>

Beno, John. “Know Your Livestock and Be Safe” Iowa State University website
<http://www.cdc.gov/niosh/nasd/docs2/ia00200.html>

Becker, William J. “Accident Prevention” University of Florida website:
<http://www.cdc.gov/niosh/nasd/docs/as02500.html>

Margentino, Marjorie. “Accident Proofing Farms and Stables” Rutgers Cooperative Extension website:
<http://www.cdc.gov/niosh/nasd/docs2/as16300.html>

Murphy, Dennis J. “Power Take-Off (PTO) Safety” Penn State Extension website:
<http://www.cdc.gov/niosh/nasd/docs2/as11100.html>

Schwab, Charles V. “Use Tractors with ROPS to Save Lives” Iowa State University website
<http://www.cdc.gov/niosh/nasd/docs2/ia00400.html>

University of Minnesota Extension Service website. <http://www.cdc.gov/niosh/nasd/docs6/mn98017>
“Safety with Animals”

Wilkinson, Robert. Tilma, Anthony. “Livestock Handling and Confinement Safety” Michigan State University Extension website: <http://www.cdc.gov/niosh/nasd/docs2/as2800.html>