WORKING SAFELY

Agricultural workers are exposed to health hazards and must take special precaution to prevent and reduce the risk of injury. Some of these precautionary measures include the selection appropriate eyewear, attaching the slow moving vehicle (SMV) emblem to appropriate machinery and establishing a lockout/tagout protocol.

Eyes are susceptible to injury serving as an entrance for tiny particles, sawdust animal dander ammonia, fumes or gases. In 1993, it was estimated that were 13,500 eye injuries among agricultural workers which translates into a tremendous loss of time and money. There are a variety of glasses on the market, many which are designed to fit over regular glasses. It is important to select appropriate eyewear for the task at hand.

Causes of Eye Injuries

A. Particles of rocks, soil or dust
B. Objects thrown from farm equipment
C. Spray cans are a huge source of chemical eye injury
D. Pesticides
E. Hand tools *(more eye injuries occur when fixing equipment than when operating it)*

Eye Care Protection

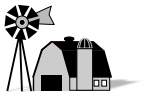
A. How can I protect my eyes while farming?

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.
Face shields should be worn when there is a possibility of flying particles or objects.
Welding goggles protect against intense light and sparks.

- Welding exposes eyes to infrared and sometimes UV light radiation.
- "Flash burn" can result from arc welding, damaging the cornea.
- Welding goggles are rated from 2-14 from lightest to darkest.
- Select the darkest shade that still allows you to see.
- Some welding shields also adjust to light automatically.

Sunglasses

- UV absorbent *(blocking 99 – 100% ultraviolet light)*
  (Note: look for the word absorption rather than protection.)
- Lenses labeled 400nm block 99-100% of UV rays.
- Polycarbonate *(high-index plastic)* tinted lenses will filter out 100% UV radiation.



- Photo chromatic lenses *(those that automatically adjust to light variations)* are 100% UV absorption, but should be replaced after several years because they darken over time.
- Wearing a hat with a wide brim is recommended in addition to sunglasses.

All eyewear should be carefully fitted and cleaned

- Comfortable
- Fit snugly
- Should not interfere with vision or movements
- Durable
- Easily cleaned

Buying eyewear

- How much does eyewear cost?
  - ✓ Goggles and sunglasses are available for under $10
  - ✓ Welding masks with filtering lenses are available for under $50
  - ✓ Masks that automatically adjust to light are available for under $200
- Where can I buy eyewear?
  - ✓ Farm supply stores
  - ✓ Hardware retailers
  - ✓ Mail order
  - ✓ Internet

When considering potential time lost eye injuries, eye protection is the most cost effective measure.

Slow moving vehicle emblems have been proven effective in reducing and preventing accidents. Many states, including Wisconsin, have established a law that requires any vehicle traveling at less than 25 miles per hour on public roads to display a SMV emblem.

Slow Moving Vehicle

A. Why do accidents occur?

Every year there are approximately 30,000 accidents on public roads involving farm machinery *(20% are rear-end collisions.)*

Most machinery have a maximum speed of 20 MPH.

Engine noise inhibits drivers from hearing approaching traffic.

A car traveling at 55 MPH spots a SMV at 400 feet *(a sizable distance)* it has less than 10 seconds to assess and react to the situation to avoid a collision.

B. Why use a SMV emblem?

It's the law!

Warns other traffic that you are a SMV

Cautions other drivers to slow down

SMV emblem law

- All vehicles traveling less than 25 MPH on a public road must display the SMV emblem on the back of their vehicle.
  - ✓ Tractors
  - ✓ Horse-drawn carriages

- ✓ Mowers
- ✓ Construction equipment
- ✓ Must be an equilateral triangle
- ✓ At least 14 inches high
- ✓ Fluorescent orange material
- ✓ Red reflective border *(This used to be retro reflective material with small glass beads, but the beads scattered the light. New ones 10 times brighter and last twice as long as the old.)*
- ✓ Must be clearly displayed in the rear and as close to the center as possible.
- ✓ Placed with the point up or perpendicular to the direction of travel.
- ✓ Lower edge of the emblem must be at least 2 feet and not more than 6 feet above ground.
- ✓ Fines are around $111

C. Maintenance of your emblem

Sunlight causes emblem to fade *(if they look white they need to be replaced!)*

- Inspect monthly for effectiveness
- Inspect for cleanliness *(clean it of mud and debris)*

Keep extra emblems on hand

Check for secure mounting of SMV emblem before driving on public roads.

D. Buying your emblem

Look for emblems that comply with the American Society of Ag Engineers (ASAE) S276.5 standard *(replaces the old S276.4.)*

Buy from a reputable dealer

Expect to pay $8-$10 for an emblem

Lock Out-Tag Out

Workers performing maintenance on (farm) machinery are prone to injuries that result from unexpected energy release or start up of equipment while undergoing maintenance. The lockout/tagout system identifies step-by-step procedures to properly shut down and secure equipment to prevent the release of hazardous energy while the machine is undergoing repair. The Occupational Safety and Health Administration (OSHA) has a lockout/tagout regulation that helps safeguard workers from potentially hazardous situations while servicing machines and equipment. This includes constructing, cleaning, repairing, oiling or tuning machinery or clearing a jammed mechanism.

A. What are Sources of Energy?

Electricity
Thermal
Chemical
Hydraulic
Pneumatic
Mechanical
Gravity

(Perhaps have participants identify types of equipment or machinery, which harbors these kinds of energy.) All energy sources have the potential for unexpected start up or energy release. Any worker who services or maintains machines and equipment and who are vulnerable to the unexpected startup or release of hazardous energy are subject to comply with the lockout standard.

B. What is Lockout/Tagout?

Prevention of energy being released while work is being performed on the machine.

- Place a device in an "off" position.
  - ✓ Manually operated disconnect switch or valve
  - ✓ Manually operated circuit breaker
  - ✓ Any mechanism used to block or isolate energy
- 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.

C. Why Develop Lockout/Lagout Protocol?

Prevents people from being injured.
Provides a warning that equipment is broken, being repaired or being maintained.
Sets a standard for people who operate and repair machinery and equipment.
Identifies the person working on the machines or equipment.
Assures that people don't operate the equipment until all maintenance is complete.

D. Steps in a Lockout/Tagout Procedure

Notify everyone affected that a lockout/tagout procedure is scheduled and the reasons why.
Release or restrain all stored energy from the machinery by shutting down using the normal stopping procedure.
Physically locate the isolating device needed to run the equipment.
Check locks and/or tags for standardization, making sure they are in good condition.
Affix lock and an appropriately signed and dated tag on the energy isolating device which holds it in a safe or locked position.
Verify equipment is appropriately de-energized by testing to make sure it cannot be restarted. Kinetic energy can be found in hydraulic systems, steam lines or flywheels. Steam lines or pneumatic systems need activation to make sure all energy has been de-energized. Blocking and bleeding may be necessary for any water, chemical or sewer lines that need to be emptied. *<Caution: Make sure that no one is near the equipment when attempting a restart.>*
Equipment is ready for maintenance
Maintenance is performed
Check to make sure safety guards are back in place and tools put away.
Notify workers that energy will be restored
Remove locks and tags

Restore energy to the machine or equipment

Most people prefer tagout verses lockout because it's easier and less time consuming but tagout *alone* should **ONLY** be used when lockout is not possible or when it can be demonstrated that tags is providing the same level of safety as the lockout system. When only a tagout system is being used, re-verify that equipment is de-energized following any absence from the work site!

E. OSHA prefers Lockout because

Locks

- Provide a physical restraint
- Can't be removed without key
- Can't be ignored

Tags

- Can be bypassed
- May not be legible
- Can fall off unless securely attached

F. Locks and Tags should

Identify who has applied the device.

Identify who is servicing the machinery/equipment.

Be able to withstand the environment ***(e.g. plastic covers on those that will be used on equipment that is stored outside.)***

Be able to withstand chemical exposure.

Have fasteners tough enough to prevent accidental removal.

Be legible

Be standardized

- Same color
- Same shape
- Same size

Developing a lockout/tagout protocol on your farm will help prevent you, your employees, and/or your family from injury, amputations or fatalities that could result from the unexpected release of stored energy or automatic startup of machinery or equipment.