

The Farm Safety Audit

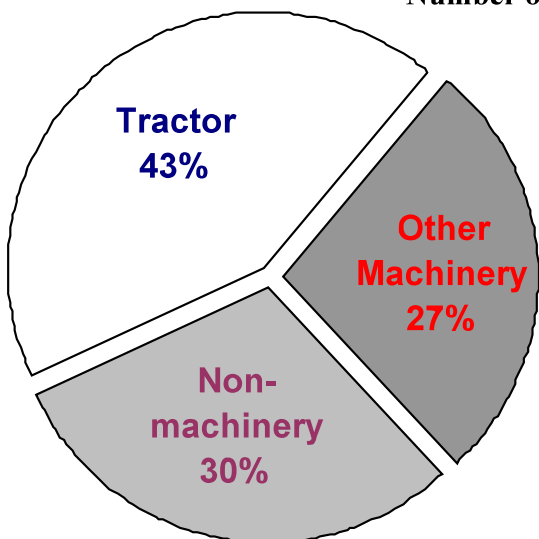
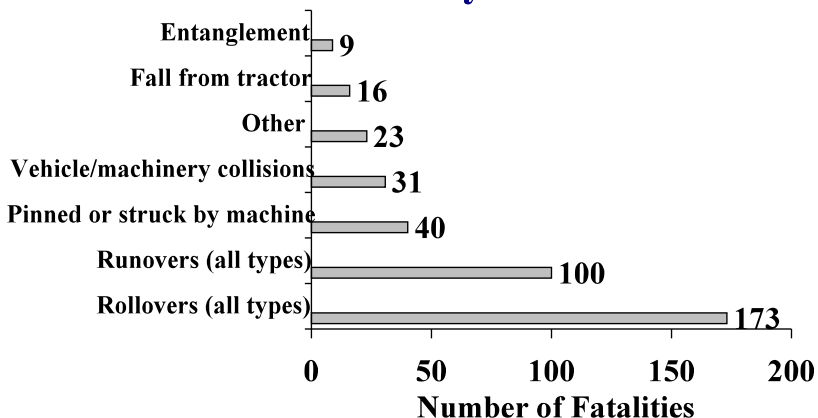
A Management Tool for Farmers

Reduce the risk of accidental loss in your farm operation
by applying these simple management practices.

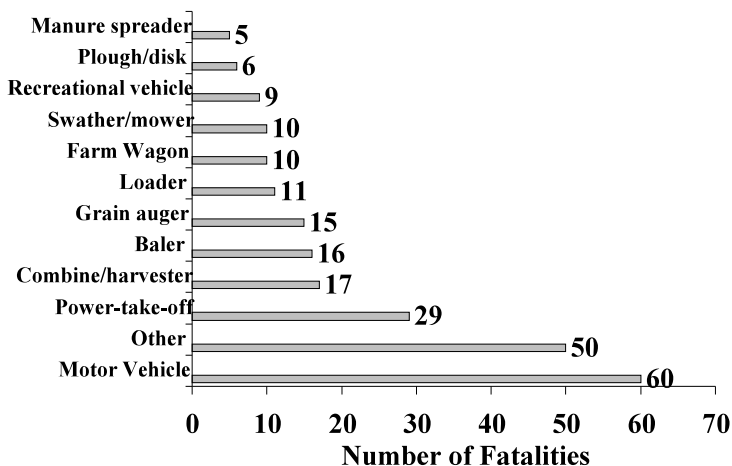


Work-Related Farm Fatalities in Canada: 1990-1998, by Circumstance

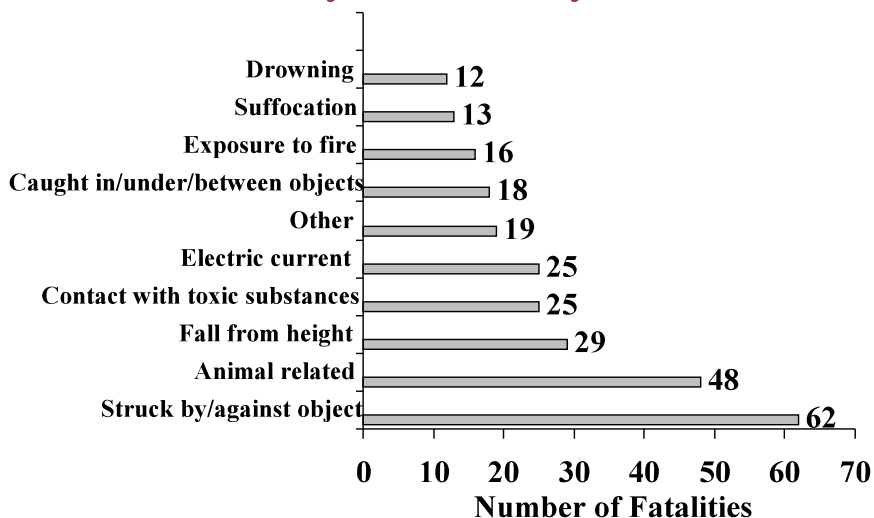
Tractor Fatalities by Cause



Other Machinery Fatalities by Cause



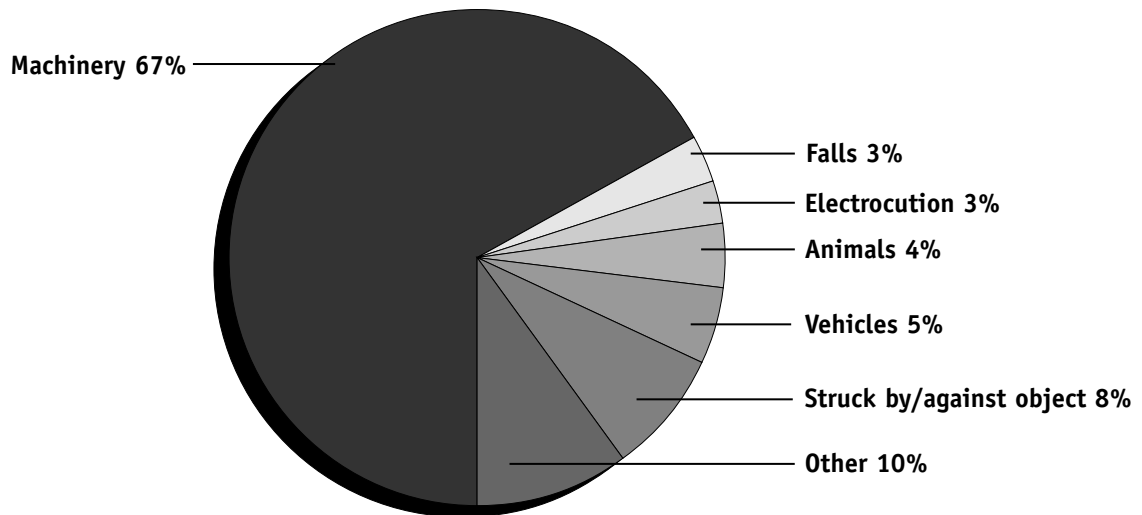
Non-Machinery Fatalities by Cause



Source: Fatal Farm Injuries in Canada, 1990-1998, A Report from the Canadian Coalition for Agricultural Safety and Rural Health and prepared by the Canadian Agriculture Injury Surveillance Program: May 2001

CAUSES OF FATAL FARM WORK-RELATED INJURIES IN CANADA – 1991–1995

(Source: *Fatal Farm Injuries in Canada, 1991–1995*,
A report from the Canadian Agricultural Injury Surveillance Program, October, 1997.)



MECHANISM OF INJURY	0-14 years	15-59 years	60+ years	Total
Rollovers (mainly tractors, sideways, backwards and other)	3	54	50	107
Runovers (operators, bystanders and extra riders)	33	16	15	64
Entanglement	2	30	17	49
Traffic (occurred on public roads)	0	34	11	45
Falling material / bale rollback	1	10	15	26
Animal-related	3	8	13	24
Woodcutting	0	16	6	22
Crush between objects	1	11	9	21
Fall	0	9	9	18
Electrocutation	0	15	1	16
Jumpstart (mainly tractors)	1	4	11	16
<i>Other: Equipment towing, Equipment malfunction, Fire, Trench collapse, Slipped jack/Grain box crush, Drowning, etc.</i>	6	62	26	94
TOTAL	50	269	183	502

- 46% of the people killed on Canadian farms are under age 15 or over 60.
- Adult male farmers have the highest rates of work-related fatalities. Rates increase with increasing age.
- In Canada, peaks in the numbers of farm work-related deaths occur in the summer months of July through September reflecting the increased exposure to farm work and farm hazards in general during this busy time.

GUIDELINES . . . STEP BY STEP

1. INSPECTION AND IDENTIFICATION OF HAZARDS

- Conduct the safety audit as a separate task; devote your **full attention** to the inspection.
- The **farm manager** should organize the inspection.
- You may need the help of **an outside pair of eyes** or **another family member** to recognize hazards.
- **Hazards** may be found in the form of **physical conditions** or **work practices**. Hazards can be classified into three basic groups according to their potential for causing personal injury or property damage. Use your knowledge of injury in farming and if necessary, consult safety and industry experts to help you classify hazards.

HAZARDS

Critical Hazard - A condition or practice likely to cause permanent disability, loss of life, or body part, and/or extensive loss of structure, equipment or material.

Serious Hazard - A condition or practice likely to cause serious injury or illness, resulting in temporary disability or property damage that is disruptive but not extensive.

Minor Hazard - A condition or practice likely to cause minor, non-disabling injury or illness, or non-disruptive property damage.

Source: Mine Safety & Loss Control, 1984

The following principles are important to remember when conducting your inspection:

PRINCIPLES OF ACCIDENT PREVENTION IN PRODUCTION AGRICULTURE

(Source: Murphy, Dennis J., *Safety & Health for Production Agriculture*)

1. Accidents have **causes** which are preventable or controllable.
2. There is usually more than one approach to **preventing** an accident.
3. **Risk** is always present in life.
4. To be human is to **err**.
5. Human **perceptions** of risk are not very accurate.
6. Human **behaviour** can be changed.
7. Farm safety and health is the **responsibility** of the farm manager.

Follow these steps to identify and classify hazards:

1. Use the **checklists** provided as guides to make your inspection thorough and systematic.
2. **Read** the rationale at the top of each checklist to prepare your eyes to be observant and your mind to be perceptive in recognizing hazards.

2. RISK ASSESSMENT

- **Risk assessment** attempts to estimate “the chance of” a particular event happening. The assessment of risks which involve the **human factor** is an uncertain activity at best. People are simply not predictable.
- It is important to understand that many farm accidents are due to risks that many people working in the industry consider routine and unimportant. This serves to illustrate that **human perceptions of risk are not very accurate.**

TO DO A RISK ASSESSMENT, YOU MUST FIRST:

Define the nature of the risk associated with each hazard:

Is there a risk of death or permanent disability, and/or extensive loss of property?

Is there a risk of temporary disabling injury or disruptive property damage?

Is there a risk of minor non-disabling injury or non-disruptive property damage?

THEN YOU MUST:

Assess the level or degree of risk:

How commonly does the injury occur on farms?

How often and for how long are workers exposed to the hazard?

The following table will help you to rate health and safety hazards so that your priority for action can be estimated.

PRIORITY FOR ACTION TABLE:

(Source: Australian Agricultural Health Unit, March 1997)

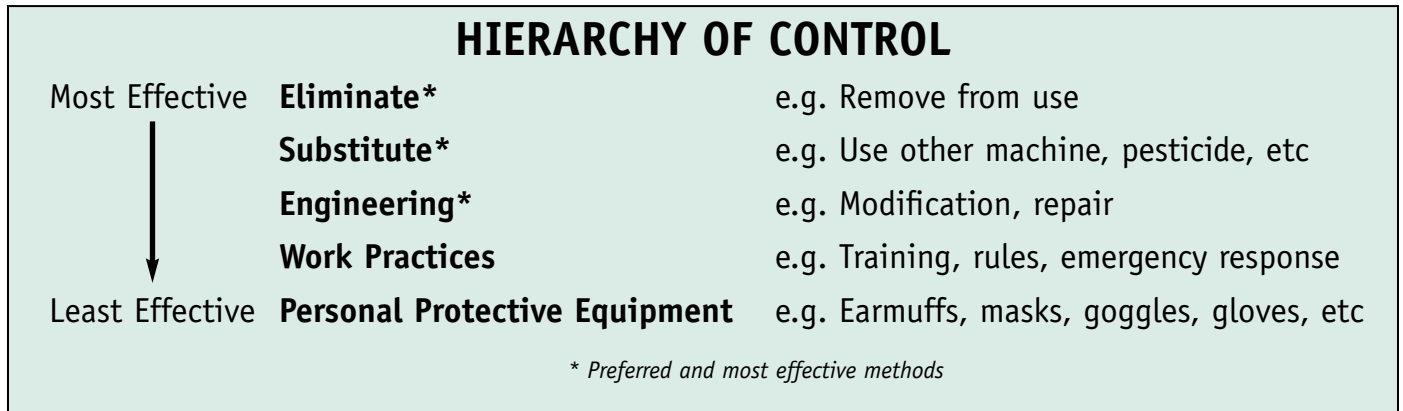
What is the likely outcome?	How often am I, or other people, exposed to the hazard?			
	Daily*	Weekly	Monthly	Rarely
Death or permanent disability	High	High	High	High
Temporary disability	High	High	Moderate	Moderate
Minor (first aid) injury	High	Moderate	Low	Low

* Daily or daily during season of use (i.e. seeding, harvest, haying)

HIGH	The danger is too great to ignore. Immediate action required. Consider discontinuing operation until correction completed.
MODERATE	Risk is serious. Prompt attention required.
LOW	Minor danger. Attention is indicated. Always look for ways to improve safety.

3. CORRECTIVE ACTION

- This is the most **important** step in the audit.
- Corrective actions are aimed at putting in place the most **effective hazard control**.
- **Hazardous conditions** are best corrected by **replacing, repairing** or **removing** the deficiency.
- Always try to choose the highest level of control possible for your situation. The control solutions will likely also increase productivity by reducing injury and property damage.



Control measures are as follows:

- | | |
|---------------------------------------|--|
| Elimination of the hazard | Removal of the hazard.
Example: selling a bull that is known to be difficult to handle. |
| Substitution for a lesser risk | Use of a different machine, material or work practice which poses less risk to perform the same task.
Example: substitution of a pesticide equally effective but less toxic. |
| Engineering/design | Redesigning the machinery or work processes to reduce or eliminate the risk or to isolate the hazard from the worker.
Example: installation of guards on machinery or noise proof tractor and combine cables. |
| Work Practices | Making and enforcing rules about work practices for oneself and other workers. As farmer manager, set a good example.
Example: checking the area before reversing a machine or vehicle. |
| Personal Protective Equipment | When no other control measure is possible, isolate the worker from the hazard by providing a protective device worn by the person.
Example: using a chemical cartridge respirator when exposed to pesticides. |

Check to make sure that the control measure chosen does not introduce a new hazard and the measure provides the desired control.

READY, SET, GO....

STEP ONE

COMPLETE THE INSPECTION and HAZARD IDENTIFICATION:

- *Use the checklists found in the remainder of the booklet to assist you during your inspection. Remember to inspect all areas of the workplace.*
- *Read the rationale above each checklist to help prepare your mind to detect hazards and to assist you to classify the hazard as critical, serious, or minor.*
- *Complete the **white section** of the table during your inspection.*

STEP TWO

CLASSIFY HAZARDS AND ESTIMATE RISK:

- *When you have finished your inspection, complete the **shaded section** of the checklist, use it as a worksheet. Where you have checked YES, no further action is required. Where you have identified a hazard by checking NO, consider the likely outcome posed by the hazard and the priority for action.*

STEP THREE

TAKE ACTION TO COMPLETE CORRECTION:

- *Establish your priorities for action.*
- *Decide what corrective action to take, based on the Hierarchy of Control.*
- *Implement an action plan by selecting a target date for the completion of each correction.*

STEP FOUR

CONTINUE TO MONITOR THE EFFECTIVENESS OF CORRECTIVE ACTION:

- *Make safety auditing a regular part of your farm management practices.*
- *Remember, there are no short cuts to safety!*

CHECKLISTS AND WORKSHEETS....

(Source: How does safety rate on your farm?, Ontario Farm Safety Association.)

COMBINES

RATIONALE:

- Most combine accidents involved entanglement in parts of the equipment, such as in the drive belts or chains. In every entanglement there will be stored energy in the system which may result in an explosive release of this energy when chains or belts are cut. This may cause further injury during a rescue.
- Reels, pickups, cutting equipment, straw choppers and grain tank augers on combines do not have shields making these features very hazardous. The only safe practice is to turn off the power before servicing, unplugging, adjusting or repairing.
- Slips and falls from ladders and platforms on combines are a common source of injury.

Checklist:

<i>Physical Conditions:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Are all shields and guards in place?						
• Are key warning decals on the combine readable?						
• Are steps and walkways free of mud, tools or debris that could cause slips?						
• Is there a slow moving vehicle (SMV) sign on the rear of the combine?						
• Is the SMV sign clean, with good reflective qualities?						
• Do you read the operator's manual for your combine, and follow the operating, maintenance and safety recommendations found therein?						
• Is the power ALWAYS turned off before adjusting or servicing the combine?						
• Before operating, are you positively certain of the location of bystanders and other objects?						
<i>Work Practices:</i>						
• Do you enforce the rule, "ONE SEAT, ONE RIDER"?						
• Have all combine operators on your farm received training on their equipment and reviewed the operator's manual?						
• If the combine does not have a sound proof cab, does the operator always wear hearing protection?						
• Do you ALWAYS use the header blocks when working around the header?						
• Do you regularly stop operation to service and inspect the combine chains, belts, wires and hydraulic hoses? AVOID HYDRAULIC FLUID INJECTION INJURIES BY USING PAPER OR CARDBOARD TO DETECT LEAKS.						
• Before entering the grain tank, do you ensure that all power to the leveling augers and unloading auger has been shut off and moving parts have stopped rotating?						

POWER TAKE OFF (PTO) DRIVEN EQUIPMENT

RATIONALE:

- A PTO drive line operating at 540 rpm makes nine complete rotations every second. If the drive line is four inches in circumference, this means that 36 inches of shirt sleeve, or an entire arm, can wrap around the drive line in just 1 second. Only half a second is needed to entangle an entire arm or leg at 1,000 rpm.
- Most PTO entanglements take place at the connecting points between the PTO and the tractor or between the PTO and the attached implement when protective shields have been removed or damaged.
- Entanglements also occur at the point where the intermediate shaft of the PTO telescopes.
- PTO entanglements usually cause severe, disabling injuries or death.

Checklist:

<i>Physical Conditions:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Do all PTO's have shields and guards in place?						
• Is there a master shield in place where your PTO meets the tractor?						
• Are shields on PTO's checked periodically to ensure that they rotate freely? CHECK WITH POWER OFF.						
<i>Work Practices:</i>						
• Before leaving the tractor seat, is the PTO always disengaged, engine shut off and keys removed?						
• When working with PTO driven equipment, is clothing close fitting, long hair covered, and no laces, etc. exposed?						
• Do you ALWAYS avoid stepping over PTO shaft?						
• Are worn or defective parts replaced as soon as possible?						

EMERGENCY PREPAREDNESS

RATIONALE:

- In the event of a farm injury, a family member will most likely be the first person on the scene.
- Practicing emergency procedures and discussing possible emotional reactions, (e.g. fear, panic, crying) can prepare a person to better handle a real crisis situation.
- Due to the isolation of farm work, there is often a long delay before an injured person is found. This delay results in a longer period before first aid or medical treatment can be started which in turn increases the likelihood that the injury will be serious or fatal.
- Farm families can reduce the delay time with emergency communication plans and proper first aid techniques.

Checklist:

<i>Physical Conditions</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Do you maintain first aid kits in the following locations: Home? Workshop? Tractors? Vehicles?						
• Are first-aid kits periodically checked and replenished?						
• Are emergency numbers posted by all phones along with farm locations?						
<i>Work Practices:</i>						
• Have all adults been trained in first aid and CPR?						
• Do all family members know how to call for emergency help?						
• Do all family members know how to shut off all machinery if someone is caught-up or pinned down?						
• Do you have a system to keep track of where family members are playing or working and when they are expected to return?						
• Do you routinely check in with working family members by phone, visit, CB or radio?						
• Do you act on issued weather warnings?						
• Do you know what to do for accidental poisonings?						

FARM TRACTOR SAFETY

RATIONALE:

- Tractors are the most common piece of machinery involved in farm accidents.
- Roll overs account for about half of fatal tractor accidents and are responsible for many disabling injuries and considerable property damage. Most overturn fatalities occur with tractors that are not equipped with roll over protective structures.
- Run over of the operator, a passenger or a bystander are also common causes of tractor related fatalities.

Checklist:

<i>Physical Conditions:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Is the tractor equipped with a roll over protective structure (ROPS) and seatbelts?						
• Do you always wear seatbelts with ROPS?						
• Are all protective shields and guarding in place?						
• Is there a slow moving vehicle (SMV) sign on the rear of the tractor or towed equipment for roadway travel?						
• Is the SMV sign clean, with good reflective qualities?						
• When towing equipment, do you use safety hitch pins and chains?						
• Is there a first-aid kit mounted on the tractor?						
• Is a fire extinguisher located on the tractor?						
• Are steps free of mud, tools or debris that could cause falls?						
• Is the exhaust system on each tractor in good condition and leak-free?						
<i>Work Practices:</i>						
• Do you read the operator's manual for your farm tractor, and follow the operating, maintenance, and safety recommendations found therein?						
• Do you NEVER bypass safety mechanisms for any reason?						
• Before operating, do you walk around the tractor making a visual check for bystanders and other objects?						
• Do you enforce the rule "NO EXTRA RIDERS" on the tractor at any time?						
• Do you lock brake pedals together before roadway travel?						
• Are brakes adjusted regularly?						
• When operating a tractor in a building, do you open doors and windows or start ventilation fans?						
• Are keys removed from the tractor when not in use, to prevent theft or unauthorized people from using the equipment?						
• Do you always steer clear of hazards such as ditches, steep hills and other areas where tractors can tip?						

<i>Work Practices: (FARM TRACTOR SAFETY cont.)</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• When using front-end loaders, do you travel with the bucket lowered to avoid sideways rollover?						
• Have all tractor operators on your farm received training on their equipment and reviewed the operator's manual?						
• Do your tractor operators always do a pre-operational check which includes a walk around the equipment to check lights, visibility, tires, brakes, etc.?						
• Is mounted equipment always lowered before the operator leaves the tractor?						
• Are towed loads always hitched to the draw bar, and never higher?						
• When towing high or wide loads, are clearances from overhead power lines always checked?						
• If the tractor does not have a sound proof cab, does the operator always wear hearing protection?						

TRANSPORT VEHICLES: TRUCKS, etc.

RATIONALE:

- Travelling too fast for road conditions can be the cause of a farm truck accident. Travelling on uneven road surfaces with soft shoulders or ruts may cause loads to shift leading to loss of control of vehicle and roll over.
- In any vehicle, passengers who do not wear seatbelts risk serious injury in the event of a collision or roll over.
- Many fatal injuries have resulted when farmers have worked beneath hoists which have failed when boxes are hoisted. If it is necessary to work beneath a hoisted truck box, even for a few minutes, make sure that the hoist is securely blocked, making it impossible for the box to come down.

Checklist:

<i>Physical Conditions:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Do you do a vehicle check before going on public highways (e.g. tires, lighting, security of load, etc.)?						

Work Practices:

• Are keys removed from motorized equipment to prevent starting by unauthorized persons?						
• When entering the public roadway from the farm driveway, is there clear vision in both directions?						
• Do you ALWAYS wear seatbelts when on the roadways?						
• Are hoist-equipped trucks stored with boxes down?						
• Are the mechanical conditions (hoses, fittings, hinge pin, valve function, controls, labels, etc.) of truck hoists inspected regularly? CHECK ONLY WITH BOX DOWN.						
• Do you ALWAYS safely block and support truck box when repairing hoist?						

FARM BUILDINGS

RATIONALE:

- Dangers are present in farm buildings. For example, fatalities have occurred when farmers have been accidentally submerged in grain bins resulting in drowning. Farmers have been overcome by carbon monoxide fumes in poorly ventilated shops or by exposure to toxic gases found in confined spaces such as manure pits, septic tanks or silos.
- In a survey of non-fatal farm injuries in Saskatchewan, 24% of injuries reported occurred in farm buildings.
- Attention to good housekeeping and maintenance practices are an important method of reducing accidents caused by slips and falls.
- Farmers have high rates of occupationally-related lung diseases due to exposure to dusts and low levels of toxic gases commonly found in grain bins and barns. These lung diseases are preventable.

Checklists:

<i>General Building Safety:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Are buildings free of litter and debris?						
• Are walkways, aisles and traffic areas clear of any obstructions?						
• Is there adequate lighting in work and travel areas?						
• Are stairs in good condition and equipped with handrails?						
• Are stairs kept clear of obstacles on steps and landings?						
• Are permanent ladders in good condition and inspected regularly?						
• Have defects in concrete floors been repaired?						
• Have broken, damaged, or rotten floorboards been repaired?						
• Are low ceilings, beams, etc., marked clearly with signs or fluorescent materials to prevent bumping into them?						
• Are stored materials properly stacked to prevent them from falling?						
• Are protrusions such as nails removed from walls, railings, etc. to prevent contact?						
• Are nails removed from used lumber before stacking?						
• Do you wipe up spills immediately?						
• Is there ample walking space between stored machines?						
• Are keys removed from stored machinery?						
• Do large doors open smoothly?						
• Are floor openings protected to prevent individuals from falling through them?						
• Do you keep your tractor and other fuel-burning equipment in an outbuilding separate from the barn or other buildings?						

<i>General Building Safety: (FARM BUILDINGS cont.)</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
<ul style="list-style-type: none"> Do you avoid storing flammable liquids in barns or other structures? 						

Workshop:

<ul style="list-style-type: none"> Are all electrical outlets in the shop properly grounded with ground fault circuit interrupters? 						
<ul style="list-style-type: none"> Are floors kept dry at all times? 						
<ul style="list-style-type: none"> Is personal protective equipment available: e.g. goggles, face shields, hard hats? 						
<ul style="list-style-type: none"> Is a stocked first-aid kit available? 						
<ul style="list-style-type: none"> Are work areas debris-free and uncluttered? 						
<ul style="list-style-type: none"> Is there adequate lighting to prevent working in shadows? 						
<ul style="list-style-type: none"> Are suitable receptacles available for oily rags, used oil, etc.? 						
<ul style="list-style-type: none"> Are there at least two exits available? 						
<ul style="list-style-type: none"> Is adequate, well-organized storage available for tools and equipment? 						
<ul style="list-style-type: none"> Are extension cords used only for temporary work? 						
<ul style="list-style-type: none"> Are portable lights properly shielded to prevent breakage? 						
<ul style="list-style-type: none"> Are portable tools unplugged when not in use? 						
<ul style="list-style-type: none"> Are benches tidy and drawers kept shut? 						
<ul style="list-style-type: none"> Are entrances to silos and grain bins secured against entry by children? 						
<ul style="list-style-type: none"> Are fixed ladders sound and in good condition? 						
<ul style="list-style-type: none"> Are there safety cages around ladders on silos? 						

Special Structures: Silos, Grain Bins, etc.:

<ul style="list-style-type: none"> Are warning signs posted to warn of silo gas or oxygen deficiency? 						
<ul style="list-style-type: none"> Do you use appropriate self-contained breathing equipment when entering a silo where gas may be present, or where an oxygen deficiency may exist? 						
<ul style="list-style-type: none"> Are workers made aware of hazards of flowing grain entrapment and crusted grains? 						
<ul style="list-style-type: none"> Can power be locked out so that unloading mechanisms cannot start by accident? 						
<ul style="list-style-type: none"> Are all shields and guards in place on unloading mechanisms? 						
<ul style="list-style-type: none"> Do you ALWAYS avoid entering a manure pit or septic tank for any reason? 						
<ul style="list-style-type: none"> Are dust respirators used when handling moldy hay and grains, or when grain dust is present? 						
<ul style="list-style-type: none"> Is your silo free of cracks and structural problems, corrosion, etc.? 						

PESTICIDE STORAGE AND HANDLING

RATIONALE:

- Pesticides (herbicides, insecticides, fungicides, rodenticides, etc.) are designed to control or kill specific pests. Pesticides can be absorbed into the human body through the skin, lungs, digestive system or eyes. Accidental overexposure to pesticides can result in serious illness, even death. Please refer to the “Pesticide Safety Handbook”, available from the Saskatchewan Department of Agriculture and Food for further information regarding pesticide toxicity, poisoning and spills.
- Courses on the safe handling, use and application of pesticides are offered to Saskatchewan farmers. For more information contact the Agriculture Division, Wascana Institute, Regina, (306) 787-4714 or Extension Division, U. of S., (306) 966-5539.
- It is the responsibility of farmers to be aware of and to comply with the requirements of the Pest Control Products (Saskatchewan) Act and its Regulations. For more information about this Act, please call Saskatchewan Agriculture and Food, (306) 933-6191.

Checklists:

<i>Pesticide Storage:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
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The Pest Control Products Regulations require the following conditions to be met in order to insure proper storage of pesticides.

• Is your pesticide storage area used exclusively for the storage of pesticides?						
• Is this storage area kept locked?						
• Is this storage separate from any other that may be used to store foodstuffs, feeds or any other material intended for consumption by humans or animals?						
• Are empty or partially empty pesticide containers stored in a secure area that is not accessible to children or animals?						
• Are empty pesticide containers destroyed or decontaminated in accordance with instructions provided by the manufacturer?						
• Do you have adequate safety equipment (e.g. respirator, rubber gloves, rubber boots, etc.)?						
• Is this storage area vented to the outside?*						
• Have you posted a chemical warning sign on all entrances to the storage area?*						
• Do you have access to an adequate source of water in the area adjacent to the storage facility?*						
• Have you advised the local fire department of the pesticides in storage?*						
• Is the storage area free of floor drains?*						
• Is the flooring readily cleanable?*						
• Is there a readily available source of absorbent material to soak up a spilled pesticide?*						
• Is the flooring of the storage area constructed so that it can contain spills?*						

The items with asterisks are required under the PCP Act for those who store pesticides for commercial use or resale.

This list is adapted from the "Pesticide Safety Handbook", Twelve Rules for Chemical Safety.

<i>Pesticide Handling:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Do you ALWAYS read the pesticide container label carefully before using a pesticide?						
• Do you follow label instructions?						
• Do you store pesticides in their original containers with a legible label?						
• Do you inspect pesticide containers for leaks before handling them?						
• Do you avoid handling pesticide containers roughly or carelessly?						
• Do you know what to do if a leak or spill should occur?						
• Do you have emergency numbers posted by the telephone (e.g. Saskatchewan Environment and Public Safety Spill Report Center, Poison Control Center)?						
• Do you keep a supply of clean water readily available when working with pesticides?						
• Do you inspect your vehicle for contamination after unloading?						
• Do you make sure NEVER to store pesticides or empty pesticide containers anywhere near food or drink (including that for animals)?						
• Do you make sure NEVER to eat, drink or smoke in the pesticide work area?						
• Do you make sure NEVER to rub the eyes or touch the mouth while working with pesticides?						
• Do you make sure to ALWAYS wash hands thoroughly before eating, drinking, smoking or using the toilet when working with pesticides?						
• Do you wear clean rubber gloves and protective clothing when handling pesticides, and a respirator whenever recommended?						
• Do you ALWAYS decontaminate clothing and equipment and replace faulty equipment such as gloves and respirators?						
• Do you shower and change all clothing immediately after applying pesticides?						
• Do you recognize and understand the meaning of the hazard and precautionary symbols and words on pesticide containers?						
• Do you obtain a material safety data sheet for the pesticide you are purchasing?						

GENERAL FARM MACHINERY

RATIONALE:

- Balers are the cause of serious injuries when the operator attempts to adjust or unplug the machine while the power is engaged. This is because the pick up and belts cannot be shielded making them very hazardous and, as a result, operator's limbs may become entangled in the mechanism causing severe lacerations, amputations, even death.
- When handling bales with machinery, the large round bales which weigh between 800 and 1500 pounds, may fall from improperly designed or applied handling devices and crush the machinery operator or bystander causing serious spinal injuries or death.
- Most incidents with portable augers involve entanglement of the hands or feet, and occur when a piece of loose clothing, glove, tie string or shoelace is caught in the flighting, or when an operator attempts to unplug the auger while it is running resulting in severe lacerations or amputations. Drive belts and winch handles are also common sources of injury.

Checklist:

<i>Physical Conditions:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Are key warning decals on machinery readable?						
• Are all shields and guards in place?						
• Are all machines free of jagged metal or protrusions?						
• Are hydraulic lines free of excessive wear or leaks? AVOID HYDRAULIC FLUID INJECTION INJURIES BY USING PAPER OR CARDBOARD TO DETECT LEAKS.						
• Is any equipment that is likely to be towed on roadways equipped with safety chains and safety hitch pin?						
• Are SMV signs in good condition (clean and not faded)?						

Work Practices:

• Are defective and worn parts replaced as soon as possible?						
• Are tires inspected regularly and properly inflated?						
• Are children and bystanders kept away from operating equipment?						
• Is the power turned off before adjusting or servicing machinery?						
• Are moveable components properly blocked before repair or adjustment?						
• Do you ALWAYS observe the "NO RIDERS" rule on machines or draw bars?						
• When implements are parked, are they always stored out of the transport position?						
• Are farm implement manuals readily available to the operator?						

ELECTRICAL SAFETY

RATIONALE:

- Many on-farm electrocutions and electrical injuries are due to contact with overhead power lines. In addition, faulty shop tools and extension cords are also a source of these injuries.
- Electricity can cause death by stopping the heart or from severe burns at the entry and exit points of the current. On Canadian farms, in the period from 1991 to 1995, 16 persons were killed by electrocution.
- Faulty electrical wiring is a source of fires in farm buildings and machinery.
- **NEVER** attempt to move, repair or measure power lines. **ALWAYS** contact the Saskatchewan Power Corporation (SPC) for assistance. The SPC district office phone number is listed in your local telephone directory.

Checklists:

	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Have you discussed the various types of insulation in buildings with your insurance company?						
• Are power lines, poles and other electrical hardware coming into the farm in a good state of repair?						
• Have trees been trimmed well away from conductors in case of storms?						
• Have you had overhead lines relocated underground to avoid contact with high vehicles in the farm yard?						
• Do all outlets have three-pronged receptacles to provide proper grounding of electrical tools and appliances?						
• Are there sufficient outlets to eliminate the continued use of extension cords?						
• Are bare light bulbs protected from being hit by objects and machines, or splashed with liquid?						
• Are outside outlets weatherproof and installed with ground fault circuit interrupters?						
• Is your TV antenna located far enough from wires in case it falls during a storm?						
• Do you have warning systems to indicate that vital equipment has failed?						
• Do livestock ever act wary or refuse to drink?						
• Do you unplug tools and equipment that are not being used?						
• Do your tools and appliances carry a CSA certification?						
• Are checks always made for underground wiring before digging?						
• Is the correct sized fuse always used in circuits?						
• Are fuses and switches all labelled properly so as to prevent confusion in an emergency?						
• When moving high equipment, do you always visually check for overhead power lines and maintain a clearance of at least 10 feet?						
• Do you always locate buildings, bale stacks, etc., away from power lines and underground electrical lines?						

FIRE PREVENTION

RATIONALE:

- Unfortunately, fires and explosions are a common accident on farms. They are caused by a variety of sources, including fuels, welding, faulty electrical wiring and overheated machinery parts.
- Burns can result in death or serious injuries that are often painful and disabling, requiring lengthy treatment and rehabilitation.
- Due to the length of response time by emergency personnel to remote farm locations, farm fires often become very involved, resulting in devastating damage to buildings, property and equipment. This fact contributes to the importance of fire prevention on our farms.

Checklists:

	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• In hazardous areas, are NO SMOKING signs placed in prominent locations?						
• Are light bulbs and heat lamps protected with wire guards?						
• Are roofs checked for leaks where hay or straw are stored (excessive wetting of hay or straw could lead to spontaneous combustion)?						
• Are lightning rods checked for proper installation and grounding?						
• Do livestock buildings have at least two exits for animals?						
• Are doors and gate latches easy to open?						
• Are faulty wiring and electrical equipment repaired or replaced immediately?						
• Do you regularly dispose of rubbish and other combustibles?						
• Are flammable liquids properly stored away from any ignition sources?						
• Do you take extreme care when refueling equipment to prevent ignition of fumes by hot machinery parts, cigarettes or other sources of ignition?						
• When welding, do you take extreme care to eliminate all possibility of igniting combustible materials?						
• Do you take care not to damage concealed electrical wiring when drilling holes or driving nails into walls?						
• Are matches and lighters stored safely and out of reach of children?						
• Are chimneys and heater pipes clean and in good condition?						
• Do you obtain an outdoor burning permit when required?						
• Are fire department numbers and farm location directions prominently displayed by all phones?						
• Is there a cistern or pond that can be quickly and easily accessed in all kinds of weather?						
• Are appropriate fire extinguishers located strategically for easy access in case of fire?						
• Are fire extinguishers inspected regularly?						
• Does your family periodically review how to operate fire extinguishers and discuss emergency plans?						

FARMYARD, FIELDS, LANES AND DRIVES

RATIONALE:

- It is difficult if not impossible to see or hear children while you are running farm machinery. Children need designated play areas on the farm that are located away from machinery and traffic. Tragically, one of the most common sources of serious and fatal injuries of farm children is being run over by equipment being operated in the farmyard.
- In a Saskatchewan survey of non-fatal farm injuries, approximately 40% of all injuries occurred in the farmyard.
- Careful attention to eliminating hazards in the farmyard will make your farm a safer place to live and work for you, your family and visitors.

Checklists:

<i>Farmyard:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Do you have an assigned play area for children (e.g., a fenced area)?						
• Do you forbid children to play where farm machinery or tractors are working or stored?						
• Is there protection from the danger of uncovered water tanks, wells, cisterns, etc.?						
• Are children protected from the dangers of open water sources such as dugouts and ponds?						
• Are all gates (yard and field) wide enough for machinery and trucks to enter and exit easily?						
• Are workers made aware of overhead power lines when moving tall equipment, ladders, etc.?						
• Are all obstacles that can be snow covered removed from yard and work areas before winter?						
• Are sidewalks and walkways in good repair?						
• Are lawn and garden tools put away after use?						
• Is the yard clear of rubbish, dead vegetation, waste, mislaid tools, etc.?						
• Do you kill or remove hazardous plants such as poison ivy from the farmyard?						
• Do you check the yard for nests of stinging insects, and take appropriate action for their removal?						
• Are clotheslines high enough for pedestrians to walk under?						
• Do you inspect trees after storms and in spring for broken limbs that could come down?						

Fields, Lanes & Drives:

• Is equipment kept off of steep slopes where stability can be uncertain?						
• Do you leave a sufficient turning area for machinery along ditches and embankments?						
• Are washouts repaired and filled so vehicles won't get stuck?						
• Do you trim low tree branches that could hit equipment or the operator?						
• Do you stop machinery before crossing railway lines on your farm?						
• If underground utilities (e.g. gas lines, power lines, etc.) cross your farm, are they well marked?						
• Do you keep your drive/lane in good condition, free of ruts and bumps or stones?						
• Are laneways marked before winter snows to indicate ditches, etc., for snow removal?						

ANIMAL HANDLING FACILITIES

RATIONALE:

- On Canadian farms, in the period from 1991 to 1995, 24 persons died in animal-related events. Accidents involving animals are the second leading cause of non-fatal farm injuries.
- The size and weight of livestock are the primary cause of injuries to humans. Victims may suffer crushing injuries to the head, torso or extremities when large animals fall on them or they are caught between the animal and another object. Falls from animals are another common source of injury.
- Animals can also be the source of some infectious diseases which are readily spread to their human caretakers. The transfer of these infections from animals to farmers is largely preventable by keeping animal facilities clean, testing and immunization and using sanitary practices in handling animals and their products.

Checklists:

	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Do you ALWAYS avoid entering a manure pit for any reason?						
• Are steps and walkways roughened in facilities to prevent slips and falls?						
• Are walkways and aisles kept free of debris, manure, feed, etc.?						
• Are outside ramps, steps and entrance ways protected from rain or spilled liquids that could freeze?						
• Are animal drugs and barn chemicals kept in a secure area in original containers?						
• Are pens, gates and fences in good condition, without protrusions?						
• Are restraining chutes designed safely, in good condition, without protrusions and securely anchored to prevent tipping or slipping?						
• Are ventilation fans and vents operative and in good condition?						
• Are heaters kept away from combustible materials?						
• Do you use special care in handling animals with new-born young?						
• Do you make animals aware of your approach so as not to frighten them?						
• Did you have cattle dehorned?						
• Do you forbid anyone to excite, tease or abuse animals?						
• Are icy areas in feedlots sanded?						
• Do you wear protective footwear and head protection when handling animals?						
• Do you make sure you have an emergency escape route when working in close quarters with animals?						
• Are pets and animals immunized as required?						
• Is lighting adequate to eliminate bright spots and shadows?						

LADDER SAFETY AND MATERIALS HANDLING

RATIONALE:

- Overexertion and incorrect lifting techniques are a common cause of back injuries in all industry, and farming is no exception. Injuries from falls accounted for 16% of non-fatal farm injuries in a survey of Saskatchewan farm injuries. Many of these incidents involved the use of ladders to access farm buildings or equipment.

Checklists:

<i>Ladder Safety:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Are ladders inspected before each use, and replaced or repaired immediately if found faulty?						
• Are wooden ladders coated with clear preservatives so that faults or cracks are visible?						
• Are metal ladders free of weld cracks, missing rivets, etc.?						
• Are ropes on extension ladders in good condition?						
• Are the feet of the ladder in good condition?						
• Do you face the ladder when climbing up or down, or when working from the ladder?						
• Are areas around the top and bottom of the ladder clear of obstruction or debris?						
• Are straight ladders placed at a four to one angle (the base set one foot out for every four feet up)?						
• When using a ladder, does it extend at least three feet above the landing level?						
• Have you replaced any missing or damaged rungs on the ladder?						
• Are two people involved when moving or erecting long ladders?						
• Do you store ladders where they cannot be damaged?						
• Do you ALWAYS put a ladder on firm footing or compacted soil?						
• Is work with ladders avoided in windy or stormy conditions?						
• When working from a ladder, do you ALWAYS keep the trunk of your body centered within the ladder rails?						

Safe Lifting and Materials Handling:

• Has everyone on your farm received instruction on safe lifting techniques?						
• Is the "bend your knees" rule ALWAYS followed?						
• Is appropriate protective equipment worn when lifting and handling materials (e.g. steel-toed boots, gloves)?						
• Are more than one person or mechanical means used to move heavy loads?						
• Do you check for a clear pathway before lifting and moving objects?						

LAWN MOWER HAZARDS

RATIONALE:

- Children playing or laying in tall grass cannot be seen by lawn mower operators.
- Severe lacerations and amputations can result when the extremities of a bystander or the mower operator come into contact with the rotating lawn mower blades.
- Debris left in the grass may be propelled at high speed by the lawn mower blades and come into contact with a bystander or the operator causing serious injury.

Checklist:

<i>Physical Conditions:</i>	Yes	No	Priority for Action	What Action is Required	Cost	Target Date
• Does the person who uses the lawn mower always wear heavy shoes?						
• Does the person who mows the grass always pick up trash, etc. first?						
• Does the lawn mower have safety shields?						
• Is extra gasoline stored in a safety gas can?						
• Do you keep good mufflers on all gasoline powered lawn mowers, leaf mulchers, or snow throwers?						

Work Practices:

• Do you ALWAYS turn off the engine before refueling the gas tank?						
• Do you ALWAYS disconnect the spark plug wire before tipping the lawn mower up to do any servicing under the mower deck?						
• Do you insist that everyone leave the area of grass you are mowing?						
• Do you work across the slope with a hand mower?						
• Do you mow up and down the slope with a riding mower?						
• Do you ALWAYS look behind you before backing up a riding mower?						
• Do you make it a practice to NEVER pull a hand mower toward yourself?						
• Do you ALWAYS wear hearing protection when operating power lawn equipment?						

REFERENCES & RESOURCES

This document has been compiled utilizing the following resources:

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5. Worsing RA Jr., *"Rural Rescue and Emergency Care"*, American Academy of Orthopaedic Surgeons, 1993
6. *"How does safety rate on your farm?"*, publication of the Farm Safety Association of Ontario

The information and recommendations contained in this publication are believed to be reliable and are representative of contemporary expert opinion on the subject material. The Centre for Agricultural Medicine does not guarantee absolute accuracy or sufficiency of subject material, nor can it accept responsibility for health and safety recommendations that may have been omitted due to particular and exceptional conditions and circumstances.

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