Farm Safety & Safe Operating Procedures

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Ag Bikes

The term 'ag bike' refers to all motorbikes with two, three and four wheels, used for farm work. Three and four wheelers are also known as 'all terrain vehicles' or ATVs.

Spot the hazard

Most ag bike injuries result from lack of training and experience, speed, uneven or unfamiliar terrain, humps, logs, rocks, embankments, carrying a passenger or an unbalanced load, inadequate protective clothing and unsafe driving. Those aged between 10 and 24 have a significantly higher risk of injury on ATVs.

Assess the risk

Ag bike injuries are predominantly to legs, followed by injuries to spine, arms and head. Three and four wheeler spills often result in the rider being pinned beneath or rolled on by the vehicle. Assess all use of ag bikes for likelihood and possible severity of injuries. Develop safe use procedures to match the risk.

Make the changes

The following suggestions will help minimise risks.

- Never ride an ag bike without an approved helmet.
- Long sleeves and pants, sturdy boots and gloves all provide protection if you come off the vehicle.
- Eye protection prevents serious eye injuries from bugs, branches or stones.

Maintenance

- Check your bike before riding it.
- Pay attention to maintenance advice in the vehicle manual.
- Check brakes and tyres regularly.
- Ensure all parts are genuine or are at least equivalent components designed for use on your particular brand of bike.
Attachments

- Take extra care when using attachments such as spray tanks and other equipment on your ATV, as they can change the vehicle's centre of gravity and affect its stability.

- Ensure any attachments are designed for use on your ATV.

Terrain

- Be on the lookout for potential hazards when riding. Rocks, bumps, irrigation pipes and wildlife all have the potential to cause an accident, and should be approached with caution.

- Take extra care when operating a bike on unfamiliar or rough terrain.

- Where possible, use familiar farm tracks.

- Be particularly careful when turning, approaching a rise or navigating an obstacle. If you are not sure of your ability to clear an obstacle, find another route or go back.

Paved surfaces and public roads

- Don't drive ATVs on paved or bitumen surfaces. They are not intended for use on smooth surfaces and could be difficult to control.

- Never ride ATVs on public roads. It may be difficult to avoid a collision if other vehicles are on the road.

Passengers and children

- Passengers and ATVs don't mix. ATVs are designed to be controlled by the shifting of weight around the vehicle. A passenger limits the driver's ability to do this.

- Never allow children to operate an ATV without training and appropriate supervision.

- Children do not always have the weight, limb size, skill and judgement to control an ATV safely.

Stunts and speeding

- Never attempt jumps, wheelies or other stunts on an ATV.

- Ride at an appropriate speed for the terrain, your experience and the visibility conditions.

Drugs, alcohol and fatigue

- Never ride under the influence of alcohol or drugs, including prescription drugs. They may affect your balance, vision, judgement and concentration.
Fatigue can also limit your ability to control an ATV safely. Operating an ATV is more physically demanding than driving a car. If you are travelling long distances, take frequent rest breaks.

Ensure you are dressed comfortably and appropriately - uncomfortable clothing can make you tire more easily.

**Know the manual**

- Be familiar with the capabilities of your machine.
- Read and understand the manual, particularly safety information.
- Know all warning labels on the machine.

**Owner responsibility**

- As an ag bike owner you must fully understand the risks associated with ATVs and know the appropriate safety precautions to take. You must ensure anyone riding your ag bike has the necessary skills and understanding to operate it safely and responsibly.
- If you are an employer, you have a duty of care under the *Occupational Safety and Health Act 1984* to ensure that ag bikes including ATVs are safely maintained and used in accordance with the manufacturer's specifications, and that employees riding them are adequately trained and are wearing protective gear.
Children

Children who live on farms or who come to visit are often at greater risk than adults who work there. To make your farm safer for children, hazards must be spotted and risks minimised before children discover them. The safest farms for children are those where safety is a priority for everyone.

Spot the hazard

Ask children to help you to spot hazards. Identify places where children like to play, perhaps where they are not supposed to be, and the sort of things they might like doing. Consider dams, streams and pools, silos, tractors, electricity, workshops and machinery sheds, chemical storage areas, farm bikes, guns and dangerous stock.

Assess the risk

For each identified risk, assess the likelihood and possible severity of injury or harm. Ask the children to help. Make high risk areas your top priority for safety improvements.

Make the changes

The following suggestions will help you to minimise risks to children on your farm.

Fences

- For small children, have an effective fence around the house and yard.
- Fence off septic tanks, sheep dips, seepage pits, ponds dams, pools and creeks particularly if close to the house.
- Maintain fences round nearby paddocks and work yards to protect small children from animals, vehicles, machinery, road traffic.
- Have safe, fenced-off areas where children can play.

Workshop

- Ensure gates, doors and locking systems keep young children out of workshops and hazardous storage areas.
• Have safety rules for older children who may need to enter these areas on farm duties.

• Keep workshops free from child hazards relating to electricity, power tools, fire, poisoning, slips, trips, falls and other dangers.

Pesticides

• Keep farm pesticides locked away out of children's reach.

• Fence off pesticide mixing and wash-down bays to prevent access by children.

• Keep children out of orchards after spraying.

Silos, grain storage

• Keep grain storage bins, silos, augers and trucks, adequately guarded to prevent access by children.

• Never allow children to play on stored grain in silos.

• Ensure fixed ladders are guarded and kept above children's reach.

• Have rules keeping children out of grain loading and storage areas unless under close supervision.

Machinery and equipment

• Lock tractors, trucks and other farm machinery away after use, out of bounds to children.

• Electrical appliances and tools should be turned off, disengaged and kept inaccessible to young children.

• Keep firearms, ammunition and explosives locked and out of children's reach.

Protection from animals

• Have rules to safeguard children from dogs that might attack or bite.

• Ensure small children cannot wander into animal pens and stockyards with confined stock.

Ladders

• Store ladders away to prevent children climbing roofs, silos, trees and other height hazards.

• Ensure fixed ladders on silos, bins, tank stands, windmills etc. are adequately guarded against children attempting to climb them.

Emergency first aid
• Have an emergency plan for dealing with serious accidents.

• Keep a first aid kit suitable for children, and have someone trained in first aid.

**Do you**

• Have a 24-hour safety program for everyone on the farm?

• Set a good safety example for children?

• Safeguard children from potential hazards?
Dairy Farms

Dairy farmers often work in isolation, facing risks from animal behavior, mechanical hazards, climatic conditions, and rushed work deadlines.

Spot the hazard

Look for hazard related to lighting, electricity, slips and trips, training and supervision of new and young workers, animal behavior, machinery guarding, heavy lifting and carrying.

Assess the risk

Check each identified hazard for likelihood and severity of injury or harm. The greater the risk and severity, the more urgent it is to minimise or eliminate the risk. Consider appropriate changes and make sure new hazards are not created.

Make the changes

The following are to help minimise risks in dairy farming.

- Have adequate lighting for early morning and evening milking.
- Concrete surfaces should be roughened to provide extra traction for both handlers and stock.
- Keep guarding in place on moving parts, e.g. belts and rotaries.
- Check guarding on compressors, pumps, electric motors and grain augers.
- Have an emergency stop lanyard - in addition to the forward-stop-reverse lanyard.
- Have a residual current device (RCD) installed on the electrical circuit board.
- Fit all-weather covers on power boards in wet areas.
- Ensure milk line supports and union joints meet recommended safety levels.
- Cover head-high projections like handles on milk filter casings with padding.
- Keep exhaust pipes clear of walkways.
- Maintain exhaust systems in good order to reduce noise and fumes.
- Fence off effluent disposal ponds to keep out children and stock.
- Clearly mark all water outlets not suitable for human consumption.
- Ensure hot water taps are inaccessible to children.

**Strain injuries**

Activities that can lead to back strain injuries include:

- long hours working on tractors;
- stock feeding;
- fencing;
- hay and silage preparation;
- irrigation.

To reduce the risk of back strain injuries,

- use mechanical aids, such as hoists, trolleys, barrows and pulleys;
- use team lifting, planning each task in advance;
- keep loads small;
- keep walkways clear;
- modify work areas to minimise bending, lifting, pulling, pushing, lowering and carrying.
- do repetitive tasks at a comfortable height, with the least amount of bending, stretching or leaning.
- develop safe lifting techniques - using the legs and not the back.

**Hot water**

- Ensure hot water is safely guarded.
- Have safe procedures for working with or near hot water.
- Make sure hot water taps can be clearly identified.
- If appropriate, fix clear warning signs next to hot water hazards.

**Remember**

- Ensure adequate lighting for milking.
- Plan tasks and modify equipment to minimise hazardous manual handling.
Electricity

The best safeguard against electrocution on farms is the residual current device (RCD) or safety switch. A fixed RCD can be installed instead of a fusebox in your house, shed or workshop, or portable RCDs can be used with individual power tools.

Spot the hazard

Check to ensure electrical fittings, fixtures, plant and equipment, wiring, insulation, switches, power cords, plugs, earth wires, guarding, and welding equipment are in good condition and regularly maintained.

Look for shorting or sparking fittings. Avoid using electrical equipment in wet conditions. Wear safe footwear and clothing. For work on wires, plugs, switches, fuses and electrical plant, call the electrician.

Assess the risk

Assess each identified hazard for likelihood and severity of possible injury or harm. If there is any risk of electric shock or electrocution, you should have a safe procedures to ensure the hazardous plant is put out of use and either isolated, or kept in a safe place until repaired or discarded.

Make the changes

The following suggestions will help to minimise or eliminate the risk of electric shock.

- Make sure all hand held power tools and appliances are connected through an RCD.
- Always employ an electrician for power alterations or repairs.
- Ensure wiring, equipment, leads and plugs are kept in good repair.
- Don't overload your wiring installation.
- Don't remove guards or covers from electrical switch gear.
- In areas exposed to wind and rain, always use weather-proof outlets and fittings.
- Avoid using outdoor electrical equipment in wet weather.
- All lights exposed to breakage by farm tools should be fitted with wire guards.
- Old rubber-insulated wiring is now unsafe, and should be replaced.

Earth wires

- The earth wire is an essential safety feature. Its purpose is to divert any current leakage to the ground and cause a fuse to blow or an RCD to trip out should a fault develop in the installation.
• The earth wire is usually a bare or green and yellow insulated copper wire, connected to a water pipe or stake driven into the ground. It should never be removed or disconnected.

Outdoor power lines

• Make sure tall items like balers and headers are kept well clear of overhead wires.
• Never ride on top of high loads.
• If your crop-dusting is done by aeroplane, tell the pilot beforehand about any power lines in the area.
• Plan farm roads to avoid passing under power lines, and have new power lines installed so they don't cross over roads.
• Always check the location of power lines before you start work.
• Always check plans and records of underground powerlines before any digging or earthworks.
• Never stack irrigation pipes or park machinery under power lines.
• Never up-end a pipe before looking up. Carry pipes horizontally.
• Remember, power line heights are deceptive. Know the operation and maximum height of your machine.
• Have an observer check your position when working close to overhead power lines.
• If in doubt, always contact the supply authority for advice and assistance.
• If you see a power line that has been damaged or has fallen down, keep clear and notify the supply authority.

Fuses and RCDs

• If a fuse blows out, turn off the switch and check the electrical equipment being used before you replace the fuse wire. If the fuse blows again, call an electrician.
• When replacing a fuse wire, make sure its rating is correct for the circuit.
• If an RCD trips out, check the electrical equipment for obvious faults. If it keeps tripping out, call an electrician.
• Remember, while an RCD may shut off a lethal dose of electricity, it does not prevent electric shock. You must still avoid live contact, particularly if you are working at height or operating hazardous machinery.
Power tools

- When buying a portable power tool, double insulated is safer.
- Never use a light socket to operate a power tool.
- Don't use tools if the casing is broken or damaged. Damaged cords and plugs should be replaced.
- Regularly check power tools are free from external damage or makeshift repairs. This includes leads and plugs.
- Don't make adjustments to a tool without first switching it off and removing the plug from the power point.
- All bench-mounted equipment, such as power saws or grinders, should be effectively earthed - except for those with double insulation.
- Don't use makeshift extension lights. Use a type with a guard around the globe and an insulated handle.

Welding equipment

- Switch off power before connecting welding leads to terminals.
- Check leads are correctly connected to terminals marked 'electrode' and 'work'.
- Ensure supply terminals and live parts are suitably enclosed and protected.
- Ensure welding terminals are shrouded to prevent inadvertent contact or short circuits.
- Check the frame of welding equipment is effectively earthed.
- Don't use leads if they have bare sections. Replace them.
- Never use bare hands on metal parts of electrode holders or electrodes while the welder is switched on. Never rest the electrode on your body.
- Be sure to keep waste material away from the welder.

Do you:

- Make sure all appliances and power tools are connected through a safety switch or RCD?
- Make sure alterations or repairs are carried out by an electrician?
- Inspect cords and plugs regularly?
Farm chemicals: Pesticide Spray

Most pesticide sprays are hazardous, and can cause injury or harm if not handled and applied correctly. Use them in accordance with labels supplied on containers, and with the more detailed material safety data sheets (MSDSs), available from your supplier.

Spot the hazard

Read labels and MSDSs carefully. Check spray equipment, safe handling procedures, protective equipment, operator training and awareness, and supervision of new and young workers.

Be aware pesticides enter the body through:

- absorption through skin contact, specially the eyes;
- inhalation of fumes, vapors and dusts;
- accidental swallowing while eating, drinking or smoking.

Assess the risk

Assess the effectiveness of protective equipment, decanting, spray and washdown procedures, operator training and safe practices. Assess also the likely risk of contamination or poisoning occurring, and the severity of harmful effects to the operator. Finally, assess the effectiveness of proposed new safety measures.

Make the changes

Here are some ways of improving farm spray safety:

- Use the least toxic pesticide available for effective control of insect, fungus or plant, as the case may be.
- Ensure only the recommended rate of pesticide is used.
- Wear protective clothing and equipment as described on the label and MSDS.
- Prepare only enough chemical for immediate use.
- Keep a record of each use and the results.
• Ensure equipment works properly and does not leak.
• Cover feed and water containers near areas where livestock are grazing;
• Don't eat, drink or smoke while pouring, mixing or spraying.
• Don't pour concentrated pesticide into tanks above shoulder height.
• Avoid working alone if you are using a highly toxic pesticide; or have some form of mobile communication.

Spraying
• Spray with minimal drift and preferably in low wind conditions.
• Never spray in high wind conditions.
• Use mechanical suction to transfer pesticides to spray tank.
• A vortex system can be used to mix pesticide concentrate with water before filling the spray tank.
• Prevent nozzles blocking by using correct filters and pesticide formulation. Ensure water and equipment are clean.
• Clear blocked nozzles by using a soft bristle brush or compressed air. Never suck or blow nozzles to clear them.

Clean up
• Thoroughly clean all spraying and protective equipment, where run-off will not create a hazard or contaminate the environment.
• Wash work clothing separately from domestic clothing, or use disposable clothing.
• Wash yourself well after a spray operation.
• After handling pesticides, wash hands with soap and water before eating, drinking, going to the toilet or smoking.

Take precautions
• Provide a first aid kit that includes a towel, clean clothing, a resuscitation mask for expired air resuscitation, disposable eye wash bottle and eye wash solution, soap, nailbrush, and clear instructions on what to do with this equipment.
• Keep fresh water close by for washing.
• Advise someone where you will be working and how long you intend to be gone. Otherwise ensure you have a two-way radio for emergency calls.

• Have a family member or other person at the farm attend first aid classes.

• Check the labels, MSDSs or other safe handling guides for your pesticides, to ensure you have the correct antidotes, emergency equipment and facilities required by labels and MSDSs.

• Stop work immediately and seek medical attention if there is any sign of muscular spasm, blurred vision, excessive saliva or difficulty breathing. Suspect pesticide poisoning with any of these symptoms.

• If regularly using pesticides, an annual medical examination is recommended before and after the spraying season, and more frequently with some chemicals.

**For skin contact:** Wash with soap and water, and rinse with clean water. Remove any contaminated clothing, and seek medical advice.

**For eye contact:** Hold eye open under running water for 15 minutes. Seek medical advice.

**For swallowing:** Ring the Poisons Information Center.
Farm Noise

Noise from farm tools and machinery can cause permanent hearing loss. Hearing loss may be temporary at first, but repeated exposure will lead to permanent damage. The damage can occur gradually over a number of years and remain unnoticed until it is too late. Some noises, such as gunshots, are so loud they can cause immediate permanent damage.

The noise exposure standard for an eight hour day is 90 dB(A). The exposure standard for peak noise - for example gunshot - is 140 dB.

**Spot the hazard**

Some early warning signs of hearing loss include:

- ringing in the ears after work;
- difficulty understanding a normal conversation;
- turning up the volume on radio or television when others appear to hear adequately;
- failing to hear background noises, such as a ringing telephone or doorbell.

Typical farm noises that can damage hearing include:

- tractor (95-100dB(A))
- header (88-90dB(A))
- angle grinder (95-105dB(A))
- bench grinder (90-95dB(A))
- chainsaw (105-120dB(A))
- shotgun (over 140 dB(lin)).

**Assess the risk**

If you have to shout above noise to be heard by someone a metre away, your hearing could be at risk. If noise cannot be reduced or removed at its source, and if there is no other way to separate people
from damaging noise exposure, protective hearing equipment must be worn. Some farmers employ a noise consultant to take noise readings, assess hearing risks and recommend preventive measures.

**Make the changes**

You can reduce noise at its source by:

- purchasing quieter machinery and equipment;
- modifying equipment to reduce noise and keeping machinery well maintained;
- if practicable, running machinery at lower revs.

You can protect people from loud noise exposure by:

- limiting the time workers spend in a noisy environment.
- isolating work areas from noisy machinery using distance or insulation;
- scheduling noisy work when fewer workers are around;
- using job rotation to alternate noisy jobs with quiet ones.

**Protective equipment**

- Where noise exposure cannot be reduced, hearing protection should be worn, e.g. on open tractors, when shooting, or when using a chainsaw.
- Try on ear muffs before buying, to ensure comfort and a sound-proof fit.
- The higher the SLC 80 (sound level conversion) figure, the higher the protection.
- Use lower SLC 80 muffs for moderately noisy jobs - a high rating might mask out important danger warning sounds.
- Ear plugs may be more comfortable for some farmers, but must be inserted with clean hands. Re-usable plugs must be cleaned regularly. Cotton wool is not sufficient.
- Clean and maintain hearing protectors. Replace worn or damaged parts. Keep protectors near the area of noisy activity, e.g. in the tractor cab.
- Wear a combination of ear muffs and ear plugs when shooting.

**Remember**

Once hearing is gone, it is gone forever, and hearing aids are of little help. They can make speech louder, but they cannot make it clearer.
Fire Fighting

Teamwork, planning and communication are vital to the safety of people fighting fires, burning off or doing other fire prevention work.

Spot the hazard

The main hazards are smoke inhalation and radiant heat. Associated hazards relate to training and safe fire fighting practices, communication between firefighters, other people involved, wind and weather conditions, terrain and vegetation, threatened buildings and their contents, availability of water and fire fighting machinery.

People on farms should know how to contact the area fire control officer.

Assess the risk

Safe fire fighting procedures involve constantly assessing risks and their potential to endanger life and property, and minimising them where possible.

Make the changes

The following safety rules help firefighters minimise risks.

- Never work alone.
- Anticipate fire changes due to wind, topography and fuel type.
- Watch for erratic fire behaviour.
- Beware of burning limbs and trees in previously burnt country - look up and live.
- Keep clear of all vehicles or machinery - the operator may not see you.
- Avoid steep slopes above a fire.
- Observe and keep in mind local topography:
  - the position of tracks, clearings, creeks and other relevant spots or landmarks
  - avoid danger areas like steep slopes, dense vegetation and deep, narrow gullies.
- Select escape routes before entering the fire zone.
- Obtain the latest forecast with particular attention to wind changes.
- Remember a general forecast may not apply in your area due to fire effects, terrain or local factors.
• Relate local weather to possible fire behaviour.

**Personal effort**

• Maintain self control under threat situations.

• Panic is infectious and drains energy.

• Avoid exhaustion from over-exertion or prolonged periods of effort.

• Avoid unnecessary shouting or whistling - it may confuse others.

**Limits of endurance**

• Lack of rest reduces physical strength, the ability to think clearly and speed of reactions - arrange relief for yourself and your team.

• Take a break at every opportunity.

• If feeling ill, drowsy, faint or nauseated, take action for heat stress.

**Drinking**

• To do without water for long periods is a mistake. Dehydration can make you sluggish, irritable, impatient, muddle-headed, tired and sleepy.

• When sweating freely, replace body fluids and salts. Drinking small quantities frequently is better than having one big gulp every hour.

• Replace salt by taking salt in food and drink, e.g. Vegemite or lightly salted water (one level teaspoon per litre).

• Aerated drinks blow up the stomach and make hard work uncomfortable. Beer does not help either.

• No alcoholic drinks. Wait until the fire is finished before 'one with the boys'.

**Protective clothing**

• Guard against falling objects - wear an approved safety helmet.

• Make sure your helmet is properly adjusted. In severe conditions, wear a chin strap.

• Wear safety glasses, goggles or a face shield to prevent injury from windblown dust, smoke irritation or during chainsaw operations.

• Working boots must be in good condition. Wear approved safety boots.

• Woollen clothing offers some protection against fire.
Heat and smoke

- Protect against radiant heat.
- Take refuge:
  - light a back burn and use burnt country as a refuge;
  - use gravel pits, or clearings in the forest and roads;
  - lie down on the ground - air is freshest and coolest at ground level.
- Use vehicles to shelter from radiation when the temperature becomes uncomfortable.
- Don't take refuge in elevated water tanks. Immersion in lukewarm water can kill.
- Limit breathing rate when smoke is dense - wait for small pockets of fresh air.
- Dense hot smoke could damage lungs, but hot dry air can be breathed for some time without lung damage.
- If it is necessary to move through the flames:
  - don't linger in front of the flames;
  - use clothing to the best advantage as a shield;
  - select an opening where flame height is lowest;
  - move through the flames onto burnt ground as quickly as possible;
  - beware always of the danger from falling limbs and trees in burnt country.
- As a last resort, if trapped, lie on the ground taking advantage of any protection available.

Be sure to:

- Beware of falling limbs and trees.
- Know the local topography.
- Drink plenty of fluids.
Handling Cattle

Injuries from cattle relate to a number of factors - inadequate yard design, lack of training of handlers, unsafe work practices, and the weight, sex, stress factor and temperament of animals.

Spot the hazard

- Check accident records to identify tasks most likely to cause injury.
- Consider situations that cause stress and injury to handlers and stock.
- Take into account sex, weight and temperament of stock.
- Consider effects of weather and herding on animal behaviour, and time allowed for settling down.
- Check potential hazards and safety advantages of stock facilities, including mechanical aids and work layout.
- Consider what training is required before a person can confidently and competently handle stock.

Assess the risk

- Using accident records, check which tasks and work situations are most frequently linked with injuries.
- Discuss safety concerns of handlers in regard to various tasks.
- Check each identified hazard for likelihood and severity of injury.
- Assess proposed safeguards and safe procedures for other hazards.

Make the changes

Here are some suggestions for improving safety in cattle handling.

- Always plan ahead. Prepare and communicate safe work practices. Get assistance if necessary.
- Wear appropriate clothing, including protective footwear and a hat for sun protection.
- Make use of facilities and aids - headrails, branding cradles, whips, drafting canes, dogs etc.
• Know the limitations of yourself and others - work within those limitations.

• Respect cattle - they have the strength and speed to cause injury.

**Facilities and conditions**

• Yards and sheds should be strong enough and of a size to match the cattle being handled.

• Good yard design assists the flow of stock. Avoid sharp, blind corners, and ensure gates are well positioned.

• Keep facilities in good repair and free from protruding rails, bolts, wire etc.

• Where cattle need restraining, use crushes, headrails, cradles, etc.

• Footholds and well-placed access ways are important.

• Try to maintain yards in non-slippery condition.

• Cattle are more unpredictable during cold, windy weather.

**The stock**

• Hazards vary according to the age, sex, breed, weight, horn status, temperamen and training of animals.

• Approach cattle quietly, and make sure they are aware of your presence.

• Bulls are more aggressive during mating season and extremely dangerous when fighting. Separate into different yards where appropriate.

• Cows and heifers are most likely to charge when they have a young calf at foot.

• Heifers can also be dangerous at weaning time.

• Isolated cattle often become stressed and are more likely to charge when approached.

• Cattle with sharp horns are dangerous - dehorning is recommended where practicable. Dehorned and polled cattle can still cause injury.

**Cattle yarding**

• Avoid working in overstocked yards where you risk being crushed or trampled.
• While drafting cattle through a gate, work from one side to avoid being knocked down by an animal trying to go through.

• Take care when working with cattle in a crush, e.g. to vaccinate, apply tail tags, etc. A sudden movement by stock could crush your arms against rails or posts.

• When closing a gate behind cattle in a crush or small yard, stand to one side, or with one foot on the gate in case the mob forces the gate back suddenly.

**Kicking and butting**

• To avoid kick injuries, attempt to work either outside the animal's kicking range or directly against the animal, where the effect of being kicked will be minimised.

• In dairies there is a high risk of being kicked. Try to follow a regular routine so as not to alarm cows - e.g. by placing cold water on their teats.

• When working on an animal's head, use head bail to restrain it from sudden movement forwards or back.

• Take care when using hazardous equipment, such as brands or knives for castrating or bangtailing.

**Stud cattle**

• When working with stud cattle, train animals to accept intensive handling through gradual familiarisation, e.g. grooming, washing, clipping.

• When leading cattle on a halter, never wrap the lead rope round your arm or hand. If the animal gets out of control, you could be dragged.

• Bulls should be fitted with a nose ring. When being led, their heads should be held up by the nose lead.

**Hygiene**

• Be aware of the risks of contracting such diseases as Leptospirosis or Q Fever when working with animals. These diseases are transmitted through contact with blood, saliva and urine.

• Hygiene is important. Consider vaccinating herds against such diseases.
Handling Pigs

Pig handlers face injuries from the size, strength and temperament of the animals they tend. Injuries may also relate to training of handlers, the safe design of pens, lanes and other yarding, and the administering of drugs and chemicals. Noise in pig sheds can reach levels that require hearing protection.

Spot the hazard

Check the safety of pens, floors and lanes, handling and restraining of animals, safety training for new and young workers, safe lifting methods, safe use of chemicals, and protection from diseases carried by pigs. Study worker injury records for evidence of hazardous jobs and situations.

Assess the risk

Assess whether any of the hazards identified are likely to cause injury or harm, and base safety decisions on the likelihood and possible severity of the injury or harm.

Make the changes

The following suggestions are to help minimise or eliminate the risk of injury or harm in pig handling:

- Check pens and lanes are large and strong enough for the pigs being handled.
- Ensure pen design assists the smooth flow of pigs - avoid sharp, blind corners, and ensure gates are well positioned.
- Keep facilities in good repair and free from protruding rails, bolts, wire and rubbish.
- Where pigs need restraining, use crushes and nose ropes.
- Try to maintain non-slippery conditions, especially in lanes and loading yards.

Stock factors

- Safety in pig handling varies according to a number of factors - age, sex, breed, weight, temperament and training of the animal.
- Boars can be aggressive and unpredictable. Treat them with caution.
- Boars are most aggressive during mating, and extremely dangerous when fighting.
- Prevent boars from coming in contact with each other at all times.
- When moving boars, use a drafting board.
Lifting pigs

- When lifting pigs, get assistance where possible.
- When lifting alone, sit the pig on its hindquarters, squat down, take a firm hold of the back legs, pull the animal firmly against your body and lift, using your legs and not your back.
- Remember, when lifting a pig this way, make sure the pig's head is positioned so that it cannot bring its head back into your face.

Chemicals, vaccinations and injections

- Read labels on chemicals and antibiotic containers carefully - follow manufacturers’ instructions and safety directions.
- Sterilise needles, teeth cutters and ear pliers, and ensure operators observe hygienic practices.
- Observe recommended withholding periods for drugs and chemicals before pigs are slaughtered.
- Wear appropriate protective clothing.
- If headaches or any other discomfort is suffered after handling chemicals, seek medical advice and have appropriate tests.
- Avoid these chemicals if possible in future, and use full protective clothing and breathing filters when handling chemicals in the feed mill.
- Ensure correct dosage rates are maintained.

Transmittable diseases

- Animals carry diseases that can be transmitted to humans. Be familiar with the symptoms so you can tell if these diseases exist in the herd.
- If signs of disease appear, have the disease confirmed and animals tested. If the disease is present, treat affected animals appropriately and vaccinate to prevent further occurrence. Maintain a vaccination program.
- Diseases like Leptospirosis are transferred by urine, blood and saliva, and through open wounds. Keep open wounds covered and wash well with water, soap and antiseptic if contact is made with blood, urine or saliva from diseased animals (See Zoonoses for further information).
- Maintain personal hygiene at all times.
Handling Sheep

Manual handling injuries - wear and tear to the back, shoulders, neck, torso, arms and legs - are the main problems to avoid when handling sheep. Awkward postures, working off balance, and strenuous, repetitive and sudden stress movements can cause immediate or gradual strain injuries and conditions.

Spot the hazard

- Take note of sheep handling activities that put strain on any part of the body.
- Unfit, untrained or out of condition workers are most likely to be injured.
- Check sheep yarding, handling and shearing facilities for injury hazards.
- Check injury records for tasks and situations causing most injuries.
- Discuss hazard concerns with other sheep handlers.

Assess the risk

Assess each identified hazard for the likelihood of injury or harm. Assess also the likely severity of injuries or harm. The more likely and serious the potential injury, the more urgent it is to minimise the risks.

Make the changes

The following suggestions are to help farmers and sheep handlers make sheep handling safer:

- Use a yard design that will encourage sheep to work freely.
- Build yards on sloping ground for better drainage.
- Keep shadows to a minimum where not required to provide shade. Build protective coverings over working and drafting races where practical.
- Avoid slippery surfaces, especially in races and forcing yards.
- Keep dust levels at a minimum.
Fitness and health

People working with sheep should:

- Exercise regularly, and eat a well balanced diet to keep fit and maintain required energy levels.
- Read labels on chemical containers carefully, and follow manufacturers' instructions and safety directions.
- Observe recommended withholding periods for drugs or chemicals before stock are slaughtered.

Working with lambs

- When marking and mulesing lambs, use a cradle where feasible. Keeping a firm grip on lambs helps to avoid cuts and chemical spillage.
- Catchers should wear protective gloves.
- Use a work system on cradles that minimises hazards of being cut, sprayed with chemicals or jabbed with a needle.
- Sterilise knives, shears and ear pliers, and ensure operators observe hygiene practices.

Jetting, dipping, drenching

- Choose chemicals that are most efficient and least harmful to humans. Always wear protective clothing, goggles and breathing equipment where specified.
- Use positive air supply hoods. If headaches or other discomforts occur after handling chemicals, seek medical advice and have appropriate health tests. Avoid using those chemicals in future.
- Ensure correct mixing rates are used.
- Keep equipment well maintained, and check regularly to avoid chemical leakage.

Mustering

- Plan the muster. Sheep movement is affected by wind direction, location of water, etc.
- Allow plenty of time. Do not rush stock.
- Use dogs to control the mob. High speed chases on bikes or horses can cause accidents.

Lifting sheep

- If sheep need to be lifted, get assistance where possible.
• When lifting alone, sit the sheep on its rump, squat yourself down, take a firm hold of its back legs while keeping the sheep's head up to restrict movement. Pull the animal firmly against your body, and lift using your legs, not your back.

• If lifting over a fence, do not attempt to drag the sheep over. Rather, work from the same side as the sheep.

• To save lifting, put a drafting gate at the end of the handling race. It is advisable to have several positions for "drop gates" in the race to hold sheep that are to be drafted off.

**Rams**

• Rams can be aggressive and unpredictable. Treat them with caution.

• When working rams in a race, ensure you are protected from those behind you. This applies particularly when checking testicles, etc. A well-positioned drop gate is useful to reduce the hazard.

**Transmittable diseases**

• Animals carry diseases that are transferable to humans. Be familiar with the symptoms so you can determine if disease exists in the flock.

• If signs of disease appear, have the disease confirmed and animals tested.

• If the disease is present, treat affected animals appropriately and vaccinate to prevent further occurrence.

• Diseases are transmitted by urine, blood and saliva, and through open wounds (e.g. scabby mouth).

• Keep open wounds covered. Wash well with water, soap and antiseptic if contact is made with urine, blood or saliva from diseased animals.

• Personal hygiene is important at all times.
Hay Baling

Large hay bales, some weighing up to 800 kg, have killed and seriously injured many farm workers in Australia. Bales, both round and rectangular, can fall on tractor and forklift operators, topple off stacks and vehicles on workers or bystanders, and collapse when stacks fail.

Spot the hazard

Look for hazards relating to:

Handling:

- Children playing near hay balers, carriers and stackers.
- Training of operators handling tractors, front-end loaders or forklifts.
- Two-poster tractor ROPS - offer no operator protection from bales falling back off forks or bale-loading frames. Tractors with cabs, FOPS (fall on protective structure) or four-poster ROPS are safer.
- Makeshift or poorly fitting bale-loading attachments on tractors and forklifts.
- Carrying bales too high off the ground.
- Insufficient counterbalance on tractor or forklift vehicle.
- Hydraulic control valve should be specific to the front-end loader attachment.

Baler operation:

- Baler properly connected to the tractor.
- Adequate safety guards fitted.
- Nobody allowed to ride on the baler.
- Prevent others getting too close to the baler.
- Build-up of loose, combustible material in the baler.
- Fire extinguisher fitted to the machine.
- Disengage PTO and apply fly wheel brake prior to making baler adjustments.
- Stop engine and apply fly wheel brake before repairs or "stringing up" the baler.
• Extra care and attention when reversing or turning the machine,
• working at night,
• loading onto a truck, and unloading.

Stacking:
• Loading and stacking on uneven ground.
• Stacks under or near overhead powerlines
• Stacks of round bales inadequately chocked and border posted.
• Damaged bales at base of stack - eg from vehicles, cattle or rodents.
• Unstable heights and loose stacking.
• Bales stacked higher than safe operating height of farm tractor or forklift.
• Children playing on stacked bales, particularly during stacking or unstacking.
• Lack of training, experience and protection for people doing hay baling, stacking and loading.
• Handling more bales than safe for the loader.

Transporting:
• Sturdiness of trailers carrying heavy loads of bales.
• Restraining frames back and front of trailer.
• Hooks fitted so ropes can be used to secure load.
• Roads too close to or below powerlines.
• Rough terrain causing bales to become unstable. Safe speeds at all times.
• People riding on loaded hay trailers - highly dangerous.

Assess the risk

Check each hazard that has been spotted to assess:
• Likelihood - how likely is this hazard to injure someone? and
• Severity - how severe would that injury be?

List all the hay baling and stacking hazards spotted, and number them in order of priority, so that those most likely to cause injury or harm can be tackled first.
Because most large hay bales can kill or seriously injure anyone they fall or roll on, any risk of a hazardous incident should be assessed as requiring urgent attention. And as children are the most vulnerable, consider child injury risks top priority.

**Make the changes**

**Handling:**

- Keep children away from hay baling and stacking operations.
- Make sure operators and handlers are properly trained and physically capable of tasks.
- Consider fall-arrest protection for people working at heights.
- Use tractors with four-poster ROPS, FOPS or cabs for protection against falling bales.
- Replace risky attachments with manufacturer approved attachments.
- Ensure loader or forklift operators transport bales close to the ground.
- Avoid sharp turns and unsafe speeds.
- Make sure vehicle controls are fitted specifically for the attachment in use.

**Stacking:**

- Stacks should be on firm, level ground, away from fire hazards, sources of ignition, overhead powerlines, dwellings, boundary fences and footpaths.
- Make sure stack and load heights do not exceed the lifting capabilities of the farm handling equipment.
- Big bales should be stacked to a maximum of four bales high.
- High density bales can be stacked up to six layers high.
- Stack big rectangular, square or high density bales by overlapping, to form a stable stack.
- Do not use bale lifting equipment to raise people on or off stacks.

**Transporting:**

- Do not allow people to ride on stacked trailers.
- Be aware of overhead obstructions, like trees, bridges and powerlines.
- Avoid rough ground that could cause bales to dislodge.
- Ensure loads are adequately secured. Do not overload vehicles beyond legal limits.
Heat Stress

The effects of heat stress range from simple discomfort to life threatening heat stroke. Heat stress causes increased sweating which leads to loss of body fluid and then reduced heat tolerance. This results in reduced capacity for work, inefficiency, and increased risk of hazardous incidents.

Heat stroke, a rarer condition, is when sweating stops and body heat rises. This is a life threatening condition, and requires immediate medical attention.

Spot the hazard

Heat stress hazards can occur through:

- high temperatures,
- high humidity,
- lack of air movement,
- unsuitable clothing,
- a person's lack of acclimatisation,
- hot protective clothing or equipment,
- physical activity,
- radiant temperature of surroundings.

Warnings

Warning signs of heat stress are:

- tiredness,
- headache,
- nausea,
- loss of concentration,
- muscle cramps,
- dizziness.

Assess the risk
Using weather forecasts, availability of shade, knowledge of the job ahead, and an awareness of individual workers' heat tolerance, assess whether the day's tasks could cause heat stress or heat stroke. Consider ways of minimising or eliminating the risks.

**Those most at risk**

Working in a hot environment is more likely to adversely affect people who are:

- overweight,
- medically unfit,
- unacclimatised to heat,
- unhealthy, particularly if suffering from heart disease,
- dehydrated, whether from alcoholic hangover, failure to replace salt and water lost in sweat, or from medically prescribed diuretic drugs.

**Make the changes**

**Indoors**

- Open windows and doors to allow natural cross ventilation, or install air conditioning if practicable.
- Provide fans or ventilators to lower temperature and increase air movement.
- Insulate roof, walls or heat making equipment.
- Duct hot steam and gases outside to help reduce humidity and lower temperature.
- Install extraction ventilation around heat producing equipment.

**Outdoors**

- Wear cool cotton clothing to allow air circulation and evaporation of sweat.
- Use a broad spectrum sunburn cream with an SPF of 15+.
- Wear broad brimmed hats that shade head, neck, face and ears.
- Wear close fitting sunglasses with side shields, labelled to meet Australian Standard AS 1067.
- Use a wetted scarf.
- Provide shaded rest areas.
- Provide an ample supply of cooled, non-alcoholic drinks and ensure they are easily accessible.
• Drink small amounts of water at frequent intervals to avoid dehydration.

• Re-schedule heavier work for cooler times of the day or for cooler days.

• Where possible, rotate work so workers spend less time each on heavy tasks.

**Heat stroke**

If heat stroke occurs:

• Remove the person from heat and allow to rest in the coolest available place.

• Cool the person down with a fine spray of water and fan them.

• Remove excess clothing.

• If conscious, give them cool, but not cold, water to drink.

• Contact a doctor, nurse or first aid officer immediately.

• Do not give salt or alcohol.

**Remember**

If working in hot weather:

• Replenish lost fluid - take small drinks frequently.

• Reduce sun exposure during the hottest hours of the day.

• Rest frequently in a cool place.
Horse Riding

Horses have the speed, strength and ability to cause injury. Riders need training and skill, and the concentration and ability to handle unexpected situations. Clothing and equipment are important for safe riding and handling of horses.

Spot the hazard

Look for hazards relating to rider training and experience, the horse's training and temperament, hazardous terrain and weather conditions, difficult roundup work, clothing, footwear and riding equipment.

Assess the risk

Check identified hazards for likelihood and severity of injury or harm. Consider the background, training and experience of horses and riders. Where risk of injury or harm is considered likely, plan safer procedures.

Make the changes

Here are some suggested ways of reducing risk.

- Plan ahead - consider safe work practices. Get assistance if necessary.

- Wear appropriate gear - leather soled riding boots are recommended as they are designed to slip easily out of the stirrup in case of an accident. Do not use boots with half-sole repairs. Jeans, jodhpurs or long trousers will prevent chafing, and a hat will provide protection from the sun.

- An approved riding helmet (polo or pony club style) should be worn where above average risk is involved, e.g. inexperienced riders, horse-breaking etc.

- Know your limitations, and avoid riding horses that are likely to exploit those limitations.

The equipment

- Keep bridles and bits in good condition, and fitted so the horse is comfortable.

- Ensure saddles and girths are kept in good repair - stirrup leathers, girth straps and surcingles should be well oiled and checked regularly.

- Stirrup irons should be of a size that allows the foot to slip in and out freely, without allowing it to slip through.
• Keep saddle cloths free from burrs and other foreign material.

• Horses vary in conformation, temperament, ability and levels of training. Some require breastplates or cruppers to keep the saddle in place, and running rings, nosebands or headchecks to keep their head and neck in a position for easy control.

• A breastplate is a good safeguard in case the girth breaks or comes loose.

The horse

• Great care is needed when galloping close to a beast at high speed. It is extremely dangerous to allow a horse to touch a running beast behind the shoulder. The horse can fall by touching the beast's hind legs, or from the beast turning completely under the horse's neck.

• In stock yards, be careful riding under gate caps. Some are too low for the horse and rider to pass under safely.

• High speed chases on horses can cause accidents - where practicable, use dogs to control stock.

• Extra care should be taken when riding in boggy or slippery conditions.

• Riders should be matched to horses that are within their handling capabilities. Do not assign an inexperienced person with a flighty, uneducated horse.

• Mounting is easier if the horse is facing uphill.

• If there is no yard to ride in, frisky horses should be taken to a creek bed or sandy area. The horse finds it harder to buck in sand, and the rider finds it softer to fall on.

Difficult horses

• It is not advisable to persevere with horses that are likely to buck, bolt or become uncontrollable. Some tolerance however is generally accepted during the breaking-in and early stages of training.

• If a horse is likely to buck, it is best to saddle it and give it some exercise prior to mounting. This can be carried out in a number of ways, e.g. by "lunging" or leading it from another horse. The horse should then be mounted and ridden in a small yard before being ridden in an unconfined area.

• If a horse is likely to bolt, it should first be ridden in a yard. If a horse bolts in an unconfined area, the rider should remain calm and gradually circle the horse until the horse comes under control.

• Riders should remain alert and in a position of control while mounted - adjusting equipment is a job to be carried out from the ground.
Machinery Guarding

Manufacturers of machinery and equipment are today legally required to make sure dangerous parts are safely guarded so that operators and others are protected from injury.

But old farm machinery is sometimes poorly guarded. Extra moving parts like wheels and pulleys may have been added for various other uses. Original guarding may have been removed for maintenance and not put back.

There may be times when an operator may need to reach over, under, around or into a machine while it is running. If so, any moving parts or other hazards must be appropriately guarded from human contact.

A guard may be any shield, cover, casing, or physical or electronic barrier, intended to prevent contact between a hazardous machine part and any part of a person or a person's clothing.

Spot the hazard

Some of the hazards associated with machinery likely to cause injury include:

- rotating PTO and other shafts (e.g. joints, couplings, shaft ends and crank shafts);
- gearing (incl friction roller mechanism), cables, sprockets, chains, clutches, cams or fan blades;
- the run-off point of any belt, chain or cable. All belts are hazardous, especially if joints are not kept smooth.
- keyways, keys, grease nipples, set-screws, bolts or any other projections on rotating parts;
- any pulley or flywheel that incorporates any openings, spokes, protrusions, etc, that render it anything except totally smooth;
- any crushing or shearing points, e.g. augers and slide blocks, roller feeds, conveyor belts;
- ground wheels and track gear that incorporate protrusions, spokes, etc, that are adjacent to an operator's position (standing platform, seat, footrest) or passenger's seat;
- rotating knives, blades, tines or similar parts of power driven machines that operate in or near the ground or engage crops;
- any machine component that cuts, grinds, pulps, crushes, breaks or pulverises farm produce;
• hot parts of any machine where the surface temperature exceeds 120°C in normal operation.

Assess the risk

Once a hazard has been identified, assess the likelihood of the hazard resulting in injury to the operator or any other person, and the likely severity of any injury or harm. For more information see "Plant in the Workplace: A Guide to Managing Risks" (National Occupational Health and Safety Commission).

Make the changes

Ensure machinery guards:

• are designed to protect the user but allow ready access for operation and maintenance;

• are always in place on dangerous parts of machinery unless they are, by any reasonable definition, located out of reach of users, operators or bystanders;

• are conveniently placed so that users, operators and service and maintenance people are less likely to remove them permanently;

• are strong and durable enough for the machine part they cover;

• protect users, operators and bystanders against burns caused by hot parts;

• are ventilated where applicable to avoid the machine over-heating;

• are not removed until the machine is stopped and isolated with a tagged lock-out switch, and all sources neutralised, e.g. pressure in the hydraulic, or LPG gas line.

Children and machinery

Children on or visiting the farm are often at risk of being injured by machinery. Minimise the risks, teach your children about safety on the farm, and get them to tell their friends.

• Agricultural machinery is not a playground. Make sure guards are on machines, especially when children are around;

• Be aware that children's fingers can sometimes reach into guarding designed for adult hands.

Safe procedure

Stick to a safe procedure for machinery guarding.

• For maintenance jobs, have a checklist procedure ensuring guarding is safely replaced.

• Use approved lock-out and tag devices to prevent machinery being accidentally started during maintenance.
• Redesign work processes to minimise risk from moving parts.

• Get rid of machinery and eliminate work processes that can't be made safe.

• Replace unguarded machinery with safer machinery.

• Have guards designed and fitted for improvised machinery.
Manual Handling

Manual handling or strain injuries can keep farm workers away from work for weeks at a time. They can happen from lifting, pushing, pulling, carrying, lowering, holding or restraining.

Injuries occur through:

- increased wear and tear or damage, e.g. from intense or strenuous manual activity;
- gradual wear and tear, e.g. from frequent or prolonged periods of activity (continuous handling of hay bales); heavy or awkward lifts (lifting heavy machinery onto a ute);
- sudden damage, e.g. from unexpected movement (carrying a heavy object over uneven ground, stumbling, tripping or falling).

Spot the hazard

Conduct safety audits of all farm jobs involving manual handling. Take note of heavy, stressful, awkward or repetitive activities. Check injury records to see which activities have caused most strain injuries. Look for difficult handling jobs that could be made easier.

Assess the risk

Assess the likelihood of each identified hazard resulting in injury or harm. Use injury records to assess the potential risk of various tasks. If you consider there is a significant risk of serious injury, look for the best way to minimise the risk.

Make the changes

Here are some suggestions to help you make the changes:

- Plan ahead. Consider the safest possible ways of lifting, carrying, holding, lowering, pushing, pulling.
- Eliminate unnecessary tasks.
- Avoid double handling.
- Use mechanical aids.
- Carry out a safety check first.
Lighten the load

- Where possible, choose light-weight materials.
- Divide heavy loads into smaller loads.
- Purchase in smaller bags.
- Half fill containers.
- Get help to share the load.

Reduce bending, twisting, reaching

- Point your feet in the direction of the load you are carrying.
- Keep tools and equipment within easy reach.
- Build benches to waist height.
- Keep frequently used items at waist height.

Follow a safe procedure

- Plan the handling.
- Clear the way.
- Wear appropriate protective clothing.

Correct body techniques

- When lifting a load from ground level, bend knees, keep back straight, keep load close to your body, lift with leg muscles, support forearms with knees, and support the load with your body.
- When lowering a load, use leg muscles and lower the load by bending your knees, not your back. Where possible, support forearms on knees.

Avoid muscle fatigue

- Warm up first.
- Take frequent breaks.
- Change jobs to use different muscles.
- Gradually get used to the job.
• Ensure the tractor seat is well sprung.

• Adopt good posture when standing or sitting at a job.

• Instead of crouching or squatting for low jobs, use a small stool.

**Mechanical aids**

Consider using:

• trolleys for heavy bags, drums or other weighty, awkward items;

• special trolleys to move and tilt 200 litre drums;

• picket drivers for fencing; *

• small mobile hoists or forklifts;

• a fixed hoist on the utility or truck;

• mobile ramps or skids for loading and unloading trucks or utes;

• crow bars, barrows, pulleys, hooks and jacks.

* **Fence picket injuries**

Steel fence pickets can inflict nasty injuries on workers using metal pipe drivers.

Unless the pipe section is long enough, the picket can dislodge at the top of the upstroke, and the downstroke can bring the worker's arm down on the picket.

Make sure the pipe section is long enough to minimise these risks. Minimum pipe length should be 600 mm. Take into consideration the size and strength of the worker.

Safe procedure should include instruction and training to ensure the worker's upswing does not exceed the length of the pipe.
Operating a Tractor

Tractors are the main cause of accidental deaths on farms. Over the years, many farmers, farm workers and others living on or visiting farms, have been killed or seriously injured falling from moving tractors, being run over by tractors, or being crushed when a tractor rolls sideways or backwards.

Spot the hazard

Regularly check for hazards relating to tractors, attached implements and field conditions. Hazard areas could include mechanical parts, operator training, other people, work procedures, unsafe jacking, climatic conditions, chemicals used, uneven terrain, and any other potential causes of an injury or a hazardous incident. Keep a record to ensure identified hazards are assessed and controlled.

Assess the risk

Once a potential hazard has been identified, assess the likelihood of an injury or hazardous incident occurring. For example, risk to children playing near a tractor will vary, depending on what the tractor operator is doing, how close they are to the tractor and whether the operator knows they are there. Consider ways of minimising risk.

Make the changes

Here are some ways of improving tractor operator safety:

- Read and follow safety procedures in the manufacturer's manual.
- Ensure an approved cab or roll-over protective structure (ROPS) is fitted.
- Fit and use a seatbelt on tractors with ROPS.
- If there is a risk from falling objects, fit a fall-on protective structure (FOPS).
- To reduce risk of back strain, fit a seat with side restraints and a backrest.
- Wear hearing protection, and remember, not all tractor cabs are sound proof.
- Keep children away from tractors and machinery.
- Remove starter keys when tractors are not in use.
- Have an up-to-date maintenance schedule.
- Follow safe maintenance and jacking procedures.
• Ensure the operator is properly trained for each type of tractor work.

• Always mount and dismount on a tractor's left side - to avoid controls.

• Adjust the seat so all controls are safely and comfortably reached.

• Keep all guards in place, including the power take-off (PTO).

• Operate the self-starter from the operator position only.

• Never carry passengers.

_When operating a tractor_

• Drive at speeds slow enough to retain control over unexpected events.

• Reduce speed before turning or applying brakes.

• Watch out for ditches, logs, rocks, depressions and embankments.

• On steep slopes, without a trailed implement, reverse up for greater safety.

• Engage the clutch gently at all times, especially when going uphill or towing.

• Use as wide a wheel track as possible on hillsides and sloping ground.

• Descend slopes cautiously in low gear, using the motor as a brake.

• Never mount or dismount from a moving tractor.

• Ensure the park brake is on and operating effectively before dismounting.

• Take short breaks regularly when working long hours.

_When towing implements_

• Fit attachments according to the manufacturer's instructions.

• Always attach implements to the draw bar or the mounting points provided by the manufacturer.

• Never alter, modify or raise the height of the draw bar unless provided for by the manufacturer.

• Regularly check safety pins on towed lift-wing implements, to ensure they are not worn.
• Ensure all guards on towed implements are in place before operating.

• Never hitch above the centre line of the rear axle, around the axle housing or to the top link pin.

• Never adjust or work on implements while they are in motion.

• Never attach implements unless the PTO shaft is guarded.

• When parking, always lower the three point linkage and towed implement.

**To avoid strain injury**

• Adjust the tractor seat for back support and comfort.

• When buying a tractor, ensure seating is safe and comfortable.

• Check seat height, seat depth, back rest height and angle, fore and aft movement, seat tilt, firm padding, partial pivoting (if you have to spend long periods looking behind you), and vibration-absorbing suspension.

• Dismount every hour or so, and spend 5 or 10 minutes doing something active.

• Plan for your next tractor to include suitably low steps, hand grips, adequate doorway and cab space, and a safe mounting platform.

• Dismount by climbing down - not jumping down - and use each provided foot and hand hold.
Shearing

Hazard in shearing generally involve machinery, electrical fittings, sheep yard design, slippery and obstructed floors, sharp tools, equipment and protrusions, chemicals, heat stress, and strain injuries from repetitive, awkward and strenuous work.

Spot the hazard

Conduct a safety audit of shearing sheds, pens, flooring, machinery, wool presses, electrical fittings, connections and cables, lighting, ventilation, and the experience and safety training of those involved, particularly young workers.

Assess the risk

Assess identified hazards for likelihood to cause injury or harm. Assess also the potential seriousness of the injury or harm. Consider various safeguards and safe procedures, and assess these for other possible hazards before deciding a plan of action.

Make the changes

Many safety innovations have been developed and implemented to reduce shearing injuries. The following suggestions are to help farmers minimise risks:

- Design steps, ramps, pens, entrances, flooring, gates and latches to minimise the risk of strain and trip injuries to shearers and helpers.
- Ensure sheds are well lit and ventilated; cool in summer and draught free in winter.
- Keep a suitably equipped first aid box in the shearing shed.
- Have suitable, functional fire-fighting equipment available in shearing sheds and quarters.

Machinery

- Keep shearing machinery safely guarded to prevent it catching limbs, clothing or fleeces.
- Place stopping mechanisms within ready reach in case of emergency.
- Ensure a safe distance between shearing positions, to prevent the risk of downtubes clashing and creating cut hazards.
- Keep handpieces well maintained to eliminate vibration injuries.
• Choose quiet machinery or isolate noisy machinery to prevent hearing damage.
• Choose wool presses designed not to trap workers’ hands.
• Consider having electric motors on wool presses to reduce noise and air pollution.
• Consider providing back support harnesses and equipment for shearers.

Manual handling

• Keep shearing floors and passage ways clean and clear of obstructions.
• Ensure floors in catching pens are kept clean and dry to reduce slip hazards.
• Allow sheep to empty out and settle down before moving them into the shed.
• Consider providing back support equipment for shearers.
• Keep shed hands clear of shearers unless they need to be there, or are called on for assistance.
• Keep dogs out of the working area, and don't tie them up where people can trip over them.

Fitness and health

• Shearers and rural workers should exercise regularly and eat a well balanced diet to guard against injury and maintain the required energy levels.
• In hot weather, take regular drinks of cool water or non-alcohol fluids to avoid heat stress.
• Maintain a good posture during physical work, and use your legs to lift, not your back.
Silos

Whenever anyone installs, climbs, enters, fumigates, fills or empties a silo, significant risks may be involved.

Hazards can include insufficient oxygen, toxic gas, explosive atmospheres, unguarded machinery, electricity, grain trapping, silos collapsing, and falls from heights.

There are also significant risks for unsupervised children.

Spot the hazard

Keeping in mind potential hazard areas, conduct a safety audit of your silo and grain storage system. Include machinery used in and around silos, especially grain augers, which can trap limbs and clothing unless adequately guarded, and are prone to tipping unless erected and transported safely.

Look closely at any part of the system that could injure or harm people on the farm, especially children. Check silo ladders, both external and internal, edge protection, and safe procedures for fumigation, dislodging bridged grain, and rescuing somebody trapped inside.

Assess the risk

Check whether identified hazards present risk of injury, and consider ways risks can be minimised.

Make the changes

To help farmers make the necessary safety changes, here are some suggestions:

- Remember, grain dust in silos can become explosive, particularly if humidity is low.
- Don't smoke near silos, and avoid causing sparks from metal friction or electric switches.
- Carbon dioxide in a silo can displace oxygen and cause suffocation.
- High temperatures can cause heat stress for people inside a silo.
- Do the job from outside if possible. Wear respiratory equipment when appropriate.

Safe fumigation

- Ventilate fumigated silos before entering.
Always follow the manufacturer's recommended safe ventilation period.

Open phosphine containers in the open air, not in the shed or silo.

Hold the container away from your face, and position yourself upwind.

Wear protective clothing and equipment.

Have someone standing by when fumigating.

Place phosphine tablets into the silo from the roof using a tube.

Clearly mark all areas under fumigation with "DANGER UNDER FUMIGATION" signs.

Avoid grain suffocation

Don't enter a silo unless you have to.

If you enter a silo, have someone standing by in case of difficulties.

Never enter a silo without turning off the auger and ensuring no-one can start filling or emptying the silo while you are inside.

Stay on the ladder above the level of compacted or bridged grain while dislodging it.

Ensure external ladders start at a height inaccessible to children.

Check machinery

Guard auger drive train (belts, pulleys, drive shafts) and the rotating screw fitting.

Locate mobile augers on firm, preferably flat ground, and operate at a shallow angle (less than 45deg) to prevent overbalancing.

Lower mobile augers when transporting.

Never start augers hidden from your view before checking the area is clear of people.

Avoid structural failures

Every material has different structural characteristics - a silo designed to store one product may not be suitable for another. Care must be exercised whenever a new product is stored in a silo.

Follow manufacturer's instructions exactly in preparing the concrete pad.

Use "bedding-in" procedure when filling a silo, by drawing off a rubbish bin full of grain.

Keep people, specially children, well clear when filling or emptying a silo.
• Seemingly simple changes to a silo can drastically alter its structural stability. Consult an engineer before any alterations are made. Equipment attached to silos can also impose dangerous loads.

**Avoid falls**

• Provide roof fall protection in the form of a simple edge rail.

• Install an external ladder cage where required.

• Provide a permanently hinged wire mesh guard on all external openings above the maximum level of grain.

• Use a safety harness.

**Emergency procedures**

• If trapped by grain don't panic - the grain will pack tighter. Shield your face and chest with arms and clothing to create space for breathing.

• Plan your escape. Always have a person watch from the outside. The watcher should have clear instructions what to do in an emergency. The first instruction is: "Don't follow me in."

• If only one person is on standby and cannot pull you out without entering, they must call for help. Only then may someone enter, wearing a breathing apparatus and a life-line. One or more people outside can help to pull you out.

• If someone else is trapped in a grain silo, empty the bin by opening any side outlet, then cut flaps in the cone or walls all around the base using power tools.
Skin Cancer

Exposure to ultraviolet radiation from the sun is the main cause of skin cancers in Australia. Skin damage from the sun is cumulative - the longer the skin is exposed to the sun, the greater the risk of skin cancers, regardless of your tan or skin pigment.

Rural workers have a high risk of getting skin cancers, as their work can expose them to long periods of ultraviolet radiation.

Spot the hazard

To help you spot skin cancer hazards, consider:

- Lack of shade in outdoor work areas.
- Reflective surfaces, eg water, cement, shiny metal or white painted sheds and silos, cement surfaces.
- What jobs are done in sunlight, and how long they take.
- What are the peak sun hours.
- The day's ultraviolet exposure forecast.
- What body surfaces are exposed to sunlight.
- Whether sun blockout is provided or used.
- Whether protective clothing is available and worn.

Assess the risk

To assess the risk of skin cancer from identified hazards:

- Work out approximately how long is spent working outdoors each day.
- Identify what jobs are normally done in peak sun - between 10am and 4pm.
- Check whether shade is available for outdoor jobs.
- Check whether hats, protective clothing and sunscreens are adequate.
- Check whether SPF15+ sunscreen is applied to all exposed skin areas.
- Ensure sunscreen is re-applied during outdoor work.

Learn to identify various types of skin cancer, and check your skin for sunspots and unusual pigmentation.
Basal Cell Carcinoma
Starts as a small lump that flattens out as it grows. One of the two most common growths, it can be easily treated and cured.

Squamous Cell Carcinoma
The other most common growth; however it is more likely to spread to other parts of the body.

Malignant Melanoma
The most dangerous type of skin cancer. Often starts as a dark mole. This type is responsible for over 1000 deaths in Australia each year.

Sunspot (Keratosis)
A small, scaly patch of skin occurring on the arms, face, nose and ears. They are not strictly a form of cancer, but indicate excessive exposure to solar UV radiation.

Be aware of short term injury risks:

- reddened skin, blistering, swelling, and later, peeling of the skin.
- photosensitisation - acute skin reaction to UV with certain drugs, ointments, creams, and chemicals, resulting in increased sunburn and skin damage.
- photoconjunctivitis and photokeratitis - sore, red, gritty swollen eyes, with sensitivity to strong lights.

Long term effects include:

- Prematurely ageing - wrinkling, wasting skin tissues, excessive pigmentation, spots marked by clusters of tiny blood vessels.
- Cataracts of the eye.

Make the changes

- Wear cool, protective clothing, i.e. a shady hat, shirt with collar and long sleeves, and long trousers.
- Use a sunscreen with a high sun protection factor (SPF +15) before you go into the sun.
- Noses, lips, ears, bald heads, necks and backs of hands need extra protection.
- Reapply sunscreen regularly, especially if you are sweating.
- Make use of shade areas wherever possible in the high risk hours.
- Use a tractor with shade protection fitted.
• To safeguard against cataracts, sunglasses that conform to with applicable standards are recommended.

**Early signs**

Check your skin for early signs of skin cancer:

• any unusual skin conditions that don't heal in four weeks;
• any sore, ulcer or scaly patch on the skin;
• a white patch on the lips that doesn't heal;
• any mole that seems to grow quickly;
• any mole that changes shape or colour;
• any mole that bleeds or repeatedly itches.

If you find any of these signs, see your doctor.

**Remember**

Over-exposure to the sun's rays increases the skin cancer risk both now and in the future.
Tractor Maintenance

People have been killed and seriously injured doing maintenance and repairs to farm tractors. Major hazards can occur when tractors are jacked and wheels are removed without safe working procedures. These risks are magnified on soil. Regular workshop maintenance of farm tractors and trailed implements can prevent hazardous incidents in the field.

Spot the hazard

When planning tractor maintenance, check the right equipment is available for safe jacking, removal of wheels and other tasks. People doing the job should be experienced, and there should be agreed safe procedures. Heavy lifting and carrying can cause strain injuries. Children should be kept away from tractor workshops. Field repairs present specific injury risks.

Assess the risk

The greater the risk of an injury or a dangerous incident occurring, the more urgent the need for changes to be made to minimise or eliminate the risk.

Make the changes

Here are some ways of improving tractor maintenance safety.

- Routinely adjust brakes, clutches and drives, according to the manual.
- Ensure steering, exhaust system and brakes are in top condition.
- Stop the motor before refuelling, servicing or greasing and, if possible, wait until the engine is cold before refuelling.
- Never remove or replace belts while pulleys are under power.
- Keep steps and working platforms free of grease and oil to avoid slips and falls.
- If the engine overheats, allow time for it to cool off before removing the radiator cap.

When jacking a tractor

- Jack on a flat surface, ideally a concrete floor.
- Avoid working alone. Ask somebody with training and experience to help.
• Refer to the manufacturer's manual on safe jacking, or seek professional advice.

• Where jacking points are not identifiable, jack from the lowest possible point.

• Use jacks that comply with applicable standards.

• Use vehicle stands that comply with applicable standards, and are designed for the load to be suspended.

**Blocks and chocks**

• Ensure wooden blocks for jacking are of hardwood, e.g. jarrah or karri, with a surface area that will support the tractor's weight on soft soils.

• Chock all wheels that will remain on the ground, using big wooden chocks at the front and rear of each wheel. Don't use rocks; they're too unstable.

• Chock all wheels on articulated vehicles to stop them twisting sideways during jacking.

• Before jacking, apply brakes, place in gear - or automatic park - and switch ignition off.

• Stay clear of the tractor while operating the jack.

**When removing wheels**

• Loosen wheel nuts before the wheel is off the ground, to avoid any movement that could dislodge the tractor.

• Before removing a tractor tyre from a rim, release all water and air pressure.

• Use safety equipment and procedures to avoid serious injuries from split rims.

• Never jack more than one wheel off the ground at a time in the field.

• If both rear wheels have to be removed, work on a flat, level concrete floor, in the workshop.

• When removing rear wheels, ensure the front wheels are immobilised by fixing wedges between axle and body.
Welding and Allied Processes

The dangers in welding, cutting, heating and grinding should never be underestimated. Everyone doing these tasks should be properly trained to use the equipment safely and to understand the hazards involved.

Spot the hazard

Hazards associated with welding include:

- **The arc itself.** The temperature of the arc can reach 6000 °C. Intense ultraviolet and infra-red rays can be harmful to both the welder and anyone else nearby. Damage to uncovered skin can be similar to severe sunburn. Unprotected eyes can become extremely red and sore and in extreme cases suffer permanent damage.

- **Welding gases.** In gas welding, leaking oxygen can enrich the atmosphere so that a naked flame, cigarette, spark or electrical fault can be dangerous.

- **The fumes.** Welding in confined and unventilated spaces should be avoided, because welding fumes can be fatal. Where it's not possible to ensure good ventilation, it may be necessary to wear an air-line fed respirator with Australian Standard certification.

- **Fumes and explosions.** Avoid welding, cutting or heating empty drums. People have been killed this way when undetectable fuel residues vapourise and explode. Always check what's been inside, and if necessary clean the drum thoroughly before cutting, welding or heating. Welding heat can also generate toxic fumes from chemical residues. Avoid welding on metal coated surfaces, such as galvanised iron.

- **Heat.** Hot metal surfaces, metal fragments and sparks can cause severe burns to unprotected skin.

- **Electric shock.** The risk of electric shock in welding is high. Any electrical hazards should be identified and addressed. Check manufacturers' instructions.

Assess the risk

Check each of the above areas for potential to cause an injury or hazardous incident. Refer to accident records, safe work procedures, training and the experience of operators doing hazardous work. If risk of injury or harm is identified, take steps to minimise or eliminate the risk.

Make the changes

Here are some suggestions for making welding safer. Appropriate protective clothing should include:
• a shield or helmet with a suitable grade of filtered lens;
• a felt skull cap or beret;
• fire resistant gloves and leather apron;
• boots and leather spats;
• arm protection - long sleeves, leather if possible;
• fire resistant overalls.

To prevent deterioration, all protective clothing and equipment should be stored carefully, and kept clean and in good working order.

**Machine welding**

• Never attempt to connect or change welding cables before switching off mains power.
• Always install the welding machine as near as possible to the power point.
• Always keep the welding machine terminals and cable connections clean and tight.
• Only use welding cables that are fully insulated throughout their entire length.
• Work on a well insulated floor wherever possible.
• Wear rubber insulated shoes.
• Always wear dry gloves when handling equipment that is live, e.g. when placing an electrode in a holder.
• Always get a qualified electrician to do any electrical repairs.
• Don't use gas pipes or water pipes as part of the welding circuit; it can cause an explosion or give someone a shock.

**Gas welding**

Leaking gases are a major hazard in gas welding. While fuel gas is usually recognised by its odour, oxygen leaks are potentially more dangerous because they are not easily recognised. Leaking oxygen can enrich the atmosphere so that a naked flame, cigarette, spark or electrical fault can be dangerous. Oils and greases may spontaneously ignite in the presence of pure oxygen.

• Do not allow any fittings of oxy-acetylene equipment to be contaminated with grease or oil under any circumstances.
• Do not oil unions, gauges or other components.
• Have regulators regularly maintained by a competent person.

• Regulators can fail in two ways - by the controlled forward flow of gas which is known as regulator "creep", or by the reverse flow of another gas in the gas lines. Regular maintenance can avoid these situations.

• Either of these failures can be recognised by a higher than expected reading on the operational or low pressure gauge. The gauge needle creeps beyond the pressure set for actual welding or cutting. If this happens, stop work, close down the cylinder valves, and have the equipment repaired.

• Take care not to drop or damage gauges and regulators.

• Excess pressure or the presence of a different gas in a regulator can cause fire and explosions of varying severity, resulting in damaged equipment and operator injury.

• Never use equipment fitted with a regulator in which a "creep" condition is known to exist.

• Use the correct colour and type of hoses and fittings recommended by the manufacturers. Copper must never be used on acetylene lines, as unstable substances are formed that may spontaneously detonate.

• Flashback arresters should be fitted to all oxy-acetylene equipment to overcome the danger of flashback.

• Oxy-acetylene or oxy-LPG equipment should not be left near hot equipment or metals that could burn the leads. Gas leaks can be detected using soap and water.

• Proper maintenance of equipment is necessary to prevent accidents.

• Don't light up welding equipment using cigarette lighters or matches. Use an appropriate flint or "piezo" electric ignition device.

• Don't smoke when welding or near welding jobs, and don't keep your lighter in your pocket - it could explode. Simple prevention could save your life.

• Have a suitable fire extinguisher close by for all welding, cutting, heating and grinding activities.

• Obtain and refer to MSDSs (material safety data sheets) for all welding electrodes, welding rods and hazardous fluxes.
Workshops

Perhaps more than any other occupation, agriculture involves a broad cross section of skills. Farmers and farm workers routinely perform workshop tasks that in other industries would be done by a variety of skilled trades people.

Repairs and maintenance of farm machinery, and associated workshop jobs, are among the most frequent causes of injuries.

Identify potential hazards and develop safe procedures for all workshop tasks, in particular training and supervision for young and inexperienced workers.

Spot the hazard

Check potential hazards in the structure of farm buildings, electrical fittings and fixtures, power tools and equipment, ladders and trestles, welding equipment and procedures, safe storage of hazardous materials and equipment, accessibility to children, and in procedures for lifting and carrying heavy and awkward weights.

Assess the risk

Check each potential hazard for the likelihood of it resulting in injury or harm. Make the highest risk items top priority for safeguarding. Assess possible risks in alternative safety measures.

Make the changes

- Ensure adequate working space for each job.
- Provide and use personal protective equipment.
- Check there is sufficient lighting and ventilation.
- Keep walkways and exits clear.
- Update fire fighting and first aid equipment.
- Ensure fuel, compressed air, steam, electrical or other services are safely installed and maintained.

Tools and equipment

- Read the manual before using new tools and equipment.
• Follow instructions on safe procedures.
• Ensure power tools and equipment are properly guarded.
• Use angle grinders only for grinding and not for cutting. Safer power cutting tools are available.
• Ensure all guards and shields are kept in place during use.
• Use clamps and vices where possible to hold job items.
• Store tools safely to prevent damage and unauthorised use.

**Ladders and trestles**

• Before climbing, place a ladder's feet about a quarter of the ladder's length from the wall.
• Before working high on a ladder, secure it to prevent it slipping sideways.
• Never place a ladder in front of a doorway unless the door is locked or guarded.
• Avoid standing ladders on drums, boxes or blocks.

**Electricity**

• Replace old fuse boxes with an RCD board that protects the whole building.
• Or, fix portable RCDs at power points where power tools are connected.
• When someone gets an electric shock and "locks on" to a live component, the power must be turned off before the person is handled.
• Check power cords regularly to ensure insulation is OK, and that inner cabling is not exposed.
• Get rid of old, worn or faulty power cords.

**Welding**

• For maximum protection against eye injuries, wear goggles with side shields, as well as a welding shield or helmet.
• Protect skin areas from radiation burns, preferably with woollen or flame resistant canvas clothing.
• Never wear thongs or open footwear when welding. Shoes or boots should be rubber soled for non-slip and electrical protection.
• Obtain and follow safety guidelines on welding.
• See Topic 13 on Welding in this book.
Zoonoses

"Zoonoses" is the name given to animal diseases that can cause illness in people. Often animal carriers are not obviously ill, yet people in contact with them can become infected.

Farm animals are a common source of infection, and people most at risk are abattoir workers, farmers, veterinarians, livestock handlers and animal laboratory workers.

Leptospirosis, Q Fever, Hydatid Disease and Orf are the zoonoses of most concern in Western Australia.

Spot the hazard

- Review infection control during animal handling procedures.
- Be aware of contamination sources.
- Check availability and use of suitable disinfectants.
- Check handling and disposal procedures for contaminated materials.
- Check if farm dogs eat meat or offal from farm-killed sheep or wild animals.

Assess the risk

Consider the likelihood of disease or harm occurring. Assess whether existing safe procedures are working or need improving. Establish whether others on the farm have immunity to various zoonoses, either through vaccination or having had the disease.

Make the changes

The following information is to help farmers understand zoonoses hazards, so that the risk of infection can be minimised or eliminated.

Leptospirosis

Flu-like symptoms include headaches, muscle pains, fever, chills, sensitivity to light and a stiff neck. Some people also develop kidney or liver problems.

- Avoid direct contact with animal urine, contaminated water, and birth fluids, especially from pigs.
- Infection enters through cuts in the skin or through the linings of eyes, nose or throat.
• Leptospirosis can be treated with antibiotics. If you think you may be infected see a doctor quickly.

• Clean benches and floors with detergents or disinfectants. Eradicate rats and mice. Ensure good drainage of stock areas, and hygienic disposal of effluent.

**Q Fever**

Q Fever also feels like 'flu', with headaches, muscle pains and fever, that may progress to pneumonia. Some people develop liver and heart problems.

• Avoid breathing contaminated dust, air infected by animal after-birth and birth fluids, drinking unpasteurised milk, or contact with contaminated straw, wool, hair or hides.

• Found in a wide range of domestic and wild animals, such as sheep, goats, bandicoots and wallabies.

• Disinfect, burn or bury infected materials.

• Treat and cover cuts quickly.

• Milk should be pasteurised or boiled.

• Q Fever in humans can be treated with antibiotics. If you think you are infected see a doctor quickly.

**Hydatid Disease**

In the early stages of Hydatid Disease no symptoms may be felt. Symptoms depend on the site of the parasitic cyst which is the cause of the disease. The most common site is in the liver.

• Symptoms due to a large liver cyst may be a sense of weight, vomiting, feeling overly full after meals, or pain, indigestion and jaundice (abnormal yellow discolouration of the body).

• Cysts may also occur in the lungs. Early symptoms may be coughing, chest pain or coughing blood. The first symptom may be coughing up salty fluid after rupture of a cyst. This may lead to shock from allergy, itching of the skin or chest infection.

• Cysts in other body organs may cause seizures, blindness, deafness, kidney pain or heart problems. All these forms are potentially deadly, and the rupture of a cyst at any site can cause death from shock due to allergy.

• Hydatid disease is caught by humans from dogs that have eaten the raw meat or offal of sheep, cattle, goats, kangaroos or wild pigs carrying Hydatid cysts.

• Eating with infected hands or other hand-to-mouth contact after patting a dog is enough for eggs of the Hydatid worm to be swallowed and cause infection.
• When swallowed, Hydatid eggs are transported by the blood to other parts of the body.

• Dogs and dingoes carry the worm in their gut without becoming ill.

**Treating Hydatid Disease**

Hydatid cysts can cause serious illness in humans. The only effective treatment is surgery to remove the cysts, sometimes in conjunction with anti-worm drugs. Some cysts in vital organs cannot be surgically removed.

**Reducing infection risk**

• Don't allow dogs to eat raw meat or offal from farm killed sheep, goats or cattle, or feral and native animals like pigs, goats and kangaroos.

• Make sure dogs are given a regular tape worm treatment - consult your vet for the most effective program.

• Dogs should be prevented from eating animals that die on the farm or in the bush. Carcasses should be disposed of as quickly as possible.

• Don't allow children to play with stray dogs.

**Orf (scabby mouth)**

The disease known as Orf or scabby mouth in sheep and goats can affect humans in other ways.

• Red areas or pimple-like lesions appear, often at the site of a graze or cut. This becomes a blister surrounded by red swollen skin that can turn into an ulcer and take four to six weeks to heal. Regional lymph glands may become swollen in some cases.

• Contact with sheep or sheep products is the usual cause of infection to humans, though goats are occasionally a source of infection.

• The Orf virus usually enters through cuts or abrasions.

• Orf sores should be treated with antiseptic dressings to prevent bacterial infection and spread. Usually healing and recovery occurs even without treatment, and you will not get the disease again.

**Reducing infection risk**

Cuts and abrasions from handling sheep should be treated with disinfectant and covered to avoid re-infection.

Learn to recognise the disease in animals (thick scabs or ulcers on the nose, lips, eyes or other hairless areas) and avoid contact.
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