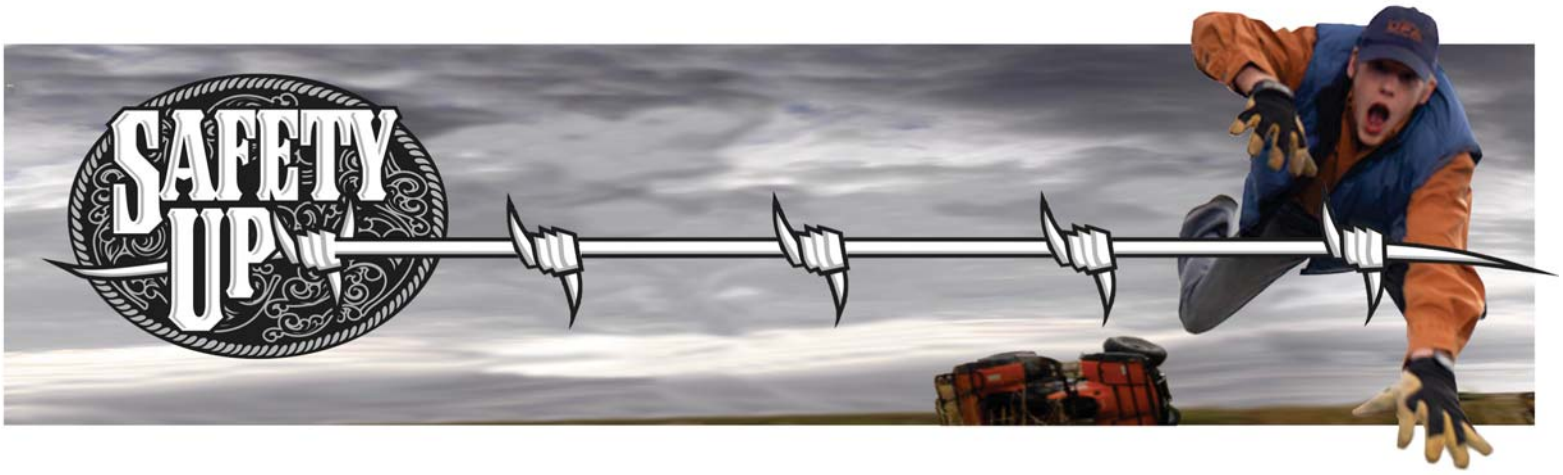

Safety Up – On Zoonotic Diseases

When you think about safety hazards associated with farming, tractor rollovers probably come to mind. Infectious diseases probably don't. Yet almost two-thirds of infectious human diseases are recognized as zoonoses – diseases that can be shared between species (such as by transmission from animals to humans, or vice versa).

In other words, working with animals on a farm can be damaging to your health if you do not do it safely. Take responsibility for your health and the health of others by preventing the spread of zoonotic diseases. Learn about common zoonoses, the risks that result in their spread, and procedures you can follow to reduce the chance of infection. **Know the job. Know the hazard. Know the drill.**

Three steps to safe farming

To keep farm safety top of mind, think of it as a three-step process that starts when you **know the job**. Knowing the job means getting properly trained ahead of time for each new task you perform. Next, **know the hazard** – learn about potential risks associated with each job, and stay alert for them at all times. Finally, **know the drill** – learn how to safely deal with hazards you confront, either by managing them or avoiding them altogether.

Zoonotic disease primer

Talk of zoonotic disease in rural Canada has been scarce in recent years, since the eradication of major ones like tuberculosis and brucellosis. However, there is a long list of zoonotic diseases that agricultural workers should be aware of. Several hundred are found in North America, but only a few dozen of these are likely to affect farm workers in western Canada. **Know the job.**

In some cases, zoonoses cause superficial fungal infections that are easy to treat (like ringworm), but in other cases they may be life-threatening (like *rabies* and *anthrax*). *Salmonella, Campylobacter,* some *E. coli* and *Giardia* are more likely to be of concern in western Canada. All cause diarrhea in humans and can be spread from infected animals to farm workers' hands and then from hand to mouth. *Salmonella* causes pronounced diarrhea in animals, so it is fairly easy for a farm worker to be exposed. If a dairy herd is infected, the bacteria may also be passed into the milk. Drinking raw milk infected with just a few *Salmonella* organisms can result in significant human infection with fever and prolonged diarrhea.

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Some zoonotic diseases to consider

Disease	Method of transmission	Resulting disease
Leptospirosis	Water- and food-borne	Serious flu-like symptoms, but responds well to antibiotics
Rabies	Virus spread by the saliva of an infected animal through a bite, open wound or sore	Potentially fatal disease that affects the central nervous system; prompt treatment with immune globulin followed by immunization can prevent it
Toxoplasmosis	Transmitted to veterinarians or slaughterhouse workers, or through litter box of family cat	Fever, sore throat, muscle aching and swollen glands
Ringworm, scabies, milker's nodule	Spread from the skin of animals to farm workers	Skin infections
Lyme disease, West Nile encephalitis	Spread from animals through insect carriers to humans, such as by mosquitoes (*West Nile*) or ticks (*Lyme disease*)	A skin rash, arthritis, heart and nervous system injury (*Lyme disease*)
Salmonella	Transmitted from poultry or other wild or domestic animals through contaminated food or water	Severe gastro-intestinal distress and fever
Campylobacter and *Giardia*	Transmitted through contaminated animal food, water or waste products	Gastro-intestinal illness
E. coli	Transmitted through feces of affected animals or in contaminated food or water	Gastro-intestinal illness; extremely serious or fatal in humans

On-farm infection prevention

Organisms that cause zoonoses may be present in saliva, blood, feces, urine, vomit and other body fluids of diseased animals. As a livestock handler, you may have contact with these fluids several times each day. Accidental ingestion of body fluid (from splashes or from contaminated hands) is the most common means of infection. Although many zoonotic infections do respond to medication, some are not treatable. Ideally, you should identify potential hazards ahead of time to prevent these diseases from spreading in the first place.

To identify hazards, consider all your activities. Some routine farm jobs may put you at greater risk, such as: assisting with the birth of calves, lambs or piglets; handling afterbirth; handling stillborns; handling diseased animals or their wounds; giving injections; performing castrations; disposing of dead animals; or handling unhatched eggs. When doing any of these jobs, be particularly vigilant about contamination. Wear gloves, goggles and a mask and ensure proper decontamination afterward (change contaminated clothing and shower).

Know the hazard. Here are more preventive strategies to help you avoid contact with hazardous zoonoses:

- Provide adequate health care for all domestic animals (including testing and immunization).
- Learn to recognize animals showing signs of illness, including neurological symptoms, and ensure they are assessed by a veterinarian.
- Keep animal facilities clean and sanitary.
- Deworm livestock regularly – whether the herd contains 3,000 animals or three, and deworm pets too.
- Follow safe work practices to reduce contact with skin; avoid creating dust that could be inhaled; handle animal waste with care; and avoid splashing material that could be ingested.
- Follow good husbandry and health promotion practices for farm animals, such as all-in/all-out management of poultry and hogs; routine cleaning and disinfection; and vaccination of livestock for common infections.
- Ensure proper handling and disposal of needles, scalpels and carcasses.
- Secure liquid manure holding facilities against entry, and fence outdoor ponds or dugouts.

Now it's personal

So you understand the basics of zoonoses and what types of strategies on the farm can help prevent problems. Now it's up to you to take personal responsibility for your health on the job. **Know the drill.** Here are some personal strategies you can use to help protect yourself against infectious diseases that may be present on the farm:

- When dealing with infected animals, always wear personal protective equipment (including water-impervious coveralls, gloves, safety glasses and respirator masks).
- Wear insect repellent and proper clothing to reduce the risk of insect-borne diseases, inspect skin regularly and remove ticks promptly.
- If you must clean the pens or cages of animals with infectious disease, wear full coveralls and gloves.
- Do not touch your face, smoke or eat while handling livestock. Always wash first.
- When you wash, take it seriously. Use soap and hot water generously and wash thoroughly.
- Clean and care for skin wounds promptly.
- Follow good personal hygiene and toilet habits; don't defecate, urinate or spit in or near animal pens and their food sources.
- Accept preventive immunizations if they are recommended.
- Consider avoiding the consumption of raw milk.
- If anyone on the farm has a pre-existing health condition that might weaken their ability to fight infection, consult a health professional to identify precautions that can be taken.
- Ensure all farm visitors have access to soap and water for hand washing after animal contact.

The last word

Incidents of zoonoses tend to rise and fall over time based on a variety of factors, such as climate changes, host species habitat changes, or mutations in the diseases themselves. You may work on a farm for many years and never be exposed to one. Or you may find that preventing the spread of zoonoses is an important aspect of your work. In either case, the key is to take personal responsibility for your health and safety on the job. Learn about zoonotic diseases, learn preventive strategies to keep you healthy, and then stay alert for any signs of the spread of infection.

References

Zoonotic Disease Risk for Livestock Production Workers, Craig W. Wilkinson, University of Alberta, Edmonton, AB, http://www.casa-acsa.ca/english/PDF/conference/Craig%20Wilkinson%20Zoonotic%20Disease%20Risk%20for%20Workers.pdf

Zoonoses, John May, MD, Northeast Center for Agricultural Health, Cooperstown, NY, http://www.nycamh.com/resources/safety_savvy/entry_detail.asp?descr=17

Safety with Farm Animals, Farm Safety Association, F-008, Guelph, ON, www.fsai.on.ca/factsheets/tips-e/safety_animals.pdf