

Chapter 10 - Common Zoonoses in Agriculture

Certain diseases carried by animals can also affect humans. These are known as zoonoses, and if you work with animals you may be at risk from them. Although some zoonoses (anthrax, brucellosis or rabies) are now uncommon in the US, good occupational hygiene practices will protect against them as well as other more common zoonoses.

If you think that you have a zoonotic disease you should consult a doctor quickly. It will help your doctor to know if you work in agriculture or have recently come into contact with farm livestock.

Legal requirements

Zoonoses are caused by micro-organisms, which are subject to the Control of Substances Hazardous to Health Regulations 1994. These Regulations require employers and self-employed people to:

- Assess the risks to health from work activities which involve a hazardous substance (eg a micro-organism);
- Prevent or, where this is not reasonably practicable, adequately control exposure to the hazardous substances;
- Introduce and maintain control measures;
- Inform, instruct and train employees about the risks and precautions to be taken.

Precautions

Everyone working with livestock should follow the principles of good occupational hygiene to protect against the risk of contracting a zoonosis. Consider the following precautions:

- Avoid or minimize using equipment or tools likely to cause cuts, abrasions or puncture wounds;
- When taking blood samples, use a vacuum-operated device rather than syringes and dispose of needles into a sharps box or other strong container which must be labeled and disposed of safely, but not through the domestic waste stream;
- Avoid mouth-to-mouth resuscitation of new born animals;
- Wash injuries immediately in running water and cover the wound with a waterproof dressing. Consider whether you need first-aid training;
- Cover existing cuts and abrasions on exposed skin with waterproof dressings before beginning work - some organisms enter the body through open wounds;
- Wash hands and exposed skin before eating, drinking or smoking;

- Have clean towels available;
- Only drink clean water out of clean containers;
- Thoroughly wash PPE after use.

Personal protective equipment (PPE)

Your risk assessment will inform your decision on whether PPE is needed. Remember:

- Only consider using PPE after you have considered other steps such as not doing the task or using controls such as avoiding contact with infected animals. However, the nature of your work with animals may mean that PPE is your only practicable option;
- Wear PPE whenever helping animals to give birth, handling the products of birth (eg placenta), examining mouths or during rectal examinations. Suitable PPE will include a waterproof apron or parturition gown and obstetric gauntlets for calvings/lambings etc and plastic or latex gloves for oral or rectal examinations;
- Use face protection (for eyes and mouth) if there is a risk of splashing from urine or placental fluids. Suitable protection will include a faceshield to BS 2092:1987;
- PPE must be suitable and properly maintained; cleaned after use; and new PPE must be CE marked.

Symptoms and controls for some common zoonoses

Cryptosporidiosis

Organism: the protozoa *Cryptosporidium parvum*;

Host animal: calves and lambs;

Hazard to humans: diarrhea and abdominal pain with flu-like symptoms for up to six weeks. The young and the old are at greater risk;

Transmitted by: contact with animal feces and drinking water contaminated with animal feces;

Treatment: non-specific. Supportive care only;

Prevent by: good personal hygiene, use of clean water for washing and drinking;

Control in animals: good standards of hygiene in calf rearing housing; avoid contaminating animal drinking water with feces.

Leptospirosis (Weils Disease)

Organism: bacterium - *Leptospira icterohaemorrhagiae*;

Host animal: rats;

Hazard to humans: fever, headache, vomiting, muscle pain; can lead to jaundice,

meningitis and kidney failure. Can be fatal;

Transmitted by: contact with infected rat's urine or watercourses contaminated with it;

Treatment: early diagnosis and treatment with antibiotics is vital;

Prevent by: using a tool (fork, shovel) or wearing protective gloves to move dead rats; maintaining a high standard of personal hygiene; controlling or eliminating rats on the premises; always using first-aid dressings to cover cuts and abrasions;

Control in animals: none.

Orf

Organism: orf virus;

Host animal: sheep and goats, in particular lambs;

Hazard to humans: ulcerative lesions on face, hands and arms;

Transmitted by: contact with lesions on animals or with infected wool, fencing or hedges;

Treatment: none. Lesions heal within six to eight weeks;

Prevent by: good personal hygiene; covering cuts and scratches on hands and arms with first-aid dressings;

Control in animals: a live vaccine is available for sheep which will also minimize economic losses from orf infection in lambs.

Ovine Chlamydiosis (Enzootic abortion of ewes)

Organism: Chlamydia psittaci;

Host animal: mainly sheep, possibly goats;

Hazard to humans: may cause abortion; flu-like illness;

Transmitted by: handling or contact with an affected afterbirth;

Treatment: antibiotics;

Prevent by: avoiding contact between pregnant women and pregnant ewes; leaving work-wear at the workplace for cleaning (wives/partners of men working with sheep may contract the disease by contacting soiled workwear);

Control in animals: consider vaccinating breeding sheep if enzootic abortion is confirmed in flock.

Visitors to farms may also be exposed to the disease; ensure they are aware of the risk and, if reasonably practicable, prevent access to risk areas.

Psittacosis (Ornithosis)

Organism: Chlamydia psittaci;

Host animal: caged, wild and exotic birds; can spread into ducks and other poultry;

Hazard to humans: flu-like illness which may lead to pneumonia and in severe cases endocarditis, hepatitis and death;

Transmitted by: inhaling dust or aerosol from feces or nasal discharge from infected birds;

Treatment: antibiotics. Early diagnosis important;

Prevent by: local exhaust ventilation in evisceration areas if reasonably practicable; if not, using half mask respirators to BS EN 140, with filters to BS EN 141; good personal hygiene.

Control in animals: high standard of flock husbandry important. Avoid producing dust, maintain good ventilation and screen flocks for the organism.

Q Fever

Organism: *Coxiella burnetii*;

Host animal: mainly sheep and cattle;

Hazard to humans: mild illness, chill, headache and general malaise, but in rare cases can cause pneumonia, liver and heart valve damage and death;

Transmitted by: contacting animal or products; inhaling dust contaminated with material from afterbirths, urine and feces;

Treatment: antibiotics;

Prevent by: good personal hygiene; careful movement of infected bedding and afterbirths; wearing protective gloves and coveralls;

Control in animals: safely disposing of animal waste, in particular afterbirths and bedding soaked in birth fluids.

Ringworm

Organism: in cattle, the fungus *Trichophyton verrucosum*;

Host animal: mainly cattle but pigs, sheep, horses and dogs can be infected with a similar fungus;

Hazard to humans: inflamed, swollen, crusty skin lesions mainly on hands, forearms, head and neck;

Transmitted by: spores entering skin through cuts and abrasions; spores transmitted to skin from handling infected livestock or equipment (gates etc) they have rubbed against;

Treatment: early diagnosis and treatment by doctor important;

Prevent by: high standard of personal hygiene and always covering cuts and other skin wounds with waterproof dressings.

Control in animals: preventing and treating disease in animals; high standard of cleanliness in buildings, in particular calf pens, cattle crushes etc;