



Potential Zoonoses Associated with Cattle

The intent of this Information Sheet is to describe the most common zoonotic agents seen in cattle and the safe work practices suggested to mitigate the exposure to these pathogens.

TABLE OF CONTENTS

1. Introduction
2. Zoonotic Pathogens
3. Safe Work Practices
4. References

1. Introduction: This document provides information about potential zoonotic exposure while working with cattle or their products (e.g. fecal sample). The infectious agents listed here are not all inclusive, but provide the most common zoonotic agents seen in cattle. The safe work practices are provided as suggestions for staff and researchers who work with animals, in animal facilities, or with animal products.

2. Zoonotic Pathogens

a. Gastrointestinal Infection

i. Organisms: *Salmonella* spp., *Escherichia coli*, *Campylobacter jejuni*, *Campylobacter coli*, *Cryptosporidium parvum*.

ii. Clinical Signs

1. Animals – Diarrhea.

2. Humans – Diarrhea, nausea, vomiting, abdominal pain.

iii. Transmission: Fecal-oral.

b. Dermatophytosis (Ringworm)

i. Organisms: ***Trichophyton verrucosum* (active infections within Cornell facilities)**

ii. Clinical Signs

1. Animals - Dry, gray, hairless patches; common on the skin around the head and neck. Most common in heifers.

2. Humans - Local itching, reddish skin, and hairlessness at the point of contact.

iii. Transmission: Direct contact with skin lesions of infected animal. Can also be contracted via contaminated equipments and environmental objects (e.g. pen boards).

- c. Leptospirosis
 - i. Organisms: *Leptospira* spp.
 - ii. Clinical Signs
 - 1. Animals - Asymptomatic to decreased weight gain, anorexia, abortion, fever, diarrhea, and generalized neurological signs.
 - 2. Humans - Flu-like symptoms (fever, chills, headache, muscle ache, vomiting); liver and kidney failure.
 - iii. Transmission: Ingestion, direct abraded skin, or mucous membrane contact with contaminated water, urine, aborted fetus, or vaginal discharge from infected animals; aerosolization can occur.

- d. Listeriosis
 - i. Organisms: *Listeria monocytogenes*
 - ii. Clinical Signs
 - 1. Animals - Depression, head pressing, circling, facial paralysis, fever, abortion, mastitis.
 - 2. Humans - Generalized neurological signs, fever.
 - iii. Transmission: Ingestion of contaminated milk, meat, or feces; possibly by inhalation.

- e. Rabies
 - i. Organisms: Rabies Virus
 - ii. Clinical Signs
 - 1. Animals - Depression or aggression; generalized neurological signs.
 - 2. Humans - Local pain at site of inoculation; headache, malaise, fever; anxiety, agitation, paralysis, coma.
 - iii. Transmission: Saliva (via bites or open wounds), direct contact with CNS tissue.
 - iv. Prevention: Wear gloves when in contact with saliva. Do not handle wildlife around the facility. Report any abnormal behavior in wildlife to facility manager immediately. Report any potential exposure to common potential carriers (e.g. bats, raccoons, skunks, foxes, etc.) to facility manager and seek medical evaluation immediately..

3. Safe Work Practices

- a. Good Personal Hygiene
 - 1. Wash hands after working with animals or animal products and when leaving animal facilities. For further instruction refer to CARE SOP 713 Hygiene-Hand Washing.
 - ii. Do not eat, drink, or use tobacco products in animal facilities.
- b. Personal Protective Equipment (PPE)
 - i. Use proper PPE for work setting as appropriate (e.g. coverall, facemask, boot covers). Maintain dedicated protective clothing and footwear while working with animals or in animal facilities. Do not wear protective clothing outside of animal facility.
 - ii. Wear disposable gloves during procedures that increase the likelihood of exposure to zoonotic agents(e.g. during collection of blood from coccygeal (tail) vein, collecting fecal sample). Also wear disposable gloves for handling sick animals (i.e. animals showing clinical signs such as diarrhea or hair loss), or contaminated surfaces and/or equipment.

- iii. Use disinfecting boot dips as applicable.
- c. Animal Care
 - i. Isolate sick or infected animals.
 - ii. Handle and care for sick or infected animals last.
- d. Cleaning and Disinfection
 - i. Maintain clean, dry, and uncluttered animal areas and workspace.
 - ii. Disinfect laboratory work surfaces after each use and after any spills when working with animal products. Use only disinfectants approved by facility managers and that are suitable for the potential agents identified in this information sheet.
 - iii. Dispose of deceased animals, animal products, items contaminated by animal products, contaminated bedding, and laboratory waste in an approved manner.
- e. Proper Sharps Handling
 - i. Work only with one uncapped needle at a time and immediately dispose of after use in sharps receptacle.
 - ii. Avoid recapping needles whenever possible.
 - iii. For further guidelines refer to CARE SOP 711.01-Sharps Precautions.
- f. Medical Attention
 - i. Contact Gannett Occupational Medicine office (255-6960) for medical evaluation if you suspect any exposure, or if you develop any symptoms associated with infection with zoonotic agents (e.g., fever, malaise, diarrhea, abdominal pain). Alternatively, see your own personal health care provider if any injury or potential exposure to a zoonotic agent occurs.
 - ii. Notify the principal investigator or supervisor and complete an accident and injury report, <http://prp.ehs.cornell.edu/Acc-Inj/>
- g. Allergies
 - i. Handling of bedding and animal products may aggravate
 - 1. allergies. Proper use of PPE reduces, but does not eliminate the risk of developing allergies. Refer to the Allergy Prevention web page (see References) for further information.

4. References

- a. CARE SOP 713 Hygiene-Hand Washing:
<http://www.research.cornell.edu/care/documents/SOPs/CARE713.pdf>
- b. CARE SOP 711.01-Sharps Precautions:
<http://www.research.cornell.edu/care/documents/SOPs/CARE711.pdf>
- c. Allergen Prevention
<http://www.research.cornell.edu/Care/documents/OHS/AllergyPreventionFactSheet.pdf>
- d. Gannett Health Services, (607) 255-5155 or www.gannett.cornell.edu/