

## POSSIBLE ZONOOSES OF CATTLE

Wearing the recommended personal protective equipment will make the transmission of diseases less likely.

PATHOGEN	TRANSMISSION	ANIMAL DISEASE	HUMAN DISEASE
<b>Anthrax</b> ( <i>B. anthracis</i> )	<ul style="list-style-type: none"> <li>• inhalation</li> <li>• skin puncture</li> <li>• direct contact with hide, blood, or tissues from an infected ruminant</li> <li>• biting flies</li> </ul>	<ul style="list-style-type: none"> <li>• fatal, often found dead with blood at all orifices.</li> <li>• decomposition of carcass occurs rapidly</li> </ul>	<ul style="list-style-type: none"> <li>• pulmonary form: flu-like symptoms (often fatal)</li> <li>• gastrointestinal form: bloody vomit and diarrhea (25-50% fatal w/o tx)</li> <li>• skin form: boil-like lesions</li> </ul>
<b>Bovine spongiform encephalopathy</b> ("BSE")/Mad Cow Disease	<ul style="list-style-type: none"> <li>• ingestion of infected animal tissues</li> </ul>	<ul style="list-style-type: none"> <li>• degenerative central nervous system</li> <li>• signs of nervousness, aggression, in-coordination and difficulty rising.</li> <li>• symptoms can take years to develop</li> </ul>	<ul style="list-style-type: none"> <li>• Creutzfeldt-Jakob disease in humans</li> <li>• degenerative neurologic signs (dementia, hallucinations, seizures)</li> <li>• fatal</li> </ul>
<b>Brucella spp.</b> ( <i>B. Abortus</i> )	<ul style="list-style-type: none"> <li>• direct contact with urine, semen, milk or blood or by handling fetal membranes</li> </ul>	<ul style="list-style-type: none"> <li>• late-term abortion and premature calving</li> </ul>	<ul style="list-style-type: none"> <li>• fever, chills, sweating, anorexia, constipation, insomnia, headache</li> <li>• neurologic signs</li> <li>• joint pain, night sweats</li> </ul>
<b>Campylobacteriosis</b> ( <i>C. jejuni, C. fetus</i> )	<ul style="list-style-type: none"> <li>• direct contact</li> <li>• fecal-oral, contaminated water</li> </ul>	<ul style="list-style-type: none"> <li>• late-term abortions</li> <li>• very weak neonates</li> <li>• metritis, placentitis leading to septicemia and death</li> </ul>	<ul style="list-style-type: none"> <li>• acute enteritis, bloody/mucoid diarrhea, abdominal pain, vomiting</li> <li>• headache, muscle and joint pain</li> </ul>
<b>Colibacillosis</b>	<ul style="list-style-type: none"> <li>• fecal-oral, direct contact</li> </ul>	<ul style="list-style-type: none"> <li>• "white scours"/diarrhea</li> <li>• septicemia, neurologic signs, ascites</li> </ul>	<ul style="list-style-type: none"> <li>• profuse, watery/bloody/mucoid diarrhea, abdominal pain, vomiting, dehydration</li> <li>• urogenital infections</li> </ul>
<b>Cryptosporidiosis parvum spp.</b>	<ul style="list-style-type: none"> <li>• fecal-oral, contaminated water</li> </ul>	<ul style="list-style-type: none"> <li>• watery diarrhea (non-bloody)</li> </ul>	<ul style="list-style-type: none"> <li>• watery diarrhea, nausea/vomiting, abdominal cramps</li> </ul>
<b>Dermatophilosis</b> ( <i>Dermatophilus congolensis</i> )	<ul style="list-style-type: none"> <li>• direct contact with lesions or via insect vectors</li> </ul>	<ul style="list-style-type: none"> <li>• elevated circular crusting or scabs usually on the face or neck</li> </ul>	<ul style="list-style-type: none"> <li>• yellow pus-filled pimples or pustules on hands, arms</li> </ul>

<b>Ringworm</b> ( <i>Trichophyton</i> and <i>Microsporum</i> )	<ul style="list-style-type: none"> <li>• direct contact with infected animal or fomite</li> </ul>	<ul style="list-style-type: none"> <li>• hairless, crust, circular areas on skin, usually on face or neck</li> </ul>	<ul style="list-style-type: none"> <li>• itchy areas on skin that are round and irritated</li> </ul>
<b>Giardia lamblia</b>	<ul style="list-style-type: none"> <li>• fecal-oral, contaminated water</li> </ul>	<ul style="list-style-type: none"> <li>• often asymptomatic</li> <li>• may see soft feces/diarrhea</li> </ul>	<ul style="list-style-type: none"> <li>• diarrhea, stomach cramps, and nausea</li> </ul>
<b>Leptospirosis</b> ( <i>Leptospira interrogans</i> )	<ul style="list-style-type: none"> <li>• direct contact with urine or semen</li> <li>• contaminated water</li> <li>• aerosol</li> </ul>	<ul style="list-style-type: none"> <li>• fever, anorexia</li> <li>• jaundice, hemoglobinuria, anemia</li> <li>• abortion, infertility</li> <li>• weak calves</li> </ul>	<ul style="list-style-type: none"> <li>• infection may resolve asymptotically or develop severe icterus, fever, headache, conjunctivitis, gastrointestinal signs, gastrointestinal hemorrhage</li> <li>• flu like symptoms, severe liver and kidney disease</li> </ul>
<b>Mycobacterium</b> ( <i>tuberculosis</i> and non- <i>tuberculosis</i> )	<ul style="list-style-type: none"> <li>• aerosol</li> <li>• unpasteurized milk</li> <li>• feces</li> </ul>	<ul style="list-style-type: none"> <li>• early infections are asymptomatic</li> <li>• low-grade fluctuating fever, moist cough, dyspnea, tachypnea, inappetance, weight loss,</li> </ul>	<ul style="list-style-type: none"> <li>• Chronic cough, blood-tinged sputum, weight loss, and fever</li> </ul>
		<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<b>Bovine Respiratory Disease</b> ( <i>Mannheimia haemolytica</i> )	<ul style="list-style-type: none"> <li>• inhalation</li> <li>• fecal-oral</li> </ul>	<ul style="list-style-type: none"> <li>• “Shipping Fever”, secondary infection</li> <li>• purulent nasal discharge, cough, diarrhea, malaise, hemorrhage</li> <li>• pleuropneumonia</li> </ul>	<ul style="list-style-type: none"> <li>• bronchiectasis, bronchitis, pneumonia</li> <li>• fever, sepsis</li> </ul>
<b>Q-Fever</b> ( <i>Coxiella burnetii</i> )	<ul style="list-style-type: none"> <li>• aerosol</li> <li>• reproductive fluids</li> <li>• milk</li> </ul>	<ul style="list-style-type: none"> <li>• usually asymptomatic</li> <li>• abortions</li> </ul>	<ul style="list-style-type: none"> <li>• fever, chills, anorexia, ocular pain</li> <li>• pneumonitis, gastroenteritis</li> <li>• hepatitis</li> </ul>
<b>Rabies</b>	<ul style="list-style-type: none"> <li>• bite or exposure to saliva from infected animal</li> </ul>	<ul style="list-style-type: none"> <li>• furious form: aggression, hypersensitivity to noise, yawning</li> <li>• paralytic form: “choke”/paralysis of the throat, drooling, bloat.</li> <li>• fatal</li> </ul>	<ul style="list-style-type: none"> <li>• pain and itching at the site of infection, neurologic signs.</li> <li>• fatal</li> </ul>
<b>Rotavirus</b>	<ul style="list-style-type: none"> <li>• fecal-oral, direct contact</li> </ul>	<ul style="list-style-type: none"> <li>• anorexia, diarrhea in young animals</li> </ul>	<ul style="list-style-type: none"> <li>• vomiting, then watery diarrhea</li> <li>• usually self limiting, children most affected</li> </ul>
<b>Sarcoptes scabiei</b>	<ul style="list-style-type: none"> <li>• direct contact, fomites</li> </ul>	<ul style="list-style-type: none"> <li>• usually infests face, ears, forelimbs</li> <li>• vesicle or papule formation,</li> </ul>	<ul style="list-style-type: none"> <li>• usually infests face, ears, forelimbs, torso</li> <li>• vesicle or papule formation,</li> </ul>

		<ul style="list-style-type: none"> <li>keratinization</li> <li>alopecia with intense pruritus</li> </ul>	<ul style="list-style-type: none"> <li>keratinization</li> <li>alopecia with intense pruritus</li> </ul>
<b>Vesicular Stomatitis</b> ( <i>Rhabdovirus</i> )	<ul style="list-style-type: none"> <li>direct contact, insect vectors</li> </ul>	<ul style="list-style-type: none"> <li>mammary, interdigital, and oral vesicles with fever</li> </ul>	<ul style="list-style-type: none"> <li>flu-like signs</li> <li>vesicles in mouth, hands, feet</li> </ul>
<b>Tetanus</b> ( <i>Clostridium tetani</i> )	<ul style="list-style-type: none"> <li>wound infection by feces</li> </ul>	<ul style="list-style-type: none"> <li>wound infection</li> <li>rigid paralysis, neurologic signs</li> <li>muscle stiffness, spasm, sweating, prolapse of third eyelid, collapse, convulsions, death</li> </ul>	<ul style="list-style-type: none"> <li>tonic spasms of jaw, neck</li> <li>rigid abdominal muscles, retention of urine, constipation</li> </ul>
<b>Yersinia pseudotuberculosis</b>	<ul style="list-style-type: none"> <li>fecal-oral</li> </ul>	<ul style="list-style-type: none"> <li>abortions, suppurative orchitis, abscessation</li> </ul>	<ul style="list-style-type: none"> <li>acute abdominal pain, fever, vomiting, diarrhea</li> <li>arthritis, iritis, nephritis</li> <li>septicemia if immunocompromised</li> </ul>
<b>Salmonellosis</b> ( <i>S. typhimurium</i> , <i>dublin</i> , <i>newport</i> etc)	<ul style="list-style-type: none"> <li>fecal-oral, direct contact, fomites</li> </ul>	<ul style="list-style-type: none"> <li>abortion</li> <li>acute and chronic enteritis</li> <li>septicemia in young animals</li> <li>fever, diarrhea, severe dehydration</li> </ul>	<ul style="list-style-type: none"> <li>severe diarrhea and debilitation</li> <li>increased severity in the very old, the very young, and the immunocompromised.</li> <li>Abdominal cramps, fever</li> </ul>

## References

Pelzer, Kevin D. and Nancy Currin. Zoonotic Diseases of Cattle. Virginia Cooperative Extension. Veterinary Extension Publication, Virginia Tech State University, May 1, 2009.

Pevek, Todd. Cattle Zoonosis, Cornell Center for Animal Resources and Education. October 1, 2007.