



# The Species Specific Educational Resource Team (SSERT)

## A Series for Small-Scale Producers and Hobby Owners

# Major Zoonotic Diseases of Sheep and Meat Goats



Maria Lenira Leite-Browning, DVM, Alabama A&M University Cooperative Extension System; Richard Browning Jr., Ph.D., Associate Professor, Department of Agricultural Sciences, Tennessee State University; Cassandra F. Vaughn, D.V.M. Associate Professor, School of Agriculture, Alcorn State University Cooperative Extension Program; Kenneth Andries, Ph. D., Animal Science Specialist and Marion Simon, Ph. D., Small Farm Specialist, Kentucky State University Cooperative Extension Program

Mrs. Wyvette Williams, Kentucky State University Cooperative Extension Program, Graphic Designer; Mr. Mitt Walker, Director of the Alabama Meat Goat and Sheep Commodity Group, Alabama Farmers Federation, Technical Input; Photograph complements of Richard Browning Jr., Ph.D., Associate Professor, Department of Agricultural Sciences, Tennessee State University

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**F**oreign animal diseases are those that are not currently in the U.S. Zoonotic diseases are those that are transferable between animals and humans. New farming methods, international trade, and the influx of people into rural areas and wildlife habitats contribute to the increase of on-farm zoonotic diseases and foreign animal diseases. Many of these diseases are treatable. However, in the case of goats, most treatments require the

extra-label use of products under veterinary supervision. Consult your veterinarian for disease prevention methods and needed vaccinations. Some diseases are ‘reportable’, meaning that they are regarded as high human or animal health risks by state and/or federal agencies. If a reportable disease is identified in an animal or herd, the case must be reported to a state or federal animal health agency. Often your veterinarian does this. Many of these diseases are transmitted to humans by contaminated foods or by exposure to diseased animals. Proper animal care, good personal hygiene, and adequate facility cleanliness will minimize the occurrence and transmission of these diseases among sheep, goats and humans.

<i>Disease / Cause / Transmission / Symptoms</i>	<i>Actions</i>
<p><b>Anthrax, cause:</b> <i>Bacillus anthracis</i></p> <p><i>How do sheep and goats get infected?</i> Eating, touching or breathing anthrax spores.</p> <p><i>How do humans get infected?</i> Handling infected animal carcasses and products, breathing anthrax spores, and/or eating undercooked contaminated meat from infected animals.</p> <p><i>What are the animal symptoms?</i> Fever, lack of rumination, excitement followed by depression, difficulty breathing, uncoordinated movements, convulsions, bloody discharges from the nose, mouth, and/or rectum, swelling in different parts of the body, sudden death, and/or incomplete stiffening after death</p> <p><i>What are the human symptoms?</i> Cutaneous form: a sore on the skin which develops into a painless ulcer with a black center; Gastrointestinal form: fever, nausea, bloody diarrhea, loss of appetite and stomach pain; Respiratory form: throat aches, coughing, tiredness, and shortness of breath.</p>	<p><i>Are animals treatable?</i> Yes</p> <p><i>Vaccine available?</i> Yes</p> <p><i>Reportable?</i> Yes</p>

Disease / Cause / Transmission / Symptoms	Actions
<p><b>Brucellosis (Bang's Diseases), cause:</b> <i>Brucella melitensis</i> (goats), <i>Brucella ovis</i> (sheep)</p> <p><b>How do sheep and goats get infected?</b> Eating and/or drinking contaminated feed, pastures, and water, or breathing air that is contaminated with <i>Brucella</i>. Milk, urine, semen, and fluids of aborted pregnancies are sources of infection. Cattle with brucellosis can infect goats and sheep.</p> <p><b>How do humans get infected?</b> Eating or drinking contaminated dairy products, breathing contaminated dust, direct contact of open wounds with contaminated tissues, fluids, or surfaces.</p> <p><b>What are the animal symptoms?</b> Late-term abortion, retained placentas, udder inflammation, testicular inflammation, fever, depression, weight loss, diarrhea..</p> <p><b>What are the human symptoms?</b> Known as undulant fever in humans, the symptoms include fever, arthritis, liver damage, and miscarriages.</p>	<p><b>Are animals treatable?</b> No</p> <p><b>Vaccine available?</b> Yes (females)</p> <p><b>Reportable?</b> Yes</p>
<p><b>Chlamydiosis (Enzootic abortion), cause:</b> <i>Chlamydophila abortus</i></p> <p><b>How do sheep and goats get infected?</b> Eating or drinking contaminated feed, water, or milk, breathing or contact with contaminated vaginal fluids, placentas, or aborted fetuses.</p> <p><b>How do humans get infected?</b> Contact with infected pregnant ewes and does during the birthing process, postpartum vaginal secretions, contaminated bedding and waste, uterine discharges, breathing contaminated dusts, and touching aborted fetuses, fetal membranes, and/or placentas.</p> <p><b>What are the animal symptoms?</b> Abortion during the last month of pregnancy with a small number of abortions in the first year followed by an increase in the second year, stillborn or weak newborns that die within two days, retained placentas, reproductive failure, concurrent respiratory diseases, arthritis, and eye inflammations.</p> <p><b>What are the human symptoms?</b> May show no symptoms, or have influenza-like signs with headaches, chills, fever, joint pains, light sensitivity, vomiting, and a sore throat.</p>	<p><b>Are animals treatable?</b> Yes</p> <p><b>Vaccine available?</b> Yes (sheep)</p> <p><b>Reportable?</b> Yes</p>
<p><b>Caseous Lymphadenitis, (CL), cause:</b> <i>Corynebacterium pseudotuberculosis</i></p> <p><b>How do sheep and goats get infected?</b> Contact with pus from the CL abscess, eating contaminated forages, and as lambs or kids while nursing.</p> <p><b>How do humans get infected?</b> Direct skin contact with pus.</p> <p><b>What are the animal symptoms?</b> External abscesses behind the ears, beneath the jaw, neck, shoulder, rear flank region, between the hind legs where the scrotal sac or udder attach, and/or progressive weight loss (due to abscesses on the internal organs)</p> <p><b>What are the human symptoms?</b> Painful skin wounds with pus and dead tissue.</p> <p>*Although the abscesses can be treated, the animal will remain infected for life.</p>	<p><b>Are animals treatable?</b> Yes</p> <p><b>Vaccine available?</b> Yes (sheep)</p> <p><b>Reportable?</b> No</p>
<p><b>Campylobacteriosis (Vibriosis), cause:</b> <i>Campylobacter fetus subsp. intestinalis</i> and <i>jejuni</i></p> <p><b>How do sheep and goats get infected?</b> Eating forages and/or drinking water that is contaminated by infected placentas and aborted fetuses. After the first abortion, the ewe is immune to the disease but spreads <i>C. jejuni</i> into pastures/pens through the feces.</p> <p><b>How do humans get infected?</b> Eating or drinking contaminated food and water, handling infected females during lambing/kidding, and/or handling aborted fetuses or placentas.</p> <p><b>What are the animal symptoms?</b> Ewe abortions during the last month of pregnancy, stillbirths, and weak lambs that die soon after birth, with losses of 25% to 50%. Goats appear to be immune.</p> <p><b>What are the human symptoms?</b> Intestinal inflammation with diarrhea, abdominal pain, fever, nausea, vomiting, arthritis, convulsions, and meningitis.</p>	<p><b>Are animals treatable?</b> Yes</p> <p><b>Vaccine available?</b> Yes (sheep)</p> <p><b>Reportable?</b> No</p>
<p><b>Johne's disease (Paratuberculosis), cause:</b> <i>Mycobacterium avium subsp. Paratuberculosis (MAP)</i></p> <p><b>How do sheep and goats get infected?</b> Grazing MAP contaminated pastures and eating and/or drinking contaminated feed, water, or milk. Kids and lambs are more susceptible than adults. Cattle, sheep and goats can infect each other.</p> <p><b>How do humans get infected?</b> Eating or drinking contaminated raw milk, uncooked meat, and unpasteurized dairy products.</p> <p><b>What are the animal symptoms?</b> First signs may not appear until years after the onset of the infection. Signs include progressive loss of weight and condition despite good appetite, bottle jaw, and depression. Disease may be misdiagnosed as caseous lymphadenitis, ovine progressive pneumonia, chronic malnutrition, or internal parasitism.</p> <p><b>What are the human symptoms?</b> Diarrhea and weight loss, it is associated with, or known as, Crohn's disease in humans.</p>	<p><b>Are animals treatable?</b> No</p> <p><b>Vaccine available?</b> No</p> <p><b>Reportable?</b> Yes</p>

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<p><b>Leptospirosis, cause:</b> <i>Leptospira</i> spp.</p> <p><b>How do sheep and goats get infected?</b> Contact with urine, body fluids, water, soil, forages, aborted fetuses or placentas of infected animals.</p> <p><b>How do humans get infected?</b> Skin contact with contaminated aborted fetuses, placentas and/or fetal fluids, urine of infected animals, and contaminated water or soil; contact through scratched skin or cuts in mucous membranes such as the eyes, nose, or mouth; or by eating or drinking contaminated water or food. Outbreaks of leptospirosis are usually seen during or after floods.</p> <p><b>What are the animal symptoms?</b> Abortions, stillbirths, premature or weak kids or lambs, anemia, jaundice (yellowing of the tissues from abnormal liver function) and/or blood in the urine.</p> <p><b>What are the human symptoms?</b> Infected humans may or may not display symptoms. Signs include high fever, severe headache, chills, muscle aches and abdominal pain, vomiting, jaundice (yellow skin and eyes), diarrhea, rash, meningitis, and liver failure. Death can occur.</p>	<p><b>Are animals treatable?</b> Yes</p> <p><b>Vaccine available?</b> Yes</p> <p><b>Reportable?</b> Yes</p>
<p><b>Listeriosis (Circling disease), cause:</b> <i>Listeria monocytogenes</i> (LM)</p> <p><b>How do sheep and goats get infected?</b> Eating and/or drinking feed, water or soil that is contaminated with LM by birds, mammals, and fish, and aerosols (sneezing and coughing). Cattle, sheep, and goats can infect each other.</p> <p><b>How do humans get infected?</b> Eating and/or drinking contaminated raw milk, uncooked meat, and unpasteurized dairy products. Handling aborted fetuses and placentas of infected ewes and does.</p> <p><b>What are the animal symptoms?</b> Depression, fever, decreased appetite, reduced milk production, walking in circles, seizures, facial paralysis, abortion, death.</p> <p><b>What are the human symptoms?</b> Diarrhea, premature childbirth, miscarriage/stillbirth, health problems in babies, fever, myalgia (muscle ache), headache, abdominal (stomach or intestinal) cramping, nausea and vomiting.</p>	<p><b>Are animals treatable?</b> Yes</p> <p><b>Vaccine available?</b> No</p> <p><b>Reportable?</b> No</p>
<p><b>Q fever (Queensland fever), cause:</b> <i>Coxiella burnetii</i></p> <p><b>How do sheep and goats get infected?</b> Eating contaminated forages, tick bites, direct contact with placentas, uterine fluids, and/or milk that is infected with <i>Coxiella burnetii</i>.</p> <p><b>How do humans get infected?</b> Handling aborted fetuses, placentas and uterine secretions from infected does and ewes. Contact with infected animals. People at high risk are slaughter house workers, veterinarians, researchers, food processors, and sheep and cattle workers.</p> <p><b>What are the animal symptoms?</b> Infected animals show no symptoms of the disease until abortion in late pregnancy or stillbirths. Some animals show depression and lack of appetite one to two days before abortion.</p> <p><b>What are the human symptoms?</b> High fever, headache, muscle pain, confusion, sore throat, chills, sweats, non-productive cough, nausea, vomiting, diarrhea, abdominal pain, chest pain, and/or hepatitis.</p>	<p><b>Are animals treatable?</b> Yes</p> <p><b>Vaccine available?</b> No</p> <p><b>Reportable?</b> Yes</p>
<p><b>Ringworm, cause:</b> <i>Microsporum</i> spp. and <i>Trichophyton</i> spp.</p> <p><b>How do sheep and goats get infected?</b> Contact with infected herd mates or pen mates at shows or sales and/or introduced by contaminated clothing and supplies of farm visitors.</p> <p><b>How do humans get infected?</b> Direct contact with an infected animal's skin or hair or contaminated surfaces such as clothing, brushes, and clippers.</p> <p><b>What are the animal symptoms?</b> Ring-shaped, crusty patches on the skin where there is hair or wool loss.</p> <p><b>What are the human symptoms?</b> Red, scaly patches on the skin that itch and may form blisters with secretions, round bald patches on the scalp or beard that itch, and/or thickened, discolored fingernails or toenails.</p>	<p><b>Are animals treatable?</b> Yes</p> <p><b>Vaccine available?</b> No</p> <p><b>Reportable?</b> No</p>

<i>Disease / Cause / Transmission / Symptoms</i>	<i>Actions</i>
<p><b>Soremouth (Orf, contagious ecthyma), cause:</b> <i>Poxvirus</i></p> <p><i>How do sheep and goats get infected?</i> Contact with infected animals or by contact with infected tissue or saliva that contains the virus.</p> <p><i>How do humans get infected?</i> Direct contact with an infected animal's skin or hair or contaminated surfaces such as clothing, brushes, and clippers.</p> <p><i>What are the animal symptoms?</i> Elevation of the skin that can progress to blisters that encrust on the lips, mouth, face, ears, vulva, scrotum, teats, feet, and mammary glands.</p> <p><i>What are the human symptoms?</i> Painful sores on the hands that may last for two months.</p>	<p><i>Are animals treatable?</i> Yes</p> <p><i>Vaccine available?</i> Yes (sheep)</p> <p><i>Reportable?</i> Yes</p>
<p><b>Toxoplasmosis, cause:</b> <i>Toxoplasma gondii</i></p> <p><i>How do sheep and goats get infected?</i> Eating and/or drinking contaminated feed and water.</p> <p><i>How do humans get infected?</i> Eating and/or drinking contaminated milk, water and undercooked/contaminated meat, contact with aborted fetuses and placentas, soil and dust.</p> <p><i>What are the animal symptoms?</i> Embryonic death, fetal mummification (doe reabsorbs the fetal fluids), stillbirths, weak kids and lambs, late-term abortions and successive pregnancy failures.</p> <p><i>What are the human symptoms?</i> Abortions, infected newborns with eye or brain damage, flu-like symptoms, swollen lymph glands, muscle aches and pains, damage to the brain or other organs, impaired vision and blindness.</p>	<p><i>Are animals treatable?</i> Yes</p> <p><i>Vaccine available?</i> No</p> <p><i>Reportable?</i> No</p>
<p><b>Vesicular Stomatitis, cause:</b> <i>Vesicular stomatitis</i></p> <p><i>How do sheep and goats get infected?</i> Insect bites, contact with the saliva of sick animals, pus draining from open blisters, aerosols (coughing and sneezing), and direct contact.</p> <p><i>How do humans get infected?</i> Handling infected animals, contact with saliva or fluid draining from ruptured blisters.</p> <p><i>What are the animal symptoms?</i> Blisters on the tongue, teats, and inner lining of mouth.</p> <p><i>What are the human symptoms?</i> Flu-like symptoms, headaches, fever, and muscle aches</p>	<p><i>Are animals treatable?</i> Yes</p> <p><i>Vaccine available?</i> Yes</p> <p><i>Reportable?</i> Yes</p>
<p><b>Rift Valley Fever, cause:</b> <i>Bunyaviridae family</i></p> <p><i>How do sheep and goats get infected?</i> Mosquitoes, coughing, and sneezing.</p> <p><i>How do humans get infected?</i> Mosquitoes, direct contact with infected animals, coughing and sneezing animals.</p> <p><i>What are the animal symptoms?</i> Fever, dullness, lack of an appetite, abortions, vomiting, bloody diarrhea, unsteady gait, skin necrosis on udder or scrotum, and/or death.</p> <p><i>What are the human symptoms?</i> Mild fever, weakness, which can progress into brain inflammations, liver abnormalities, headaches, seizures, extreme weight loss, vision loss, and back pain.</p>	<p><i>Are animals treatable?</i> Yes</p> <p><i>Vaccine available?</i> Yes</p> <p><i>Reportable?</i> Yes</p>

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