

Leptospirosis
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Leptospirosis is a bacterial infection of animals and people. It is known for its significant effects on livestock through abortions, stillbirths and decreased milk production. *Leptospira* is a spirochete with over 200 known pathogenic serovars. Within the pathogenic species, *Leptospira interrogans* there are five serovars that are commonly recognized in cattle; hardjo, pomona, icterohemorrhagicae, canicola, and grippityphosa. *Leptospira hardjo-bovis* is the host adapted strain in the United States.

Infections from the organism have a predilection towards young cattle either male or female. Although the infection is often associated with abortions and a drop in milk production in the cow, bulls can be infected and act as carriers. Males do not usually show any signs of the disease, despite their ability to spread the infection to other animals through urine or semen. While cattle of any age are susceptible, calves tend to develop the more severe acute form of the disease compared to adults.

Signs of infection in cattle may be depression, anorexia, transient and slight fever, reproductive problems, drop in milk yields with a flabby udder, and recumbency. Other signs of a more intense infection are hemoglobinuria (dark urine) jaundice, bloody milk, anemia, abortions, lameness, and death.

The organism is transmitted through contaminated environments or via direct transmission from urine, vaginal secretions, or other discharges associated with a recent abortion. In the environment, leptospirosis is closely associated with water contamination and can survive for as long as six months in standing water. The organism can also be shed by carriers through urine, especially during the first few months of infections. Carriers may also shed the organism for a year or more and potentially a lifetime. The disease can also be harbored by a wide range of domestic and wild animals such as dogs, sheep, deer, raccoons, rodents and pigs. Animals become infected when they come into contact with the organism which then gains entry through mucus membranes or abrasions with infection then occurring in four to seven days. Diagnosis is either by identifying the organism, or serology.

Complete elimination of the organism from a herd is unlikely due to the hardiness of the organism in the environment and the number of other species that can carry the organism. Biocontainment of the disease is however a reality. Doing a risk assessment within a herd on ways to contain the disease is profitable. Potential risks for introduction of Leptospirosis would include purchased replacements and wildlife. Developing a management plan to address the health concerns regarding Leptospirosis would include, isolating replacements, keeping pens clean and dry, immunizing the herd, keeping colostrum and water sources clean, rodent and wildlife control, and minimizing contamination of feed and water sources.

Replacement heifers brought into the herd should be immunized prior to introduction and isolated after being brought onto the farm or ranch for 60 days. Treating all new animals along with isolation has also been recommended. Most Lepto vaccines contain several serovars, however it is probably most important to include the *L. borgpetersenii* serovar hardjo-bovis in the vaccine as this is the cattle adapted type.

Producer should vaccinate all replacement heifers by 4 months of age with a booster 4-6 wks later followed with an annual revaccination. Cows once entering the herd and assuming they were properly vaccinated as a developing heifer should also receive an annual revaccination. Herd bulls should be vaccinated twice before entering the herd and annually thereafter.

The risks of developing Leptospirosis are high in the warm humid climates typical of the southeast. Managing beef herds to reduce the risk of Leptospirosis can be economically rewarding by increasing milk production and increasing reproductive efficiency. It is better to prevent Leptospirosis infection and its introduction rather than managing a disease outbreak.