



# LEPTOSPIROSIS

One of animal industry's most costly diseases

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**L**eptospirosis (lepto) is one of the most costly diseases of the livestock industry. As more is learned about this disease it is apparent that it is present in all sections of the United States. The incidence of leptospirosis in domestic animals is on the increase.

Leptospira infections also occur in humans and, in some instances, may become a major health problem.

### Cause

Leptospirosis is caused by the leptospira organism, of which over 60 different types presently are recognized.

Three of these types most commonly encountered in livestock and human infections are L. icterohemorrhagiae, L. canicola and L. pomona. Leptospira pomona is most often isolated from cattle, swine, sheep, goats and horses. L. icterohemorrhagiae is most often reportedly isolated from rats and other wild rodents while L. canicola is usually associated with the dog.

All types of the leptospira organism may infect any species of animal and man.

### Symptoms

Cattle — Leptospirosis in cattle often is referred to as "warm weather disease" because of its increased incidence in spring, summer and early fall. In a typical case, there is an elevated tem-

perature (104 to 107 F.), depression, the animal goes "off feed", the animal may abort late in pregnancy, pass bloody urine and have mastitis.

A typical leptospiral mastitis is evidenced by a marked drop in milk production. The milk that is produced usually is thick, yellowish or possibly bloody. The udder is usually soft and limp.

When infected animals do not abort, they often produce a weak or dead calf at term.

Swine — Swine usually show little or no symptoms. The first hint of an infection is usually abortion and weak or dead pigs at birth.

Swine harbor the infection and spread it to cattle, sheep, horses and humans. Hogs are an ideal host and of major importance in the spread of leptospirosis. The symptoms of leptospirosis in cattle and swine may be mistaken for those of Bangs disease.

Dogs — Leptospirosis infection in dogs may not be evident in many instances. In the more acute case, the symptoms include anemia, elevated temperature, yellow mucous membranes and dehydration.

Horses — The symptoms of leptospirosis in horses are an elevated temperature and localization in the eyes. It is suggested that the leptospiral organism is the cause of moon blindness (periodic opthalmia).

### How Spread

This disease usually is spread by the urine of infected animals coming into contact with the mucous membranes of the eyes, nose and mouth of susceptible animals.

The leptospiral organism concentrates and lives in the kidneys, female reproductive tract and for extended periods may live in pools of stagnant, alkaline water.

It may be spread from farm to farm or animal to animal by rats, mice, wild animals, dogs and by the addition of infected animals to the herd. Swine may become infected by following infected cattle, or infected swine may serve as a source of infection for cattle. Leptospirosis may also be spread by the act of natural breeding.

Humans may become infected by handling aborted fetuses, placental membranes of infected animals, and infected organs such as the liver, kidneys, blood and milk. Farmers, ranchers, veterinarians, packinghouse workers and meat inspectors who work with livestock frequently are subject to infection. Persons bathing or wading in stagnant water contaminated by infected rats, dogs or domestic animals may become infected.

The chronic (asymptomatic) case is the greatest problem in the spread of leptospirosis. Though there are no symptoms, the animal harbors the organisms and serves

as a source of infection for susceptible animals.

### Prevention

An effective livestock sanitation program is needed to prevent leptospirosis. Such a program should include these practices.

- (1) Carry out an extensive rodent control program. When possible, prevent contact with wildlife that may serve as carriers of leptospirosis. See Extension Service Circular No. A-31 "Rat Control".
- (2) Purchase leptospirosis-free or vaccinated replacements.
- (3) Bury deep and add lime, or burn, aborted fetuses, afterbirth and bedding of infected animals.
- (4) Prevent urine contamination of feed and water supplies.
- (5) Isolate sick animals and suspected carriers.
- (6) Exercise unlimited caution in handling infected animals, to prevent human infection. All milk consumed by humans should be pasteurized.
- (7) Discard milk from known or suspected leptospirosis infected or carrier animals. Do not feed infected milk to calves, pigs or chickens.
- (8) Avoid the use of stagnant surface water sources for livestock.
- (9) Consult a veterinarian immediately upon suspicion of leptospirosis infection.
- (10) Vaccination.

A vaccine is available which may be most helpful in preventing and controlling leptospirosis. The protection following vaccination may vary but will usually last at least one year. Protection will be provided within 15 to 30 days following vaccination.

Because other diseases often produce similar symptoms, have a definite diagnosis made by a licensed veterinarian, or by a recognized diagnostic laboratory. Laboratory diagnosis consists of isolation and identification of the leptospira organism from aborted fetuses and organs, milk or blood from suspected animals.

Immunity usually is of shorter duration in young animals than in older animals. When leptospirosis has been diagnosed definitely in a herd, all the animals should be vaccinated including calves 2 to 3 weeks old. Thereafter, revaccination should be carried out every 6 months until the disease is under control.

Future prevention in a herd should consist of vaccination of heifers a month or two before breeding and annual vaccination of the entire herd.

Vaccination should be done under the supervision of a veterinarian and only under the following conditions:

- (1) In herds where it has been established definitely that leptospirosis infection exists.
- (2) When leptospirosis appears on nearby farms.

- (3) If animals are added to herd that is already infected or has a history of leptospirosis.
- (4) When cattle and hogs are run together. Cattle used for exhibition purposes.
- (5) On farms or ranches where there is an extensive turnover of livestock.

### Diagnosis

If the symptoms of leptospirosis in cattle and swine as described in this circular have been noticed an infection is indicated.

A blood test for antibodies for leptospirosis similar to the test for brucellosis has been developed. Antibodies appear in the blood about 12 to 18 days following infection and may remain for several years. A positive blood test alone does not necessarily indicate a recent infection. Symptoms of leptospirosis, in addition to a blood test or two blood tests at 5 to 7 day intervals with an increase of antibodies, would indicate active infection.

The symptoms of leptospirosis, a positive blood test, and the isolation and identification of the leptospiral organism, would be the ultimate in diagnosis.

**\* Good sanitation is your greatest asset in protecting your livestock from disease.**

**\* Consult your veterinarian at the first signs of disease.**

**\* Isolate the infected animal from the rest of the herd as soon as disease symptoms are noticed.**