# Tech Specs

Lepto Shield®

## *Lepto Shield® 5*

Leptospira Canicola-Grippotyphosa-Hardjo-Icterohaemorrhagiae-Pomona Bacterin

### REPRODUCTIVE PROTECTION

**ONE DOSE FOR CATTLE, TWO IN SWINE**

Lepto Shield 5 is approved for one dose (2 mL) in healthy cattle. No booster is required. By only needing to handle cattle once, you can save valuable time and reduce needless stress on livestock. In swine, booster 3 to 4 weeks after the initial dose.

**SAFE AND RELIABLE**

Each serial is tested for potency, purity and safety prior to being released to the consumer. Effective protection is provided against the five major serovars that cause leptospirosis in cattle and swine.

### *Lepto Shield 5*

**INDICATIONS:** This product has been shown to be effective for the vaccination of healthy cattle and swine against disease caused by *Leptospira canicola, grippotyphosa, hardjo, icterohaemorrhagiae,* and *pomona.* This product was licensed prior to the requirement to establish a minimum age for use. The duration of immunity for this product has not been established. For more information regarding efficacy and safety data, see *productdata.aphis.gov*.

**DIRECTIONS:** Shake well before using. Administer 2 mL intramuscularly. For swine, give a second dose in 3 to 4 weeks. Historically, annual revaccination has been recommended for this product. The need for this booster has not been established. For advice on revaccination, contact a veterinarian.

**PRECAUTIONS:** Store out of direct sunlight at 2 to 8°C (35 to 46°F). DO NOT FREEZE. This product has not been tested in pregnant animals. Use entire contents when first opened. Do not mix with other products, except as specified on this label. In case of human exposure, contact a physician. Do not vaccinate within 21 days prior to slaughter. Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine. Contains thimerosal as a preservative.

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# TECHNICAL DISEASE INFORMATION

Leptospirosis is widespread in the animal population of the United States and is considered one of the most infectious diseases of farm animals. In animals, the disease is known to cause reproductive disorders, loss of weight, decreased milk production and sometimes death. The economic losses suffered are very large. The disease can be caused by several specific leptospires. The causative organisms belong to a group of pathogens called *Leptospira interrogans*, with five major serovars incriminated: *L. grippotyphosa, L. hardjo, L. pomona, L. canicola* and *L. icterohaemorrhagiae*.

This disease is spread to domestic livestock by shedding of the organisms in urine, which contaminates feed or water. These organisms survive well in surface waters. The organisms may be found in the udder and be secreted in the milk to suckling calves or piglets, thus infecting them.

Many wildlife species may be infected with these organisms, with some of the more common being rats, raccoons, skunks, foxes and opossums. Dogs are also often infected. The incubation period varies from 1 to 4 days and is followed by a leptospiremia (bacteria in the blood), which lasts for 1 to 5 days. With the appearance of antibodies in the animal's blood, the leptospiremic phase is terminated. The organisms may remain in the kidney and multiply in this location, then be shed in the urine for months or years, infecting other farm animals.

Young animals that are acutely ill with leptospirosis may show a transient fever, loss of appetite and difficulty in breathing with death losses due to severe anemia. Lactating cows exhibit a loss of milk production with a milk secretion that is yellow, clotted and often blood-tinged. Severely affected animals develop anemia, jaundice, hemoglobinuria and pneumonia.

In pregnant cows the organism may infect the fetus, which dies and is aborted 1 to 4 weeks after the leptospiremic phase usually in the last trimester of pregnancy. Good husbandry and a solid immunization program with Lepto Shield® 5 is the economical route in preventing this disease in cattle. Simply administer one (2 mL) dose intramuscularly to breeding stock.

Swine are infected similarly with the most common serotypes being *L. pomona*, which is shed from pig to pig via urine, and *L. icterohaemorrhagiae,* which is spread to pigs from dogs and rats. Symptoms in swine vary widely. Many of the infections are subclinical and are only recognized by seroconversion, by isolation of the organism from the kidneys and urine, or by cases of leptospirosis in other animals than the swine herd. The most common signs are abortions and stillbirths in pregnant animals, mainly late abortions. Common clinical signs include loss of appetite, intestinal problems and reduced weight gain. Acute or subacute infections are observed in young pigs with fever and high death loss being the primary signs. Treatment of this disease using antibiotics is sometimes effective but costly.

Prevention of this disease in swine is accomplished by administering 2 mL of bacterin to the brood sows and boars, with a booster shot 3 to 4 weeks later.

As leptospirosis can be an occupational hazard for dairy and swine workers, the veterinarian should inform the owner of the public health aspects of the disease whenever an outbreak occurs. Using antibiotic therapy and vaccination reduces the shedding of leptospires in the urine.

**The label contains complete use information, including cautions and warnings.**
**Always read, understand and follow the label and use directions.**