

TETANUS

IN DOMESTIC FARM ANIMALS



THE PEAK OF QUALITY
SINCE 1923

303-295-7527
www.colorado-serum.com

INTRODUCTION

Tetanus is a common disease among domestic farm animals around the world. Without prevention or treatment, the disease is almost always fatal. Horses are most susceptible, while cattle, sheep, goats, and pigs are less susceptible.

The organism that causes the disease, *Clostridium tetani*, requires an anaerobic (no oxygen) environment in which to grow. Animals are at greatest risk of infection when the bacteria enters the body through a deep penetrating wound, an umbilical or post-birthing uterine infection, a severe skin laceration, or a post-castration/post-tail docking procedure (especially associated with banding).

Once the organism has entered the body, it releases an exotoxin that binds to certain nerve fibers and results in muscle rigidity. Clinical signs noted secondary to the muscle rigidity include a “sawhorse appearance,” a fixed stare, erect ears, a reluctance to eat or drink due to a “locked jaw,” an elevated tail, flared nostrils, and a protruding third eyelid. Even with treatment at this point, death is usually imminent.

CONTROL AND PREVENTION

ACTIVE IMMUNIZATION

The best method of dealing with tetanus is with an active immunization program. An active immunization program involves vaccinating an animal with Tetanus Toxoid (inactivated tetanus toxin) and repeating this immunization in about 14 to 28 days. Complete protection will be achieved in about 7 to 14 days after the second injection – lasting about one year.

With active immunization, the body recognizes the inactivated toxin in the vaccine and causes certain white blood cells to form antibodies in response. The immune system will “remember” that particular vaccine and will be ready to respond quickly the next time it “sees” the toxin again. Once this type of immunity has been established in an animal, a booster injection of Tetanus Toxoid will quickly re-establish protective immunity if it is exposed to this disease.

This type of immunization program results in the best immunity versus the disease, is long lasting, and can be used to increase the amount of antibodies passed from the dam to her offspring for protection. On the other hand, active immunization is not immediate and is not achieved until a short period of time after the second injection.

Tetanus Toxoid is intended to be used to induce immunity in naïve healthy animals or boost immunity in previously vaccinated animals. A Tetanus Toxoid booster (along with antibiotics) is all that is necessary in wounded animals that are current with their Tetanus Toxoid vaccination (received within the previous 12 months).

PASSIVE IMMUNIZATION

An alternative to active immunization is passive immunization. This involves administering antitoxin, which contains antibodies to the tetanus toxin. This antitoxin is derived from the blood of horses that have been actively vaccinated with tetanus solutions and is processed to contain high levels of antibodies. Administration of Tetanus Antitoxin to a susceptible animal results in immediate, short-term protection. This protection lasts about 7 to 14 days, depending upon the degree of disease exposure and the species of animal in which it is used.

Passive immunization protection is recommended if the animal is exposed to the disease or will be shortly, if the animal’s vaccination history is unknown, or if the animal has not been previously vaccinated with Tetanus Toxoid. Situations in which immediate, short-term protection is required include deep penetrating wounds in an unvaccinated animal, tail-docking and castration of newborn or young animals, and umbilical infections. These situations would not allow enough time for active immunization to be established prior to disease occurrence. Since the product is derived from horse blood, a small percentage of animals may experience an allergic reaction post-administration.

Tetanus Antitoxin is meant to be used (along with antibiotics) for immediate passive immunity in non-immunized animals that are at risk of contracting tetanus from a wound, or in wounded animals that are overdue (> 12 months) for their Tetanus Toxoid booster. Tetanus Antitoxin is also indicated (in much higher doses – see label) in cases where animals are currently suffering from tetanus disease caused by *Clostridium tetani*. In these cases, a veterinarian should be attending to the animal and administering adjunctive treatments in addition to Tetanus Antitoxin.

It is recommended that producers consult with a veterinarian before instituting a prevention and control program.

Colorado Serum Company manufactures and distributes both forms of tetanus protection for livestock owners. Contact your local distributor or veterinarian and request these and other quality products from Colorado Serum Company.

TETANUS ANTITOXIN

5 ml dose

#13601 - 1 x 1,500 unit (5 ml)
#13603 - 10 x 1,500 unit (10 x 5 ml)
#13604 - 1 x 15,000 unit (50 ml)

Tetanus antitoxin is prepared from the blood of healthy horses that have been specifically hyperimmunized. It is recommended for use as an aid in the prevention and treatment of tetanus in animals.

Tetanus is caused by a neurotoxin (poison) produced by growth of *Clostridium tetani*, an anaerobic microorganism, in necrotic tissue.

Tetanus Antitoxin is recommended for use when a non-immunized animal suffers a deep wound that may have been contaminated with soil, following castration or docking, and other situations where tetanus infection has been a problem.

This product was licensed prior to the requirement to establish a minimum age for use. The exact duration of passive immunity is unknown but literature states 7-14 days. Safety in pregnant animals is unknown.

The use of equine serum has been associated with hepatitis (Theiler's Disease).

TETANUS ANTITOXIN Concentrated / Purified

2 ml dose

#63611 - 1 x 1,500 unit (2 ml)
#63614 - 1 x 15,000 unit (20 ml)

This product is a purified, concentrated antitoxin, primarily immunoglobulin in nature. It is prepared from the blood of specifically hyperimmunized horses. It is recommended for use in horses as an aid in the prevention and treatment of tetanus due to *Clostridium tetani*.

This product was licensed prior to the requirement to establish a minimum age for use. The exact duration of passive immunity is unknown, but literature states 7-14 days. Safety in pregnant animals is unknown.

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TETANUS TOXOID Concentrated, Adjuvanted

1 ml dose

#11411 - 10 x 1 ml
#11415 - 10 ml

This product has been shown to be effective for the vaccination of healthy horses, cattle, sheep, goats, and swine against tetanus. This product was licensed prior to the requirement to establish a minimum age for use. The duration of immunity is unknown.

For more information regarding efficacy and safety data, see productdata.aphis.usda.gov.

Prepared by detoxifying tetanus toxin in such a manner as to allow the antigenic properties to remain intact. Product is purified, concentrated and adjuvanted to provide a low dose effective immunizing agent. Each serial is tested for purity, safety, and potency in accordance with USDA requirements.

Tetanus is caused by a neurotoxin produced by growth of *Clostridium tetani*, an anaerobic (lives without air) microorganism, in necrotic tissue.

Affected animals become stiff, have difficulty swallowing, and have an increased pulse rate. Breathing is labored. Spasmodic contractions of the muscular system occur, such as contracting muscles of the jaw. Thus, the term "lockjaw" is often used. Legs and tail are often stiff with abdominal muscles contracted. Tetanus stricken animals may be unusually sensitive to light and heat. Temperature of the animal generally remains normal, elevating only shortly before death.

Protective antibody levels usually occur about two weeks after the second injection of the primary immunization series. In contrast, administration of Tetanus Antitoxin is recommended for immediate, emergency, passive treatment of exposed animals with unknown vaccination history or with signs of tetanus infection. Refer to product circular for Tetanus Antitoxin for full information and consult with a veterinarian.

TETANUS TOXOID Unconcentrated, Adjuvanted

Dose based on weight

#11401 - 10 x 1 ml
#11405 - 10 ml

This product has been shown to be effective for the vaccination of healthy horses, cattle, sheep, goats, and swine against tetanus. This product was licensed prior to the requirement to establish a minimum age for use. The duration of immunity is unknown. For more information regarding efficacy and safety data, see productdata.aphis.usda.gov.

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