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VET'S VIEW

Johne's Disease

Johne's (pronounced "Yoh-nees") disease is becoming more commonly seen in Iowa beef cattle herds in the last few years. Some studies have estimated the prevalence of Johne's to be less than 9% in beef cattle herds. However, testing for Johne's is sporadic and the real prevalence is unknown. The number of positive cases identified by the Iowa State University Veterinary Diagnostic Laboratory have increased dramatically in the last few years. In 2010, only 65 positive cases were identified out of all the samples submitted. In fall of 2016 over 200 cases were identified, with more results still to be accumulated. Long considered a disease primarily of dairy cattle, it is becoming a more common problem for beef cow-calf herds.

Johne's disease is caused by the bacteria called *Mycobacterium paratuberculosis*, which is in the same species as the bacteria that causes tuberculosis. Mycobacteria are very hardy bacteria that survive a long time and grow relatively slow. Cattle can be infected as calves and not show signs of disease until they are 3 to 5 years old. There is no treatment for infected cattle. In Iowa Johne's is a reportable disease although the control program is voluntary.

There are several factors associated with increasing prevalence of Johne's in Iowa. The primary factor is the increasing movement of cattle between operations. Expanding herds commonly bring outside cattle into their operation that could be carrying the disease but not showing any clinical signs leading to exposure to the resident cattle. Even closed herds are at risk as Johne's has been diagnosed on seedstock operations that could potentially be selling young infected bulls. Although diagnostic tests are available they

are not perfect and carrier animals can be missed. Because the bacteria grows so slowly young animals such as yearling bulls or heifers could be infected but do not have high enough levels of the bacteria to be detected, even with the most sensitive tests. With Johne's disease a positive test is usually positive but a negative test may just mean it is not positive yet.

The other major factor leading to increased prevalence of Johne's is the increased concentration of cattle in Iowa. The bacteria grows in the intestinal tract leading to chronic diarrhea and weight loss and calves are infected by being exposed to fecal material from positive cows. For the past 100 years beef producers haven't worried too much about the disease because cattle on pasture do not transmit the disease very easily. However, as pasture has become scarce Iowa herds have become more concentrated particularly around calving when young calves are most at risk of becoming infected.

To control Johne's, new additions to your herd should be tested, although we may miss some cases, it is the only way to currently have any capability of preventing from infecting your herd. Any mature animal that develops chronic diarrhea or weight loss should be tested even if you are just going to cull the animal. Identifying the disease before multiple animals are infected will decrease the economic impact to your herd. If you identify a case in a purchased animal, notify the original owner as they may not know that they have a problem in their herd. If you suspect Johne's, contact your veterinarian so testing and control programs can be implemented.

ANADA 200-495, Approved by FDA

Enroflox[®] 100 (enrofloxacin)

100 mg/mL Antimicrobial
Injectable Solution

**For Subcutaneous Use in Beef Cattle, Non-Lactating Dairy Cattle and Swine Only.
Not for Use in Female Dairy Cattle 20 Months of Age or Older Or In Calves To Be Processed For Veal.**

Brief Summary: Before using Enroflox[®] 100, consult the product insert, a summary of which follows.

CAUTION: Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian. Federal (U.S.A.) law prohibits the extra-label use of this drug in food-producing animals.

PRODUCT DESCRIPTION: Each mL of Enroflox 100 contains 100 mg of enrofloxacin. Excipients are L-arginine base 200 mg, n-butyl alcohol 30 mg, benzyl alcohol (as a preservative) 20 mg and water for injection q.s.

INDICATIONS:

Cattle - Single-Dose Therapy: Enroflox 100 is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni* and *Mycoplasma bovis* in beef and non-lactating dairy cattle; and for the control of BRD in beef and non-lactating dairy cattle at high risk of developing BRD associated with *M. haemolytica*, *P. multocida*, *H. somni* and *M. bovis*.

Cattle - Multiple-Day Therapy: Enroflox 100 is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni* in beef and non-lactating dairy cattle.

Swine: Enroflox 100 is indicated for the treatment and control of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Haemophilus parasuis* and *Streptococcus suis*.

RESIDUE WARNINGS:

Cattle: Animals intended for human consumption must not be slaughtered within 28 days from the last treatment. This product is not approved for female dairy cattle 20 months of age or older, including dry dairy cows. Use in these cattle may cause drug residues in milk and/or in calves born to these cows. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Swine: Animals intended for human consumption must not be slaughtered within 5 days of receiving a single-injection dose.

HUMAN WARNINGS: For use in animals only. Keep out of the reach of children. Avoid contact with eyes. In case of contact, immediately flush eyes with copious amounts of water for 15 minutes. In case of dermal contact, wash skin with soap and water. Consult a physician if irritation persists following ocular or dermal exposures. Individuals with a history of hypersensitivity to quinolones should avoid this product. In humans, there is a risk of user photosensitization within a few hours after excessive exposure to quinolones. If excessive accidental exposure occurs, avoid direct sunlight. For customer service, to obtain a copy of the Safety Data Sheet (SDS) or to report adverse reactions, call Norbrook at 1-866-591-5777.

PRECAUTIONS:

The effects of enrofloxacin on cattle or swine reproductive performance, pregnancy and lactation have not been adequately determined.

The long-term effects on articular joint cartilage have not been determined in pigs above market weight.

Subcutaneous injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter. Enroflox 100 contains different excipients than other enrofloxacin products. The safety and efficacy of this formulation in species other than cattle and swine have not been determined.

Quinolone-class drugs should be used with caution in animals with known or suspected Central Nervous System (CNS) disorders. In such animals, quinolones have, in rare instances, been associated with CNS stimulation which may lead to convulsive seizures. Quinolone-class drugs have been shown to produce erosions of cartilage of weight-bearing joints and other signs of arthropathy in immature animals of various species. See Animal Safety section for additional information.

ADVERSE REACTIONS: No adverse reactions were observed during clinical trials.

ANIMAL SAFETY:

In cattle safety studies, clinical signs of depression, incoordination and muscle fasciculation were observed in calves when doses of 15 or 25 mg/kg were administered for 10 to 15 days. Clinical signs of depression, inappetence and incoordination were observed when a dose of 50 mg/kg was administered for 3 days. An injection site study conducted in feeder calves demonstrated that the formulation may induce a transient reaction in the subcutaneous tissue and underlying muscle. In swine safety studies, incidental lameness of short duration was observed in all groups, including the saline-treated controls. Musculoskeletal stiffness was observed following the 15 and 25 mg/kg treatments with clinical signs appearing during the second week of treatment. Clinical signs of lameness improved after treatment ceased and most animals were clinically normal at necropsy. An injection site study conducted in pigs demonstrated that the formulation may induce a transient reaction in the subcutaneous tissue.

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