



**PRECISION  
VACCINOLOGY™**



## **FOOTROT** **(*Fusobacterium necrophorum*)** **NEW SOLUTIONS TO ONGOING PROBLEMS**

Nearly 20 percent of all diagnosed lameness in cattle is caused by Interdigital phlegmon, commonly known as Footrot<sup>4</sup>, caused by *Fusobacterium necrophorum*. Once *F. necrophorum* gains entrance to foot tissues via a skin defect, infection of the soft tissue of the interdigital space is quickly established. If left untreated, joints may eventually be affected<sup>1</sup>.

### **THE CONDITION CAN LEAD TO SIGNIFICANT ECONOMIC LOSSES TO CATTLEMEN, DUE TO FACTORS SUCH AS:**

- Reduced feed intake
- Loss of body condition
- Reduced resistance to infectious diseases
- Treatment costs
- Reduced reproductive performance/reluctance to breed (bulls)
- Salvage slaughter of chronic animals
- Bullying of lame animals<sup>3</sup>

Footrot is difficult to prevent. The traditional method of iodine in the feed has produced questionable results, as the level that is approved for use in feed is not considered to be therapeutic, and higher levels can interfere with immune function tests<sup>2</sup>. In order for treatment to be successful, the ailment must be caught early. Treatment can be labor-intensive and may involve removal of infected tissues or even claw amputation in severe cases<sup>4</sup>.

A more severe form of the disease, called "Super foot-rot," is characterized by more rapid onset, extreme necrosis and erosion of interdigital space, and resistance to treatment<sup>1</sup>.

## **PRECISION VACCINOLOGY™**

Autogenous vaccines from Cambridge Technologies employ next generation diagnostics and state of the art production technology to create a customized product targeting the disease-causing agents in the affected herd(s). Our industry-leading molecular diagnostics, including metagenomics and next-generation sequencing, identify the specific antigens threatening the herd(s) which may need to be included in the product. Then, the experienced production team can formulate and manufacture a vaccine customized to the needs of each individual customer, including antigen concentration, multiple adjuvant choices, dose sizes, and the option of SoliDose<sup>®</sup> implants. SoliDose<sup>®</sup> implants are the tool to use in cattle for the convenience of two doses in one application and for the safety of reduced endotoxins when vaccinating against gram negative bacteria.





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## **FOOTROT** *(Fusobacterium necrophorum)* NEW SOLUTIONS TO ONGOING PROBLEMS

### **WHY AUTOGENOUS?**

**SPECIFIC:** Autogenous vaccines from Cambridge Technologies are the most targeted, science-driven solution available. The vaccines will be built around the disease strains that are identified as potential threats to the herd in question.

**SPEED AND FLEXIBILITY:** The nature of autogenous products means a speedy turnaround, so that emerging threats can be dealt with in a timely fashion. Should a new strain or agent emerge, future manufacturing runs of the autogenous product can be altered to include the new threat.

**ANTIBIOTIC STEWARDSHIP:** Many cases of clinical disease are treated with antibiotics. However, the recent implementation of FDA guidance 209 and 213 along with the expansion of the Veterinary Feed Directive has created a need for an alternative to managing animal health. Autogenous vaccines offer veterinarians and their clients a flexible management tool to counter emerging and evolving diseases.

**SERVICE AND SOLUTIONS:** The customer and technical service at Cambridge Technologies extends beyond the vaccine bottle. Our experienced team partners with veterinarians and cattlemen through every step of the process, from initial diagnostics through product testing and shipment, and continued monitoring moving forward.

#### **SOURCES:**

1. American Association of Bovine Practitioners. AABP Fact Sheet: Interdigital Phlegmon (Foot Rot). <http://www.aabp.org/Members/resources/AABP%20Footrot.pdf>. Revised March, 2016 Accessed July 24, 2017.
2. Griffin, D. Lameness. <http://www.beefusa.org/CMDocs/BeefUSA/resources/CC2011-Lameness-Griffin.pdf>. Accessed July 24, 2017.
3. Greenough, P. Health Management: Lameness in Feedlot Cattle. [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/beef11731](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/beef11731). Updated October, 2011. Accessed July 24, 2017.
4. Step, D, Whitworth, B, Giedt, E, Lalman, D. Foot Rot in Cattle. <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2023/ANSI-3355web2015.pdf>. 2015. Accessed July 24, 2017.



#### **FOR ORDER PLACEMENT AND ORDER STATUS:**

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