



*Cavalry*⁹

CUTTING EDGE CLOSTRIDIAL PROTECTION

Broadest spectrum available, including tetanus¹

Demonstrated outstanding immune response²

Demonstrated low reactivity³

2-mL subcutaneous administration

10-, 25-, 50- and 125-dose bottles

DEFEND YOUR HERD

*A Powerful Defense Against **Nine** Clostridial Diseases*

 **MERCK**
Animal Health

Cavalry 9 Vaccine:

Broadest Spectrum Available, Including Tetanus

Major Clostridial Vaccines for Cattle

Components	Cavalry 9	Ultrabac® 7	Ultrabac 8	Vision® 7	Vision 8	Alpha-7™	Caliber™ 7
<i>Cl. tetani</i>	X						
<i>Cl. chauvoei</i>	X	X	X	X	X	X	X
<i>Cl. septicum</i>	X	X	X	X	X	X	X
<i>Cl. sordellii</i>	X	X	X	X	X	X	X
<i>Cl. haemolyticum</i>	X		X		X		
<i>Cl. novyi</i> Type B	X	X	X	X	X	X	X
<i>Cl. perfringens</i> Type C	X	X	X	X	X	X	X
<i>Cl. perfringens</i> Type D	X	X	X	X	X	X	X

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Cavalry 9 Vaccine:

The First Approved 9-way Product with Tetanus

Organism: *Clostridium tetani*

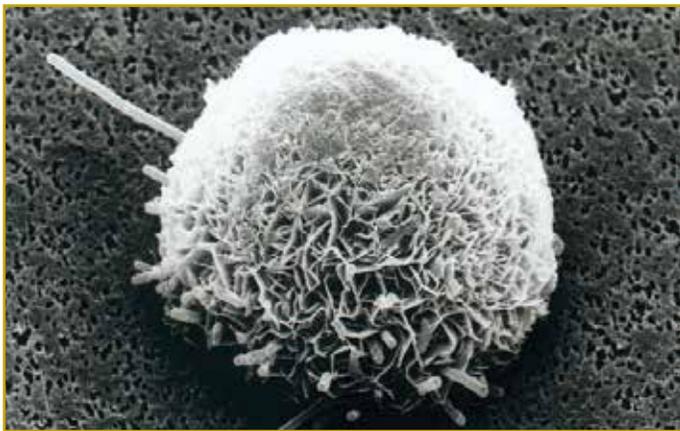
Common disease name: Tetanus

Primary tissue: Muscle

Clinical signs: Muscle spasms, generalized stiffness, extended head and neck, respiratory failure

Sources of infection: Common causes are banding/castration, tail docking, puncture wounds, dehorning, difficult calving, metritis and surgical intervention

Cattle are susceptible to tetanus from a number of common events and management practices that put them at frequent risk. While tetanus is not a sudden-death disease like blackleg, it is often fatal. You can economically prevent the loss of your valuable cattle to tetanus, with Cavalry 9.



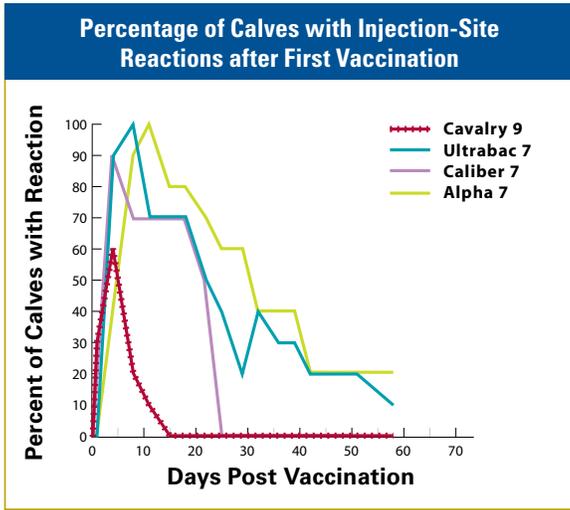
Microscopic view of *Cl. tetani*



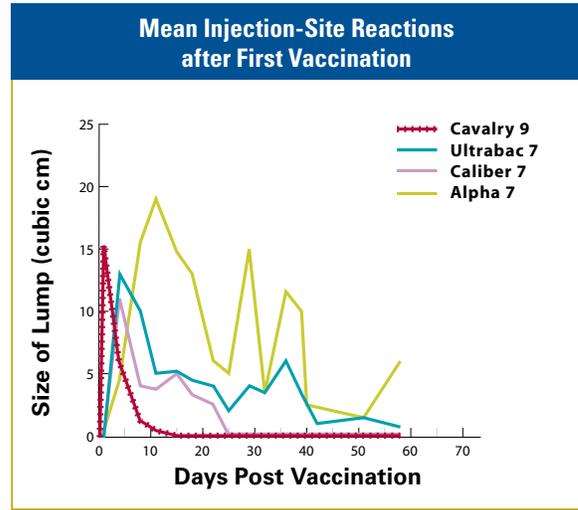
Rigidity and stiffness of limbs caused by *Cl. tetani*

Cavalry 9 Vaccine:

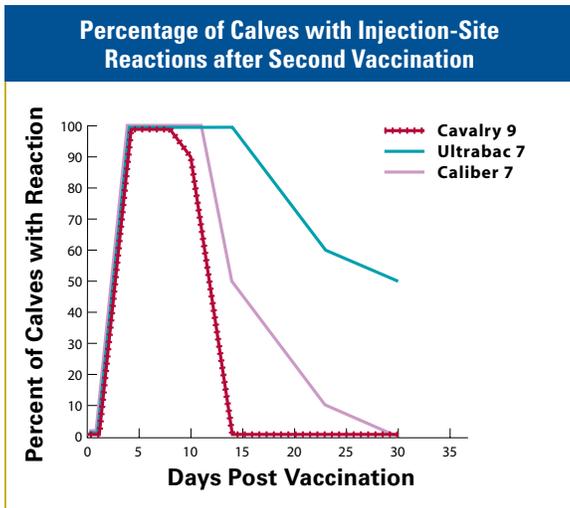
Demonstrated Low Reactivity



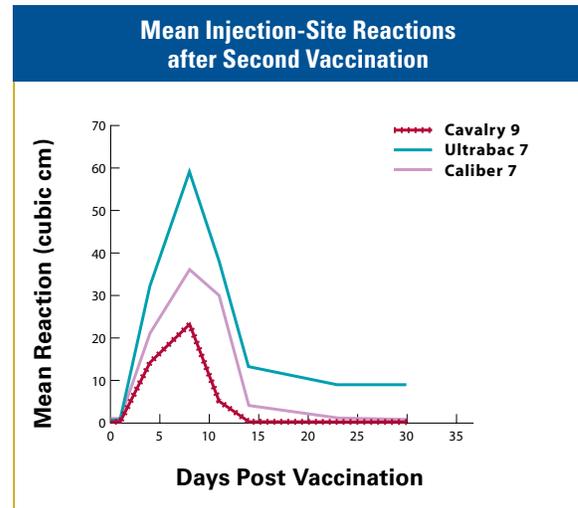
Few calves experienced injection-site reactions with Cavalry 9 vaccine.



Cavalry 9 vaccine injection-site reactions resolved quickly.



Injection-site reactions typically are more pronounced after a second dose. Those from Cavalry 9 vaccine resolved in about two weeks.



Cavalry 9 injection-site reactions following the second vaccination were small.

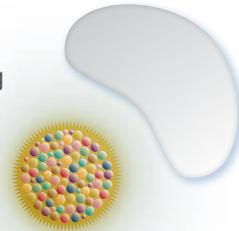
Cavalry 9 Vaccine:

Vigor™ Adjuvant Provides Optimum Balance of Safety and Efficacy

1. Cavalry 9 is a vaccine made from the adjuvant Vigor containing antigens to create immunity for nine clostridial diseases.



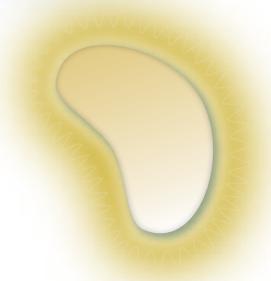
2. Inflammation caused by the needle penetrating the skin attracts immune system cells to the site of the injection.



3. Those cells are then attracted to the adjuvant/antigen complex and engulf the vaccine particles.



4. Once inside the cell, the properties of Vigor cause a series of events that stimulate immunity.



Merck Animal Health has been a leader in clostridial vaccine technology for more than 50 years

Our researchers develop innovative clostridial adjuvants, such as Vigor

They formulated Vigor, our proprietary adjuvant system, specifically to provide exceptional efficacy with a low-volume dose

CAVALRY 9 is manufactured in one of the most sophisticated animal vaccine production plants in the world. Located in New Zealand, the Merck Animal Health Global Vaccine Unit (GVU) is renowned for its state-of-the-art facilities.

Cavalry⁹

¹ Commercially available product labels

² Merck Animal Health efficacy trial work

³ Merck Animal Health study B06-163-01