



Vision® 7 Feed Consumption And Reactivity Trial

Introduction

A study conducted by Dr. G.L. Stokka at Kansas State University compared cattle injected with Vision® 7 clostridial to Blacklegol® 7. Cattle injected with sterile saline were used as controls. Twelve animals were included in each of the groups. Injection-site reactions, inflammatory response, and feed consumption were compared among groups.

Injection-Site Reaction

There was a statistical difference in site reactivity between the 5mL and 2mL products on Days 2 (P-value .0291) and 17 (P-value .0132) following administration. On Day 2 post-injection, the 2mL sites were like the cut edge of an orange whereas the 5mL sites were similar in size to the cut edge of a grapefruit. These results follow what has been demonstrated in other studies conducted around the country (Graph 1).

Note on statistics: The smaller the P-value, the more reliable the results. A P-value less than or equal to .05 is considered statistically significant by most scientific researchers.

Haptoglobin Measurement

Haptoglobin is an acute phase protein released by the liver. Measuring haptoglobin levels is an indirect way of monitoring the inflammatory process.

The haptoglobin levels were statistically significantly higher for the 5mL product over the 2mL product on both Days 2 (P-value .0001) and 6 (P-value .0002) post-vaccination. These results support the fact that the 5mL product is more inflammatory than the 2mL product (Graph 2).

Feed Consumption Data

Four Day Comparisons:

The data were analyzed comparing feed consumption for four days previous to four days following administration of the clostridial vaccines.

Overall:

- Statistically, there was a difference when comparing consumption for four days before to four days after administration for all three groups. P-values were .0135 for the saline group, .0261 for the Vision group and .0001 for the Blacklegol group.
- There was a 10.4% reduction in consumption in the sterile saline group, a 9.85% reduction in the Vision 2mL group and a 26.6% reduction in the Blacklegol 5mL group.
- The 16.2% spread in feed intake between the Vision 2mL group and the Blacklegol 5mL group clearly emphasizes the more negative response seen in the 5mL group (Graph 3).

Per Day:

- On a feed-per-day basis, this translates to a drop in consumption of 3.16 lbs., 2.81 lbs. and 7.893 lbs. for the saline, Vision and Blacklegol groups respectively.
- Economically, this results in a difference of 5.17 lbs. of feed-per-day per-head for the four days post-processing in the Blacklegol 5mL group compared to the Vision 2mL group.

Ten Day Comparisons:

The data were also analyzed comparing consumption for ten days before injection to ten days following injection.

Overall:

- The saline and Vision groups consumed .879% and 5.472% more feed respectively, for the ten days following, compared to the ten days before injection. The Blacklegol 5mL group consumed 7.261% less for the ten days following.
- This represents a 12.7% spread between the 5mL and 2mL groups (Graph 4). Control and Vision groups had recovered while the 5mL group was still 7% behind compared to consumption ten days before vaccination.

Per Day:

- On a feed-per-day basis, this translates to an increase of .245 lbs. and 1.46 lbs. for the saline and Vision groups respectively, but a decrease of 2.02 lbs. for the Blacklegol 5mL product.
- Economically, this translates to a difference of 3.48 lbs. of feed per day per head for the ten days post-processing in the 5mL group compared to the 2mL group.

These data clearly illustrate that cattle injected with Vision 7 2mL product recover more quickly from the stress of handling and vaccination than do cattle receiving the 5mL product. The Vision cattle are consuming an average of 14 lbs. more feed per head over the ten days following injection than they were for the ten days before whereas the 5mL product cattle are consuming an average 20 lbs. less feed per head (P-value .0489).

What do these data tell us about stress and vaccination with clostridials? Feed consumption is a measure of appetite and appetite is a measure of how well the cattle feel. A calf that is not feeling well will be nutritionally compromised and is then under more stress. This “window of stress” following processing can be dramatically shortened by using the Vision product.

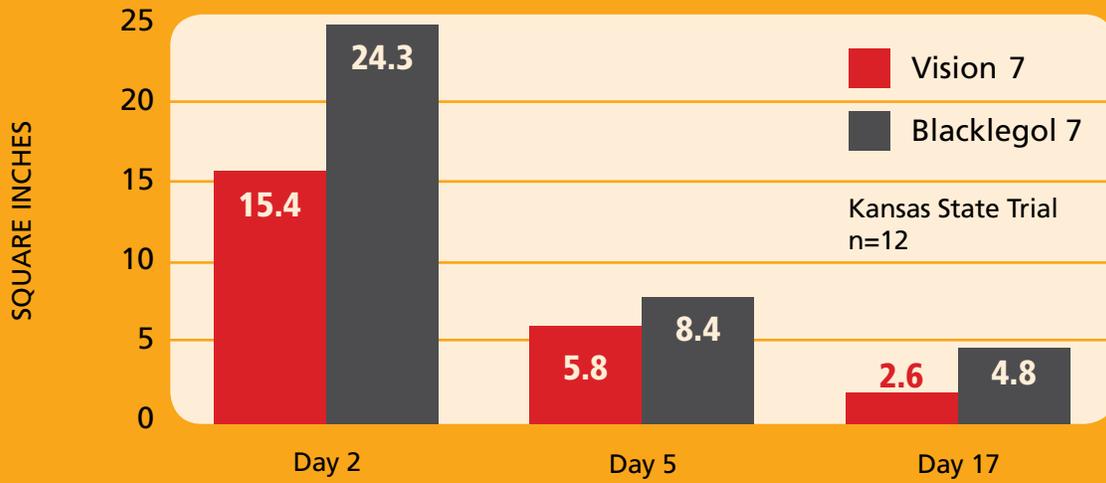
To equate stress with economics, we must assume that morbidity will increase in disease-exposed, stressed cattle. If treatment costs per pull are \$12-\$15, an increase in morbidity of 10% will increase treatment costs per head by \$1.20-\$1.50. Money is better spent on Vision initially than on treatment afterwards.

Summary

This study, conducted under ideal conditions, clearly illustrates the increased stress placed on an animal receiving a 5mL product over the 2mL product. This stress was measured directly through feed consumption following the administration of vaccine and indirectly through haptoglobin measurements. The inflammatory response following the use of Merck Animal Health’s Vision clostridial vaccine will consistently be less than that associated with any 5mL product.

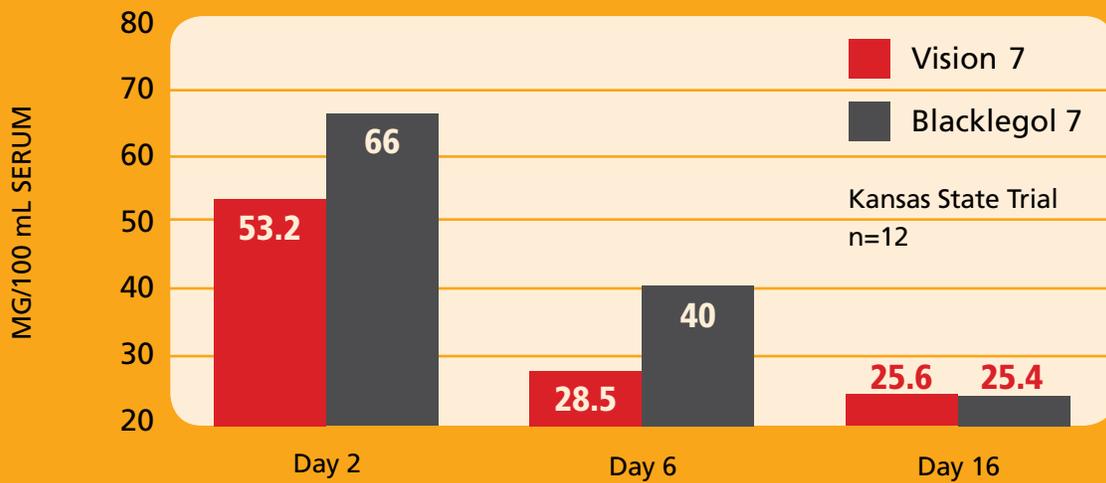
The stress of clostridial vaccination does not have to widen that “window of stress” for other diseases in an otherwise stressed animal. Veterinarians and producers now have a clear choice when choosing their clostridial vaccines.

Graph 1. Injection-Site Reactions



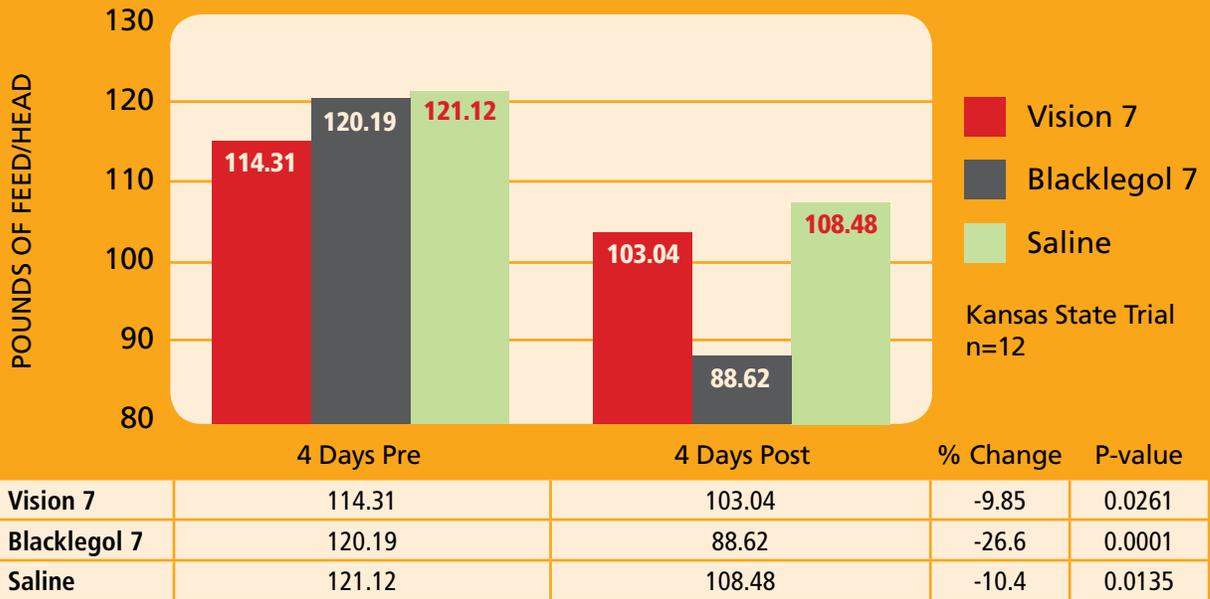
Vision 7	15.4	5.8	2.6
Blacklegol 7	24.3	8.4	4.8
P-value	0.0291		0.0132

Graph 2. Haptoglobin Levels DAYS POST INJECTION

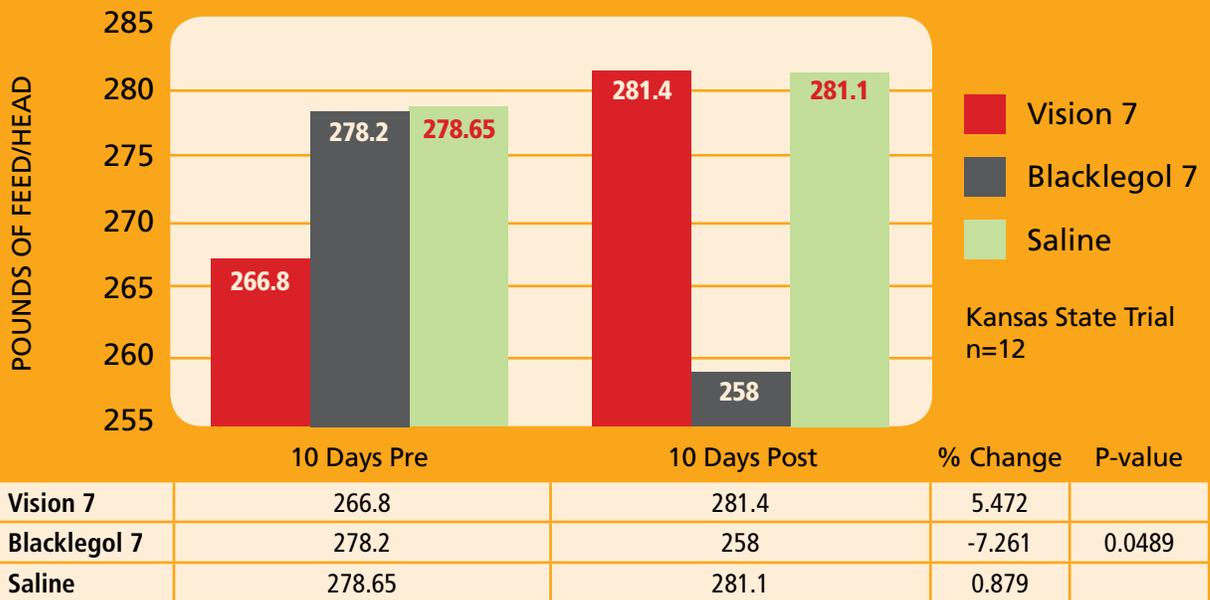


Vision 7	53.2	28.5	25.6
Blacklegol 7	66	40	25.4
P-value	0.0001	0.0002	

Graph 3. Feed Consumption 4-DAY COMPARISON



Graph 4. Feed Consumption 10-DAY COMPARISON



556 Morris Avenue • Summit, NJ 07901 • merck-animal-health-usa.com • 800-521-5767
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