Bovine Virus Diarrhea (BVD) Vaccination

Homer D. Caley, *D.V.M.*
Veterinary Clinical Sciences Bldg.
Kansas State University
Manhattan, Kansas 66508

Bovine viral diarrhea (BVD) was first reported in 1946, or approximately 30 years ago, yet there is still confusion and lack of understanding of this disease. It is difficult to find general agreement on any part of this disease entity from vaccination to titer. Despite the confusion, most people have definite opinions about the disease, including the use of vaccine.

It is true that BVD as we know it today is quite complex for it affects bovine of all ages and in different ways. Clinical signs may frequently be misleading and add to the confusion rather than provide a definite diagnosis.

In certain areas of the United States it is not recognized and some people, including a few veterinarians, do not admit that it occurs.

It is my opinion that a major portion of the resistance to the use of BVD vaccine can be traced back to the early days of recognition and control when complaints on the use of vaccine were common. An apparent reaction to the vaccine frequently resulted in problems more severe than the disease. The spectacular part of BVD gets the attention while the biggest economic loss may be the more chronic type.

A discussion on the use of BVD vaccine in feedlot replacements should be qualified. Calves of different sizes may react differently to the vaccines. Yearlings or older calves may have been vaccinated before being used as feedlot replacements. The critical age and weight in my opinion is the 350- to 450-pound animal. Material in this presentation is slanted to this weight group.

Personal experience with my own cattle, in conjunction with field trials and product evaluation, has convinced me that BVD can best be handled with a vaccination program. My presentation and the following trial results will tell you why.

Effects of Bovine Virus Diarrhea (BVD) Vaccine Administered Orally or Intramuscularly on the Performance of Stressed Steer Calves

G.V. Davis, H.K. Caley[1], and H.A. Anthony[2]

Summary

An 89-day trial was conducted with 124 stressed calves to compare oral and intramuscular administration of BVD vaccine. Blood samples taken at the start of the trial and 42 days later showed all calves sampled (10 from each treatment group) had BVD titers less than 1:4 initially. Control calves and those given BVD orally also had BVD titers less than 1:4 42 days after inoculation, but 50% of those given BVD vaccine intramuscularly had BVD titers exceeding 1:4. However, that did not influence rate of gain, feed consumption, or feed efficiency.

Introduction

The majority of feedlot cattle in southwestern Kansas receive an intramuscular inoculation of BVD vaccine when they enter feedlots. Recently, some oral BVD vaccine has been used. This trial was to compare oral and intramuscular BVD vaccine in stressed calves.

Experimental Procedure

The 89-day trial used 124 stressed steer calves to compare orally and intramuscularly administered BVD vaccine. The calves were hauled directly from a ranch in Mississippi, shrinking 9.7% in 22 hours of transit.

Loose hay was provided free-choice initially, but sparingly as calves went on ration. The ration fed consisted (as-fed basis) of 81.5% corn silage, 4.9% ground alfalfa hay, 10.2% dry-rolled wheat, and 3.4% supplement.

Blood samples were taken from 10 calves in each of the three treatment groups soon after they arrived here and 42 days later. Samples were analyzed for IBR (infectious bovine rhinotracheitis) and BVD titers.

Results and Discussion

Rate of gain, feed consumption, and feed efficiency were not influenced by BVD vaccine administration (Table 1). This was an anticipated response, as initial BVD titers indicated calves had not been previously exposed to BVD.

BVD vaccine administered orally did not increase titers at 42 days after inoculation. But when it was administered intramuscularly, five steers had BVD titers exceeding 1:4.

Sickness was held to a minimum and no calves died.

[1]Veterinarian, Extension Service, Kansas State University, Manhattan, Ks.
[2]Director of Diagnostic Laboratory, Kansas State University, Manhattan, Ks.

© Copyright American Association of Bovine Practitioners; open access distribution.

Table 1. Effect of Bovine Virus Diarrhea (BVD) Vaccine Administered Orally or Intramuscularly on Performance of Steer Calves, Garden City Branch

October 28, 1977 to January 26, 1978, 89 days

Indicated Data	BVD Vaccine		
	None	Oral	Intra-muscular
No. of steers	40	40	44
Avg. weight, lbs.			
Initial	415.7	419.4	431.5
Final	599.1	594.7	606.1
Gain	183.4	175.3	174.6
Daily gain			
0-41 days	2.23	2.22	2.13
42-89 days	1.92	1.76	1.83
0-89 days	2.06	1.97	1.96
Avg. feed consumed, lb. DM			
Daily			
0-41 days	10.43	10.23	10.67
42-89 days	16.71	16.33	15.37
0-89 days	13.81	13.52	13.21
Per lb. gain			
0-41 days	4.71	4.65	5.03
42-89 days	8.73	9.41	8.60
0-89 days	6.71	6.86	6.77
No. steers with BVD titers less than 1:4*			
0 day (vaccination)	10	10	10
42 days after vaccination	10	10	5
No. steers with IBR titers less than 1:4*			
0 day (vaccination)	5	7	8
42 days after vaccination	1	2	1
Health			
Sick calves, %	7.5	2.5	0
No. times each sick calf was treated, avg.	2.7	2.0	0
Deaths	0	0	0

*Ten calves were evaluated in each treatment group.

© Copyright American Association of Bovine Practitioners; open access distribution.