



PROFESSIONAL SERVICES

Boehringer Ingelheim Vetmedica, Inc.

TECHNICAL BULLETIN

PULMO-GUARD™ PHM-1 Studies

Key Points

Adding PULMO-GUARD™ PHM-1 to a Vaccination Regime of EXPRESS® Vaccine Reduces Mortality

- Including PULMO-GUARD™ PHM-1 vaccination significantly ($p < 0.05$) reduced mortality at one feedlot; showed no significant reduction at another feedlot.
- Neither feedlot study showed a significant difference in morbidity rates between the two vaccination programs.

Study Design

Investigator	Dr. Phil Klassen, Coaldale, Alberta Sponsored by Boehringer Ingelheim (Canada) Ltd., Vetmedica Division
Study animals	Site A: 2565 recently weaned auction sourced calves plus some recently weaned direct from ranch calves Site B: 2007 recently weaned auction sourced calves
Procedures on arrival	Site A & Site B Group 1: EXPRESS 3 & PULMO-GUARD PHM-1 Group 2: EXPRESS 3

Study Morbidity Results

Number of Head

	Site A		Site B	
	EXPRESS & PULMO-GUARD	EXPRESS	EXPRESS & PULMO-GUARD	EXPRESS
Diagnosis	1280	1285	1001	1006
BRD* Treatment 1	277	280	380	353
BRD Retreatment 1	80	78	112	120
BRD Retreatment 2	31	26	39	50
BRD chronic	10	4	7	12
Footrot	166	132	78	84
Other	56	47	68	72
Total	620	567	684	691

*BRD, bovine respiratory disease, cause undetermined in this study



Study Mortality Results

Number of Head

	Site A		Site B	
	EXPRESS & PULMO-GUARD	EXPRESS	EXPRESS & PULMO-GUARD	EXPRESS
Diagnosis	1280	1285	1001	1006
BRD	5*	11*	6	5
<i>H somnus</i>	1	2	7	4
<i>Mycoplasma bovis</i>	2*	7*	1	2
Digestive	2	5	5	2
BVD	1	0	2	5
Other	2	5	2	4
Total	13 (1.01%)	30 (2.33%)	23 (2.29%)	22 (2.18%)

*indicates significant difference at $p < 0.05$

Site A: Mortality

BRD and *Mycoplasma bovis* showed significant difference between treatments
Ranch calves - 1.35%; auction sourced calves - 3.03%.

Site B: Mortality

Treatment groups showed little difference due to *Mycoplasma bovis* or BRD

Site A & Site B: Mortality

Eight mortalities diagnosed grossly as BVD

Four of eight were persistently infected with BVD virus

4.7% of mortalities from all causes were persistently infected with BVD virus

The Bottom Line

- Inclusion of **PULMO-GUARD PHM-1** significantly reduced overall mortality and mortality due to BRD and *Mycoplasma bovis* in one feedlot but not the other.
- Why this difference occurred is unknown. With all vaccination programs, proof of significant benefit from a vaccine use depends on a challenge from an organism. When there is no challenge from the organism, a benefit is difficult to demonstrate.
- **PULMO-GUARD PHM-1** can be a beneficial vaccine in newly arriving feeder cattle when challenge is such that BRD is likely or when significant stresses are likely to trigger BRD.