Elanco

Pulmotil®

14 DAYS OF SUSTAINED BRD CONTROL IN THE PALM OF YOUR HANDS

BRD control innovation — beyond the chute

- 14-day BRD control
- In-feed group therapy
- Reduced morbidity

Pulmotil® (tilmicosin) is an innovative BRD treatment for groups of cattle in the early stages of an outbreak that provides 14 days of sustained in-feed therapy, a practice that reduces stress associated with cattle handling.*

Pulmotil®

What you can't see — the total impact of BRD

Bovine respiratory disease (BRD) is the most common disease among feedlot cattle, accounting for approximately 75% of feedlot morbidity and 50% to 70% of feedlot deaths,[1-3] costing the industry an estimated $800 to $900 million annually due to reduced feed efficiency, treatment costs and death.[4]

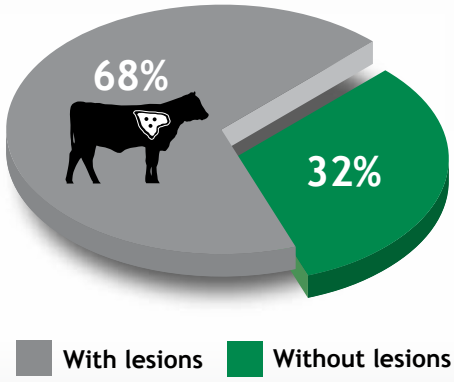
Although death loss is a primary concern, economic losses related to sick cattle escalate when considering treatment and retreatment costs, additional labor requirements for pulling and treating cattle and the associated losses in performance both during and after the illness.[5] All of these BRD-related factors can contribute to a reduction in average daily gain (ADG) by as much as 0.3 to 0.5 lbs.[5,6]

And what about subclinical cases of BRD? In a study identifying pulmonary lung lesions at harvest, 65% of the cattle in the study were untreated for BRD, yet 68% of these untreated calves had pulmonary lesions at slaughter.[7] The study suggests that a significant number of animals never diagnosed with BRD do, in fact, suffer from some degree of respiratory disease.

The cost of BRD-related labor

The cost of labor should be considered, as it comes at a premium price today. A recent survey of feedyards found that cowboy labor costs have risen 44% in six years.[8]

Percentage of lung lesions at harvest among cattle not treated for BRD[7]



0.17 lbs — the reduction in ADG during the feeding period among animals found to have pulmonary lung lesions at harvest[7]

Effective BRD control isn't just a chute-side protocol anymore

Now you have another BRD management option — a treatment program that allows you to provide 14 days of sustained in-feed therapy to groups of cattle showing early signs of BRD. Ideal for cattle not requiring a metaphylaxis treatment on arrival and/or when labor resources are limited, feeding Pulmotil means fewer pulls and less individual animal management.

Elanco Pulmotil®™

- Reduce the risk of a BRD outbreak once cattle are on-feed
- Reduce the impact of subclinical BRD and associated economic losses
- Reduce pulls with a 14-day sustained in-feed treatment
- Reduce stress associated with animal handling by utilizing an in-feed management practice

*Pulmotil is indicated for the control of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni* in groups of beef and non-lactating dairy cattle, where active BRD has been diagnosed in at least 10% of the animals in the group.

Four-study registration summary — reduced pulls[9]

Cattle were allocated to a negative control or Pulmotil treatment when 10% or more of the calves received at the study sites showed active signs of BRD. Day 0 represents when the cattle started treatment; therapy stopped at the end of day 14.

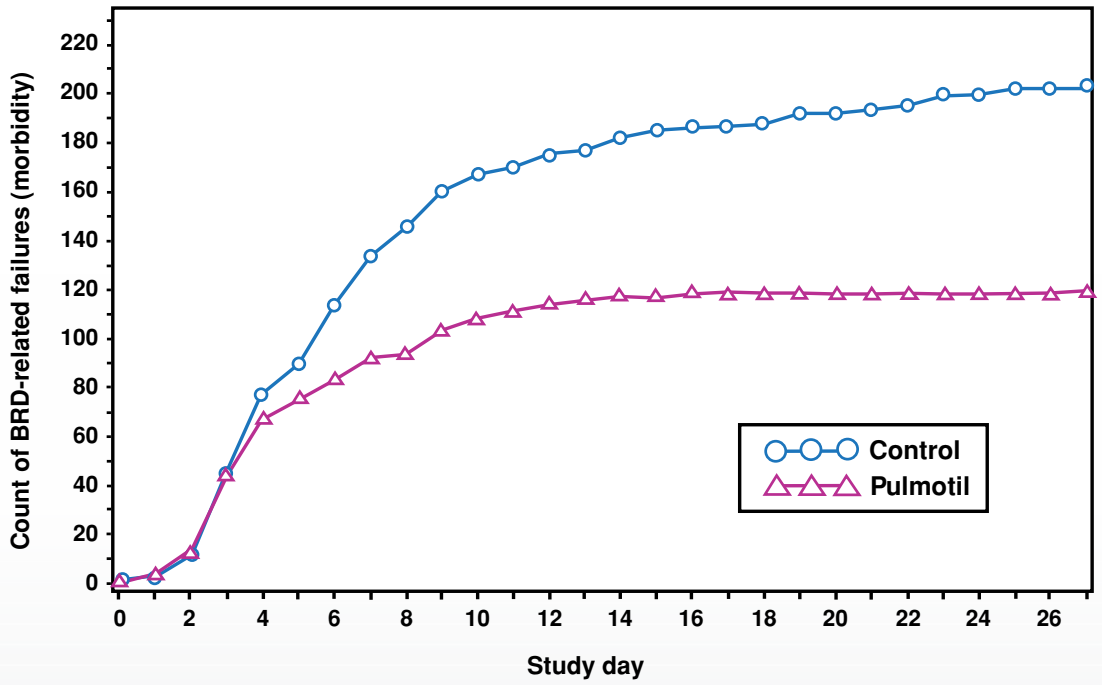
- Reduced BRD pulls (failures) by 35.6% (Table 1)
- Fewer pulls starting at day four (Graph 1)
- Reduced cumulative morbidity through day 28
- No difference in daily feed intake was observed

Table 1. Effect of feeding Pulmotil to newly received calves: four registration studies, 28-day summary

	Pulmotil dosage, mg/kg BW/day		
	0.0	12.5	*P*-value
Pens	48	48	—
Initial head	576	576	—
Initial weight, lbs*	538	537	—
Treatment success (healthy),%**	49.2	67.3	0.03
Treatment failure (morbidity), %**	50.8	32.7	0.03
BRD-related mortality rate, %**	1.06	0.88	0.80
Daily feed intake, lbs DMB**	10.9	11.0	0.34

*Arithmetic mean.
**Least squares mean.
DMB=Dry-matter basis.

Graph 1. Accumulated daily BRD-related morbidity



Overcoming the stress of **BRD MANAGEMENT** *requires* **INNOVATION**

Worried about too many pulls? With Pulmotil, controlling BRD has gotten a whole lot easier with 14 days of sustained in-feed therapy.

Using Pulmotil

To help ensure human food safety, the FDA established requirements for use of Pulmotil for the control of BRD. Be sure to work with your veterinarian to integrate Pulmotil into your BRD management program:

- Contact your veterinarian for a VFD and help developing a Pulmotil protocol once a 10% BRD diagnosis threshold has been reached in the group of cattle
- Initiate the 14-day Pulmotil treatment within the first 45 days of the production period and only in groups of cattle that have not received an injectable macrolide antibiotic
  - Injectable macrolide antibiotics can be used after the Pulmotil treatment has ended
- Pulmotil treatment can begin no sooner than 3 days following the administration of a non-macrolide injectable BRD therapy
  - If the treatment must be initiated sooner, exclude calves treated with the injectable therapy from the group receiving Pulmotil

The label contains complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.

IMPORTANT SAFETY INFORMATION

- **CAUTION:** Federal law restricts medicated feed containing this veterinary feed directive (VFD) drug to use by or on the order of a licensed veterinarian.
- Cattle intended for human consumption must not be slaughtered within 28 days of the last treatment.
- To assure both food safety and responsible use, treatment must be initiated within the first 45 days of the production period. The treatment should not occur concurrent with or following administration of an injectable macrolide, or within 3 days following administration of a non-macrolide injectable BRD therapy.
- VFD expiration date must not exceed 45 days from the time of issuance. VFDs shall not be refilled.
- Use only in cattle fed in confinement for slaughter.
- Cattle with severe clinical illness should be evaluated for individual treatment with an alternative non-macrolide therapy.
- Do not use in female dairy cattle 20 months of age or older or in veal calves.
- Safety has not been established for cattle intended for breeding.
- Do not allow horses or other equines access to feeds containing tilmicosin.

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Veterinary Feed Directive (VFD) — a coordinated effort

Similar to the prescription requirement for injectable products, a veterinarian must issue an FDA-required Veterinary Feed Directive for Pulmotil.

- The VFD process requires a coordinated effort among the producer, veterinarian, feed supplier and feed advisor
- To start the process, contact your veterinarian to establish a protocol for using Pulmotil in your operation
- We encourage you and your veterinarian to contact your Elanco sales representative for more information about how to meet the requirements for fulfilling a VFD, and to order VFD forms and a helpful quick-guide checklist

Indications & Feeding Directions

For the control of Bovine Respiratory Disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni* in groups of beef and non-lactating dairy cattle, where active BRD has been diagnosed in at least 10% of the animals in the group: Feed continuously for a single, 14-day period at 568 to 757 g/ton of tilmicosin (100% DM basis) in a Type C medicated feed as the sole ration to provide 12.5 mg/kg of body weight/day.

[1] Edwards, A. J. 1996. Respiratory Diseases of Feedlot Cattle in the Central USA. Bovine Practitioner. 30:5-7.
[2] Galyean, M. L., L. J. Perino and G. C. Duff. 1999. Interaction of Cattle Health/Immunity and Nutrition. J. Anim. Sci. 77:1120-1134.
[3] Loneragan, G. H., D. A. Dargatz, P. S. Morley and M. A. Smith. 2001. Trends in Mortality Ratios Among Cattle in US Feedlots. J. Am. Vet. Med. Assoc. 219:1122-1127.
[4] Chirase, N. K. and L. W. Greene. 2001. Dietary zinc and manganese sources administered from the fetal stage onwards affect immune response of transit stressed and virus infected offspring steer calves. Animal Feed Science and Technology. 93:217-228.
[5] Smith, R. A. 1998. Impact of Disease on Feedlot Performance: A Review. J. Anim. Sci. 76:272–274.
[6] Bateman K. G., S. W. Martin, P. E. Shewen and P. I. Menzies. 1990. An evaluation of antimicrobial therapy for undifferentiated bovine respiratory disease. Can. Vet. J. 31:689-696.
[7] Wittum T. E., N. E. Woollen, L. J. Perino and E. T. Littledike. 1996. Relationships among treatment for respiratory tract disease, pulmonary lesions evident at slaughter, and rate of weight gain in feedlot cattle. J. Am. Vet. Med. Assoc. Aug 15;209(4):814-8.
[8] Jensen, R., D. R. Mark. 2010. 2010 Nebraska Feedyard Labor Cost Benchmarks and Historical Trends. Extension Division of the Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, December: 1-24.
[9] Pulmotil 90 Freedom of Information Summary (NADA 141-064).

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