Put the benefits of Flex Dose to work in your operation.

Battle Bovine Respiratory Disease (BRD) by delivering the appropriate dose to every animal.

Micotil is indicated for the treatment of bovine respiratory disease (BRD) associated with Mannheimia haemolytica, Pasteurella multocida and Histophilus somni, and for the control of respiratory disease in cattle at high risk of developing BRD associated with Mannheimia haemolytica.

Important Safety Information
Before using this product, it is important to read the entire product insert, including the boxed human warning. Caution: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian. Not for human use. Injection of this drug in humans has been associated with fatalities. Keep out of reach of children. Do not use in automatically powered syringes. Exercise extreme caution to avoid accidental self-injection. In case of human injection, consult a physician immediately and apply ice or cold pack to injection site while avoiding direct contact with the skin. Avoid contact with eyes. Always use proper drug handling procedures to avoid accidental self-injection. Consult your veterinarian on the safe handling and use of all injectable products prior to administration. For use in cattle or sheep only. Inject subcutaneously. Injection of this antibiotic has been shown to be fatal in swine and non-human primates, and may be fatal in horses and goats. Do not use in lambs less than 15 kg body weight. Do not use in female dairy cattle 20 months of age or older. Use in lactating dairy cattle or sheep may cause milk residues. The following adverse reactions have been reported: in cattle: injection site swelling and inflammation, lameness, collapse, anaphylaxis/anaphylactoid reactions, decreased food and water consumption, and death; in sheep: dyspnea and death. Micotil has a pre-slaughter withdrawal time of 42 days.
Micotil (tilmicosin injection) is the proven, long-lasting BRD treatment that offers a flexible, cost-effective dose range for both metaphylaxis and individual pull-and-treat therapy.

How does truckload variation impact your BRD program?

Typically, when a truckload of calves comes in, we select the dose based on the average weight. Yet research has proven¹ that disease risk and animal weight within a truckload can be highly variable. Micotil is the only antibiotic approved for metaphylaxis that offers a flexible dose range to ensure that heavier or higher-risk cattle receive the most appropriate dose.

Based on an analysis of 14 truckloads purchased in an 11-day period, there was a wide range in individual body weight — from 362 lbs to 638 lbs.

- In most production settings, dosages are determined by treating to the load average — which means a percentage of cattle are not appropriately dosed*
- When considering the weight variability in a truckload, using different dosages allows for more cattle to receive the minimum required dose of 1.5 mL/cwt
- In this situation, if cattle had been dosed according to the load average, only 54 percent would have received a minimum dose of 1.5 mL/cwt
- By increasing the dose to 2 mL/cwt, 100 percent of the cattle would receive a minimum dose of 1.5 mL/cwt

* All cattle in this study were individually and accurately dosed.
Flex Dose reduces morbidity and improves economic returns

Micotil Flex Dose not only allows you to better manage on-arrival weight and disease risk variation, it can also provide increased efficacy.

Based on a Texas study\(^2\) of 1,000 high-risk heifer calves sourced from multiple sale barns, Micotil metaphylaxis at 3 mL/cwt decreased morbidity by more than 50% when compared to nontreated controls; and more than 30% compared to Micotil at 1.5 mL/cwt.

As a result of improved health, Micotil metaphylaxis at 3 mL/cwt also delivered higher net returns per head at closeout:
- $126 advantage compared to nontreated controls
- $39 advantage compared to Micotil at 1.5 mL/cwt

Table 1. Animal Health Data, Texas Trial\(^*\)

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Micotil 1.5 mL</th>
<th>Micotil 3.0 mL</th>
<th>(P)-value**</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRD morbidity, % (n)</td>
<td>34.0 (68)(^a)</td>
<td>24.3 (97)(^b)</td>
<td>16.8 (67)(^c)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>BRD mortality, % (n)</td>
<td>13.5 (27)(^a)</td>
<td>7.5 (30)(^b)</td>
<td>6.0 (24)(^b)</td>
<td>0.02</td>
</tr>
<tr>
<td>BRD removals, % (n)</td>
<td>3.5 (7)</td>
<td>2.5 (10)</td>
<td>1.5 (6)</td>
<td>0.33</td>
</tr>
<tr>
<td>Total BRD loss***, % (n)</td>
<td>17.0 (34)(^a)</td>
<td>10.0 (40)(^b)</td>
<td>7.5 (30)(^b)</td>
<td>0.01</td>
</tr>
<tr>
<td>Net return/hd</td>
<td>-41.41(^a)</td>
<td>45.19(^b)</td>
<td>84.61(^b)</td>
<td>0.02</td>
</tr>
</tbody>
</table>

\(^*\)Data presented as an arithmetic means and analyzed on a pen means basis.

\(^{**}\) \(P\)-values are from the assessment of the overall treatment effect.

\(^{***}\)Total loss = mortality + removals.

\(^{a,b,c}\) Different superscripts in same row differ \(P<0.05\).

Flex Dose also delivers more cost-effective pull-and-treat therapy

Flex Dose offers producers benefits for pull-and-treat therapy as well. In a study\(^3\) comparing Micotil at 15 mg/kg (2.25 mL/cwt) to Draxxin\(^\circledast\) (tulathromycin) at 2.5 mg/kg (1.1 mL/cwt), there was no significant difference in treatment success rate or other health outcomes. Yet treatment cost per head for Micotil was significantly less than Draxxin — $17.79 versus $23.34.

Table 2. Animal Health Data, Micotil vs. Draxxin

<table>
<thead>
<tr>
<th>Item</th>
<th>Micotil</th>
<th>Draxxin</th>
<th>Diff</th>
<th>SE</th>
<th>(P)-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number calves (pens)</td>
<td>100 (10)</td>
<td>100 (10)</td>
<td>0.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRD morbidity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment success, %</td>
<td>78.00</td>
<td>82.00</td>
<td>4.00</td>
<td>0.50</td>
<td>0.63</td>
</tr>
<tr>
<td>Treatment failure, %</td>
<td>10.00</td>
<td>11.00</td>
<td>1.00</td>
<td>0.60</td>
<td>0.90</td>
</tr>
<tr>
<td>Treatment relapse, %</td>
<td>13.00</td>
<td>8.00</td>
<td>5.00</td>
<td>0.48</td>
<td>0.28</td>
</tr>
<tr>
<td>New episode, %</td>
<td>1.00</td>
<td>1.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.97</td>
</tr>
<tr>
<td>Treatment costs/head, $**</td>
<td>17.79</td>
<td>23.34</td>
<td>5.55</td>
<td>1.51</td>
<td>0.002</td>
</tr>
<tr>
<td>BRD mortality, %</td>
<td>1.00</td>
<td>0.00</td>
<td>1.00</td>
<td>3.16</td>
<td>0.97</td>
</tr>
</tbody>
</table>

\(^*\)LS means

\(^{**}\) Treatment costs based on study location actual market value antibiotic costs for first line and retreat therapies.

See label on back for complete use information, including boxed human warnings and non-target species safety information.

Proven BRD management tool

Thirty-five trials\(^4\) (22,640 head) representing a wide range of cattle types, sources and production systems demonstrate that Micotil metaphylaxis continues to be an effective, highly consistent BRD management tool.

Safe handling and use training and resources

To help ensure safe handling and use of all injectable products, Elanco offers veterinarians and producers a complete training curriculum, including bilingual tools. To learn more or to set up an on-site safety training, contact your Elanco sales representative.
Put the benefits of Flex Dose to work on your operation

- **Micotil** is the only antibiotic that offers a flexible dose range for metaphylaxis to ensure that heavier or higher-risk cattle receive the most appropriate dose.
- **Micotil Flex Dose** not only allows you to better manage on-arrival animal weight and disease risk variation, it can also provide improved efficacy.
- **Micotil Flex Dose** also delivers more cost-effective pull-and-treat therapy as compared to Draxxin.

As your y and your veterinarian assess BRD risk in your cattle to determine the most appropriate dose, be sure to consider the following factors and their impact on disease severity:

- **Age**
- **Weaning status**
- **Source (single or commingled)**
- **Transportation time**
- **Nutrition status**
- **Preconditioning history**
- **Appearance**
- **Weather conditions**

**Elanco**

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