

FDA approval for use of Rumensin in calves and heifers

- Rumensin is approved for the control and prevention of coccidiosis
- Rumensin is approved for increased rate of weight gain
- Rumensin meets the U.S. Food and Drug Administration's stringent standards for efficacy and safety
- On average, Rumensin provides a 7:1 return on investment in calves and heifers



Coccidiosis in dairy calves and heifers^{1,2}

What is coccidiosis?

Coccidiosis is an infection of the large and small intestines caused by protozoan parasites. In the host animal's intestinal cells, coccidia undergo developmental, reproductive cycles (see *life-cycle diagram on reverse*).

How do animals get coccidiosis?

- Infected animals shed infective oocysts in feces
- Non-infected animals become infected by consuming oocysts from fecal-contaminated pasture, feed, water, bedding and by grooming contaminated hair coats
- Protozoan parasites may remain dormant for weeks or months in soil, water and vegetation, thriving in a moist, moderate, airy environment



How does coccidiosis affect cattle?

- Coccidiosis can decrease weight gain
- The infection destroys cells lining the lower GI tract, causing a reduction in nutrient absorption, thereby reducing feed efficiency

What are some of the signs?

- Diarrhea (watery to sometimes bloody), fecal soiling on the tail
- Dehydration, reduced feed intake, weakness, depression

How do you diagnose coccidiosis?

- Most direct and effective diagnosis is through microscopic examination of feces from suspect animals to determine presence of coccidia oocysts and quantitative evaluation of oocysts per gram of feces
- Keys to successful diagnoses:
 - If mortalities occur, conduct a complete postmortem examination
 - Sample multiple animals immediately when diarrhea appears
 - Repeat sampling

What animals are at a high risk of developing coccidiosis?

- Calves after 3 weeks of age and up to 6 months are most vulnerable
 - Most outbreaks are prevalent in animals younger than 1 year
- Over-crowded/confined animals (freestall barns, feedlots, small pastures)
- Animals in "stressful" situations: weaning, pen moves, shipping, diet/weather changes
 - Infections are frequent during management changes and temperature fluctuations
- Animals not provided with an effective coccidiosis control program or without an effective ionophore included in their diet

Economic impact: The cost of coccidiosis worldwide is estimated at \$400 million (US)

Cost estimate includes animal death loss to coccidiosis, veterinary expenses and treatment of clinical coccidiosis, but does not include losses due to subtle impaired growth, impacts on feed efficiency, and effects of subclinical coccidiosis.

(Jolley and Bardsley, 2006)

How much Rumensin do my calves and heifers need for proper protection?

Calf and heifer claim:

For control and prevention of coccidiosis and for increased rate of weight gain.

Dose recommendation for calves:

Approved range for coccidiosis prevention and control in calves: 0.14 – 1.0 mg Rumensin/lb of body weight

Dose recommendation for heifers:

Approved range for coccidiosis prevention and control in heifers: 0.14 – 0.42 mg Rumensin/lb of body weight

Recommend with confidence

Producers depend on your expertise, so recommend Rumensin with the assurance that you're helping them give their calves and heifers their very best start toward a lifetime of productivity.

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

For additional product information or to report a suspected adverse event associated with the use of this product, call (800) 428-4441.

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Rumensin

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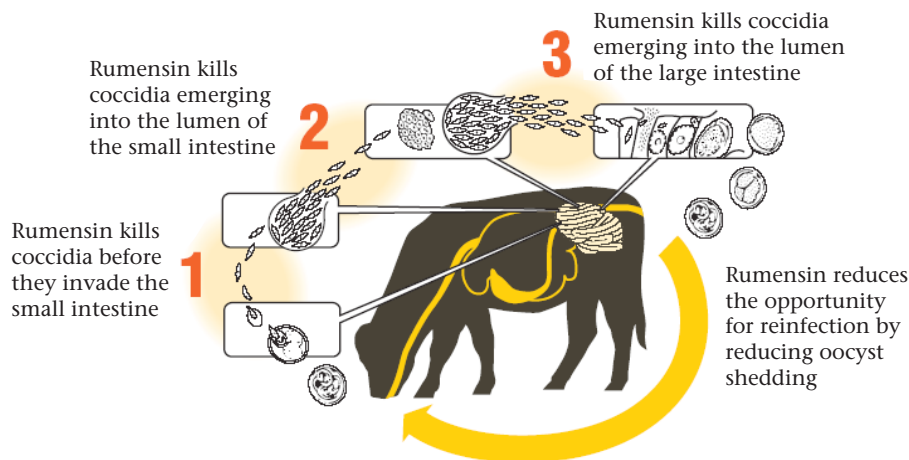
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Prevention is key

How can producers prevent coccidiosis in their replacement animals?

- Limit fecal-to-oral transmission of the coccidiosis parasite through environmental management
 - Minimize exposure of animals to fecal-contaminated feed, water, and soil
 - Routinely clean maternity pens for early prevention
 - All-in/all-out hutch management (clean, relocate hutches between calves)
 - Minimize contact between calves
 - People in contact with calves should routinely wash boots, clothing
 - Prevent overgrazing of pastures
 - Raise water troughs above the ground
- Isolate animals with severe clinical signs (severe diarrhea, dehydration)
- Include Rumensin in the calf starter to prevent coccidiosis "breaks"

Rumensin provides continuous coccidiosis prevention through three different stages in the coccidian life cycle^{3,4}



Options for control and treatment: coccidicidal vs. coccidiostatic

Agents are either coccidicidal (cidal), which means they KILL the parasite, or coccidiostatic (static), which do not kill the parasites, but arrest their development. With coccidiostatic treatment, the live parasites will still be present in the calf's intestines.

Agent	Killing action ^{5,6}	Trade name
Monensin	<i>cidal</i>	Rumensin®
Lasalocid	<i>cidal</i>	Bovatec®
Amprolium	<i>cidal</i>	Corid®
Decoquinat	<i>static</i>	Deccox®

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Rumensin controls the protozoan population by killing the coccidiosis parasites.

Information summarized from:

¹ Dauschies, A and M Najdrowski. Eimeriosis in cattle: current understanding. *J. Vet. Med. B.* 52:417-427, 2005.

² Jolley, WR and KD Bardsley. Ruminant coccidiosis. *Vet. Clin. Food Anim.* 22:613-621, 2006.

³ McDougald, LR. Chemotherapy of coccidiosis. IN: *The Biology of the Coccidia*, ed. PL Long, University Park Press, Baltimore. 373-427, 1982.

⁴ Long, PL and TK Jeffers. Studies on the stage of action of ionophorous antibiotics against Eimeria. *J. Parasitol.* 68:363, 1982.

⁵ Ernst, JV and GW Benz. Intestinal coccidiosis in cattle. *Veterinary Clinic of North America: Food Animal Practice.* 2:283, 1989.

⁶ Merrick's Tech Bulletin # 6RMC0811, 2006.