

# Calf Notes.com

---

## ***Calf Note #32 – Coccidiostats in Calf Starters***

**Introduction.** Coccidiostats are widely used to reduce the effects of coccidial infections in young calves. There are three primary coccidiostats used in calf starters. They are (in alphabetical order):

- Bovatec<sup>®</sup> is fed at 1 mg/kg of BW to prevent coccidial infections.
- Deccox<sup>®</sup> ([Deccox technical page](#)) is fed at 22.7 mg of Deccox per 100 lb of body weight (0.5 mg/kg BW) for 28 days to prevent infection by coccidia.
- Rumensin<sup>®</sup>, a product of Elanco Animal Health (For more technical info on this product, see the Elanco Animal Health [Products Page](#)). It is mixed with feed at 10 to 30 grams/ton of feed to prevent infection by coccidia.

There are several good reviews of coccidial infections and the actions of coccidiostats and products to treat coccidiosis (see list below). So only a brief review of the effects of coccidia and coccidiostats in young dairy calves will be presented here. Coccidia are internal parasites of the species *Eimeria* that infect many types of animals, including dairy cattle. Signs of coccidiosis are diarrhea (sometimes bloody), loss of appetite, loss of body weight, and in severe cases, death. Much of the damage done by coccidia occurs before clinical signs are apparent. Coccidia grow inside the intestinal cells of animals and cause extensive damage to the intestine during their growth. This intestinal damage reduces digestibility, causes scours, and reduces the appetite of the calf.

The best method of minimizing the effects of coccidiosis is prevention. This can be accomplished by a combination of hygiene and use of a coccidiostat in feed or water. Why put coccidiostats in calf starter? There are several very good reasons.

- It's easy. Most (if not all) commercial calf starters can be manufactured to contain a coccidiostat.
- It's cheap. The cost of the coccidiostat in starters is only pennies a day. It's an excellent investment to prevent infections by coccidia.
- You can't easily *stop* the spread of coccidiosis on many farms once it has become established on the farm, so use of coccidiostats is important.
- Much (some estimates say >90%) of the economic loss caused by coccidiosis occurs in animals with *subclinical cases* - which are extremely difficult to detect. Thus, prevention of coccidiosis by using a coccidiostat is the best option.
- Some coccidiostats (lasalocid and monensin) also act as *ionophores* in the animal - increasing feed efficiency and body weight gain.

So, what's the down side? The biggest problems associated with use of coccidiostats is that of predicting intake. Young dairy calves often don't begin consuming significant amounts of calf starter (>1 lb or 454 grams per day) until they are 3 to 4 weeks of age (later in the case of sick or weak calves). Of course, calf starter intake depends on availability of water, feed management, quality of

the starter, amount of milk or milk replacer fed, and several other factors. Feed companies determine the amount of drug to include in their feed by estimating the intake of feed, expected size of the calf, further processing the feed will undergo (e.g., mixing with corn or other grain), and age of calves that will be fed. This complicated set of estimates results in a concentration of drug per unit of feed. Usually, this corresponds to 30 to 50 mg of drug/kg of feed. For example, let's say your calves weigh 150 lb (68 kg). To get a sufficient dosage of Bovatec (1 mg/kg of BW), they must consume 68 mg of Bovatec/day. If the feed contains 40 mg Bovatec/kg of feed, then the calf has to consume  $68 / 40 = 1.7$  kg of feed per day to get an effective dose of the drug. Similar calculations can be done for Deccox or Rumensin.

If your calves don't consume sufficient feed to get the effective dose of the drug, then the risk of coccidial infection is increased. Some research suggests that coccidiostats can impair intake of starter at high levels. Thus, the amount of coccidiostat in a starter cannot be too high, or the calves won't eat it. It's important to understand that simply buying a medicated feed will not control coccidiosis - the calves must consume an adequate amount of the drug to be effective against coccidia. So, proper feed management is critical to ensure that calves eat enough starter at an early enough age to provide protection.

Which coccidiostat is best? This is a question that I'm often asked at meetings and conferences. All three compounds are effective in preventing coccidiosis. Some research indicates an advantage of one coccidiostat or another (depending on the study), but no one product has been shown to be consistently better than another. Bovatec, Deccox, and Rumensin can all be effective. The choice should depend on availability, price, and ease of delivery. Purchasing a commercial calf starter containing a coccidiostat is by far the easiest and safest choice.

Providing medicated calf starter to prevent coccidiosis makes good economic sense. If your farm has a history of coccidial infection, then you should use a coccidiostat in your calf feeding program.

---

For a more complete review of internal parasites, coccidial infections and the actions of ionophores, see:

- "[Calf Note #17 - A review of coccidiosis in calves](#)" from Mr. Glendon Sinks, University of Tennessee
- "[Fact Sheet No. 10: Bovine Coccidiosis](#)" by Dr. John Maas of Univ. of California, Davis School of Veterinary Medicine.
- The Deccox coccidiosis [FAQ page](#).
- "[Common Internal Parasites of Cattle](#)" by Dr. Robert M. Corwin and Richard F. Randle of the College of Veterinary Medicine, University of Missouri
- "[Internal Parasite Control in Cattle](#)" by Dr. James E. Strickland, Extension Veterinary Science, University of Georgia.

**Written by Dr. Jim Quigley (03 December 1997).**  
©2001 by Dr. Jim Quigley  
Calf Notes.com (<http://www.calfnotes.com>)