

CALVING EASE

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Coccidiostats and Murphy's Law

Coccidiosis

Coccidiosis is the name we give to the disease caused by coccidia. Coccidia are microscopic parasites. There are at least thirteen different species that infect cattle. The two most common ones that cause coccidiosis in heifers are *Eimeria bovis* and *Eimeria zuernii*.

Coccidia eggs called oocysts are present on nearly every dairy farm. They are very hardy. Extremes of hot and cold don't kill them. Many of them survive when disinfectants are sprayed on calf hutches and in barns. It is extremely difficult to prevent exposure to any coccidia. Good sanitation procedures can substantially reduce the numbers of coccidia to which heifers are exposed.

By one way or another heifers get the coccidia eggs or oocysts in their mouths. The oocysts open inside the intestines and multiply. This growth damages the lining of the intestine. The immune system's ability to fight off other diseases is depressed. Efficiency of feed conversion is lowered.

Coccidiostats*

Coccidiostats are chemicals commonly added to calf feeds. They control the growth of coccidia inside the heifer.

In order to be effective the heifer must consume them. In addition, the coccidiostats must be consumed at a rate related to the body weight of the heifer. As the heifer grows the amount eaten must increase in order to effectively control coccidial growth. Also, they must be fed daily. They do not have a residual effect that carries over from day to day.

Enter Murphy's Law

Murphy's law states that if anything can go wrong, it will. Examples are (1) if a gate can be left open, it will be left open; (2) if a milk transfer pump motor can burn out, it will burn out (at 5 AM on a Sunday morning); (3) if a coccidiostat can be fed incorrectly, it will be fed incorrectly.

How does Murphy's law apply to coccidiostat use? First, the heifers must consume the coccidiostat for it to control coccidial growth.

Young calves commonly have a consumption problem. They are not yet eating very much medicated calf starter. Frequently the feed medication level requires starter consumption well in excess of a pound or quart per day for minimal control. These young calves need another source of coccidiostat to prevent coccidiosis. The most common solution is to medicate the milk or milk replacer.

Post-weaning calves are another group with consumption problems. Often as they move into group housing the feed is changed, too. It's common for these heifers to have depressed feed intakes for three to seven days. Even if the medication is in the ration at the proper level, uneaten feed can't provide coccidial control. Avoid changing housing and feed at the same time.

Second, the heifers must consume the coccidiostat every day for continuous control of coccidial growth. Breaks in medication allow newly ingested oocysts to establish themselves in the gut and allow maturing coccidia to multiply.

The most important rule in using coccidiostats is to always keep extra on

hand. Also, if using a milk replacer medicated with a coccidiostat always check when a new supply is delivered. Be sure that the "medicated" product actually contains the coccidiostat rather than an antibiotic additive. If a TMR is being fed talk with the person running the feeding equipment. He or she needs to know how important it is that the coccidiostat is added every day. And, that includes his or her day off when a substitute is doing the feeding.

Third, the heifers must consume an adequate amount of coccidiostat in relation to their weight for effective control of coccidial growth.

Among preweaned calves the medication rate for liquid feed is often set for the youngest and smallest calves. If the same quantity of milk or milk replacer is fed to all calves regardless of size then as calves grow the chance of under-medicating increases. The same risk is present among older heifers, too. The medication rate in a grower pellet is often set for the amount fed to two or three hundred pound heifers. If the same quantity of medicated grower pellets continues to be fed regardless of size then as heifers grow the chance of under-medicating increases.

* Coccidiostat is used here to refer to products that either kill or slow the growth of coccidia.

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