

Coccidiosis Management for Dairy Calves and Heifers

- **The nearly all of our calves in their first week of life will be exposed an infective dose of coccidia oocysts.**
- **Reducing shedding of oocysts is an effective control measure.**
- **Coccidia infections, called coccidiosis, may begin to decrease feed efficiency as early as the first week of life.**
- **Immunity to coccidia comes from successful response of calves' immune system, not from colostrum.**
- **Successful immune response to coccidia depends on limiting the infection and keeping the calves well fed and healthy.**
- **Treating all calves with coccidiostatic drugs to limit infections before some of them get sick is more cost effective than waiting to treat the clinically ill calves.**

All dairy animals infected with coccidia shed parasite eggs or oocysts in their feces. Shedding by adult cows peaks at the time of calving. Shedding by infected calves often peaks in the range of 18 to 22 days of age. The peak numbers of oocysts shed per day by untreated infected calves in one study was 50,000,000 on day 21 of age. In the same study the average calf produce an estimated 143,000,000 oocysts between 18 and 22 days old. Unfortunately, these oocysts have excellent survival capability. They usually are capable of causing infection a year or more after they are shed.

Because the chances of infection go up with the number of oocysts that go into the mouths of heifers we know that less exposure to coccidia oocysts is better than more. How to cut exposure? Reduce shedding!

Tips for reducing shedding

“Shedding” is the process where an infected heifer passes eggs (sporulated oocysts) in her feces. Dr. Sheila McGuirk (University of Wisconsin School of Veterinary Medicine) made up a short list of management practices that have been shown effective in reducing shedding.

- Clean, well-bedded resting space for calves.
- Optimize ventilation in the barn and calf or heifer pens.
- Provide adequate feed space per animal.
- Minimize weight and age variation between animals in the group.

Sam Leadley, Calf & Heifer Management Specialist smleadley@yahoo.com
www.atticacows.com Calves with Sam blog at dairycalfcare.blogspot.com

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- Avoid feeding on the ground unless it is at a bunk.
- Provide 12" of linear water space per 10 animals.
- Treat infected animals.
- Maximize time between successive occupants of the same pen.

It's all a numbers game. Controlling shedding, even in a pen of heifers that seem "healthy," cuts exposure. Lower exposure levels mean better feed conversion rates.

Keys to lower infection rates

At any given level of exposure to oocysts there are management strategies that will reduce the severity of infections. These include:

- Reduce stress at weaning by using a “step-down” method of cutting back on milk rather than abruptly stopping milk feeding.
- Adopt heat abatement practices such as better use of natural ventilation and/or mechanical ventilation.
- When possible, avoid exposing calves and heifers to multiple stressors at the same time. Spread out over several weeks stressors like vaccinating, dehorning, ration changes, grouping changes, pen changes and loading animals on and off of trailers.
- Plan ahead to reduce crowding. Once cows are pregnant we know when calves are going to be born and it is easy to predict when we will have to take action to reduce crowding either as milk-fed calves or transition heifers.
- Provide a regular, daily source of medicine to control the growth of coccidia. Work with the herd veterinarian to identify the preferred medication and route of administration (blended into liquid ration, mixed with grain ration, mixed with TMR).
- Monitor supplies of coccidiostatic medications so that there are no lapses in treatment. And routinely check each delivery of milk replacer, medicated grain and mineral mix to confirm that the desired medication was included at the prescribed rate.
- Monitor calf and heifer care workers to be certain coccidiostatic medications are always provided every day – substitute workers are as well trained as those who provide daily care.

Infections and Treatment

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www.atticacows.com Calves with Sam blog at dairycalfcare.blogspot.com

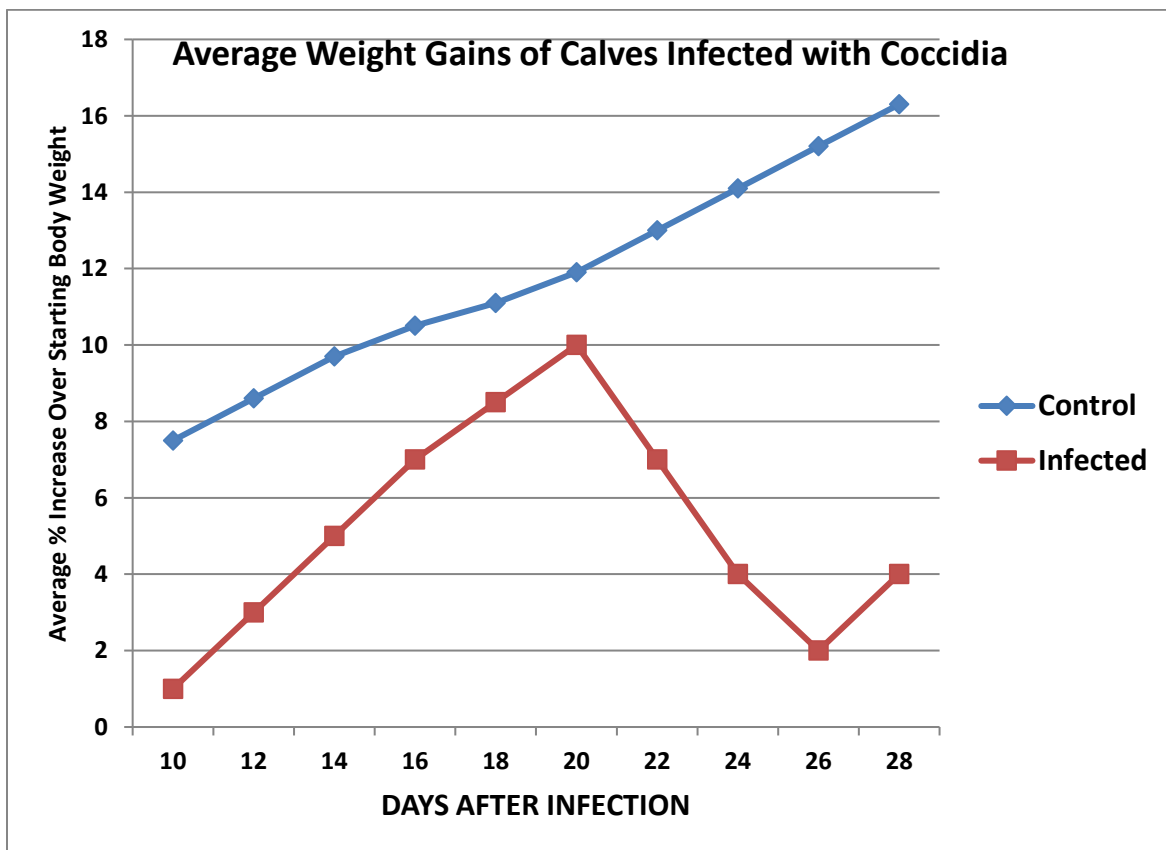
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Studies show that calves vary widely in their ability to resist a coccidia infection. Thus, what may be an infective dose for one calf may not result in an infection in the next calf. This variation does not come from coccidia-specific antibodies in colostrum. The immunity present at birth will start to protect the calf against coccidia. But, the calf has to be fed enough energy and protein to support a strong immune response. That means plenty of clean colostrum at birth. It means feeding a seasonally-appropriate quantity of clean milk/milk replacer every day.

Given that some calves will successfully resist having coccidiosis while other will get sick, then we have to decide how to medicate the calves.

Do we treat all of them early in life before some of them become ill?

Or, do we wait until the susceptible calves become ill and treat only those? Note in the chart below how much less the infected calves gained



compared to the uninfected control group as early as 10 days after the experimental exposure to coccidia.

Start treatment early in life.

Talk with your herd veterinarian about the alternative products available to keep coccidia under control among your calves and heifers.

Also remember that immunity to coccidia may be compromised among stressed animals. Additional care needs to be taken to prevent these stress-related infections.

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