



Herd Health Bulletin

Bovine Intestinal Parasites

Dr. Paul Dettloff- Staff Veterinarian

The bovine's digestive system is inhabited by many species of parasites. The development of clinical signs of internal parasites can depend on many factors, which I will cover below:

1. Climatic Conditions- This factor can be variable. The Pacific coastal Northwest, where it hardly ever freezes and is quite damp and wet, is a perfect environment for parasites, parasite eggs and larvae. Compare this to Northern Maine, Vermont, New York, Minnesota and Wisconsin, where it can get to minus twenty-five + below zero with deep snow. Parasite eggs and larvae do not do well under these conditions.
2. Age of the animal is an important issue. Older adult animals do seem to develop a level of immunity and protection. Parasites are protein and may impart some immunity. Young animals under one year, are the most susceptible to parasites. One could say you should concentrate your efforts on anything under two years of age. Older cows will have a small parasite load, if they are in good health-that is like a symbiotic relationship.
3. Season of year. It has been found that a lot of internal parasites are seasonal egg layers- particularly in the spring. In January, a few quiet non-egg-laying nematodes may be in the intestine. Now, if you remove 90% of these with an anthelmintic, the remaining 10% will then go into a super egg laying spree to repopulate. Remember Mother Nature, Survival of the Fittest and Natural Selection- it still works folks. You would have been better to let the giant sleep in January.
4. Nutritional level is always the key to survival. It always has been and always will be and we tend to forget it. If you have a protein deficient, vitamin deficient, mineral deficient, thin, weak animal- parasites will eliminate that animal- and they should. This is Nature's culling system. Give a well-fed, well-nutritionally balanced animal the same parasite challenge, and it won't phase it, as it will have the ability to ward off any bad stressful effects as it is do nutritionally strong with lots of reserves for all its systems.
5. Sanitary Conditions- this is just common sense. With the advent of the bobcat industry, where one handy implement is used for everything from delivering feed to manure disposal, we have to be aware that most of the internal parasites still use the fecal-oral route to infect their hosts. The concentration of animals in a small space also concentrates your parasite load into a small space. Modern agriculture has forgotten the fecal-oral connection. With good manure control, whether it is composting or a dry manure pack, always be aware of your route of

infection and try to minimize the exposure. A clean environment reduces the infection rate. Using barn lime liberally in pens and stalls after clean out is very inexpensive. Calcium Carbonate (lime) CaCO_3 is a drying agent that kills worm eggs and larvae. Most dairy farms need calcium in their soils anyway, so use the lime or include it in your clean-out procedures. It is simple and very inexpensive. Use every trick you can to minimize your exposure.

6. Genetic Resistance- Here is an issue we have totally ignored in our high-tech dairy world. The reason we have ignored it in the dairy industry is the U.S., is that our high-production, high-input, high turnover herds have never left us with extra replacements for proper culling. Technology has done our culling over the last four decades. Everything that lived to breeding age was saved, as you needed them just to maintain herd size. I will site a personal experience my wife and I had in Australia:

We were in a pasture looking at 166 Friesian, Normande, Jersey and Swedish Red milk cows that had many crosses and many mixtures in them. They were the tamest animals I had ever seen. The owner could walk up to most of them and lean on them while they were grazing. Because of their 12-month grazing and very low mortality rate, they expect a total of 8 calves from every animal that calves. This allows them to cull for many things including wild acting animals. Any high strung, fence jumper, kicking animal is gone. She is simply not tolerated. Any calf that gets sick from much of anything or has too many problems is culled. They want strong trouble-free animals. They are assisting natural selection. Mr. Wilco Van Eck, the Australian farmer, then mentioned his young heifers from last year all went through a lungworm attack last summer. Lungworms are common in warm, moist, mild climates. He did mention that his Swedish Red crosses, that he had in the group, did not pick up lungworms, they showed no signs. He was seeing a genetic resistance to lungworms.

When an organic farm gets the system rolling with good soils, high quality forage and healthy closed herds, I think we build a system that is not conducive to parasites. We have a lot of the organic industry that is still in its infancy as we are growing. I think it will be interesting to see the changes in these “young organic operations” after the model has been working for ten years.

In conclusion, look at the six variables and improve on them, as they will all help reduce parasitism.

When I talk internal intestinal parasites, they include *Haemonchus*, *Ostertagia* and *Trichostrongylus*. Their life cycles are similar, and they all operate by sucking blood from the intestinal wall. They all are usually found together at different levels, and may be a profit reducing factor depending upon the severity and strength of the animal.

I question if whole herd worming on a healthy, high-forage herd is economical. One has to look at the body condition and hair coat. If you've got a 5-6 year old cow in excellent condition and when she calves she has a nice slick hair coat, I wonder if we are doing any good by messing up the natural selection of Nature. Give special attention to the young

animals, especially the yearlings. If they look rough, with poor hair coats and are a little pale in the membrane, then you might want to get on them. In the temperate areas, the best months to worm are May and October. The seasonal egg layers are waking up and the pasture season is starting and ending then.

Now, if you are in the Southern and Northwestern areas, your pasturing is nearly all year and you would want to coincide your worming with your grazing schedule. You folks will also experience more of a challenge so you may want to watch your young stock a little closer and worm more often as needed.

What products do you use? I know Ivomec has been approved by the NOP for severe cases, and you must check with your certifier. I have some reservations with a drug that has an effect for 200 days. It is not approved for lactating animals. For those of you that can use it, I would only consider it as a last resort. The practice of a low level of D.E (Diatomaceous Earth) in the feed has been shown to be quite ineffective. It has also been postulated that the D.E. is a non-specific absorbent of trace minerals and we may be doing ourselves a disservice by sending them out to the gutter. D.E. was one of the very early tools found to be useful in organics and we may have new mousetraps now.

Such products as Walnut Hulls, which are very high in tannins, work systemically. Also, walnut leaves are high tannin and are absorbed very fast. Elecampane Root and Wormwood Root both are excellent wormers. There are a lot of combinations being introduced that all have worming properties. Some combine then with D.E. Most give the wormers orally for three days and then re-worm in three weeks. There will be more products introduced in the future. Find yourself one that works for you and watch your young stock and timing.

Counting eggs as to the amount of worm infestation is a misnomer. If you catch a few worms in a super ovulation stage, you will see a lot of eggs. Conversely, if you have a pretty good worm load that is not laying eggs in a dormant state, you may think that the animal is clean. I contacted the Wisconsin State Lab to do before and after egg counts and they discouraged me and said that it is not relevant to what you have. Also, the amount of feces is so great that you may have a dilution factor or timing factor. Unless you do the entire day's feces quantitatively, you do not get an accurate picture of the level of parasite infestation.

The graziers that are going for a bio-diverse plant population are going in the right direction for parasite control. If you could expose the bovine to the entire bio-diverse plant population that could possibly grow in your climate, the bovine would seek out what she needs to worm herself. We need to exit from the monoculture, high-tech dairy world we are in, and get back to bio-diversity and natural selection. We would all be healthier for it.