

‘So, what’s new?’

Angela Daniels | Updated: November 1, 2012

This was the start of a conversation that I have had with my regular Monday morning client for the past several years. I’d shrug and say “Nothin’, how about with you?”

But whenever I would return from my annual American Association of Bovine Practitioners meeting, I never got off that easily. There has always been a responsibility on my part to pass along information that I learned at the meeting to this particular client. His thought process was that if I needed to miss a weekly herd check, it had better benefit him in some way.

Now that I’m on maternity leave, I miss those conversations and the chance to pass along my knowledge. I know my client is reading, so here are my updates about new calf information presented.

I hope that you will benefit as well...

There was some very good information originating from the University of Minnesota from Godden, et. al. confirming some thought processes on heat-treated colostrum.

Previous studies have shown that batch pasteurizers used to heat colostrum for two hours at 140 degrees F would significantly reduce the amount of bacteria in the colostrums without lowering the IgG concentrations. But there had not been any data to show that calf performance and health would also improve. We were left wondering if batch pasteurizing was worth the investment.

Six randomized trials were conducted in Minnesota and Wisconsin with more than 1,000 calves evaluated. On each trial, the calves received either heat-treated colostrum or fresh colostrum. IgG levels were evaluated and compared between the groups. Calves fed heat-treated colostrum had significantly higher serum IgG concentrations than the calves fed fresh colostrum. Not surprisingly, the risk for a calf receiving a scours treatment or any other treatment event was also significantly higher in the fresh colostrums group compared to the heat-treated group. Total plate counts were monitored on all colostrum samples to determine the bacteria load. Using a statistical method called path analysis, there was a cause-and-effect relationship between the lower risk of illness and the heat-treated process.

A follow-up study was done to determine if there were any detrimental effects of heat-treatment on the nutritional and immune factors in the heat-treated colostrum. Colostrum samples were split and one sample was heat-treated, then analyzed, while the other was analyzed fresh. Laboratory tests determined dry matter, true protein, crude fat, lactose, solids not fat, other solids, insulin, lactoferrin, IGF, IgG, pH, total plate count, total coliform count and somatic cell count. With the exception of bacteria counts (the total plate count and total coliform count), there was no treatment difference in the measured parameters. As expected, both bacteria counts were significantly lower in the heat-treated colostrums compared to the fresh colostrum.

Researchers had expected that the somatic cell count may be lower in heat-treated colostrum. Therefore, more testing was done to determine if the white blood cells (somatic cells) were viable. So, the IgG levels, total white blood cell counts, viable white blood cell counts, percent viable white blood cell counts, total plate counts, total coliform counts, and alkaline phosphatase activity were analyzed. They did find that the white blood cell viability was significantly reduced in the heat-treated colostrum versus the fresh colostrum. Based on the first trial focusing on health, the effect of lowered viable white blood cells does not appear as important as the health benefits gained by heat treatment. More research needs to be done on the function and purpose of white blood cells in colostrum. It was also noted that the measurement of alkaline phosphatase was not a good indication of heat treatment if used as a parameter for monitoring colostrum heat-treatment programs.

So, Joost, you might consider buying a batch pasteurizer for your dairy if you are looking for a tax writeoff this year. It looks like it can improve your calf morbidity. Yes, I know how bad milk prices are, I'm just sayin'...

Angela M. Daniels is a veterinarian with Circle H Headquarters LLC, a dairy and swine veterinary practice, food safety laboratory and DHIA milk-testing and contract research organization in Dalhart, Texas.