

CALVING EASE

September 2006

Sam Leadley, Attica Veterinary Associates

Feeding Immunoglobulins

Is it profitable to feed immunoglobulins (Ig) after the first day of a calf's life? Well, it depends on the cost, in money and labor, and the benefits we expect from feeding Ig's to our calves.

Potential benefits of feeding immunoglobulins

When we feed immunoglobulins (Ig) to a calf after the first twenty-four hours of life we cannot expect to see increases in the Ig levels in the blood. The transfer process from gut to blood ended at one day of age.

However, Ig's fed to very young calves can have other benefits. By bathing the lining of the gut with these antibodies (Ig's), we may keep undesirable bacteria from attaching to these intestinal cells. The fewer "bad" bacteria that attach to the gut lining, the lower the chances of scours (enteric disease).

A secondary benefit of reducing the amount of bacterial colonization in the gut is that more immune resources are available to battle other pathogens. For example, calf raisers that regularly feed excess colostrum and/or transition milk during the first week often report that cryptosporidiosis events are less intense and shorter in duration.

Research on the effects of feeding Ig's has resulted in inconsistent findings. Sometimes calf health is the same between the control and treatment groups. Other times the calves fed Ig's have better health than the control calves. The probable cause of these inconsistencies is the level of pathogen exposure from one research setting to another.

The current interpretation of this research is that under conditions of significant pathogen exposure, feeding Ig's will result in measurable reductions in scours and generally better calf health.

My best guess is that if a calf operation has a scours treatment rate of less than ten percent (that is, calves treated with electrolytes and/or antibiotics) there probably will be only a small reduction in treatment rates if Ig's are added to the ration. If treatment rates are in the range of thirty to sixty percent, adding Ig's to the ration at least for seven to ten days could result in decreases in treatments of one-third to two-thirds.

Cost of feeding immunoglobulins

If the current colostrum management program has an excess of clean (low bacteria count) colostrum already on hand, this is probably the least expensive source of Ig's. If colostrum is graded on Ig concentration (cow versus heifer colostrum, Colostrometer), then the lower quality colostrum can be fed out on days two through seven. Remember that colostrum is twenty-five percent solids. This is about double the twelve to thirteen percent solids in whole milk. After the second day it is a good idea to just add colostrum to the milk or milk replacer that you are feeding. I have added about one pint per calf per day with good results.

Some dairies find it practical to collect second through fourth milkings from fresh dams. This milk, called transition milk, is about fifteen to eighteen percent solids and much, much higher in Ig's than either milk replacer or salable milk from the bulk tank. It is a challenge to keep the bacteria count low in transition milk. If it can be fed within thirty minutes after it is collected the bacteria count usually is acceptably low. If transition milk must be chilled to avoid excessive bacterial contamination and then reheated for feeding then addition expense is incurred beyond the labor involved in collecting it.

Plasma is another source of Ig's. A commercial product, Gammulin®, is available to feed very young calves. The manufacturer recommends feeding small amounts (one to two ounces) daily during the first seven to ten days. This is practical to do if the milk or milk replacer for that age group of calves can be managed separately from the product prepared for the remainder of preweaned calves. The recommended use also includes reducing the amount of product fed in several steps at the end of feeding rather than abrupt termination. Managing this step-down phase is an important factor to consider when evaluating whether or not to use this source of Ig's.

Balancing the Benefits and Costs

If the current scours control program success rate is too low, then it makes sense to adopt strategies to fix the problem. Depending on the severity of the problem, feeding immunoglobulins may be a cost-effective strategy to explore. Depending on the dairy's situation, the cost of Ig's may vary widely from farm to farm.

For some calf raisers the use of sub therapeutic antibiotics to control high rates of scours is not acceptable. In addition to measures to reduce pathogen exposure, they prefer to use nutraceutical control methods such as immunoglobulins and oligosaccharides. For these producers the choice between antibiotics and nutraceuticals is not based solely on the balance between reductions in scours rates and costs.

If you know of someone that doesn't currently receive **Calving Ease** but would like to, tell them to **WRITE** to **Calving Ease**, 11047 River Road, Pavilion, NY 14525 or to **CALL** 585-591-2660 (Attica Vet Assoc. office) or **FAX** (585-591-2898) or **e-mail** calvingease@rochester.rr.com. A limited number of back issues may be accessed on the Internet at either www.atticacows.com or www.calfnotes.com and clicking on the link, Calving Ease.

Our thanks to Intervet for sponsoring this issue of Calving Ease.