You Can Manage Only What You Measure!
Improving Treatment Effectiveness

Scours:

- **How long after birth are calves receiving their first feeding of colostrum?**
- **How much colostrum are calves receiving at their first feeding?**
- **Is the first-feeding colostrum uniformly of high quality?**
- **Is the first-feeding colostrum uniformly low in bacteria content as fed?**
- **Do we have a protocol that everyone uses to diagnose treatable cases of scours (diarrhoea)?**
- **Do we record calf ID, severity of symptoms, drug, dose and duration of treatment for each calf receiving antibiotics for diarrhoea symptoms?**
- **Do we regularly summarize treatment records to identify the most effective treatment procedures?**

Pneumonia:

- **Do we have a procedure that everyone uses to diagnose respiratory illness (pneumonia)?**
- **Do we record calf ID, severity of symptoms, drug, dose and duration of treatment for each calf treated for respiratory illness?**
- **Do we regularly review treatment records to identify the most effective treatment procedures?**

Do you think that the title of this issue is probably an overstatement? I am going to argue that when you do not have the facts about your calf enterprise you are only "muddling through" rather than managing.

Example Number 1: Managing scours (diarrhoea)

How much do we really know about our calf enterprise? How many calves are getting their first feeding of colostrum within the first few hours of life (percent)? Is this written down anywhere? If we keep this record, how recently have we reviewed these facts so that they are usable information? Remember, we lose about 40% of the calf's ability to absorb antibodies when the first feeding comes more than six hours after birth.

How much colostrum are the calves actually consuming? For example, the farm protocol may say that every calf receives 3.5 litres of colostrum in the first six hours. How closely is this procedure being followed? In practice, are the calves born at night assumed to have suckled their

Sam Leadley, Calf & Heifer Management Specialist
Shirley Macmillan, United Kingdom Editor
smleadley@yahoo.com www.atticacows.com

dam? And, then these calves are not fed any colostrum until the next regular calf feeding time? Remember, calves cannot absorb antibodies that have not been fed.

Are we assuming that all colostrum that "looks good" has a sufficient concentration of antibodies for successful passive transfer of immunity? Even in a well-vaccinated herd it has been estimated that as many as 25% of cows give poor quality colostrum. While the low quality colostrum is still great nutritionally, it does need to be supplemented if that is all that is available to be fed. Remember, for a given volume fed, antibody transfer works better with high rather than low quality colostrum. Quality can be checked on-farm very quickly using a Brix refractometer - for more on this method go to www.calffacts.com, scroll down the alphabetical list to "Refractometer: Use for testing colostrum."

Does our calf enterprise track colostrum cleanliness? This is a key piece of information for quality control in calf care. Recent experiences in a number of states emphasize for me the universal challenge of feeding clean colostrum. Even samples from well-managed dairy farms will be contaminated with enough coliform bacteria to predict treatable cases of scours. As an aside, this is a challenge when feeding colostrum replacer, too.

If your farm has not submitted colostrum samples for bacterial culturing within the past six months, now is the time to do it. Using a sterile milk sample bottle (just like the ones used by the tanker driver), from the end of a tube feeder or nipple bottle just as you are ready to feed colostrum to a newborn calf collect half a sample bottle of colostrum. Freeze it. Have it cultured asking for both species and quantity. Coliform bacteria counts over 5,000cfu/ml are not good – for a resource on bacteria standards go to www.calffacts.com, select the "Metric" version at the top of the page, then scroll down the alphabetical list to "Colostrum: Coliform Bacteria Standards for Calf Health."

Remember, contaminated colostrum hits calves twice. First, they may transfer some the bacteria directly into their blood. Second, many bad bacteria will attach to the lining of the gut ready to make trouble for weeks.

To achieve uniformity in scours diagnosis it may be helpful to use the chart at this web site: http://www.vetmed.wisc.edu/dms/fapm/fapmtools/8calf/calf_health_scoring_chart.pdf . Scroll to the bottom of the second page for scours pictures.

Improving the effectiveness of our treatment protocols is a great goal, however this is not easy.

Example Number 2: Calves treated for pneumonia.

Are too many calves being treated for pneumonia? How effective is the treatment protocol? How many calves treated for pneumonia are requiring re-treatment?

Sam Leadley, Calf & Heifer Management Specialist
Shirley Macmillan, United Kingdom Editor
smleadley@yahoo.com www.atticacows.com

Do we have a procedure that everyone uses when diagnosing pneumonia? If you have not given this much thought, consider Dr. McGuirk's (University of Wisconsin) diagnostic scoring system with pictures. It is located at this web site: http://www.vetmed.wisc.edu/dms/fapm/fapmtools/8calf/calf_respiratory_scoring_chart.pdf **See the second page for pictures of healthy and sick calves.** Early diagnosis of pneumonia and timely treatment are keys to full recovery. Also, it is a best management practice to work with the herd vet to set farm-specific thresholds for starting treatment of sick calves.

How complete are our records? We need to write down details for each calf diagnosed with pneumonia [for example, ID, severity of symptoms, treatment given]. These facts along with the age of the calf when she was treated need to be reviewed regularly to give us useful information. Examples are:

- Percent of calves treated one or more times between birth and weaning.
- Percent of calves being retreated for pneumonia.
- For an individual antibiotic, percent of calves successfully recovering from pneumonia.

I like to summarize treatments by age, too.

- In winter many cases around two weeks of age may point to inadequate energy from milk or milk replacer for environmental conditions. Too little energy for too long results in low resistance to pneumonia.
- Many cases around four weeks old may point to inadequate coccidia control. Subclinical coccidiosis leads to low resistance to pneumonia.
- Many pneumonia treatments right around weaning suggests inappropriate weaning management.

Bottom line?
Collecting and recording good reliable facts and reviewing them to make useful information leads to good management. We can manage only what we measure.

Sam Leadley, Calf & Heifer Management Specialist
Shirley Macmillan, United Kingdom Editor
smleadley@yahoo.com www.atticacows.com