



INFORMATION TO IMPROVE THE BOTTOM LINE!

LAMENESS IN DAIRY COWS

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Dairy cow lameness is major problem on some Ontario dairy farms. Not only have new problems that cause lameness appeared in the last 10 to 12 years, it also appears that old problems have been resurrected and are "new" again. While there is still a need for a major survey of the extent and impact of lameness in Ontario herds, from producer and veterinary comments it seems that more herds are recognizing lameness as a major bottleneck in the success of their operations. Some farms are affected much more severely than others, suggesting that there are important differences between farms that we need to discover to protect cows from lameness and operations from loss of production.

Lameness impacts on production and reproductive performance. We need to take this problem seriously so that we can keep cows healthy and improve many aspects of dairy production. We can get pretty frustrated looking for solutions to poor performance when lameness problems remain unresolved.

The housing systems for dairy cattle that we have created have increased foot problems and lameness. We need to fix the problem we have unknowingly caused on some farms.



How Common is Lameness?

In a survey done in British Columbia in 2001, all cows in 20 herds had their feet examined. The researchers found that 624 cows had evidence of a foot problem. Every herd had at least one cow showing some kind of a problem. The average percentage of cows affected within each herd was 85.7%, with it ranging from 53.7% to 100%. "Severe" problems were found in 34.9% of cows, with a range 7.3% to 74.1% per herd. Most problems (54.9%), were found in the outside claw of the hind foot.

A study in France in 1996 looked at 121 cows with visible problems in their feet. The researchers followed the production of the cows after they had examined the feet. They found that 55% of the cows with the visible problems had no decrease in production, 19% showed a decrease in milk that lasted less than 5 weeks, while 26% showed a decrease in milk for longer than 5 weeks (range of loss was from 11 to 27 weeks). The median production loss (middle between the highest and the lowest losses) was 440 kg. This study tells us that while the production of some cows was only mildly affected by lameness, one in five cows with foot problems suffered lower production for 4 to 6 months, or about half the lactation.

In 2001 an intensive study of lameness where 2,500 cows on two farms in the U.S. were followed for one and a half years. Amazingly, 40% to 50% of cows were treated at least once during that lactation for lameness. When the lame half of each of the herds was compared to their non-lame herd mates it was found that lame cows produced 2.6 kg of milk less per day for the entire lactation. In a herd with cows producing 30 litres/cow per day, that's about a 10% production loss. This is milk that is not made by the cow, even though the feed is there, she occupies a stall and has to be looked after just like the rest. Lameness quickly becomes a very costly disease. It especially hurts if the prevention could be done relatively cheaply.

Lameness Affects Feeding Behavior

It makes sense that cows with sore feet don't get up to eat as much and in a freestall situation the impact on feed intake will be magnified. A New York study backs this up. In one herd, lame cows ate fewer meals than their non-lame herd mates. However, when the dry matter intakes (DMI) of the individual cows was compared there was no difference between the two groups. This means that to "keep up" on DMI the non-lame cows had to eat bigger meals. I be late to

LAMENESS *Continued from Page 1*

Even though these cows were fed a totally mixed ration (TMR) these cows were slug feeding - something we know we want to avoid because of its negative effect on rumen health. It may be that the lamer a cow is, the sicker her rumen becomes. When she is lame she will be late to the bunk, easily shoved aside and not likely come as often as she should. Once they are lame, cows have great difficulty in meeting their requirements for production, they lose weight rapidly, and have a greater risk of prolonged feeding related lameness.

This behaviour impact is further confirmed by the measurements of the time the cows laid in the stalls. Lame cows lay longer in stalls (408 minutes/day) compared to the non-lame cows that averaged 280 minutes lying in stalls per day.

Lameness Affects Reproductive Performance

Reproductive performance is also measurably affected by lameness and not just in the ways you might expect. Lameness has been shown to be an indirect cause of ovarian cysts.

A 2001 study of 3,000 cows in a Florida herd compared reproductive performance among lame and non-lame cows. These researchers found that 30.8% of the lame cows were culled very early in lactation, before any reproduction event such as a heat or a breeding, could be recorded. Only 5.4% of the non-lame cows were culled during the same interval. When they looked at all the reproductive problems in the herd they found that the lame cows were almost three times more likely to develop ovarian cysts than the non-lame cows. When they tallied all the reproduction statistics at the end of the study period they found that the non-lame cows had been over four times more likely to conceive at first service. Overall, lame cows were only half as likely to conceive during the 480 day study period.

It is be pretty frustrating to try to solve this kind of poor reproductive performance with costly hormone programs or intense breeding protocols when lameness is the true bottleneck!

Common Types of Lameness in Ontario Cows

Lameness in Ontario cows falls into two main categories - the type that is caused by infection such as Digital Dermatitis (Strawberry Foot, Hairy Heel Warts, Mortellaro) and Interdigital Dermatitis (Stable Foot rot or Pasture Foot Rot), including all the management problems that allow bacteria to multiply and the type that is associated with feeding problems that cause poor rumen health called Metabolic Hoof Horn Disease. We need to accurately recognize what the true type of the lameness is that we are dealing with in individual cows and in problem herd situations. Only then can we apply the right treatments and take the right steps to prevent future cases.

Common sense recommendations to avoid infection-related lameness

- Keep the feet clean and dry
- Don't buy infected cattle
- Separate and treat new cattle before introducing them to the home herd - get your veterinarian's advice on the best protocol for your herd

- Monitor foot problems carefully by picking the feet up and examining them closely so you can accurately tell when new problems occur. Be able to recognize what each kind of hoof infection looks like. Don't guess and try a non-specific treatment.
- Use routine preventive practices, specific to your herd and your herd's problem, as advised by your herd veterinarian

Common sense recommendations to avoid metabolic hoof horn disease

- Fibre needs to be in the ration in the correct amounts - *check ration formulation*
- Fibre in the ration needs to be eaten as predicted by all cows - *prevent sorting*
- Herds with lameness need special sorting solutions
- CHO needs to be in the ration in the correct amounts - *check ration formulation*
- CHO in the ration needs to be eaten as predicted by all cows - *avoid slug feeding*

Hoof Trimming

Hoof trimming needs to be done more frequently in housed dairy cattle than is often done currently in many herds. At the bare minimum most participants in the workshops felt that a hoof trimmer should be on the farm at least twice per year. Most cows will get by with this kind of a program, however some producers felt very strongly that some problem cows would need much more frequent trimming to prevent problems. Additionally, newly lame cows would require additional trimming between the main visits.

There was much discussion about when to trim cows. It probably can be summarized at this point by saying that it depends on the operation. For some herds, trimming at least once during the dry period, before anticipated fresh cow lameness problems, was critical. This was usually accompanied by a second trimming near or just after peak lactation (60 days). For others, trimming times based on season were a priority. Much of this will depend on the housing and cleaning system in each operation.

Increasing the frequency of hoof trimming is needed when Metabolic Hoof Horn Disease is present or when feet are constantly in wet conditions. Both of these conditions increase the rate of hoof horn growth. The buildup of sole under the heels of affected cows for them is like you walking with a pebble in your shoe. Trimming relieves this pain and reduces the pressure on the already abnormal and damaged sole.

All Ontario dairy herds should have a formal trimming schedule and program developed in concert with a reputable hoof trimmer and their veterinarian. Documenting the problems found in individual cows is also a service some hoof trimmers offer that will greatly help to describe the types of problems a particular herd commonly has and when they occur. This can be a big help in finding the right solution to a costly, insidious lameness problem.

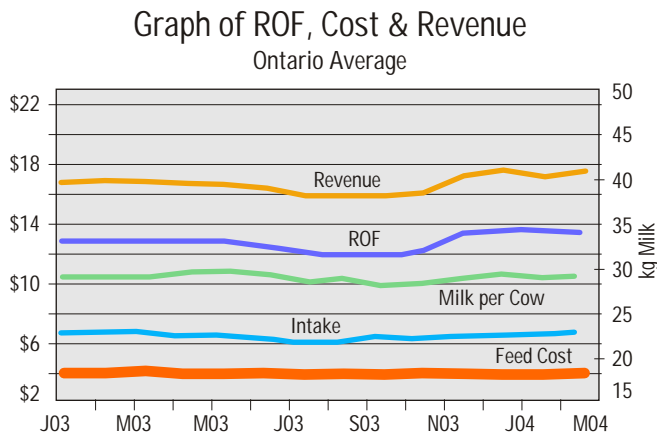
This was an excerpt from a more detailed article. More information on each of these specific types of lameness can be obtained from your veterinarian or by contacting the author at (519) 846-3409 or by contacting Canwest DHI.

ROF RELATIONSHIPS

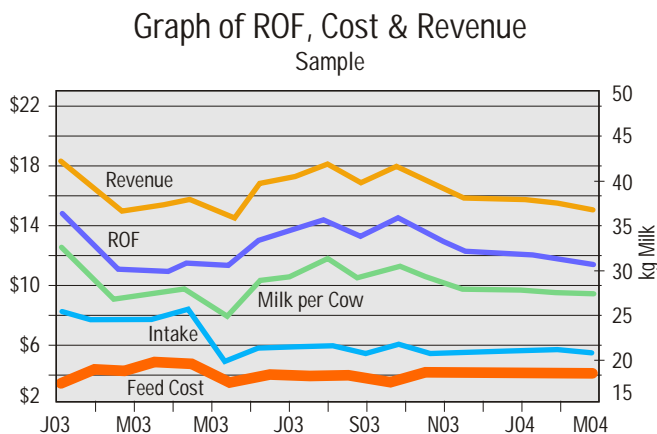
In past newsletters, we have provided charts and tables that showed the relationship of ROF to other management practices. We will continue to provide benchmarks because the real value of ROF is knowing the dollar impact of herd management changes. In this newsletter, there is a series of graphs that show the relationship of various herd management measures and practices. Some may show minimal impact while others show a definite trend. Take a look at them and then at your own operation. Profitable management is focusing on items that have the greatest impact on profitability. Other items have less priority.

Relationship Over Time

This graph compares revenue, ROF and feed cost (left axis) and milk/cow and intake (right axis) for the last 14 months (most recent is at the right). Notice the relationship between milk/cow, revenue and ROF and the consistency over time of intake and cost. Also notice the drop in the summer months.



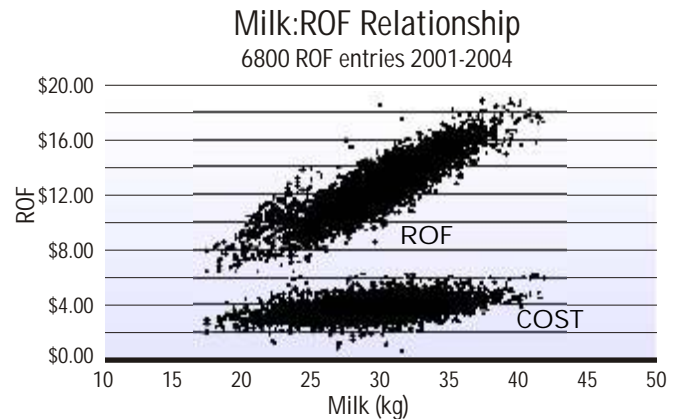
When we look at averages, things seem relatively consistent. However, with individuals, there is much more variation. The next graph is an individual herd where the variation is more apparent. The value of the difference between the highest and lowest ROF in this herd amounted to the equivalent of \$5,590 for a 50 cow herd/month. How much does your herd vary? What can be done to prevent this from happening.



The next few graphs are “Scatter Graphs”. They show the relationship of each of the 6,800 herd tests as a single point. The “scatter” of all the points shows a trend. Where a section of the graph appears to be one solid color, that is where many points are on that same coordinate.

Relationship of Production to Cost and ROF

The next chart shows the relationship between ROF and feed cost and milk/cow. Both graphs are on the same scale with milk/cow on the bottom and the dollar value on the left. Notice that there is a very definite relationship between MILK and ROF but not as much between cost and milk production.

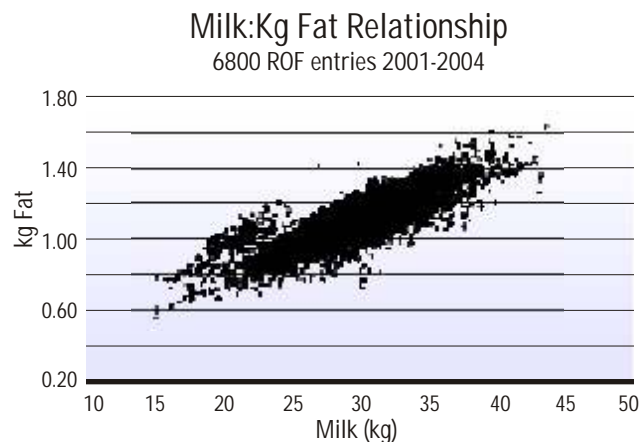
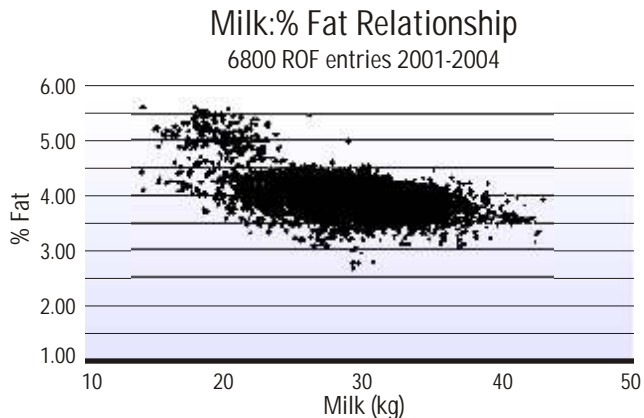


Milk Components

The next graphs concern the components compared to the milk/cow. As milk/cow increases, do components decrease? These graphs show BF compared to milk - both as % and as kg fat. There is a definite relationship between the total fat produced and total milk produced. However the relationship between % fat and milk production is not as well defined. (These tests show all herd tests and the higher % fat at lower milk production is probably the Jersey tests)

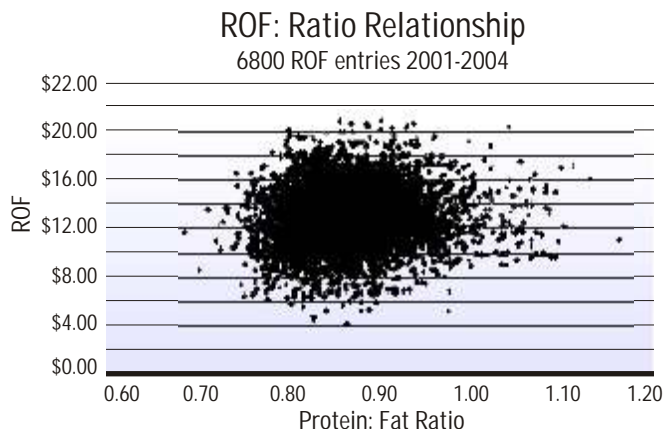
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It seems to me that the goal would be to concentrate on getting more milk/cow and the fat production (which you are paid for) will follow. It usually follows that more total milk equals more total protein to sell as well.



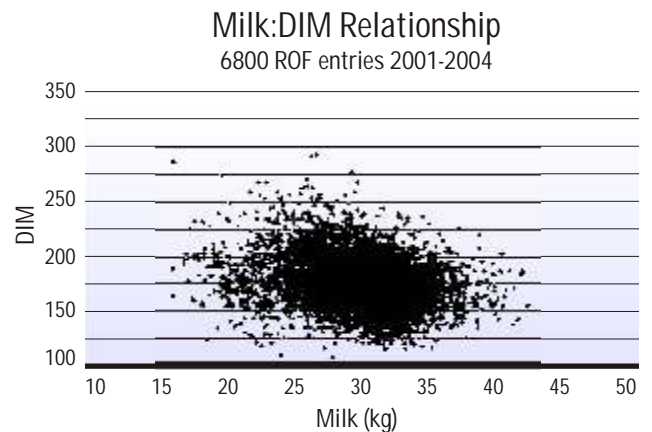
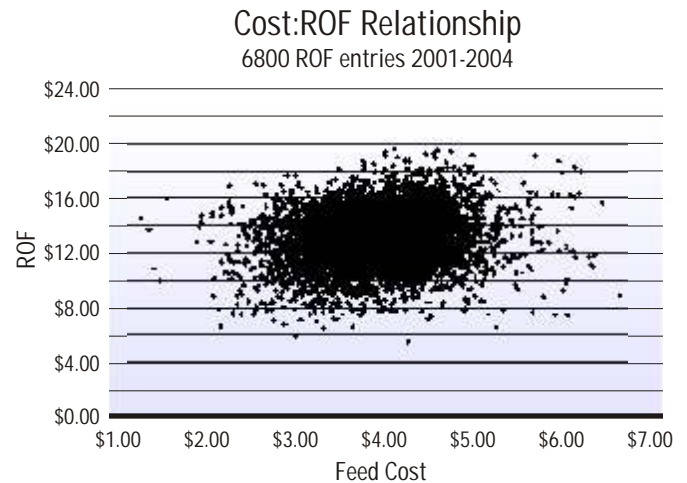
The comparison of the Protein:Fat ratio and the ROF/cow shows while it is true there is profit within quota rules in increasing this ratio, the relationship between the ratio and the profit/cow does not seem to be as sharply defined as we might expect.

The few tests that have a ratio above 1.0 show a bit of an increase in profit/cow as defined by ROF. However, the nutritional and health implications such as possible acidosis and laminitis that go with high ratio may cost much more in the long run than is gained now.



Other Relationships

Lastly, compare ROF and cost. There does not seem to be any real relationship even though there is a significant range in cost. Similarly, comparing milk/cow and DIM shows more range in milk at a given DIM (or vice versa) than any trend that may develop. For example, there is more than 100 DIM range at 30 kg milk and more than 15 kg milk range at 175 DIM. While we expect to have lower milk as DIM advances, there are still a lot of herds that have good production at higher DIM.



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