



Tangible Assets

Doubtless, 2009 will go down in most of our histories as the year of fear and soul searching. One of my clients commented to me that the second week of April was the worst week of his life. He is a young WCB supplier!

Some deep soul searching will be occurring on many dairy farms this year. Not wanting to throw salt in the wound, but it is from these experiences we grow as efficient producers of milk. Nothing fertilizes the mind like adversity. As mentioned last month, this review of our businesses and production methods must be free from emotions, guided by objective analysis of our farm management and activities to assess where we make profit, where we lose money, and what investment will return.

Within this context, the subject I want to broach is calf rearing; but avoiding all clichés like, “calves are our herd’s future”, which we all know, but don’t provoke management changes. Our goal must be to raise better heifers and lower the cost. By better heifers I’m referring to calving down a 24 month old heifer (Holstein) at 600 kgs live weight – and it can be done. Anything less and we’ve limited that animal’s life production potential and significantly reduced our farms profitability. We would never pay for a brand new tractor that had 4000 hours on the clock. We are eager to criticise management outside our farm gate, but extremely tolerant of our own.

Over the last two years’ calf articles I’ve presented significant material, trial and research data, on the impact of both quality and quantity of colostrum administered to new born calves: four litres within 12 hours of birth. Anything less and we’ve already shortened her productive life. Most farmers are now very quick to eartag calves for obvious reasons. Take colostrum with you and tube feed the calf there and then. No other detail will add to your farm’s viability than this. Good immunoglobulin transfer has lifetime impacts in productivity, and has immediate impacts on calf survival, growth potential and health costs.

The two most common causes of calf deaths are pneumonia and scours. Colostrum is our first and best defence. Although immune transfer has major influence in both these causes, sound management of facilities must accompany good colostrum administration. Clean, dry pens serviced with clean fresh water and grain. Most sick calves actually die of starvation rather than the disease, but sustaining energy intake in debilitated calves is a challenge that requires considerable labour/time cost.

Sand is the best bedding to minimise bacterial growth. Sand (preferably beach sand) has no organic matter in it, drains well, and so does not support bacteria growth. Straw is the worst

bedding as it encourages consumption of the straw which can be bacteria laden, but also is detrimental to rumen development. Saw dust is both a carrier of bacteria and an incubator for bacteria growth. Rice hulls are probably the next best option after sand. Dryness of bedding is the gold standard in all cases.

Clean drinkers supplied with fresh water and fresh grain daily need to be at opposite ends of the pen to minimise cross-contamination. Labour is by far the greatest cost in raising calves, so optimum response to feed dollars is paramount in reducing this cost. Calves are the most valuable animals on the farm, have the greatest potential for feed conversion, and hence highest return on feed dollars.

The most economic calf is the one weaned by 6 weeks of age. Feed cost, labour cost and capital cost (shedding) are all minimised at 6 week weaning. The essential and enabling factor to 6 week weaning is rumen function. When the rumen can digest solid feed, milk and its associated labour and capital costs are eliminated, and these are significant.

Rumen development is maximised by grain consumption. Forage (hay or straw) limits rumen development and nutrient (energy/protein) up-take. Only grain produces the right VFA's to stimulate rumen papillae development, the absorption sites for nutrient. Further, research at Cornell University demonstrated significant difference between pelleted calf feed and mash (milled grain mixes). Table below.

Table 1. Effects of physical form of calf starter on performance

| | Pelleted | Mash |
|------------------------------------|----------|------|
| Daily gain, 5 to 8 wks, kgs. | 0.5 | 0.64 |
| Daily gain, 0 to 8 wks, kgs. | 0.32 | 0.41 |
| Starter intake, 5 to 8 weeks, kgs. | 39 | 51 |
| Starter intake, 0 to 8 weeks, kgs. | 48 | 61 |
| Week 1st ruminating | 6 | 3.7 |
| % of time ruminating | 8.7 | 21 |
| Rumen pH | 5 | 5.4 |
| Papillae length, cm | 2.9 | 3.5 |

The Cornell work revealed mash calf meal (milled grain mixes) improved weight gains both prior and after weaning. Greater meal intake (higher nutrient intake), earlier ruminating and more time spent ruminating. The calves that were autopsied had higher rumen pH, longer papillae and higher percent muscle/mucosa; all indicators of rumen maturity, performance and growth potential. Lifetime production must be considered in cost minimisation.

Newer data indicates that improved daily gain without fattening before weaning is associated with higher first-lactation milk yield. Minimising milk fed to calves by early weaning, and attention to protein/energy balance in calf meal will foster this goal. Indications are that even at such a young age, critical mammary gland development is taking place. Fat heifers never milk well due to fat deposition in, and poorly developed, mammary systems.