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Negative Energy Balance Post-Calving

Lead Feeding springing cows with a sound Dietary Cation/Anion Difference (DCAD) for 21 days is so well documented in research work conducted by Drs Ian Lean and Peter DeGaris in Australian herds, that it should be standard practice. As mentioned last month, I believe the greatest cause of failure to achieve this is accurate calving dates to ensure cows are on Lead Feed for the full 21 days. Herein lays the real problem: the capacity to have accurate calving dates in most Australian herds.

Only herds that practice 100% artificial insemination are going to be able to easily pregnancy test at 4 to 5 weeks post-joining. It is possible, using heat detection aids, to monitor and record natural matings and then pregnancy test at 4 to 5 weeks if no further observations of heat activity are made. This would require real commitment of the dairyperson, but I'm sure the economic returns would well justify the effort. The two graphs below verify this from the perspective of both milk production and metabolic disease prevention (both clinical and sub-clinical).

Figure 1: Days on Lead Feed
Vs First Test Day Milk

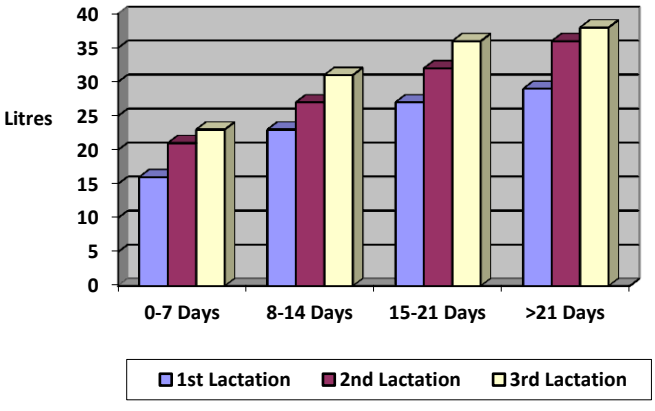
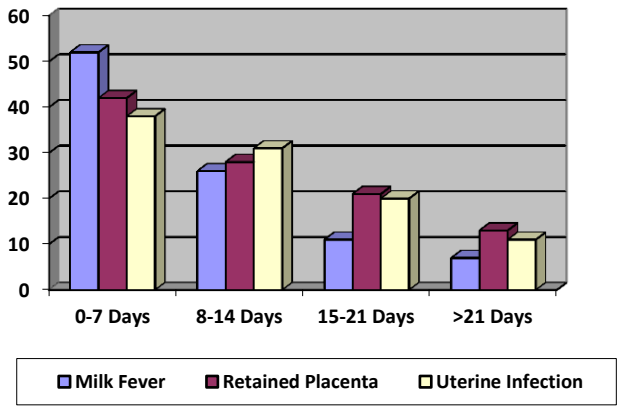


Figure 2: Days on Lead Feed
Vs Incidence Metabolic Disease.



Negative energy balance occurs when energy intake is less than energy consumed in producing milk plus allowance for cow maintenance. Mobilization of body fat must balance the equation. Moderate fat mobilization is normal and sustainable without inducing health issues and metabolic diseases of milk fever, ketosis, uterine infection and displaced abomasum.
Sub-clinical milk fever and ketosis are far more costly than clinical cases which are visible and treated; both will bring on immune deficiency symptoms mostly commonly verified in elevated cell count and clinical mastitis. As input costs have been reduced over the last two years I have been confronted with unprecedented incidence of "mid-lactation" milk fever. There is little doubt in my mind that in reality, it is both milk fever and ketosis as they are rarely separated, one will induce the other. A cow suffering with sub-clinical metabolic disease will not make a profit in that lactation. Heifers are prime candidates for sub-clinical metabolic disease-induced poor performance in both production and reproduction, and I suspect, too frequently are culled as a result; another major profit loss.

The second major cause of negative energy balance post-calving is low dry matter intake. Although I'm addressing it as a separate issue, it is mostly precipitated by inadequate lead feeding programs; time on lead feed as the graphs show. It can also be due to simply lack of quality (nutrient dense) feeds available immediately post-calving. This has been common in recent (dry) years in all but spring calving cows due to very limited pasture available and no compensating nutrient dense feeds.

We have, over the last few years, attempted to meet the needs of fresh cows through autumn/winter by extending our summer cropping plans to run well into winter with rape/sorghum mixes (dry grown). Depending on the year, we have two options with these paddocks when the rape/sorghum crop is no longer needed. Firstly, an early spray-out of the rape/sorghum can be sown to straight oats for extra late winter grazing and then silage. Secondly, we can run the rape/sorghum through till July then spray-out and sow down to a cereal/legume mix for a bulk silage cut late October, then straight back into turnip, and then pasture the following March.

Hormonal drive for milk production in fresh cows has little tolerance to inadequate energy intake. When not met, excessive fat mobilisation occurs, inducing fatty liver syndrome and ketosis. I am hopeful that a milk test strip for ketosis will be available shortly. This will enable an easy way to check fresh cows for sub-clinical ketosis and treat, at least dealing with a problem that otherwise goes unnoticed. There will be obvious benefits in both production and reproduction.

All too frequently we see autumn calving cows achieve peak milk yields in October. This is real 'tell-tale' of inadequate energy intake in early lactation as peak milk should have occurred at 80 to 100 days in milk. As peak milk at 80+ days will determine whole of lactation potential, clearly a peak at 150+ days is telling us we have really missed our production potential. Feed budgets are an essential tool to plan and realize adequate energy dense feeds twelve months of the year; and this is achievable.