

Transition Management

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One of the most critical periods for a dairy cow is the 3-4 weeks before and after calving. A successful season's production can be made or broken during the transition period.

A successful transition feeding program helps:

- Reduce metabolic disease
- Reduce RFMs, assisted calvings and endometritis
- Save time and money spent on treating sick and downer cows
- Increase in-calf rates
- Increase milk production

The transition period is a time of enormous physiological and metabolic changes as cow goes from being dry through to early lactation. Ensuring the nutritional requirements are met during this time gives the cow the best bet to deal with all of these changes, and means the cow is in the best position to hit early peak milk production.

One of the biggest indicators of the likely success of transition is the body condition that a cow is at calving. Our targets are:

- Adult cows BCS 5.0
- Heifers BCS 5.5

When lighter than these targets, cows are at risk of poor rise to peak milk production, excessive weight loss post calving, ketosis and succumbing to systemic disease.

Much of the success of transition management can be seen just by looking at the cows. Be honest about their condition, and it always helps to have an impartial eye to look over them if there's any doubt. Levin and Horowhenua Vet Centre can offer this as a one-off service, as part of the WelFarm programme or ongoing as part of Headlands consultancy. Other cow-side parameters to look for are grazing behaviour, rumen fill and cud chewing, as well as dung consistency.

Once a cow calves, the enormous energy demands of milk production means her requirement doubles overnight. This combined with the fact that colostrum cows don't eat to their fill means that the cow is in negative energy balance (NEB). The cow then mobilises body fat in an effort to fill this deficit. Fat is broken down to ketones and fatty acids. Ketosis occurs when a cow can't process these ketones fast enough. Clinical ketosis can be seen as a nervous form (twitching, excitable, incoordination, aggression or other bizarre behaviour) or a wasting syndrome (weight loss, reduced intakes, milk drop). Subclinical ketosis occurs when the cow doesn't demonstrate clinical signs but still has a build-up of ketones. Subclinical ketosis has a significant effect in increasing the risk of endometritis and reducing six week in calf rates and subsequently lower days in milk the following season. The average effect of subclinical ketosis on reproduction is a staggering 7% reduction in six week in-calf rates.

When calving, the demand for calcium rises markedly. This is further worsened by the fact that colostrum cows don't eat to their maximum fill. Calcium balance is controlled by the parathyroid gland which secretes parathyroid hormone (PTH). PTH secretion is increased in response to a lower level of circulating calcium in the blood. When a cow enters the colostrums, the sudden demand for

calcium means that the parathyroid gland has to work hard to meet this need. If it can't manage this and circulating calcium plummets then clinical milk fever occurs.

The costs associated with milk fever are not just the absolute costs associated with trying to save a cow. This would include the direct costs associated with the metabolic treatments, or potentially a vet callout, but also the indirect costs due to a drop in production. A clinical case of milk fever results in a 14% drop in production, but cows with subclinical milk fever also have a significant drop in production at around 7%. Subclinical milk fever is also a tip of the iceberg disease with about 20 cows affected subclinically for every case of clinical milk fever detected. Cows which have no clinical milk fever are between 2-3 times more likely to conceive. It's certainly not a stretch to assume the entire herd has been affected to some degree if only 5% of the herd is seen with clinical milk fever.

The diet can be manipulated to ensure the parathyroid gland is ready to try and meet this calcium requirement. The feeding of a low calcium diet in the last few weeks prior to calving helps to increase the amount of circulating PTH. This means that when a cow calves, and then is offered the colostrum diet she is can absorb the maximum amount of calcium she needs. The colostrum diet should contain enough calcium; the addition of added lime flour is important to make sure that this requirement is met.

This is also the theory behind the manipulation of dietary cation-anion difference (DCAD). This involves the addition of anionic salts to the diet to bring the pH of blood down (more acidic) and improving the efficiency of calcium absorption. Strictly speaking in our pastoral based system, true DCAD manipulation isn't possible. The most we can hope for is some improvement with the use of magnesium chloride and magnesium sulphate.

Magnesium plays a role in the production of PTH, so low levels of magnesium have an impact upon calcium balance as well. Magnesium is essential in its own right leading to staggers if deficiency of magnesium occurs without milk fever complicating it. There is no readily accessible store of magnesium in the body, so daily intakes must provide the requirement. Pasture is low in magnesium, particularly in the spring so additional supplementation is necessary. Magnesium status is further worsened by high potassium levels, such as in potassium-fertilised pasture and effluent paddocks. It is essential to avoid grazing springers and colostrums on effluent paddocks, but during spring avoiding fertilised paddocks can be difficult.

The springer diet should roughly resemble the early milker diet in order to give the rumen microflora the chance to acclimatise to the diet. Large amounts of PKE for the springers are best avoided due to the potassium level, and also the fat content may interfere with calcium balance even further. Any changes made to the diet should be made gradually, particularly with risky and high starch feeds. Colostrums should be ad lib fed, as their voluntary feed intakes are low regardless and the pressure to compete for feed behind a fence further worsens their ability to eat to their demand.

Colostrums and springers are the most metabolically fragile cows; careful management of these groups minimises the likelihood of clinical disease, but also the subclinical disease that has enormous effects on production but is difficult to detect. We can look over your transition management plan and look for areas of improvement to help your farm move through this critical period more smoothly. Don't hesitate to contact the clinic today to speak to Charlene Christensen about how we can help you reach your goals.