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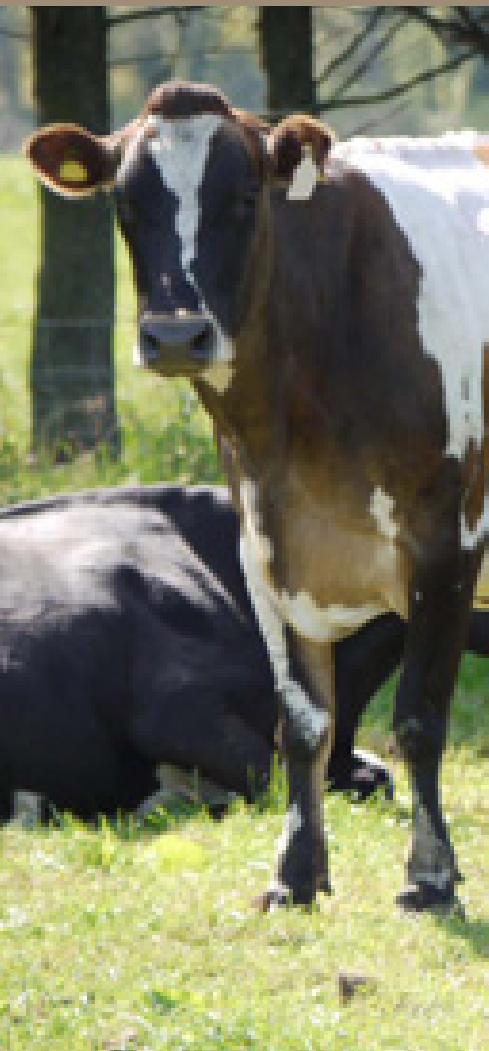
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Colostrum: doing it right this spring

Some old and new facts about colostrum

At a recent dairy veterinary conference in South Africa, there was an excellent session on understanding colostrum and its role in our valuable dairy replacement AI calves.

We all understand how important colostrum is but at the conference I felt a number of points were raised around the very special physical qualities of colostrum that were important to talk about again. I make some comments as follows:

Beef cows versus dairy cows

Dairy cows are the poor cousin when it comes to the quality of colostrum. Beef cows make a far superior colostrum, so our dairy calves are behind the game from the outset.

Failure to suckle

As vets we have long been told that surveys show as many as half of calves fail to suckle colostrum naturally; this has been confirmed by recent findings. Whatever the percentage, the message is that calf pick up must include a colostrum dose on arrival back at the shed.

Interestingly we now understand the obvious fact - the modern dairy cow udder shape does not lend itself well to easy calf suckling of colostrum.

What else apart from antibodies are in colostrum?

There are many active immunity components found in colostrum, apart from the well-known antibody proteins. However colostrum also contains live active white blood cells from the mother. These white blood cells are absorbed along with the antibodies when colostrum is given early post birth. So colostrum is a very complex and delicate food stuff!

What is "best practice" for colostrum supplementation in New Zealand dairy calves?

An initial dose of colostrum must be given within six hours of birth, perhaps as late as 12 hours, but no longer post birth. This mandatory dosing is on the basis that many New Zealand calves have either failed to have enough or any colostrum. The six to 12 hour timeframe is critical because after that the calf stomach and intestine does not absorb the colostrum but simply treats colostrum as a food stuff (digests it). By six hours absorption of colostrum has reduced to a third of that at one hour after birth: early really is better and does make a difference.

A second dose of colostrum should be given within six to 12 hours of the first.

The gold standard of volume to be given is slightly less than 10% of the body weight e.g. a 40 kg calf needs four litres of day zero colostrum.

Long term effects of getting or not getting colostrum

- Clear science showing significant delay to timing of first oestrus/mating, of up to four weeks difference.

- Clear science showing significant reduction of milk production over the first two lactations in the order of 100s of litres.

Are there differences in quality colostrum production between cows?

Yes! There is a big variation in the quality of colostrum between individual cows. It is not clear why but the following comments apparently apply:

- Jerseys and Ayrshires produce a better quality colostrum than Holsteins.
- Heifers produce a poorer quality colostrum than mixed age cows.
- Dry period needs to be less than 21 days to compromise colostrum production so we are safe in outdoor New Zealand calving herds.
- Cows fed too little protein or energy or if they are deficient in minerals over the dry period produce poorer quality colostrum especially if this occurs in the last month before calving.

What other factors can affect the quality of colostrum?

Improperly stored colostrum is bad news. If bacteria are allowed to grow in stored colostrum, bacteria progressively bind up the active antibodies, as well as making the colostrum generally harder to absorb by the calf.

Over-heating colostrum when thawing or warming; it destroys the antibodies.

Fridge storage without preservatives or pasteurisation is recommended only for two days; otherwise the bacteria loading starts to build up and reduces the value of colostrum.

Should I tube colostrum or is a suckle bottle system more effective?

Tubing calves in the spring is an extremely effective and practical method of getting colostrum into large numbers of calves.

Tubing does not allow the oesophageal tube reflex to happen so the tubed colostrum may end up partly in the undeveloped rumen. However, the impact of that is apparently very small so tubing from that perspective is still perfectly ok.

One other negative of tubing is that the calf has not had its first "teat" drinking experience.

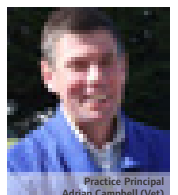
In conclusion tubing is ok, it does not have long-term negatives and there are many positives to be had by ensuring that first feed arrives in the gut as soon after birth as possible.

Finally

These reminders about colostrum have made me look at colostrum with fresh respect.

Wishing all our clients a successful spring.

Best regards,
Adrian Campbell - Vetlife Ltd



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Winter right...

Winter feed costs are high this year and efficient use of feed resources is essential for profitable farming; all the more so when facing a challenging pay-out. Is there any way you can fine-tune this?

For cows that are already at a body condition score (BCS) of 5.0 (or 5.5 for two and three year olds) it is wasteful to feed above maintenance. In fact, it is not just wasteful; it will actually put cows at risk. When cows are above BCS target they are at increased risk of metabolic disease, ketosis and other issues at calving. This can cost you a lot more in spring in animal health costs, lost production and reproduction, let alone the time and dollars spent dealing with downer cows. Remember, it is fit not fat that you are aiming for. Too fat at calving can have as many problems as too thin.

Many herds will have cows at a range of body condition scores and this can be a challenge. But, you can tackle it by targeting feed to where it is most needed and avoiding feeding excess feed to cows already at target BCS.

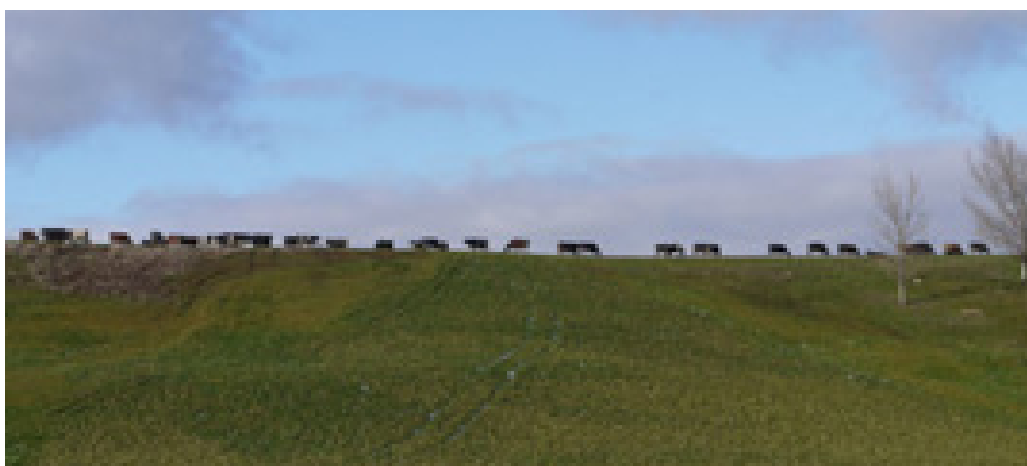
- Look at drafting cows into mobs based on BCS for targeted feeding on an ongoing basis this winter. Look at the feed available and the length of time before calving to decide how to manage these cows.

- Use an accredited Vetlife body condition scorer to help you get it right.
- If you have the ability to, re-draft regularly to fine-tune feeding, even better!
- Give the feed to the cows that need it most: early-calving, high producing, thin cows.
- Focus on the young, early-calving and high genetic merit cows first if you have to make tough choices.
- If you decide to cull some cows still in the herd (e.g. slips), remember to check for drug withholding periods first! This is especially

important with dry cow, drenches and pour on lice products as some of these have very long withhold periods.

For advice on how much feed you need in order to make those important BCS targets in the spring, talk to your Vetlife vet or Craig Trotter at the Centre for Dairy Excellence, Geraldine

Andrew Bates
Vetlife Temuka



Veterinary disbudding: is it cost-effective?



Vetlife research, now published in the peer reviewed New Zealand Veterinary Journal (www.tandfonline.com/doi/abs/10.1080/00480169.2014.982739#.VGVhW2eZi0k), shows that calves receiving pain relief at disbudding grow significantly faster than calves that do not receive pain relief. When pain relief included sedation and local, the increase in growth rate persisted for at least 30 days following disbudding and amounted to an extra 0.9 kg/day over the 30 days or six fewer rearing days required to reach the equivalent weight.

This work suggests that calves receiving pain relief need fewer days to reach target weight. Improvements in growth rate reduce the total number of days taken to reach weaning weights and so potentially reduce rearing costs. Daily costs related to calf rearing include the cost of calf meal, roughage, milk feed and labour. The cost of milk feeding depends on whether milk replacer, antibiotic or normal milk is fed and so a cost of zero was assumed for milk fed to calves (as many local farms feed waste antibiotic milk to calves), \$800/tonne for calf meal and a negligible cost for roughage. All calves were assumed to eat 0.5 kg meal per day and calves disbudded by non-vets were assumed to drink 4 litres/day while those

disbudded by vets consumed 5 litres/day but required on average six fewer days to reach the same 30 day weight. The difference in feed costs over the first 30 days worked out at around \$1.00 extra for the slower growing calves (more days required but less milk drunk per day) and the difference in labour was calculated at an extra 0.25 hours per day at \$15.00 per hour for the six extra days. With the relative pricing of vet disbudding and farmer or contract disbudding factored in, the net benefit of veterinary disbudding with sedation and local are around \$17.00 per calf.

So, pain relief for calves does carry an economic and a welfare benefit. The combination of sedation and local anaesthetic used in vet disbudding gave the best economic outcome. Adding Metacam would improve the economic and welfare situation for contract or farmer disbudding as a close second where no other form of pain relief is used. The poorest performing system was farmer/contract disbudding with no pain relief.

Andrew Bates
Vetlife Temuka

Endometritis: early vs



Once again we are heading into spring and with impending calving there is a lot to plan. One of the decisions that needs to be made is around the use of early metri-checking to pick up and treat infections in the uterus early. There is currently a lot of data available to support the story that early metri-checking and treating will lead to similar conception rates in treated cows to non-treated cows. Early metri-checking will result in shorter infection times within the uterus so the uterus is in good health to conceive as early as possible. Cows that are untreated, treated later or after four weeks post-calving, result in approximately 2% higher empty rate over the season and approximately 8% of the herd calving two to three weeks later than they would compared to a clean cow. Ultimately, early metri-curing will result in a tighter calving spread which in turn will increase the number of days in milk.

Why is it better to metri-check and treat two weeks after calving compared to four weeks after calving?

Metri-checking is a crude method that we use to identify infections within the uterus after calving. It will not detect all infections but is the best tool we currently have for identification. If



s late metri-checking

Below is a table that identifies the pros and cons of early metri-checking.

Early metri-checking		Late metri-checking	
Pros	Cons	Pros	Cons
<ul style="list-style-type: none"> • More accurate identification of endometritis. • 2% lower empty rate. • 8% of the herd 2 to 3 weeks earlier calving (calving spread, days in milk). 	<ul style="list-style-type: none"> • Higher labour costs. • Higher number of treatments. • More organisation needed to identify groups of cows unless use of computerised programmes i.e. protract or milk-hub. • Increased upfront costs. 	<ul style="list-style-type: none"> • Less labour costs. • Less cows to treat. 	<ul style="list-style-type: none"> • Miss a lot of subclinical infections that will be affecting fertility. • 2% higher empty rate. • 8% of herd 2 to 3 weeks later calving. • Increased calving spread.

we leave the checking for an extra two weeks we will pick up less infected cows. This is not because the infections do not exist, but instead it is due to subclinical infections or infections that have begun to produce minimal pus. The fact is that there is still an infection present at this time but it just becomes harder to detect.

The result is that if you do not do early metri-checking this is likely to be costing your herd \$27,264.00 annually (800 cows). If you were to do early metri-checking and treating, you may treat 25% of your herd with metri-cures. This would equate to a figure around \$5,000.00 plus labour for the treatments given. In general we have found it quite normal to treat between 15 to 25% of the herd as being dirty.

As you can see the benefits are there for early metri-checking and treating. If you would like to know more please feel free to contact your Vetlife vet to discuss the options that you may have for your herd. It is definitely worth thinking about.

Susan Geddes
Vetlife Ashburton

If we were to convert this data into some numbers based on an 800 cow herd this is what we get:

Reason	Calculation	Total cost
2% higher empty rate (Δ in cost of in calf cow \$2,000 and empty cow \$800).	\$1,200 x 800 cows x 2%	\$19,200.00
8% of cows will be 2 to 3 week late to get in calf i.e. lost milk production.	\$6 x 8% x 800 cows x 1.5kgMS/d x 14d later to get in calf.	\$8,064.00
Total cost of late metri-checking		\$27,264.00



Latest mastitis research timely for spring

Combining pain relief with antibiotic treatment for post-calving mastitis could make a big difference to herd reproductive performance, going by early results of a large new international dairy research project.

Cows with a clinical case of mastitis or a high cell count have lower conception rates. It is thought that inflammation caused by mastitis affects:

- The ovary and its ability to produce high quality eggs for fertilisation.
- The ability of the cow to maintain an early pregnancy.

Preliminary analysis from the FERTILE study has found that cows treated for mild to moderate post-calving mastitis with the non-steroidal anti-inflammatory drug meloxicam in addition to standard antibiotic intramammary treatment tended to be ready for their first service a week earlier, and were 10% more likely to conceive from that first service than cows which received antibiotics only.

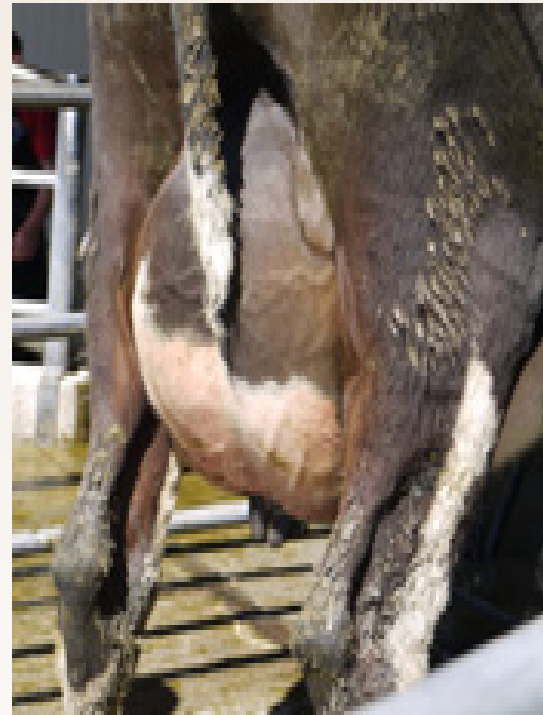
Meloxicam is the active ingredient in Metacam 20, from Boehringer Ingelheim. The FERTILE

study was carried out by leading New Zealand veterinary researcher Dr Scott McDougall, Cognosco, and Elke Abbeles, from Boehringer Ingelheim Germany. It involved more than 500 cows diagnosed with mastitis within 120 days of calving on ten European farms.

“Based on these preliminary results, it is concluded that the addition of a meloxicam injection to a standard treatment with an intramammary antibiotic results in a higher first service conception rate,” they told a recent world cattle health congress in Australia.

The work was based on earlier New Zealand research which showed that Metacam 20 used in combination with an antibiotic for mild and moderate clinical mastitis significantly reduced cow culling, and also reduced somatic cell counts in treated cows. To find out more, give your Vetlife clinic a call.

Andrew Bates
Vetlife Temuka



Getting the most out of your mastitis treatments: how you do it is as important as what you use

New Zealand's best dairy farmers do not mess around with mastitis but detecting cases early and choosing the right product is only part of the secret to successful treatment.

We have identified that in many dairy sheds there is a need to raise awareness about best practice hygiene when administering mastitis treatments.

Research has shown that when treating cows for mastitis a significant number of cows have new pathogens introduced to the udder with the insertion of the intramammary tubes. These new infections can be very difficult to treat making it appear that treated cows have not responded to the initial course or resulting in a very severe, secondary mastitis. To avoid this, the same strict teat end sanitation should always be observed for inserting mastitis treatments as is observed for dry cow or teatseal.

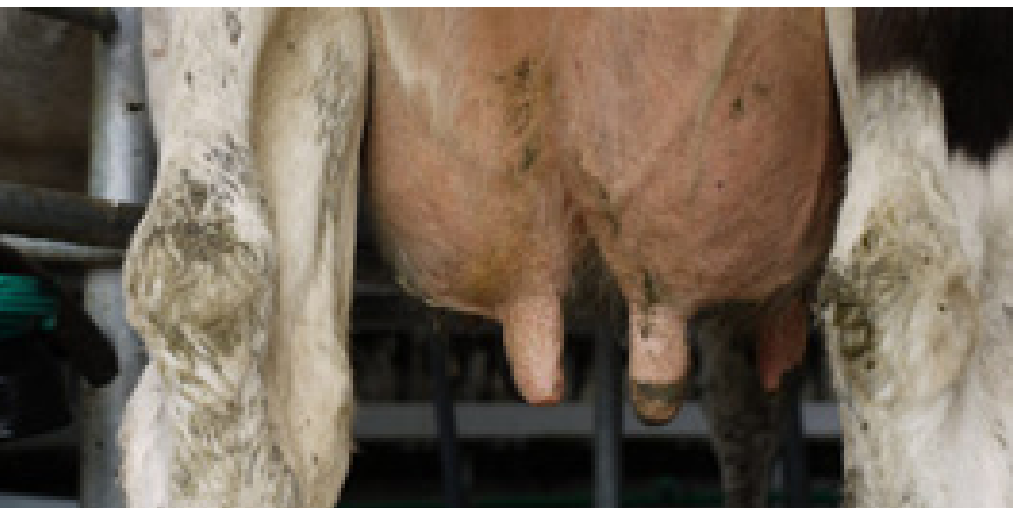
To ensure the very best cure rates, the following should be considered:

1. Select the appropriate treatment. This can be influenced by milk cultures, seasonality, cow factors (age, susceptibility to mastitis), once/twice a day milking.
2. Teat end sanitation and sterile tube insertion.
3. Complete a full course of treatment.
4. Identify and record treated cows and treatments. Observe withholding periods.
5. Constant assessment of the treated cows.

In the on farm milk quality training packages that Vetlife runs, mastitis detection and treatment is one of the most popular subjects and all farm staff - young and old - can benefit from a refresher in this important area. If you think your milking team would benefit from a uniform, best practice approach to detecting and treating mastitis cows then give your Vetlife clinic a ring. Courses are normally run on farm at the end of July and geared for your shed and your staff. If you have any concerns about mastitis make sure you talk to your Vetlife vet advisor.

Get the job done properly so you can spend your time putting milk in the vat.

Duncan Crosbie
Vetlife Temuka



The future of TB is in your hands

Most of the new farming generation has no experience of bovine tuberculosis (TB). Regardless of whether your cows have been slaughtered due to TB or whether you are a young farmer just starting out, the TB plan review will affect you.

\$1.2 billion has been spent on fighting TB since the start of 2000. 20 years ago there were 1700 TB infected herds in New Zealand, today there are less than 50 and this is due to the work set out in the TB plan. Although we expect infected herd numbers to rise with seasonal TB testing, TB infected herd numbers are at an all-time low nationally.

Now an independent group is consulting with the farming community to find out what you

think of the programme. It's time to take stock of where we are with eradicating TB from our herds for good, and the group are looking for your help to shape the future of TB control. As part of the consultation, key questions will be:

- Should the speed of TB eradication be faster or slower?
- Who should pay and how much?
- Is the programme working on farm and have we got the right mix of 'carrot and sticks' to get farmers on board with the plan?

Just because your herd is free of TB now, doesn't mean this consultation should pass you by - in fact - that is why you should come.

- Find out more at a review workshop in June/July

- Check out www.tbplanreview.co.nz for workshop timings and developments
- Public consultation process will start late June 2015
- Closing dates for submission is July 2015

FOR FURTHER INFORMATION

Hazel Willis
South Island Relationship Advisor for the TBfree programme
OSPRI
03 363 3090



Hot off the press from the LUDF!

A quick glance of weekly farm data	5th May	12th May	19th May	26th May
Pasture growth rate (kg DM/d)	36	50	52	17
Pre-grazing pasture mass (kg DM/ha)	3773	3606	3549	3416
Average pasture mass	2630	2593	2553	2244
Post-grazing pasture mass	1700	1650	1650	1650
Pasture quality (MJME/ kg DM)	11.9	12.3	12.2	12.2
Pasture offered (kg DM/cow/d)	13	14.5	18.0	18.0
Pasture silage offered (kg DM/cow/d)	5	4	0	0
Milk solids production (kg MS/cow/d)	1.56	1.52	1.55	1.54
Milk solids production (kg MS/ha/d)	3.41	4.12	3.91	3.34
Herd mean body condition score	4.36	-	4.41	-
Monitor group LW (kg)	514	517	515	517
Bulk milk somatic cell count ('000)	139	138	158	171

For more detailed information go to www.siddc.org.nz



The next LUDF focus day is 9th July 2015.

Book into your diary now!!



In this issue:

- Phosphorus in fodder beet feeding: when to add phosphorous and when to save some money
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- A new approach of integrated heifer management

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“Fodder beet, like most bulb crops, is relatively low in both calcium and phosphorus.”

Phosphorus in fodder beet feeding: when to add phosphorous and when to save some money

Fodder beet feeding is well under way on many wintering blocks and so far the work done by Jim Gibb and Craig Trotter on transitioning cows onto this crop has paid off and we are not seeing too many problems. A frequent question though is: should I be adding phosphorous to my cows when they are on fodder beet.

Quoting, directly from Jim: “Fodder beet, like most bulb crops, is relatively low in both calcium and phosphorus. The samples obtained in the DairyNZ fodder beet project (Gibbs 2011), along with others collected from allied projects, have demonstrated that the typical fodder beet plant in New Zealand wintering will have a phosphorus content below that considered adequate for pregnant cows (<0.24% dry matter), and in most cases, a calcium content that is approximately adequate (>0.4%). In most wintering applications, this is of no consequence, and on most farms it is not addressed. But for reasons that are not clear, some regions appear to produce beet with very low phosphorus content (<0.1%), and some beet-wintered herds in these regions can have relatively high milk fever incidences in early lactation (up to 10%), along with specific cases of identifiable phosphorus deficiency, seen as “creeper cows”. These appear as milk fever

cases, but the cows are typically alert though down, can respond quickly to calcium injections but relapse promptly, and often struggle to recover. This constellation of clinical signs is associated with inadequate phosphorus supply (<c.9g/ day) across winter. It is rare where grass silage is used as the supplement, as this commonly has a moderate phosphorus content, and typically hay or straw will have been used.”

A very effective prevention strategy in these herds is the use of 50 g of dicalcium phosphate (DCP) or Phoscal per cow daily throughout winter feeding, fed right through to calving. This supplies around 9 g phosphorus daily, and is usually applied by mixing a slurry and pouring over the supplement. In 2015 DCP costs approximately \$1,400/t, so costs about 7c/cow/day. Phoscal is around 3c/cow/day. It should also be noted that the use of DCP or Phoscal before calving does not adversely influence the incidence of milk fever by supplying calcium, as the small amount of calcium in the 50 g dose is an insignificantly low dose to induce that effect.

Jim Gibb and Craig Trotter
Centre for Dairy Excellence, Geraldine



Springer management

Whilst not quite there yet, spring is well on its way, many would have by now cleared out the calf shed in anticipation, some of you might already have the odd cow that has slipped and others might be doing your best to milk the girls who just could not wait.

It would certainly seem that in the last few seasons, there has been a much more concerted effort by managers in understanding and minimising transition issues on many farms. Thinking about this some more, it is of course most likely due to the advances in our understanding of transition cow management and the rise of fodder beet across New Zealand as an effective feed which truly allows cows to be at a BCS of 5 come calving time.

The majority of recent scientific literature from the New Zealand dairy pastoral context supports a philosophy of feeding springing cows which are at a BCS of 5 and above at 80-90% of their metabolisable energy requirement in the two week period pre-calving; see the table below. This states that a typical 475 kg LW cow in mid-lactation (550 kg LW pre-calving) that is BCS 5 (or higher) would be fed between 100 and 105 MJME, so around 10 kg DM if the average ME of feed was 10 MJME/kg DM. If another of her herd mates was less than BCS 5 and weighed the same as her, she would be offered around 12 kg DM (120 MJME/d) to fulfil her requirements for metabolisable energy pre-calving.

Most farms would produce a spring rotation planner, if you do not, go and see a neighbour who does or talk to an advisor and get one set up well before the 1st of August! A rotation plan allows you to closely monitor the conditions on farm and gives the ability to make informed decisions early enough so that things do not go too awry. The aims of a rotation plan are to allocate set areas of the farm through the spring beginning with a very slow rotation length and as the cows calve down speeding this rotation up so that highest feed demand also occurs where pasture growth is sufficient to maintain demand i.e. balance date. We need to ensure cows are fed as well as possible through the spring to minimise BCS loss, maximise milk production and minimise losses in potential reproductive performance (Table 2).

It is well known that freshly calved cows are in a state of body tissue mobilisation during the first six weeks of calving, putting systems in place to minimise this loss is vitally important so that we can achieve reproductive targets and set the platform for milking through the season. Effectively utilising supplement through the spring is often important to ensure cows are fed to capacity.

This loss of body condition built up over the late lactation and dry period is a programmed step of your typical New Zealand high BW high producing dairy cow. Over the spring period, they utilise the condition gained in order to milk

Table 1. Daily metabolisable energy intake per day (MJME/d) for cows in the last 14 days before calving (sourced from DairyNZ Technical Series 26).

Mid-lactation liveweight (kg)	Pre-calving liveweight (kg)	ME intake if BCS less than 5 (MJME/d)	ME intake if BCS at or greater than 5 (MJME/d)
350	400	95	80
400	460	105	90
450	520	115	100
500	580	125	105
550	630	130	110
600	690	140	120

and subsequently peak well later in the early part of the season. Minimising the loss of BCS to less than 1 unit of BCS is vitally important to ensure there are no long lasting effects in future seasons and will ensure that reproductive performance of the herd is not compromised. Through restricting good BCS cows immediately pre-calving and feeding all cows to full capacity post-calving, you will ensure that the cows perform well over the season and beyond.

Through putting systems in place now, we can minimise the effect of severe weather events and potential resultant losses in animals and

reductions in performance on farm. Take the time to talk to an advisor, Vetlife vet or your neighbour around these issues, it will be time well spent. Every one of us can think of someone, who is a good operator; take the time to give them a call or sit down over a cup of tea or a beer before the waves of calves begin to arrive. Through taking some time to contemplate the issues of the past, we can work together to minimise them in the future.

Craig Trotter
Centre for Dairy Excellence, Geraldine

Table 2. The impact of body condition score loss in early lactation on potential reproductive performance (From In calf, DairyNZ).

Mean herd BCS loss	Possible decrease in 6 week in calf rate (%)	Possible increase in empty rate (%)
Less than 0.5	-	-
0.5 - 0.75	-2	1
0.75-1	-3	2
1-1.25	-4	3
1.25-1.5	-5	4
more than 1.5	-6	5



A new approach of integrated heifer management

Achieving target weights of heifers at mating (15 months of age) and pre-calving (22 months of age) facilitates adequate reproductive cycles before mating, and results in higher milk production in the first lactation and a higher proportion back in calf after calving. However, in New Zealand, dairy heifers traditionally have failed to achieve the recommended target weights, mainly because of the seasonal deficits in pasture supply.

In the traditional South Island system, calves are spring born and weaned in summer when generally pasture quality is poor; the stock then are usually moved to a run-off or to a contract farm. In the first winter, a crop is frequently used to address the feed deficit, but generally liveweight gains are modest for young stock on the brassica crops that have been commonly used, and the stock fail to attain the target weights for mating. In contract grazing, dryland pastures are typical so there is also a strong reduction in pasture quality in summer and early autumn. This leaves only the spring and autumn to use adequate grass quality and quantity for strong liveweight gain. In many cases, ground is lost in the first year, and then many of the attempted remedial strategies for liveweight gain are in the final winter before calving - which is generally too late to be effective. There is increasing evidence, including recent research from Cornell University, demonstrating strong benefits in lifetime production from first mating, not calving, liveweight increases.

To remedy the failure to reach targets, young stock rearing on specific heifer farms has

increased. Usually irrigated, they have provided good quality pastures across the year at higher stocking rates (e.g. 4/ha). However, these systems carry a high risk of endoparasitism, as adult stock to control pasture larval burdens are absent. Without introducing adult stock, the only credible control of pasture larval burdens is short interval winter windows use.

In the last few years, with the "re-appearance" of fodder beet, a new approach for heifer management has been developed at Lincoln University, New Zealand - the use of fodder beet crops (from early autumn to spring) integrated with maximal use of spring pastures.

The weaners are introduced to the crop from February to spring with only minimal pasture allocation, as the protein and fibre supply, used until wet winter weather prevents pasture use. Grass silage is then used until spring. The daily liveweight gain on fodder beet crops can vary between 500 g to 1 kg/day in the first year and can be above 1 kg/day in the second year.

Typically, spring pasture liveweight gains are even higher. These daily liveweight gains enable complete nutritional control over liveweight targets for mating and calving for an optimal reproductive and productive performance. The lower summer pasture quality can be used strategically to slow annual gains if targets are exceeded.

This approach allows a dramatic increase in the stocking rate, to an overall (pasture plus fodder beet) of 10/ha: a cost-effective system.

Furthermore, introducing fodder beet allows the control of pasture larval burden. However, successful use of this system has several critical control points, and can be done badly, like all fodder beet systems. Liveweight gains require the appropriate use of fodder beet, most importantly in the transition period to the crop, but also to maintain maximal feeding. Best feeding practices include: appropriate paddock design for face length of the crop; strict transition protocols; strategic supplement use, especially in the transition; a suitable fodder beet variety for young stock and the use of a vaccine against clostridial diseases (e.g. 5 in 1 vaccine).

The use of this system is rapidly spreading, and is likely to become routine in the next few years. The popularity of the system is based on excellent nutritional control and animal health, low cost, low land area requirements, complete parasite control and simple management requirements. This system will require advanced extension programmes to many farms over the next few years, and Vetlife will be in the vanguard for this work. Contact Bernardita Saldias, at the Centre for Dairy Excellence, Geraldine for more information.

Bernardita Saldias
Centre for Dairy Excellence, Geraldine

