**New research tells us what we have always suspected!**

Often when we get to this time of the year we look at our cows and wonder why they are not in the condition we expect, for the amount of feed we have fed them! New Dairy NZ research gives us some of the answers.

Most importantly the research showed that maintenance requirements in the two months pre-calving are higher than previous research showed. A 520kg dry cow 2 months from calving needs 110-115 MJ ME/day just to maintain her own body weight. This is 20-30 MJ ME/day higher than previous recommendations or 25%! This explains why it is so hard to put weight on cows in late pregnancy when we use the old figures. The research also looked at feed types and their efficiency at putting condition on cows in the autumn. It found that different feed types needed to be fed at different rates independent of the ME. Of note is how autumn pasture requirements are much higher to put on weight than other feeds.

**New Ketosis data highlights cost of this production-robbing disease**

Ketosis is a common disease affecting the dairy herd but it is not always in the form of the obvious “Downer cow”. During the 2009 calving most of New Zealand experienced the “best weather on record” yet a recent study of 57 farms nationwide revealed that 17% of the 1600 clinically normal cows blood tested, were suffering from varying levels of subclinical ketosis, when measured at 1-2 weeks after calving. Heifers and cows older than 7 years of age showed up as the most affected at 21%.

The study was conducted by Elanco Animal Health in conjunction with veterinarians across several NZ locations, in an effort to quantify the cost of subclinical ketosis to dairy farmers. North American research has shown that subclinical ketosis significantly impacts reproduction by reducing first service conception rate by 20-50%, decreasing milk production by 2-3 litres per day and increasing the incidence of metritis (uterus infection) by 300%.

During 2010 calving Elanco conducted a further study in conjunction with veterinarians across the same locations. The percentage of clinically normal cows with subclinical ketosis peaked at 2 weeks after calving, at 25%. Depending on age group, the percentage of cows experiencing subclinical ketosis at any one time point during the 6 weeks after calving was 43% to 63%. This same study found that cows which had subclinical ketosis within one week of calving were 3 times more likely to have endometritis when they underwent a Metricheck examination at 30 days after calving.

Aside from providing ample high quality feed, Rumensin is one way to help control subclinical ketosis. Rumensin increases the amount of energy available to the cow at a time when her feed intake is naturally low due to the stresses of calving.

In Massey University trials the risk of subclinical ketosis was reduced by 3x when Rumensin was used from the start of calving. When Rumensin was used pre-calving, there was a 19x risk reduction, clearly demonstrating the importance of pre-calving nutrition. Rumensin costs from 4c to 10c per cow per day and returns from milk protein alone yield over 30c per cow per day.

These study results indicate there is plenty of room to improve nutrition and energy around calving, in order to maximize the health and production of the cow. What does next spring have in store for us?
NURSING THE DOWNER COW

Downer cows are a common problem in spring and can be the result of a number of problems. Milk Fever or Hypocalcaemia is the commonest cause for older cows to go ‘down’ after calving, usually within the first 24 hours. Prompt treatment usually results in the affected animal getting back on its feet rapidly, however the longer an animal is down before treatment and the longer it remains down after treatment then the likelihood of secondary damage affecting the animals recovery chances increases dramatically. Accurate diagnosis of a downer cow’s problem and the adoption of a management plan for the animal will increase the chances of successful outcomes with downer cows.

Diagnosis

1. Metabolic i.e. Milk Fever
2. Acute Systemic Illness; acute mastitis, pneumonia, metritis, salmonellosis, peritonitis secondary to a ruptured uterus
3. Musculo-skeletal, including dislocated hip, fractures, ruptured gastrocnemius muscle, “nerve” damage, compartment syndrome

Observation of the animal is useful:
- Is the cow bright and alert?
- Is she sitting upright or lying on one side?
- Does she attempt to get up?
- Does the strength of the legs vary from one to the other?
- Can she change sides or is one leg weaker than the other?
- Are there any obvious swellings?

After a careful examination a diagnosis can be made and appropriate treatment instigated.

Animals that don’t respond to initial treatment need an effective nursing plan, and the most important parts of this plan are the provision of accessible feed and water, regular turning and lifting, and importantly the provision of deep soft bedding with good footings. Non-steroidal anti-inflammatory drugs such as Key injection, Metacam or Rimadyl are useful when given early, and should only be used for the first three days [Key injection is a daily treatment the others have a longer lasting effect].

Compartment syndrome is an important cause of downer cows. The large hamstring muscles of the cow are divided by thick connective tissue fascia into compartments. Compression of these muscles for any length of time will result in the release of fluid and blood into these compartments. This increases pressure inside these muscle compartments causing further pressure damage, this eventually leads to severe muscle damage due to lack of circulation to these muscles. Damage can occur within 40 minutes especially in a large animal lying on a hard surface such as concrete.

Secondary nerve damage can also occur in animals lying on hard surfaces, the sciatic nerve is vulnerable and the femoral nerve can easily be damaged as the cow struggles to rise on a slippery surface with legs slipping out behind into the frog-leg position. Cows that are left to pull themselves around in the paddock can also cause further damage to themselves from stretching of the nerve roots where they exit the spine.

Nursing

- **Bedding.** Most downer cows will have some form of secondary muscle or nerve damage or both. Rapid removal from a hard surface and the provision of adequate bedding is important, clean heaped straw or hay to a depth of 12 to 16 inches is required. Sawdust or sand is also satisfactory.
- **Rolling.** Frequent rolling is required, some cows are able to move themselves from side to side, but if they are unable to do this they should be manually moved every three hours. This of course can be time consuming and frustrating at a time of the year when there are many other jobs to do.
- **Barriers.** Restricting the cows movements can be an important part of her nursing, this may prevent further secondary muscle and nerve damage or even misadventure resulting in a dislocated hip. Hay bales are satisfactory as they can be moved easily for rolling the patient. Making a pen out of gates in a shed is good to keep the cow confined and out of the elements.
- **Lifting.** Lifting should only be done if it is effective and supervised. If a cow is hanging in hip clamps or slouching in a sling without taking any weight on their legs, more damage will be done than if just left on the ground. If a cow is unable to lifted effectively leave her for a day or two then try again. There are several methods to lift a cow.
- **Hip clamps** are the easiest to use and the most common. They are ideal for a quick lift but not for prolonged support. If the cow can stand when lifted then they are great but repeated use can result in severe traumatic damage to the hips. Use of the hip lifter in conjunction with a strap under the chest behind the front legs can provide good support.
- **Slings** tend to be a waste of time because most of the time the animals are inadequately supported. The straps tend to cut into the axilla and groin region and compromise circulation and mobility. They are also difficult to apply.
- **Shelter.** Particularly important in a cold environment, downer cows can easily lose body heat and chilling effects to already compromised circulation can exacerbate problems.
- **Feed and water.** Adequate feed with sufficient energy and fibre along with ample water, within easy reach and out of the reach of other animals.
- **Milking.** Cows recumbent for more than 12 hours should be milked twice daily to reduce the risk of mastitis, and also for the animal’s comfort. Care should be taken with hygiene about the cows teats to prevent infection at this vulnerable time.
- **Euthanasia.** The effectiveness of any regime should be evaluated if there are no signs of improvement and euthanasia considered. In fact euthanasia at an early stage is often the only answer if the prognosis from the outset seems hopeless.
June saw the annual Milk Quality and Dairy Vets’ Conferences held together in the new Claudelands Centre. Here are some take home points from four days of hard listening!

MAF is now called MPI
...and it has a new purpose; “protecting natural resources and increasing sustainable use, and growing NZ by improving sector productivity and maximizing export opportunities”. We were told that since the 2009 melamine issue, international markets are increasingly sensitive to milk integrity. We need to protect and maintain the integrity of our milk supply to protect our reputation, and show we meet the standards for export markets. Caroline Saunders (economist) pointed out that consumer concerns regarding environmental, social and animal welfare impacts of farming are affecting their purchasing choices. This is reflected in a number of overseas subsidies for farmers meeting these criteria; retailer market assurance schemes; and voluntary labelling. We need not only to meet international standards, but to market products on this basis to obtain a premium market advantage. We need to add value to our product, not volume, as we only produce 1.8% of the world’s dairy sector.

Coliform Mastitis
More intensive feeding and housing systems can see a threefold increase in E. Coli mastitis! Factors contributing to this include the greater confinement of cows in a more contaminated area, and higher number of these bacteria in the faeces. High starch diets (including maize) lead to increased growth of coliforms in the hindgut. Coliform mastitis can make the cow very sick, and halve milk production. Suggestions to minimize the risk include minimizing udder contamination by using the feedpad for short periods only (move into paddocks for lying and grazing), milking mastitis cows last to prevent spread, and teat spraying. If you do suffer an outbreak; wash, dry and strip all teats pre-milking. The highest risk periods were the month after calving, and when cows were housed on a pad, and for 4 days after rain. Essentially, the housing has to be designed and set up (roofed and drained) correctly.

AgITO Mastitis Course
These courses seem well presented and worth attending to upskill you or your staff.

 leptospirosis
70 human cases were notified in 2011, over half of whom were farmers. It is such a serious disease that 38 were hospitalized. It has been shown that beef cattle, deer and sheep do also have a high prevalence of Lepto infection, and this has been shown to infect freezing workers. Lepto causes kidney and liver disease in cattle, and can sub-clinically increase abortions and decrease conception rates. In deer it has been shown that vaccination of at-risk herds gave higher growth rates (6.4kg at 12 months) and 6% higher weaning rates. 30% of dairy herds have some cows shedding Lepto in their urine. To minimize the risk of calves catching Lepto and becoming carriers before they get vaccinated, Cambridge Vets will be recommending a program of earlier vaccination for calves to minimize this risk. Beef herds should also consider vaccination programs. Please speak to your vet about other precautions to minimize the risk of Lepto.

Cell Counts
Cell counts have been on the rise and are currently averaging just below 200k for all processors, so SmartSAMM has been rolled out by DairyNZ and NMAC. It is a systematic approach to improving mastitis and cell count across the industry. The essential approach is a bit like InCalf; assess herd udder health, identify scope for improvement and benefits, consider options, implement, review. A variety of resources are available, including a range of tools on their website for assessing mastitis and cell count. MindaMilk has some charts to help with drying off treatment decisions and the “Healthy Udder” book is a useful on-farm guide for procedures and techniques. For the average supplier, reducing BTSCC from 212 to 150k would save nearly $23000 in milk yield, treatment costs and culling.

Teat Spraying
It is highly effective if done properly; it can reduce SCC and infections (contagious and environmental) by half! Pitfalls include incorrect dilution, poor coverage and use a clean jug! A neat demonstration showed how alkaline and chlorinated detergents caked around a jug cause precipitation (it goes cloudy) and reduced availability of the disinfectant. Fonterra emphasized that pre-milking teat spraying should only be done with products registered for this use to avoid milk contamination.

Salmonella
A wider survey confirmed that pelletized and farm-mixed mineral (magnesium oxide) supplementation, combined with high carbohydrate supplementary feeds (but NOT PKE) are associated with increased risk of the disease. It is hypothesized that high levels of magnesium oxide causes an increased pH in the rumen which allows proliferation of Salmonella and triggers disease. However, a small number of experimental studies have not confirmed this yet. Take care to minimize faecal contamination of feedstuff from rodents and birds, ensure you are using an appropriate amount and formulation of magnesium and take care introducing high starch feeds.

Calf scours
A recent Waikato survey suggested that 10% of replacement calves get scours, and 1 in 9 of these die. As one third of the cost of rearing a calf is incurred within the first 12 weeks, this can have a major impact on costs and performance, as well as the risk to human health. Protocols that reduced risk include: biosecurity measures, increased age of switching to once a day feeding, herd vaccination against rotavirus or salmonella, water offered in the shed, and bedding replacement.

Bleeding Calf Syndrome
Some calves born to cows vaccinated with Pregsure BVD have been diagnosed with Bovine Neonatal Pancytopenia. They bleed profusely from any external injury, or even internally, as antibodies in the colostrum destroy blood cells. They die within the first seven days. This is very rare, but we may still see a few cases in the next few years, despite the vaccine being withdrawn from the market, as the antibodies linger. It depends on the genetics of both the cow and the bull.
EARLIER CONCEPTION, MORE MS FROM DRENCHED COWS

More kg of milk solids, and more days in milk.

If that sounds good to you, plan to treat your herd with EPRINEX® Pour-On for Cattle soon after calving this spring, advises Dr Brendan Hickman from Merial Ancare.

Research shows you can be better off not only in terms of reproductive performance, but also milk solid production. Why? Because treated cows and heifers can conceive earlier than those which are not treated and generate more milk solids (MS) per day. The difference is significant – heifers treated with EPRINEX conceived 12.9 days earlier than their untreated herdmates in a New Zealand trial¹, while cows given the same treatment in Canada conceived 9 days earlier².

New Zealand cows treated with EPRINEX also showed production gains of 0.03kg MS/cow/day³.

Dr Hickman says both earlier conception and higher MS production in the New Zealand trial are results of the same thing – treated animals do not incur the cost associated with carrying a parasite burden. Instead their metabolism is tuned for the planned start of mating, and/or milk production. Treated animals have also been shown to spend more time grazing⁴.

The economics of such improvement in performance look very positive even with Fonterra forecasting a payout of $6/kg MS for the 2012/13, he says.

At $6/kg MS, and with average production of 1 kg MS/day, treated heifers would potentially earn $77 more income than untreated, because of their earlier conception and longer lactation.

“The cost of treatment is approximately $6/head, so the financial argument in favour of drenching with EPRINEX soon after calving is quite compelling in this instance.”

What about adult cows? When the daily increase in MS production of 0.03 kg per treated cow is combined with an extra 9 days in milk from earlier conception, the potential return from using EPRINEX is around $117 per cow, Dr Hickman says. Again this is calculated at a payout of $6/kg MS, using average New Zealand production of 1.3 kg MS/cow/day, and a lactation length of 250 days.

There is another benefit to be considered in addition to the bottom line, he says.

“Improved herd reproduction is in its own right fast becoming a key performance indicator for many dairy farmers in New Zealand.

“Getting cows back in calf quickly year after year is now more important than ever.

“Obviously there is no one answer to this challenge – implementing a successful herd reproduction programme involves balancing many variables, not least of which is the weather.

“But the data clearly shows application of EPRINEX soon after calving can play a valuable role at this critical time of the dairy production season.”

EPRINEX Pour-On for Cattle was specifically designed for lactating dairy cows. It has nil milk and meat withholding and holds a label claim stating that it ‘increases milk production’.

Ask your local Vet for more advice on using EPRINEX post-calving to improve your productivity this spring.

GOSSIP

Congratulations to Nurse Megan and husband Nev, who have thoughtfully provided a little brother for Olivia.

Daniel Richard Brewster was born on 17th June, 9lb 15oz.
At Cambridge Vets we have a comprehensive range of what we think are the best products in the market place, at competitive prices, with professional advice to ensure you get through this season without a hitch.

- Calving gear - ropes, chains, handles
- Disinfectant, lube, gloves
- Pessaries, penicillin, oxytocin
- Metabolics - Calcium, Magnesium, Oral treatments
- Ketol, MPG, Starter Drench
- Rumensin
- Eprinex / Drench
- Bulk Magnesium, Molasses, Calcium, Salt
- Mastitis treatment, Intramammary & Injectable
- Teatspray and Udder Cream
- Hoof gear

Calves
- Iodine spray, Electrolytes, tags, feeders
- Shed disinfectant, teats
Spring Product Deals!

Kelvin has put together some early bird deals on these essential spring products. Purchase in July and be into win. See below for details.

**Magnesium** - We stock or can have delivered on farm, magnesium drenching and dusting products including Agrimag, Nutrimag and Imperial. Give Kelvin a call for a great price, and good advice, on the best product for you and your budget.

**Bomac metabolic products** - *If you buy a box of 12, you will get one flexipack free!* This includes the entire injectable range. The Bomac flexipack range is proven and reliable. Get those cows up and milking. We stock the professional range of these products which includes a dose of B12 to boost appetite. Our recommended treatment for down cows after calving is a bag of the appropriate calcium in the vein followed by an oral dose once the cow can swallow well and is alert. This will help to stop these cows relapsing and keep them eating.

Remember that products containing dextrose like Calpromax/Calprophos should only be given in the vein. They are not absorbed well from under the skin.

**Oral calcium products:** We highly recommend the use of oral calcium products instead of under the skin treatments. As long as the cow has a good swallow reflex. These products give much more calcium than putting a bag under the skin and it lasts much longer. We find it drastically reduces the number of milk fever cows that relapse. Most of these products have a burst of energy as well. We stock the following proven oral products.

**Calform Plus** - Rapid acting calcium and a shot of energy that’s easy to pour. The vets choice.

**Emulsi-Cal** - In 400ml bottle or 4.8L. This is an excellent oral calcium drench to keep those milk fever cows on their feet after i/v treatment.

**Oral max** - 650ml bottle and 10 Litre packs.

**Starter plus 200 litre.** Our proven cost effective post calving start up drench. Keep them on their feet and eating through the transition period. Its a cheaper price than last year.

**Drench deals** - We recommend all heifers and cows are drenched at calving. There is good research work using Eprinex, in NZ, to show on average heifers get in-calf 13 days earlier and cows give an extra 8 kg of milk solids during lactation if treated as they calve.

**Eprinex** - We have two great Eprinex deals at present. Buy a 20 litre herd pack and receive a free BBQ..... Or buy 3 x 5 litre packs and get a 5 litre free of charge.

**Genesis** - 5 litre - Still at a crazy price with 10% extra free.

Be in to win. Order/purchase any of the above deals/products before the end of July and go into the draw for a great escape prize. One entry for every $100 dollars spent.