TOTALLY VETS ANIMAL CARE & EXPERTISE

VET notes

YOUR TOTALLY VETS NEWSLETTER ALL ABOUT ANIMALS ON YOUR FARM

APRIL 2017

Manawatu Dairy Industry Awards

Congratulations to this year's winners at the Manawatu Dairy Industry Awards!

On Wednesday 1st March the Manawatu region's annual Dairy Industry Awards dinner was held at the Awapuni Racecourse in Palmerston North. Entrants from across the region waited with baited breath to see how they fared in the judging of their competition.

And the winners were...
Persistence paid off for Jarrod & Nikki Greenwood who took out the closely contested Share Farmer category on their fifth attempt. Hayley Hoogendyk won the Dairy Manager competition and Stephanie Walker the Dairy Trainee. Special mention to Matthew McDougall who won the Manawatu Dairy Trainee Merit Award.

Well done to all entrants - the calibre was very high this year making judging very difficult. For the full list of winners and their awards visit www.dairyindustryawards.co.nz/results/regional-results/?region=201

Avoiding inhibitory substance grades

PART ONE - AROUND DRYING OFF

Helen Mather

The majority of inhibitory substance (IS) grades are attributable to risky on-farm management practices particularly relating to the periods of time around drying off and/or calving. This is when most antibiotic grades occur and are most frequently as a result of cows recently treated with dry cow therapy (DCT).

There are a number of steps that can be taken to minimise the risk of grading particularly around drying off. These include:

- Allow time, have adequate numbers of capable staff on-hand, ensure that cows are clearly identifiable and their numbers are recorded adequately.
- Only infuse DCT once all cows have been milked. Bring cows back in immediately after milking, once all cups are off.
- If cows are dried off in batches, make sure treated cows are kept separately and are well away from the milking herd.
- Make sure everyone knows how treated cows are marked and what to do should any treated cows re-enter the herd.
- Any suspicion that contamination of the vat has occurred – contact the dairy company. This may save getting a grade or lessen the penalty imposed.

Every DCT season we invariably have a number of calls asking what to do if a cow has inadvertently received double treatment. To decrease this risk mark treated cows clearly and have a pre-determined order of administration of DCT (eg. BL-BR -FR- FL). Administering two tubes of DCT to a quarter alters the antibiotic residue profile and increases the risk of an IS grade at the start of the season.

The volume of milk a cow produces toward drying off affects how antibiotic behaves in the udder. DCT applied to cows once dry will produce extended periods of antibiotic residue in milk post-calving. Individuals that are producing less than five litres per day (or <0.4kgMS/cow/day) are getting close to drying themselves off and are likely to have prolonged residue profiles.

Provided with-holding periods are complied with and stock are well managed IS grades are avoidable and penalties are rare. To complete the picture, don't miss our article next month (Part two) on how to avoid IS grades around calving!

Looking ahead

Potential animal health issues, tasks to consider and reminders for **April** include…

DAIRY

- **Drying off** – make holistic decisions around which cows to dry off when. In particular, keep an eye on cow body condition and milk production, and book in your Milk Quality Consult sooner rather than later! - **article P3.**
- **Herd testing** - bulk milk somatic cell count will be rising in late lactation. Seriously consider investing in a herd test that will give very valuable information to assist in making both drying off and dry cow therapy decisions.
- **Trace element monitoring** – pre-winter is a good time for liver biopsies (either standing or from culls) to ensure adequate levels – **article on zinc P4.**

How vaccines work

Charlotte Gibson

When bacteria or viruses enter the body, whether it be human or animal, the immune system kicks in to fight it off. It does this by producing antibodies which fight the invader and protect against infection.

When the body first encounters a bacteria or virus, it takes time for it to recognise the invader. The immune system can take several days before it has produced the right specific antibodies to help overcome the infection. During this time, the invader can cause infection and disease. If the immune system produces the right antibodies in time it can then start tackling the invader to protect itself.

After this has happened, the body remembers the invader and keeps some memory cells. These cells will recognise the invader straight away if it infects again and can deal with it much faster and help prevent disease.

Vaccines are used to prime the body to recognise the invader before it has encountered it. It does this by imitating an infection without causing any illness or disease. This way the body responds in the same way it would if it was truly infected, and will create memory cells to deal with the infection faster next time.

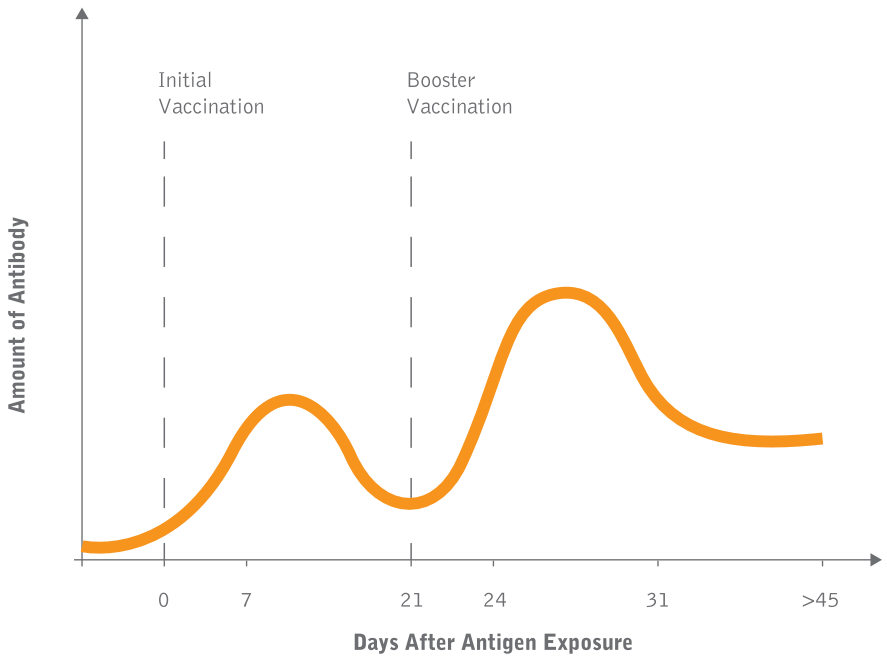
Vaccines can do this because the exposure to the virus or bacteria has been altered to stop it creating disease. This is done in many ways including killing the virus first, or using a virus that has been weakened so it cannot cause disease, however this most often means the response created isn't strong enough for the body to have complete immunity. This is why most vaccines require a booster shot three to four weeks after the first vaccination. The body's response to the second vaccination will be much greater and faster, producing a large number of antibodies (Figure 1).

This means that when the body does actually encounter the live invader, it will be better equipped to deal with it and prevent infection.

Vaccines also work by sometimes allowing the body's memory antibody cells to be passed to their young through the colostrum. This is why colostrum is so important in young animals as it can provide them with a more equipped immune system to deal with diseases as soon as possible.

Vaccines are a safe, effective and generally affordable insurance policy to protect against disease but must always be used according to instructions, particularly in regards to the timing of injection(s). For more information on what vaccines are available for your stock don't hesitate to contact your nearest clinic.

Figure 1: Antibody response to vaccination



- **Leptospirosis vaccination** – autumn is a perfect time to boost your herd prior to winter (being the highest risk period). Ensure that young stock is included in this and that the interval between annual vaccinations never extends beyond 13 months – **article on how vaccines work P2.**

SHEEP and BEEF

- **Mating** – is now in full swing. Monitor plane of nutrition and ensure adequate ram ratios.
- **Planning for winter** – prepare an autumn/winter feed budget and relate it to body condition score management, consider timing of winter shearing, iodine supplementation and book in your scanning.

DEER

- **Mating** – monitor stag health and condition through mating.
- **Vaccinations** – if fawns are yet to have their first shot for Leptospirosis, along with Yersiniavax® for Yersiniosis, plan for this now - **article on how vaccines work P2**.

EQUINE

- **Planning for winter** – regular hoof care will help decrease the risk of foot abscesses and timely dental checks will help ensure, particularly in older horses, maintenance of condition through winter. Air out and check straps on heavier rugs and, if not done so already, now is a good time to ensure elimination of tapeworms and cyathostomes with a good drench!

Drying off

Cormac Chalmers

The dry period is a crucial time in a cow's lactation cycle and is also an opportune time to implement strategic culling and management decisions.

The dry period is not only a good time for cows to put on weight and reach body condition score (BCS) targets before calving, but it is also during this period that the udder prepares for next year's lactation. In this time many of the cells that produce milk are removed and replaced before the next calving - this process of tissue repair and rejuvenation takes six to eight weeks. Another change which occurs at the start of the dry period is the closure of the teat canal by the formation of a keratin plug. This is the udder's natural defense mechanism against new infections during the dry period.

How does this affect the choice of treatment at dry-off?

While intramammary antibiotic treatment at drying off will clear most existing infections and prevent new infections during the first few weeks, treatment alone will not prevent new infections developing later on in the dry period due to the limited coverage of antibiotics. It is also worth noting that not all cows form a functional keratin plug (up to 20% of quarters by six weeks after dry-off). This is where internal teat sealants (ITS) are used. ITS mimic the natural keratin plug to prevent bacteria from entering the teat canal and protect uninfected quarters during the dry period and at calving.

When used in conjunction with dry cow therapy (DCT) it helps extend the protection provided by the intramammary antibiotics.

What are the options?

The different approaches to drying off include whole herd DCT, partial herd DCT, and combination therapy (DCT with ITS). Choosing the right option can differ between farms. The decision making takes into consideration a number of factors such as the spectrum of activity, likely cure rates, knowledge of the specific bacteria responsible for clinical mastitis, the period of protection provided by different products and the expected duration of the dry period. Partial herd DCT requires adequate information from herd tests and/or rapid mastitis testing in order to select which cows to give which treatment. It also requires excellent cow identification and record keeping to ensure with-holding periods at the start of the next lactation are adhered to.

Lastly, it is timely to mention the current global concerns being highlighted in the media, around the use of antibiotics in animals and the possible implications of antimicrobial resistance in human medicine. See next months newsletter to find out more but, in the meantime, utilise drying off as the perfect opportunity to review the role that farmers and vets play in ensuring the responsible use of antibiotics on farms.

Call the clinic and book in for your Milk Quality Consult and ensure you make the most of the dry period this season.

In's and out's of zinc

Mark Eames

In New Zealand (NZ) interest and research in zinc (Zn) has mainly been for the purposes of facial eczema (FE) control.

However Zn is also an essential trace element required for a wide range of body functions, especially reproduction and sex organ development and to ensure the integrity of the immune system. The body has no stores available to be mobilised so continuous absorption through the gut is essential.

Zn deficiency has not been confirmed in NZ (Grace, 2010) so nutritional supplementation is not considered vital in our conventional farming systems. There is some anecdotal evidence that oral zinc supplementation decreases lameness in dairy herds in NZ but there is no good scientific data to support this. What is known is that addition of zinc sulphate (one kilogram into ten litres water) to footbaths is extremely effective at controlling foot-rot, in fact as effective as formalin, with the advantage of being safer to the user and environment.

The levels of Zn required for protection from liver damage in FE are 10 to 15 times that required for normal nutritional needs. This needs to be provided prior to the assault by the fungal spores to be effective. While Zn can be toxic in excess, poisoning is unlikely to occur under normal circumstances. However, the use of Zn in FE protection substantially increases this risk. Signs of Zn toxicity include reduced feed intake, depressed live-weight gain and decreased feed efficiency.

High Zn intake can also impair copper (Cu) absorption and this is thought to occur in the gut. This means that injectable Cu supplementation remains effective unlike oral copper sulphate products. Ideally, a herd should be checked for Cu levels following autumn FE Zn supplementation. This is best achieved by liver biopsy of eight to 10 randomly selected cows, or as a second best option, monitoring of cull cows at the freezing works post slaughter.

Talk to your vet for more information and/or call the clinic to make a booking to get your cows checked.