

## TOXIC TURNIP



*As we sit huddled around the heater this morning looking out on the carpark, which closely resembles an ice skating rink, I start dreaming of warmer days. My toes are slowly thawing and getting to that painful hot stage after standing on a platform for three hours scanning at a frosty morning milking. I remember not so long ago wishing for cold like this when scanning high on a platform at an afternoon milking in 35 degree heat with the sun beating down through a cleverly placed sky light. I am suddenly reminded of an article that I had started writing during this time but missed the deadline for the Dairy notes (sorry Charlotte!). I am sorry that the article is not very topical for this time of year but there are a few common threads with most cows in the process of getting settled back onto brassica crops for winter.*

We had multiple cases of photosensitivity on summer turnips this season. There was a wide variation in the severity of these cases. Some farms experienced only mild photosensitivity in one or two animals whereas others were hit hard with severe photosensitivity affecting up to 5% of herd and even death in some animals.

The teats appeared to be most severely affected by the photosensitivity. In severe cases all four teats peeled leaving them raw and red. Other cases also involved the back of the udder and white areas of the animals. Some did not see peeling of the skin on the body but noticed that white areas on the body were raised and animals were agitated and kicking. These animals would seek shade and appeared more comfortable out of the sun.

Some animals were noticed sitting down, very lethargic and reluctant to move. On blood test all affected animals showed signs of severe liver damage. Although no post mortems were carried out on the animals that died, the deaths were presumably a result of the severe toxic insult to the liver.

Photosensitisation is a condition in which skin becomes hyperactive to sunlight due to the presence of 'photodynamic agents' (light sensitive agents) in the blood. These photodynamic agents, when exposed to the sun, lead to damage to skin cells. There are two types of photosensitivity, primary and secondary

✦ Primary photosensitivity is caused by the photodynamic agents (agents that react with light) being directly absorbed from the plant. Secondary photosensitivity happens when the liver is damaged. The liver normally gets rid of the breakdown products of chlorophyll (the green pigment in plants). These breakdown products are photodynamic (react with light). When the liver is damaged it cannot get rid of these breakdown products, they build up the blood and cause photosensitivity.

In the past Brassicas have been incriminated as primary photosensitisers but outbreaks on summer turnips in recent years appear to be secondary – shown by the severe liver damage in most cases. A article by Angus Black (a pathologist from Hamilton) pinpointed compounds called glycosinolates in brassicas, these compounds build up when the crop is stressed, especially by drought or overcrowding of plants. When these glycosinolates are broken down in the rumen they form toxic compounds which damage the liver, resulting in photosensitivity. With turnips, the particular toxins causing the damage have not been identified and there is still debate over whether these are the cause of the problem.

Managing cattle on a toxic turnip crop is similar to dealing with excess nitrates. Reducing intakes by filling the cows up with hay/ baleage/straw before feeding crop and, if possible, minimising time on crop can help reduce the risk of toxicity.

Research into photosensitivity is continuing. Many of the samples that we took from photosensitivity cases this season have been sent to Massey University for analysis in the hope that we can better understand this problem.

Bianca Mackintosh BVSc

# REMINDERS



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- It is time to have a sit down with your vet and discuss next seasons drug allocation for your farm, in the Annual RVM (Restricted Veterinary Medicines, this supersedes the PAR) consult. Call your closest VetSouth clinic and book in before calving hits.
- VetSouth clinics can do Nitrate Testing on your crops. This can be done in half an hour, and give you a result that will let you know if your crop s safe for your stock to eat.
- Book in early for the annual seminars, "Calf Rearing", "Spring 1st Aid", "Stabbing and Jabbing" and "MilkWise".

# DAIRYNotes

## NZ KETOSIS TRIAL: THE RESULTS

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Ketosis is a common disease affecting the dairy herd but it is not always in the form of the obvious "Downer cow". During calving in 2009, most of New Zealand experienced the "best weather on record" yet a recent survey 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 survey was conducted by Elanco Animal Health in conjunction with veterinarians across several NZ locations, in an effort to quantify the cost of sub-clinical 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%.

Aside from providing ample high quality feed, Rumensin is one way to help control this production limiting condition. 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 sub-clinical 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 precalving nutrition. Rumensin costs from 4c to 9c per cow per day and returns from milk protein alone yield over 30c per cow per day.

These survey results indicate there is plenty of room to improve nutrition and energy around calving, and they were measured during a "record" spring. What does next spring have in store for us?

### Are your cows away at grazing for the winter?

Just a wee note to remind you that you should be checking your cows at least once a week when they are being grazed by somebody else. This will help you stay aware of their condition and be able to treat any cows that are showing signs of metabolic disease early, before they have the stress of the truck ride home or calving, causing them to become that costly "Downer Cow".

**Gore**  
8 Richmond St  
Ph 03-203 9220  
Fax 03-203 9221  
goreadmin@vetsouth.co.nz

**Invercargill**  
123 Yarrow Street  
Ph 03-214 5384  
Fax 03-214 5394  
invercargill@vetsouth.co.nz

**Lumsden**  
44 Diana St  
Ph 03-248 9030  
Fax 03-248 9031  
lumsden@vetsouth.co.nz

**Otautau**  
149 Main St  
Ph 03-225 8206  
Fax 03-225 8201  
otautau@vetsouth.co.nz

**Tapanui**  
Main Rd  
Ph 03-204 8233  
Fax 03-204 8798  
tapanui@vetsouth.co.nz

**Winton**  
Cnr Great North & Welsh Rd  
Ph 03-236 6090  
Fax 03-236 8518  
admin@vetsouth.co.nz

## Thinking Ahead: Calf Shed Preparation

Like it or not winter will speed by and in no time at all the joy of calving season will be upon us. You've put a lot of work into getting these newborns on the ground so don't let them take you by surprise; now is the time to set up some provisions for them.

Most of you will already have a specific shed ready for the wee ones. Even if you've used it for seasons on end there may still be some minor changes you can make to ensure it's like the Hilton for calves!

**Start with a clean slate.** The floors and walls should be squeaky clean. Steam clean or water blast and then disinfect the area with a good quality product (eg Virkon or Vetsan), make sure you read the instructions and dilute correctly.

**Layout.** You should not have to walk through pens to get to other pens; this is a surefire way of spreading disease. Make sure there is a centre aisle for accessing pens, or direct access from the outside. Ideally the partitions between pens should be solid, this is a simple way to minimise disease spread.

**Ventilation:** Sheds do not have to be warm, but calves do need a plentiful supply of FRESH AIR so that there is no ammonia (from urine) build up. Make sure the shed has good ventilation, ideally with the front opening facing north (this maximizes UV disinfection). Remember though - it should not be draughty at calf level - this is when calves will catch a chill. Get down on your hands and knees, this way you'll be able to know just how the calves will experience the elements and be able to make any adjustments.

**Drainage:** The shed should have a good drainage system, urine and dirty water build up is an ideal way to harbor nasty bugs.

**Space:** Each calf should have approx 2-3 m<sup>2</sup> of space. The pens should be 2 x deep as they are wide. Set up pens to hold no more than 20 calves each (grouped according to age group and size). Keeping the calves in smaller groups means minimal competition between animals and it will be easier for you to detect those who are crook.

**Water:** Make sure that there is an UNLIMITED supply of CLEAN water available to all calves. Now is your chance to sort out any plumbing issues and make sure those troughs are nice and clean

**Feed access:** Plan where you are going to have the feed, all calves should have access to both roughage (ideally straw) and pellets from Day 1. Feed should not be shared between pens and you should be able to fill it up without entering the pen. Feed should be raised above the ground so as not to get contaminated with faeces/urine.

**Bedding:** Ideally non edible, untreated shavings, sawdust or bark chips. This should be at least 10cm deep on a base of gravel and topped up with clean bedding regularly.

**Isolation area for sick calves:** This should be in a separate shed from the other calves (disease can quickly spread through the air to other calves in close proximity) Calves from this area should never return back into their original pen or back to the main shed.

**Storage area:** Somewhere safe and dry to keep everything you're going to need over this busy period. Make sure you've got together all the necessary equipment/treatments so you're ready to go when the first calf hits the ground....buckets, whisk, tube feeder, calf covers, heat lamp, electrolytes etc.

**HYGIENE** - the wee ones are most susceptible to disease in their first few days/weeks of life. Both you and the equipment are sources of infection. Make sure you have some **washing up liquid/disinfectant** and a brush available. **Running water** to wash your hands (remember we can suffer from some diseases such as crypto too) and **footbaths** for staff and visitors to dip their boots in when entering and leaving the calf rearing area.

*For up to date information and invaluable handy hints on calf rearing, contact the clinic to book your spaces on our Calf Rearing Workshop, 27<sup>th</sup> July*

Becca Vallis

### You might be a dairy farmer if...

- If you know the price of milk per hundred weight but not by the gallon.
- If the medicine cabinet contains a container of Bag Balm.
- If you've ever gotten an award for fat (and were proud of it).
- If your idea of a power lunch is a sandwich on a tractor.
- If your idea of a neighborhood watch is someone calling you to let you know your heifers are out.
- If you have more than a dozen cats.
- If your idea of overnight delivery is pulling a calf at three in the morning.
- If you can remember the name of every cow on your farm but the names of your children elude you.
- If manure is a dinner table topic.
- If your backyard ends at an electric fence.



## Rotavirus Vaccination

The cows are all away for the winter, and it's time to put your feet up and relax, but before you switch-off completely, have you thought about the coming season's batch of calves? Specifically, have you thought about rotavirus? If you've had a rotavirus outbreak before, then you know what it's like to be up to your elbows in skinny calves with that smelly, yellow scour coming out their back ends. You've seen how quickly it can spread. You've seen the losses that can occur, and the \$\$\$ spent on electrolyte treatments. Don't get caught out again!

Rotavirus is a disease that is very common in dairy calves. It occurs early in life, usually from 2 days to 3 weeks of age, resulting in a mucoid yellow scour. Rotavirus attacks the intestinal lining, causing it to become stunted. This makes it difficult for the gut to absorb nutrients from feed, as well as making the intestines prone to damage from secondary bacterial infections. The damaged intestinal lining causes infected calves to lose electrolytes and water from the body. The end result is calves becoming severely dehydrated and malnourished, and without intensive treatment - dead. Calves that do survive will have suffered a growth check from the infection, so they may take longer to reach sexual maturity.

Once a rotavirus outbreak occurs, it is a long, hard journey ahead in the calf sheds. Most calves will become infected and require treatment. Vigilant screening of calves is necessary to isolate new infections. Add to that the daily disinfection of pens, the costs of daily electrolyte treatments, calf losses, etc. Rotavirus can survive in the environment for many months, and is intermittently shed by carrier cows in the herd. Therefore, if you have had rotavirus on your farm before, you will see it again. As in all cases, the costs of prevention are less than the costs of treating the disease outbreak. This is why we highly recommend that farmers protect themselves by using Rotavec vaccine.

Rotavec treatment is given as a single injection to each pregnancy between 12 and 3 weeks from the start of calving. The vaccine provides protection against rotavirus, coronavirus (another virus that attacks the intestines) and *E.coli* K99. Vaccination boosts the antibodies against these infective agents in the colostrum, therefore, simply jabbing the cows is only one part of the process. It is **imperative** that calves get at least 2 litres of colostrum in the first 6 hours after birth, a total of 3 - 4 litres within 12 hours of birth, and that they continue to receive 2.5 - 3.5 litres of colostrum daily for at least the first 2 weeks of life. **The protection is in the colostrum**, so if calves are not getting adequate colostrum for at least 2 weeks, they will not be protected from rotavirus, even though the cows have been vaccinated.

Rotavirus is a major cause of disease in dairy calves that is expensive to treat. The best protection for your calves - and your wallet - is the use of Rotavec vaccination and proper colostrum feeding. If you have any questions about Rotavec vaccination, contact your KeyVet for more information. Also, be sure to check out our Dairy Notes article on calf shed preparation. Proper preparation and maintenance of calf sheds is important for reducing the risks of other calf scour causes, such as cryptosporidia and *Salmonella*.

Jay Kluttz BVSc

### Important notes when feeding FODDER BEET

- Fodder beets are NOT equal to swedes. Sugar contents in beets are higher than in swedes so there is even higher risk of developing **ruminal acidosis**.
- Make sure cows are transitioned onto fodder beets gradually over 10-14 days.
- Don't feed more than 60% of the diet as fodder beet. Straw and hay are very important to feed with it to keep the rumen healthy. The ideal beet:silage:straw ratio would be 50-60% fodder beet : 30-40% silage/baleage : 10% straw/hay
- Make sure you check the DM content of the crop. The DM% can vary a lot between crops (13-22%) and therefore it can under/over estimate the amount you are feeding in a big way.
- Feed characteristics of fodder beet are that it has higher DM content than other brassicas (10-22%), is low in protein (7-11%), high in ME (12-13.5 MJME/kg DM), is high in soluble carbohydrate but low in minerals
- Beet leaves can contain **high oxalate concentrations**. This makes it a dangerous feed for springers or transition cows. Brassicas are in general not ideal transition feed but fodder beet is worse. Oxalates bind calcium which precipitates **milk fever** in the close up cow.
- If you have to swap between fodder beet and brassicas make sure you do this gradually as they are quite different feeds.
- Watch cows closely for acidosis (watery, smelly dung, reduced cud chewing, dull appearance) remember "only" 1 or 2 cows with acidosis over winter is the tip of the iceberg, you are bound to have more "weird" sudden deaths for months to come .....

