



# VET notes

YOUR TOTALLY VETS NEWSLETTER ALL ABOUT ANIMALS ON YOUR FARM

JULY 09



Above Peter Aitken

Peter Aitken has been back with Totally Vets for six months. His time in England was spent cultivating his skills in dairy cattle production systems.

Peter also found time to work on his well-earned reputation as an alpaca physician. His work in the UK gave him ideas about the huge potential for planned farm calls to promote animal health, achieving higher levels of productivity. Similar approaches could be applied in New Zealand with the vet being an integral part of farm management and operations. Effects of Foot and Mouth outbreaks in the UK have contributed to a major reorganisation of veterinary services; the general practitioner is fast becoming a thing of the past!

## Leptospirosis

Anita Renes

After dairy herd vaccination began in 1979, leptospirosis cases in humans dropped from 667 to 106 by 1991. Today New Zealand has one of the highest rates of leptospirosis in the world.

Leptospirosis is a zoonosis, i.e. a disease spread between animals and people. People contract the disease when they have contact with the urine of infected animals. The infection enters through cuts and cracks in the skin and through the membranes of the eyes, nose and mouth. Most infected animals carry the bacteria without any obvious signs of disease.

Symptoms of infection in people include severe headaches, fever and sensitivity to light, sweating, nausea and vomiting, muscle pain, loss of appetite and mood changes. In more severe cases, jaundice can develop from liver damage as well as breathing, vision and skin problems and diarrhoea. People with severe leptospirosis will be hospitalised, often ending up in intensive care.

Those at greatest risk are farmers, meat workers, veterinarians, meat inspectors and other rural service workers. Leptospirosis has historically been most common in dairy farmers, however clinical disease in sheep and deer is increasing and becoming a significant source of infection to humans.

Under the Health and Safety in Employment Act, employers are obliged to 'take all practicable steps' to prevent leptospirosis in their employees and visitors to the farm.

Vaccines for people are available overseas but they have unpleasant side-effects and currently offer almost no cross-protection between the different strains of leptospirosis. Animal vaccination is as much to protect people as animals. Vaccination levels in beef cattle, deer and sheep are very low.

People working in livestock and meat processing industries are at risk of being infected with leptospirosis. Reducing the risk of leptospirosis on your property involves more than just vaccination.

**Totally Vets are happy to develop risk management plans for your property.**





# Totally Vets current stock health

A new season with even greater pressures is upon us. A volatile dollar and fluctuating commodity prices make it increasingly difficult to budget accurately. Focus on the goose that lays the golden eggs!

One way of giving yourself more time to focus on trends and avoid the day-to-day noise is to let go and give others responsibility. They will become experts! Totally Vets provide on farm training for your staff to handle the day-to-day events that distract you from the main target.

## Dairy

The transition period is critical to the season's production and the herd's overall performance.



## HA HA From Paul

A school was faced with a unique problem.

Several 12-year-old girls were beginning to use lipstick and would put it on in the bathroom. Then they would press their lips to the mirror leaving dozens of little lip prints. The janitor would remove them and the next day the girls would put them back.

Gathering the girls and the janitor in the bathroom, the headmistress explained that the lip prints were causing a major problem for the custodian who had to clean the mirrors every night (just imagine the yawns from the little Princesses).

The janitor showed the girls how much effort was required to clean the mirrors. He took a long-handled squeegee, dipped it in the toilet bowl, and cleaned the mirror with it. The silence was broken by a large number of gasps, a few girls vomited and apparently someone fainted, however since then, there have been no lip prints on the mirror.

**There are teachers  
... and then there are educators.**



## Nitrate toxicity

**Craig Dickson**

**All of the commercially farmed ruminant species i.e. cattle, sheep, deer and goats are susceptible to nitrate toxicity.**

Nitrate is taken up by plants from the soil and is converted into protein for plant growth. Under certain growing conditions these levels can build up enough to be dangerous to grazing animals. These conditions include drought followed by rain, cloudy weather with active growth and the addition of nitrogenous fertilizer. Plants that have been associated with nitrate problems include rape, choumoellier, turnips, ryegrass (particularly new grass and short rotation Italian types), wheat, barley, sorghum and oats.

When animals graze plants high in nitrate, nitrite (this is not a chemistry lesson but nitrite is simply nitrate with one oxygen removed) builds up and binds to the haemoglobin in the blood. This interferes

with the blood's ability to carry oxygen and turns the blood a brownish colour. Symptoms range from sudden death through to increased breathing rate, gasping, increased heart rate, incoordination and salivation.

If you are concerned that this profile fits your animals, remove them from the offending material immediately and call Totally Vets. This is one toxicity for which we have a specific antidote: if given early, methylene blue can minimise losses.

However, prevention is better than cure! If you have paddocks that you are concerned about, bring in a supermarket bag of the plant material. Totally Vets can analyse the nitrate levels and give you advice on how safe this pasture is to use. There are several management strategies that can be employed to reduce the risk of grazing potentially dangerous crops or pastures. These are essentially concerned with reducing the time grazing these paddocks, managing the amount of gut-fill prior to being introduced onto the paddock or new break, and careful observation. If you have any concerns give Totally Vets a call.

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Transition management is not an additional cost and if well done, will enhance your prosperity (refer to Lindsay's article in the June VetNotes).

Trace elements and magnesium and calcium are keys to getting cows through the stresses of calving with minimal animal health setbacks. Ensure that you have covered your bases before calving starts.

Worms and lice can add to the loss of condition after calving. Rearing calves through

poorly prepared facilities will invariably add to the frustrations of spring. Second guessing nitrate levels in winter crops can be costly. All of these issues are preventable!

### Sheep

Toxoplasmosis and campylobacteriosis are the main causes of abortion in ewes. Fresh whole foetuses and their membranes are the best samples to get a definitive diagnosis.

Preferentially feed ewes carrying multiples. Drench any light ewes.

### Beef

Prepare to supplement cows with magnesium and see to trace elements. Rotavec® Corona vaccinate cows and heifers 3 weeks before the planned start of calving. Drench young stock if necessary.

### Equine

Look after your horses' feet to avoid foot abscesses. Drench mares and keep their herpes vaccinations up-to-date.

# Guide to calving cows

Barry Askin

The calving season is a busy time on any dairy farm. Good management can help to avoid many problems but in spite of the best laid plans, births do not always run to plan. Knowing a few basic principles may help to make this tiring time run as smoothly as possible.

The normal stages of labour are as follows:

#### 1ST STAGE OF LABOUR

- The start of uterine contractions and cervix dilation
- Usually lasts three to six hours but difficult to determine its onset

#### 2ND STAGE OF LABOUR

- Forceful abdominal contractions and the appearance of the water bag
- Delivery of the foetus

#### 3RD STAGE LABOUR

- Abdominal contractions end and uterine contractions intensify to expel membranes

#### WHEN TO INTERVENE

- If 1st stage does not progress to 2nd stage within six hours. Check for a nose and two feet
- If a cow in 2nd stage labour does not make any progress. A minor correction of the calf's presentation may be all that is needed
- If any animal that is due to calve looks sick or uncomfortable or is seen with an arched back/elevated tail
- If there is a foul-smelling discharge or the presence of any membranes

#### BASIC PRINCIPLES

- Remember the 10 minute rule: if you are not making any progress, stop and try something different
- Be hygienic at all times - wash the cow's rear end and your arms before going into the uterus
- Check for any metabolic issues - a cow with milk fever may just need a bag of calcium to enable her to calve on her own

- Use plenty of lubricant when manipulating a calf - this is critical to protect the uterus but also makes the job a lot easier
- Pulling on a mal-presentation will only make matters worse – make sure that you are only pulling on one animal
- Traction should be used with caution - an incredible amount of force can be applied using a calving jack and a great deal of damage can be done
- **Never use quadbikes, Toyotas or tractors to pull!**
- Always check for a second calf, and a third - it wouldn't be the first time!

If you feel you are not making any progress, are concerned about the health of the animal that is calving, suspect foetal oversize or a twisted uterus, please contact Totally Vets as soon as possible. Solutions for a problem calving include manipulation and vaginal delivery, forced extraction, foetotomy (cutting up the calf inside the cow) if the calf is dead, caesarian section or euthanasing the cow (sometimes a live calf can be removed at this stage).



# Diagnosis of trace elements in sheep and beef cattle

Hamish Pike

There are many complex interactions and influencing factors affecting both the uptake and utilisation of trace elements at the soil, plant and animal level.

All these factors, plus the farm's history and fertiliser use, should be considered before administering trace elements. Treatment without being aware of the farm's mineral status is wasteful, potentially harmful, or even fatal to livestock.

The diagnosis of trace element status is accurate and inexpensive. Both blood and liver sampling can be used in conjunction with

soil and/or plant analyses to develop a trace element supplementation programme.

It is best to obtain livers from cattle for the analysis of copper status in the autumn. This allows predictions as to whether supplementation is required prior to winter and spring when the availability of copper from the soil and pasture decreases. The animals' requirements for copper are highest at this time of the year, particularly in young or heavily pregnant animals. Blood samples are only useful for the diagnosis of copper deficiency.

A good relationship exists between the level of selenium in the soil, plant and animal. If the selenium in the soil is known to be low, then the likelihood of having selenium deficiency in your livestock will be high. In saying this, soil and plant analysis will not tell us the amount of selenium being absorbed. Therefore liver sampling or bloods are better predictors of the need for supplementation. Samples can be taken from cattle and sheep at the same time as for copper, in the autumn.

In the Manawatu, severe cobalt deficiency in lambs is rare. This is because most areas

are adequate, or only marginal in cobalt. A response to vitamin B12 supplementation is unlikely unless there has been severe erosion (weathering), leaching, repetitive cropping or fertiliser use. Clinical signs of cobalt deficiency are anorexia and poor growth rates in lambs. If you are not seeing this in your lambs, you are very unlikely to see cobalt deficiency in adult sheep or cattle on the property. It is best to test lambs at weaning in December, a time when liver reserves of vitamin B12 will be lowest. Liver selenium and copper could be tested at the same time but because sheep have lower requirements for copper (unless they are Finns!), this may not be necessary depending on the farm's history.

Liver samples can be taken from the live animal, or at the time of slaughter. If you wish to have samples collected at the works, or would like to have liver biopsies taken, please contact us at Totally Vets to make the necessary arrangements.

Together we can then make informative decisions regarding the treatment options available.



## What's the goss?

This is no mean feat! Hearty congratulations to Kimbolton School who travelled to Michigan, USA and won the junior section of the cultural and civic division of the community

problem solving section at the Future Problem Solving International Finals.

Be very polite to these guys for one day they may be your boss! Nathan Bartlett, Catherine Smith, Beau Welsh, Ngaira Puha, Josh Old, Joshua Burge, David Jensen and Conrad Williams got there by their work to restore Kimbolton's historical library.

A mighty apology to those clients missed from the facial eczema (FE) support group

in June. Without our regular submitters of grass for spore counting, Totally Vets would not be able to bring you up-to-date FE risk information. Our appreciation and thanks to Paul Frecklington, Aaron Taylor, Andy Rogers, Shane Carroll, Hugh and Helen Winder, Bill Hale, Steve Barr, Rick Pettigrew, Tony Meads, Mary Wilton and Brian Hunter.

Totally Vets congratulates George Whitelock who has been named in the Junior All Blacks to play in the IRB Pacific Nations Cup

# Paca poo problems!

Peter Aitken

The impression that most alpaca poo problems are related to parasitism with the odd chance of something else thrown in the mix is one easily accepted.

Although parasitism is a major problem (to be looked at in more depth in later newsletters), Johne's disease is also a problem and more prevalent than thought.

Johne's disease is caused by bacteria in the same family as tuberculosis. It does most of

its damage in the gastrointestinal tract, not in the lungs. It is/was believed to be in alpacas (but similar to the bovine form where by it could take years to manifest itself), and would show as progressive weight loss and ill-thrift over a number of months to years, eventually leading to death. This may still be the case in some situations but a more aggressive form is also out there. It is much more rapid in onset and can see animals waste away and die over weeks to months with an intermittent scour that will not respond to any form of treatment.

Johne's is spread by the faecal/oral route from animal to animal. It is more commonly a disease that spreads when animals are overcrowded and conditions mean they are eating closer to the ground and to poo piles. Unfortunately once they contract it, we are unable to treat it as antibiotics do not



Above Clinical Johne's disease in alpaca intestines

work. It is also very hard to screen for as it is not readily detectable on poo or blood samples.

What do we do about it? If you have any animals that scour or are losing weight and they don't respond to drenching, then seek advice!

**For further information on Johne's disease in alpacas or other alpaca-related matters, contact Peter Aitken on 06 3565011 or at [admin@totallyvets.co.nz](mailto:admin@totallyvets.co.nz).**

# Ostertagia in R2 heifers and cows

Greg Smith

*Ostertagia* is an important parasite in cattle because fewer worms are required to cause significant harm, cattle are slower to develop immunity against it and *Ostertagia* has a greater ability to cause harm from the suspended state (type II ostertagiosis).

While immunity is robust under normal conditions, adverse factors such as

underfeeding, worm-contaminated pasture and periods of stress such as is experienced around calving, reduce the effectiveness of immunity.

The usual lifecycle of *Ostertagia* once infective stage larvae are ingested is for the parasite to mature and start producing eggs within three to four weeks. A proportion of ingested larvae does not develop to maturity and is arrested in the stomach wall prior to reaching the egg producing adult.

During this suspended state, larvae cause little irritation. When they emerge, they cause the same damage as a mature worm. The animal shows significant clinical disease with symptoms of scouring, loss of appetite and ill-thrift and even death if left untreated. A more usual outcome is for the suspended larvae to emerge over an extended period and cause chronic type II ostertagiosis. Suspended larvae start to emerge in early spring so a late winter drench effective against type II will remove

the burden accumulated during the previous autumn/winter.

## EFFECTS OF AGE

R2 heifers are more susceptible than older cows. If their growth rates are low and other effects such as feeding or trace elements are accounted for then parasitism could be the cause.

Drenching at calving makes very good sense every year. A calving drench is advisable for 3 year cows (2nd calvers) as well. Mature cows, because of their greater immunity are at less risk of ostertagiosis.

An assessment of this risk is warranted before making the decision to drench mature cows at calving. Totally Vets is available to discuss these issues and parasite control programmes for all stock classes if you have any concerns or questions.

Tournament. Just reward for a lot of hard work and sacrifice.

Lucy Cahill qualified for the Pro Vice-Chancellor's Merit List in 2008. This means Lucy achieved an A minus average. The merit list includes all top-performing students within the College. Well done Lucy on a grand achievement.

Congratulations to Annabel and Nick Gorman who are expecting their first baby early in December. Annabel has developed an aversion

to sweet things which makes those who believe in old wives tales think she may be having a boy.

At last Hamish and Kirsten have announced their engagement. Totally Vets wishes the happy couple good luck and an exciting future.

Nigel, Aimee and Rachel attended a business training course and helped their group win a \$50 bar tab building a totem pole! It's not difficult to figure what happened to the bar tab, but the totem pole?



Above Hamish and Kirsten with Scrappy.

# Equine genetic parentage testing

Dr Jenny Cahill

The use of DNA technology is something most of us are familiar with - due to its uses in human forensics. But it also has applications in the equine world, including DNA profiling for parentage, colour and some inherited diseases.

It has been standard in New Zealand for some years that all thoroughbred and standardbred foals undergo DNA parentage verification before registration, and is becoming a common prerequisite to register a foal with other breed societies.

Here are some basic genetic concepts to help you understand the following information on DNA genotyping:

**CHROMOSOMES** - long double-stranded molecules of DNA, present in the nucleus of every cell in the body, containing all of the information of inheritance. Chromosomes come in pairs - one from each parent.

**DNA** - molecules made up of millions of the four basic repeating units A (adenine), T (thymine), G (guanine) and C (cytosine). Only 10% of DNA sequence actually codes for genes.

**GENES** - specific sites on the DNA, containing the information for inherited traits, coded by the specific order of the four bases. Genes and gene markers also come in pairs - known as loci.

**MICROSATELLITES** - DNA markers which are present in the 90% of noncoding DNA.

**ALLELE** - form of a gene at its specific locus. There are two alleles at each locus - one from each parent.

## PARENTAGE VERIFICATION

DNA is extracted from the hair follicles from plucked mane or tail hair and parentage is verified by comparing specific microsatellites markers in the foal's DNA (the DNA fingerprint) to those of the parents. This uses the principle that one of each pair of

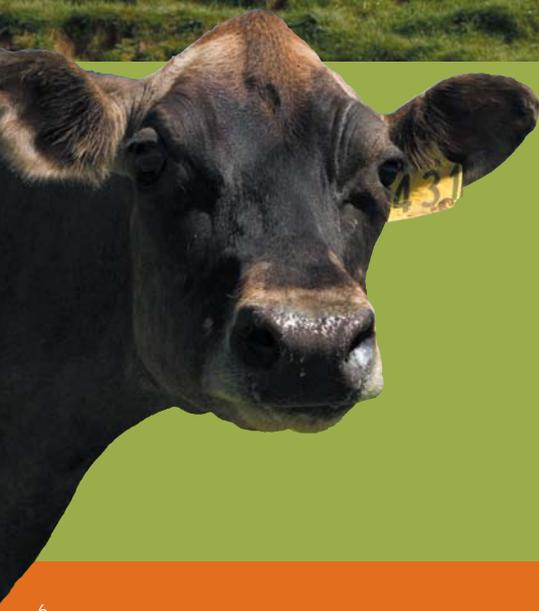
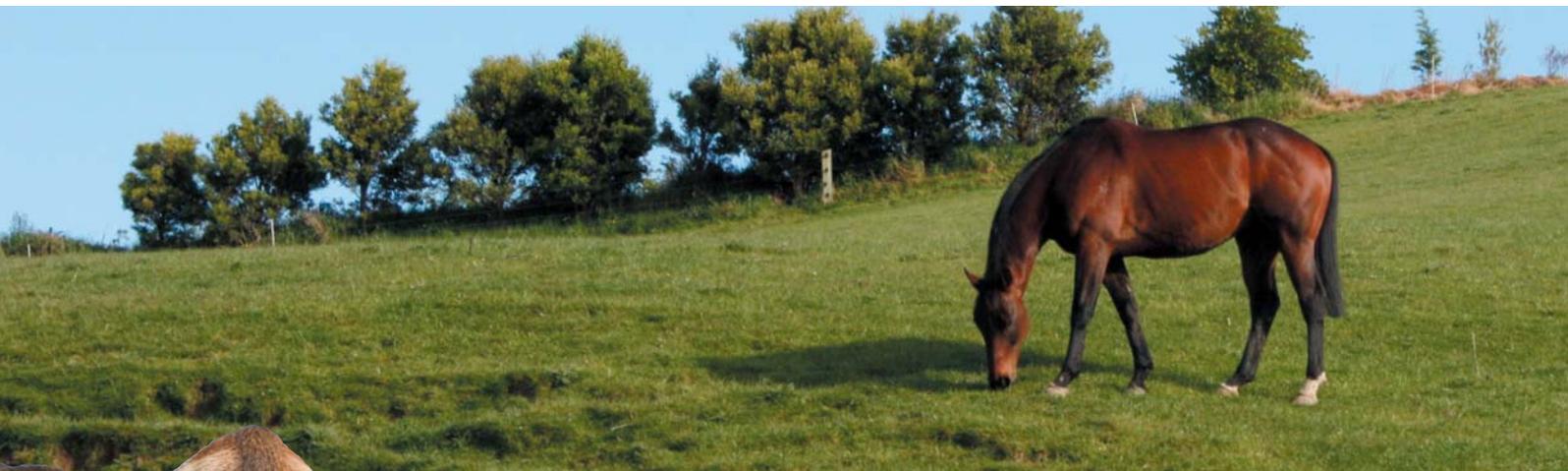
microsatellite markers for the foal has come from the dam and one from the sire.

Sometimes the results are unexpected - there will always be surprises when dealing with horses. The expected sire or dam does not match on DNA - mares will swap foals in the paddock, and stallions will use many devious and sometimes seemingly impossible means to reach a mare.

A scientifically-based method for verifying parentage is crucial to any breeding programme, to ensure that pedigree information is absolutely accurate. Reliance on observation, manual identification and record-keeping produces a surprisingly high level of errors. Even in the 'gold standard' of pedigrees, the Thoroughbred Stud Book, genetic studies showed that up to 50% of maternal/dam lines contained DNA they could not possess if the pedigrees were accurate.

If you would like more information on parentage verification or colour testing in New Zealand, please contact

**Dr Jenny Cahill BVSc PhD**  
**Director Equine Parentage and Animal Genetic Services Centre**  
**Massey University | Palmerston North**  
**Email [J.I.Cahill@massey.ac.nz](mailto:J.I.Cahill@massey.ac.nz)**



## Rotavirus scours in calves

Paul Wiseman

Calf scours can be costly today, and may affect productivity in the future. Plan for a solution

that helps ensure piece of mind now, and optimal returns tomorrow.

Bigger herds, more calves reared and more intensive rearing systems with calves kept in high-density housing will all be factors in this increase.

Rotaviruses, consistently the biggest cause of scours, are shed in the faeces of healthy animals, especially at times of high stress



# Copper deficiency

Anita Renes

## HOW DOES COPPER DEFICIENCY AFFECT AN ANIMAL?

Copper deficiency can contribute to reduced growth rates in young cattle, diarrhoea, bone defects, lightening of the coat colour with patches of grey around the eyes, anaemia and possibly reduced milk production and poor reproductive performance.

Young deer suffer reduced growth rates and adult deer develop a condition called 'swayback' where they lose coordination of their hind end. Lambs can also suffer from swayback. Copper deficiency in sheep will also lead to weak bones, wool abnormalities and possibly reduced fertility.

The classic signs of copper deficiency are not as common these days and most of the time we are aiming to achieve levels that optimise production.

## WHAT CAUSES COPPER DEFICIENCY?

The reason for inadequate copper levels is usually due to interfering minerals in the soil/pasture and not low levels of copper in the diet per se. Minerals that reduce the absorption of copper are called antagonists. The main antagonists are molybdenum, sulphur, iron and zinc. Antagonists have a large influence on the

such as at calving. This makes newborn calves especially at risk. Outbreaks often occur at the same time as calving peaks.

Infected animals shed vast amounts of virus, contaminating the environment and infecting healthy calves.

Seeing valuable calves suffering and dying is also very distressing for all concerned.

Long-term consequences of neonatal diarrhoea can include calves not reaching the target liveweights that are important to ensure

amount of copper that must be present in the diet to maintain optimal levels.

## IS COPPER SUPPLEMENTATION NEEDED WHEN TREATING FOR FACIAL ECZEMA?

At high levels zinc is a copper antagonist. Many farmers must treat with high levels of zinc over the facial eczema (FE) season to prevent disease. Severe outbreaks of FE in zinc-treated animals have been linked to high copper levels. If copper levels are adequate, copper supplementation should stop while animals are being supplemented with zinc. Fortunately copper requirements are generally not that high during the FE season. Though copper depletion is common during the FE season, it has not yet been linked to a reduction in animal performance. It is important to check animal trace element levels in the autumn following zinc FE treatment

## WHY DO COPPER LEVELS FALL OVER THE WINTER?

Copper levels tend to fall over the winter and are often at their lowest heading into the spring. The reasons for this are:

- Pasture molybdenum levels increase in water-logged soils
- During the winter the amount of soil, and hence iron, ingested by animals increases (it can be up to 10% of the diet if grazing short muddy pastures, if silage has a lot of soil contamination or if the water table is high)

subsequent productivity. Failure to reach target liveweights at 15 and 22 months can result in reduced fertility and reduced 1st lactation in dairy heifers. Less than optimal productivity can mean reduced income.

Because calf scours will affect virtually every calf rearing unit at some time, it makes economic sense to have a simple and effective risk management plan.

Vaccination is the economic solution that helps ensure piece of mind today, and optimal productivity in the future.

- Copper requirements are higher during the late winter/early spring due to the demands of the developing foetus and early lactation

Autumn is a good time of the year to test trace element levels in the herd.

## WHY IS LIVER TESTING BETTER THAN BLOOD FOR COPPER?

Liver samples are preferred to blood samples for assessing copper status. The liver is the major storage site of copper in the body. Think of the liver as being like a water tank slowly feeding a trough (the blood). The trough remains full until the tank is empty and then the trough level also falls. Blood testing will identify clinical deficiency but does not give any indication of the level of copper reserves in the liver. Generally we are not looking for clinical deficiency but want to know whether there is enough copper reserve to get through the next period of time and how effective the supplementation programme has been.

Assessing copper status is not always as simple as reading the test result from the lab. In interpreting lab results, age/breed of animals, feeding, level of production, copper, molybdenum, sulphur and iron levels in the feed, clinical signs of deficiency and previous copper use are all important factors that Totally Vets will consider when advising on copper supplementation.

A single 2mL dose of Rotavec® Corona \* to the pregnant cow massively boosts protective antibody levels in colostrum, which are then passed onto the newborn calf either by suckling or by being fed colostrum.

To get the best value from vaccination, good colostrum feeding is critical. Calves must get 2-3.5 litres of first day colostrum within 6-12 hours of birth while colostrum antibodies are at their highest.

\*Registered pursuant to the ACVM Act 1997, No. A8132



# Did the worms die? Part two - cattle results

Greta Baynes

Last summer, Totally Vets completed a number of Faecal Egg Count Reduction Tests (FECRTs) in order to examine drench resistance on our clients' properties. Sheep results were discussed in the June issue of VetNotes.

There were only a small number of farms that tested calves, so this year's results have been

combined with other farms surveyed in 2006. The results below are compared to the 2006 national drench resistance survey results.

## LEVAMISOLE - CLEAR DRENCH

This is currently effective on all farms tested in this district, although nationally 6% of farms had Levamisole-resistant worms.

## BENZIMIDAZOLE - WHITE DRENCH

White drench worked well on one farm, but on most others both *Ostertagia* and *Cooperia* showed resistance. Seventy six percent of farms surveyed nationally had resistance, attributed mainly to *Cooperia*, but *Ostertagia* are commonly resistant to white drench in our area. This has implications for those using double-combination drenches.

## IVERMECTIN - ENDECTOCIDE

*Cooperia* are very commonly resistant to endectocide treatment. Ninety two percent of farms nationally have endectocide-resistant parasites.

## SUMMARY

*Cooperia* are commonly resistant to both white and endectocide drenches. Do you know the resistance status of *Cooperia* on your farm?

On farms where *Ostertagia* are resistant to white drench, the routine drench choice may be different from our standard recommendations. Do you know the resistance status of *Ostertagia* on your farm?

FECRTs provide vital information, meaning the money you spend on drench is not only killing the worms, but aiding optimal productivity on your property.

Our FECRT service will be available again this summer.

**If you are interested in the drench resistance status of the parasites on your farm, contact Greta Baynes at Totally Vets on 06 323 6161 or e-mail [admin@totallyvets.co.nz](mailto:admin@totallyvets.co.nz) and we will contact you nearer the time.**

# Teeth can be a pain in the mouth!

## But equine dentistry doesn't have to be!

Dental pain may cause your horse to:

- drop its feed
- lose weight
- shake its head while being ridden
- be reluctant to turn
- be difficult to ride

A calm, stress-free, safe and efficient dental may be all you need to correct these problems

Totally Vets provides full equine dental services

- sedation and pain relief as required
- floating
- extraction
- radiography if required

**Speak to us today for information and to book an appointment!**

**For further information on our equine dentistry services visit our website [www.totallyvets.co.nz](http://www.totallyvets.co.nz) or phone Feilding 06 323 6161 or Palmerston North 06 356 5011.**

