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Winter Ills

It's that time of year again, the onset of winter, when rodents tend to migrate inside.

Cold frosty mornings coupled with winter rains filling rat holes outside tend to make these rather unwanted guests seek warmer shelter in houses and, particularly, barns.

So, homeowners and farmers spread rat poison round with gay abandon. The result is often that not only dogs, but also cats and goats inadvertently receive toxic doses.

Most rat poisons contain warfarin, or some other coumarin, causing interference with blood clotting leading to bleeding by interfering with the vitamin K stage in the clotting cascade.

There are certain non-negotiables in the use of vitamin K therapy.

Symptomatic therapy plus Vitamin K₁ (phytomenadione) as a specific antidote is treatment of choice, because this form of the vitamin is

immediately available for synthesis of new blood clotting factors whereas other forms of vitamin K are not.

There are certain non-negotiables in the use of vitamin K therapy.

Vitamin K₁ has no direct effect on coagulation itself, and synthesis of new clotting factors takes at least 6-12 hours.

Therefore, emergency needs for clotting factors can only be met by transfusion.

Because of this time lag to onset of any anticoagulation action differences of minutes in the absorption of vitamin K₁ are probably not clinically significant and so individual patient factors determine the preferred route of administration.

Anaphylactic reactions may occur if vitamin K₁ is given I/V and often extensive bleeding has occurred after I/M therapy, so neither of these two routes is recommended.

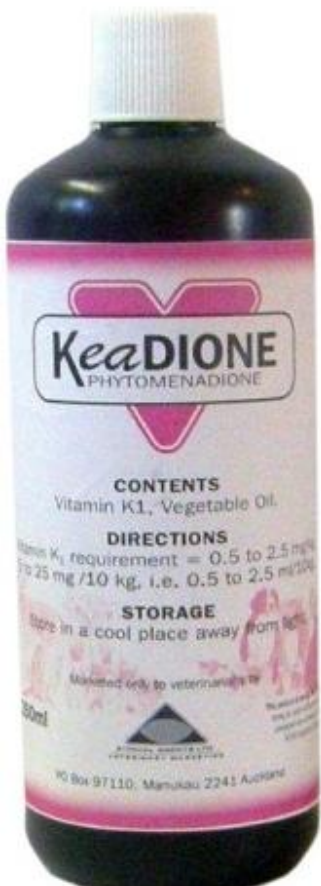
Bioavailability is very high following oral administration, so this route is recommended for animals that are not vomiting.

Vitamin K₁ is highly lipid soluble and so bioavailability would be enhanced by it being dissolved in oil or the concurrent feeding of a small fatty meal.

Vitamin K₁ may be given S/C if the animal is vomiting or is reluctant to take oral therapy.

Since Vitamin K₁ has no effect on both the metabolism and the elimination of the rodenticide, therapy must be maintained until toxic amounts of the compound are no longer present in the animal.

Certainly, most liquid medications are much easier than tablets and oily solutions obviate the need for a concurrent fatty meal to be fed.



New Zealand Made

We often hear the cry, “Buy New Zealand made,” which is a little oxymoronic in a country that is so dependent on exports for revenue. How would our clients feel if trade was only one way?

Reasons for buying New Zealand made include:

1. You can be assured that a business manufacturing in NZ is doing so ethically. Not only do we have better working conditions, but we also have legislation that ensures workers are paid and treated fairly. *This may be a fair comment, but we are not the only country in the world to which this applies.*



2. Businesses who have been manufacturing in New Zealand for many years have experience in meeting these quality expectations.

They've put quality control processes in place to ensure that their products will do what they promise. This is not always the case with products that are sourced from overseas and you don't know this until the goods arrive on your doorstep.

This is only partially true. Decades ago, Japanese and the Korean cars were considered much inferior, more lately it has been Chinese. All these countries have dramatically advanced their technologies to be amongst the finest on the planet.

3. Manufacturing in NZ means those quick, urgent orders that you have can be turned around within your time frames and meet your deadlines. Sourcing from overseas can see timeframes blow out, particularly with the shipping delays that have been experienced over the last couple of years. *Very true and very relevant right now.*

4. The shipping industry is responsible for around 940 million tonnes of CO2 annually, which is at least 2.5% of the world's total CO2 emissions. Goods sourced from overseas require longer shipping times, therefore adding to our carbon emission problems. Think of the reduction in carbon emissions if your product was locally manufactured. *Yes, true.*

5. Purchasing from a business that manufactures in NZ is keeping the dollar in New Zealand. This has a flow on effect for everyone in the economy as there is more money to be spent, which in

turn means businesses can afford to employ more people and spend more money. *To a degree but, as stated above, how would our clients feel if trade was only one way?*

In normal times most of the NZ made claims can be rebutted but we are not currently in normal times.

Whatever your opinion about the war in the Middle East there is no escaping the fact that it has had a dramatic effect on our economy. Like in Covid times local businesses are hurting and need our full support.

While normally we should be cognizant of the fact that we are an exporting nation, now it is time to rally round and support local.

In the veterinary world the majority of products are manufactured overseas and are marketed by both multinationals and NZ agency companies, with the latter supplying mainly generics.

Supporting agency companies ensures constant supply.

Multinationals often readily discontinue products in the 'too hard basket', imperiling supply of essentials such as oxytocin and lignocaine, as seen recently, with agency companies stepping up to the plate and relieving the crisis.

A Ghost

Two men were walking home after a party and decided to take a shortcut through the cemetery just for laughs.

Right in the middle of the cemetery, they were startled by a tap-tap-tapping noise

coming from the misty shadows. Trembling with fear, they found an old man with a hammer and chisel, chipping away at one of the headstones.

“Oh, Mister,” one of them said after catching his breath,

“You scared us half to death — we thought you were a ghost!

What are you doing working here so late at night?”

“Those fools!” the old man grumbled. “They misspelled my name!”

New Tablet For NZ Cats

Clavaseptin has been around for some years now and is what we would term a value added generic, i.e. a generic product that has advantages, making superior to the original.

The major advantage of course, is palatability, especially for cats; it is the treat that treats.

This makes owner compliance much more certain. In addition to this Vetoquinol have brought out a new size tablet, targeting New Zealand cats.



All the current brands are based on European cats, which typically have a lower average body weight than cats in New Zealand.

As a result, cats here may have been underdosed.

Now Vetoquinol have provided a solution to this problem.

In veterinary medicine, the proper and rational use of antibiotics is fundamental in the fight against antimicrobial resistance (AMR).

So, when AMR is at the forefront of our minds, this more convenient dose tablet fulfils a lot of the criteria.

The rational use of antibiotics has 7 key points: Emphasising preventative health strategies, Diagnosis prior to prescription, Sampling and testing, The selection of first line antibiotics, Monitoring and feedback, Prescribing the right dosage and duration, Communication and client compliance.

Points 5 and 6, (Prescribing the right dosage and duration, Communication and also client

compliance,) are both well covered with the new tablet.

Accurate dosing and adherence to recommended treatment durations are paramount to ensure therapeutic efficacy while minimising the risk of resistance.

The new 62.5 mg Clavaseptin tablet takes out a lot of the guesswork and ensures NZ cats are not underdosed.

This not only fits the key points of correct dosage from an AMR point of view but also ensures better treatment efficacy.

And, of course, the extreme palatability absolutely ensures owner compliance.

In this age of responsible antimicrobial usage, it means that you don't need to use a third or fourth generation cephalosporin in order to get convenience in dosing.



You Couldn't Do It If You Tried!

There was the famous case many years ago of a horse trainer being late for a meeting, with his excuse being that he had stopped for petrol, leaving his dog in the car.

The dog excitedly jumped up and down, inadvertently hitting the lock button, locking the trainer out of his own car.

That was hard to beat but somehow Nagy mastered that.

While doing a courtesy, dropping off a pack from one clinic to another, he rushed out of his car, somehow getting his seat belt caught in the door and jamming the lock.

Upon returning to the car, he found himself unable to get in as the partially open door was immovable.

Getting in through the passenger's side he found

himself unable to drive off to the dealership for help as the electronics refused to let the car move due to the door not being fully closed.

Cue a call to AA, hence a long wait for a mechanic to come and remedy the problem. In all it was a nearly 2-hour delay.

As far as imaginative excuses go, Nagy is at the top of the class.

At The Vet

An interesting series of articles appeared in the UK based podcast, The Conversation, by dog-owning economist David Rietzke, who is Senior Lecturer in Economics, at Lancaster University and referring to his research into veterinary pricing in the UK.

Many of his findings can be, or soon could be, extrapolated to the NZ veterinary world.

Until 1999, UK vet practices had to be owned by qualified vets. Most were small, local and privately run. But that changed when the Veterinary Surgeons Act was amended to allow wider ownership. (Ditto for NZ).

This opened the door for venture capitalists, healthcare companies and multinational corporations, like Mars and Nestlé, to expand into the veterinary sector.

They quickly bought up small vet practices and soon dominated the market.

This domination has led to concerns of an excessive focus

on profit rather than affordable veterinary care, leading to high costs for owners and stressful performance targets for vets. The Competition and Markets Authority (CMA), the UK version of our Commerce Commission, has been investigating the veterinary sector since September 2023 because of this.

Prices for veterinary services have risen sharply in recent years, and many pet owners say they find it difficult to understand or predict what they will be charged.

Although vets have long been portrayed as trusted figures, increasingly that trust is being questioned and vets report that clients are suspicious of the advice they offer.

One vet he spoke to was frustrated that a client had refused all treatment options because they believed that their recommendations were motivated by financial targets and not their pet's welfare.

Healthcare is not like buying groceries or new shoes – it's what economists call a "credence good". Similar to car repairs, this is where experts know far more than their clients, and it's difficult to verify afterwards whether the right course of action was taken.

Trust matters not only for the wellbeing of vets, but also for animal welfare. When trust breaks down, clients may delay or decline treatment. Vets said they struggled to balance the best outcome for the pet with the owner's willingness or ability to pay.

Some vets describe hostility from clients, while others avoid telling people they are a vet to escape conversations about fees. Vets frequently stated that they did not join the profession for the money, yet the public perception is that high veterinary charges lead to high salaries. However, high fees for clients do not necessarily equate to high salaries for vets.

Intensive Care

A man was brought into the hospital intensive care ward, put in a bed, tubes coming out everywhere.

A week later, another man was admitted, being in a similar condition.

Both lay there, machines pinging, tubes poking etc. A couple more weeks before one of them had the strength to raise his hand and point to himself and say, "American."

The other patient signalled he had heard, raised his own

hand, and said that he was Canadian.

This act tired them out so badly it was a week before the first summoned up the strength to say, "New York..."

The other replied in a weedy frail voice, "Toronto..."

Once more, the strain was too much for them both and they passed out.

Days passed before the first patient managed to again point to himself and say, "Michael..."

The second patient then replied, "David..."

A few hours later, Michael managed to point to himself again and rasp out weakly, "Cancer."

David responded, "Sagittarius."



At The Vet (cont.)

There are, of course, reasonable explanations for rising fees. Pet ownership in the UK ballooned at the height of the COVID pandemic. Increased pet ownership means there is increased demand for veterinary care, which means higher prices. Advances in treatment have improved the quality of care while also raising costs.



Nevertheless, the CMA found that the profitability of large

veterinary groups is far higher than would be expected in a well-functioning market.

The CMA is also targeting the way medicines are sold. Many pet owners don't know that they can request a prescription and purchase medications online, often at lower cost. Under the new proposals, vets will be required to make this option clear, and there will be a £21 (\$NZ 48.50) cap on prescription fees.

However, many online retailers of animal medication are owned by the corporate practices and so some believe this will merely transfer income from independent practices.

A survey by the CMA as part of their investigation found that most people choose a vet based on location and quality of care, not cost.

However, the research also found that many owners were

not aware that their vet practices were corporates.

When clients could compare options, they may be less likely to assume that their vet's recommendations are driven by profit.

The veterinary profession is navigating a complex set of pressures, including the rising cost of living, increasing overheads in the UK and difficulty in retaining experienced vets (Sound familiar?).

The CMA's recommendations are an important step towards improving transparency and empowering pet owners, but rebuilding trust will take more than clearer pricing.

It will depend on people understanding and also anticipating the cost of pet ownership and valuing the expertise and care at the heart of veterinary relationships.

At The Doctor

Oliver's wife and kids all came down with the flu.

Upon returning home from school with his kids, he turned his attention to his ailing wife.

After preparing some chicken soup for her, he picked up the phone to call her doctor.

The receptionist picked up and he related the situation

to her. She then told him that his wife could have an appointment in 3 days.

Oliver went ballistic and yelled into the phone, "Three days?! The doctor can't see her for three days?! She could be dead by then!"

Calmly the voice at the other end of the line replied, "If so, would you please call to cancel the appointment?"



Sign Language

Two deaf men were talking on their coffee break about being out late the night before.

The first man signed to his friend, "My wife was asleep when I got home, so I was able

to sneak into bed and not get into trouble."

The second deaf man signed back, "Boy, you're lucky. My wife was wide awake, waiting for me in bed, and she started

swearing at me and giving me hell for being out so late."

The first deaf man asked, "So what did you do?"

The second replied, "I turned out the light."

Too Good To Be True?

A thought-provoking article appeared in a recent online platform Science Daily. The article fixated upon the antibacterial properties of graphene.

Graphene is a material that is extracted from graphite and is made up of pure carbon.

It is a single-atom-thick layer of carbon atoms arranged in a hexagonal lattice and purported to be a super material in many fields. (in 2010 Andre Geim and Kostya Novoselov were awarded the Nobel Prize in Physics "for ground-breaking experiments regarding the 2-dimensional material graphene")

To quote the article: "Hygiene is essential for everyday items that come into close contact with the body, including clothing, masks, and toothbrushes. Scientists have now uncovered how graphene can selectively eliminate bacteria while leaving human cells unharmed. This discovery points to a new class of antibacterial materials that could be both safe for people and capable of reducing reliance on traditional antibiotics.

Recently, KAIST announced that a collaborative research team led by Professor Sang Ouk Kim from the Department of Materials Science and Engineering and Professor Hyun Jung Chung from the Department of Biological Sciences identified the mechanism behind the antibacterial properties of Graphene Oxide (GO).

This material consists of a single atomic layer of carbon with oxygen groups attached, giving it the ability to disperse well in water and perform a range of functions.

Until now, scientists did not fully understand how graphene achieved its antibacterial effects. This study provides clear molecular-level evidence explaining how the material works.

Selective Antibacterial Action Explained

The researchers found that graphene oxide carries out what they describe as "selective antibacterial action."

It attaches to and disrupts the membranes of bacteria while leaving human cells unaffected. The process is similar to how a magnet only sticks to certain metals.

This selectivity comes from oxygen-containing groups on the surface of graphene oxide. These groups bind specifically to 1-Palmitoyl-2-oleoyl-sn-glycero-3-phosphatidyl-glycerol (POPG), which is found in bacterial cell membranes but not in human cells. In simple terms, graphene oxide identifies a unique feature of bacteria, attaches to it, and breaks down the cell structure. Phospholipids make up the membrane surrounding cells, and POPG is a type mainly present in bacteria.

Effective Against Superbugs and Promotes Healing

When applied in nanofiber form, this material was able to stop the growth of a wide range of harmful bacteria, including antibiotic-resistant superbugs.

Tests in animals also showed that it helped wounds heal more quickly without causing inflammation.

Another advantage is durability. Fibers made with

graphene oxide retained their antibacterial properties even after repeated washing, suggesting strong potential for use in clothing, medical fabrics, and other practical applications.

From Lab Discovery to Real-World Products

This technology is already being used in consumer products. A graphene based antibacterial toothbrush was developed through patents from the faculty-led startup 'Materials Creation Co., Ltd.,' has sold more than 10 million units, demonstrating strong commercial success.

In addition, GrapheneTex, a textile material incorporating this technology, was used in uniforms worn by the Taekwondo demonstration team at the 2024 Paris Olympics. It is also expected to appear in functional sportswear at major upcoming events such as the 2026 Asian Games."

It is certainly food for thought but is it too good to be true?

Considering that antimicrobial resistance can develop by bacteria altering chemical targets, as POPG clearly is, and taking into cognizance the plans to use graphene for antibacterial properties in a massive fashion, with all sorts of consumer products one wonders how soon it too will be past its use by date.

Triclosan, some years ago was widely used in toothpastes, antibacterial hand soaps and 'odour eaters' in shoes. Evidence indicates that it promotes antibiotic-resistant bacteria, reduces the effectiveness of clinical treatments, and persists in the environment so it is now banned in many countries.

Nature is not Simple

Simplicity simply does not work in nature. While it is human nature to try to put topics in discrete little defined boxes, nature just does not work like that.

Nowhere is this more obvious than in bovine hypocalcaemia. On the surface it is a simple disease, a low blood calcium level that needs correcting, and the simplest way to do that is add calcium. Time has shown us over the decades that it is not that easy, with the major problem being that people want easy and are not interested in complication.

The DCAD diet, while extremely effective, has not taken off here as much as it has overseas, because it is difficult to achieve with our extensive pastoral farming system.

Despite obvious limitations due to poor solubility,

dicalcium phosphate and calcium carbonate have been reasonably popular as supplements but, predictably, not the real answer.

Now we have the rise of the calcium bolus, with a plethora of such products entering the market.

At first glance they offer the simplicity that people wish for, but again nature is not so obliging.

Being solid the bolus must first dissolve before any chemicals can be absorbed by the body.

They generally contain relatively insoluble calcium carbonate and also highly soluble calcium chloride for a supposed 'quick' response.

Unfortunately, solubilization of calcium chloride in water is an exothermic process, and these boluses have caused

severe oesophageal and rumen mucosa damage in some animals. (Reference: Jesse P. Goff, Treatment of Calcium, Phosphorus, And Magnesium Balance, Disorders Veterinary Clinics of North America: Food Animal Practice Volume 15, Number 3, November 1999)..

In addition, unpublished work by Aage Højbjerg et al in the early 90's showed significant mucosal damage from boluses settling at the bottom of the rumen, maintaining a high concentration of calcium chloride next to the mucosal wall itself, accentuating the damage of the exothermic reaction.

So, while boluses seem to be flavour of the month here, they have not taken the world by storm overseas.

The simple solution is not often as simple as it seems.

The Smuggler

Juan crosses the border on his bicycle with two large bags over his shoulders.

The guard stops him and says, "What's in the bags?"

"Sand," answered Juan.

The guard says, "We'll just see about that. Get off the bike."

The guard takes the bags and rips them apart; he empties them out and finds nothing in them but sand.

He detains Juan overnight and has the sand analysed, only to discover that there is nothing but pure sand in the bags.

The guard releases Juan, puts the sand into new bags, hefts them onto the man's shoulders, and lets him cross the border.

A week later, the same thing happens.

The guard asks, "What have you got?"

"Sand," says Juan.

The guard does his thorough examination and discovers that the bags contain nothing but sand. He gives the sand back to Juan, and Juan crosses the border on the bicycle.

This sequence of events is repeated every day for 3 years.

Finally, Juan doesn't show up one day and the guard meets him in a Cantina in Mexico by coincidence. "Hey buddy," says the guard, "I know you are smuggling something. It's driving me crazy.



It's all I think about and I can't sleep. Just between you and me, what are you smuggling?"

Juan sips his Corona and says, "Bicycles."



Animal welfare is our business



Church Language

Two American men are touring Europe and are scheduled to arrive in France Sunday afternoon.

However, they arrived several hours early and had little to do on Sunday morning while everything was closed.

"Well," one says to the other, pointing to a nearby Cathedral, "why don't we attend Mass?"

"Sure," replies his friend. "But we don't know how the French pray and we can't speak French!"

The first guy thinks of a solution. "We'll pick a guy in front of us, and whatever he does, we'll do."

His friend agrees. They enter the church, sit close to the front, and choose a guy.

Fifteen minutes pass, and their plan is working well. Thirty minutes, no issues.

By the time forty-five minutes pass, they've gotten used to the routine. Suddenly, while everyone is seated, the priest says something in French and the gentleman they chose stands up. Without thinking, the two Americans stand up as well.

The church bursts into hard laughter.

Realizing that no one else is standing up, the two American men leave in embarrassment.

They wait for the Mass to end, and then approach the priest, who spoke English.

"We're well-meaning people—we don't speak French and just chose some guy to imitate while praying," one says.

The priest chuckles. "Ah. You're probably wondering why everyone laughed at you."

"Yes," replied the other American.

"Well, you see, I announced the Baptism of a child... and asked for the father of the child to stand up."

