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Looking For Answers



We have one story inside entitled "More Questions Than Answers," delving into the minefield of animal welfare, more especially the controversy over life animal exports and the tricky position for NZVA.

Many people hold strong opinions and opinions are often emotionally based, like the vaccine debate.

Unlike the vaccine debate where many emotional opinions are based on witchcraft and pseudoscience the life export debate has people on both sides forming opinions on sound bases.

The problem is that the sands shift with time and, what was once bad practice, may now in fact be more acceptable. That is still questionable but reason tells us we do not have all the answers.

Where we do have answers is in another article regarding the pluses and minuses of UV light irradiation as a means of sanitation.

UV light is a whole new field for most of us and, although interesting, it does have serious drawbacks, in that ubiquitous little microbes can soon find a way of surviving, meaning that UV light sanitation has, at best, no more efficacy than chemical disinfection has, generally less so.

Also looking for answers is the equine industry, more specifically looking for being able to identify and locate horses in the event of a disease incursion. This is no easy task considering the number of undocumented horses running wild but very necessary.

Where we definitely have all the answers is in the safe handling of Steri-GENE, which is not only the most effective disinfectant on the veterinary market, but totally biodegradable and also among the safest to use.

If all else fails there is the usual array of jokes to hold attention!



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More Questions Than Answers

The emotive issue of live animal exports has reared its head with the change of government leading to a reversal of policy. Like all emotive subjects, sound science, which should be the determining factor, is not universally accepted. In this case there are also many questions and few real answers.

It is true that the practice has been lacking in many animal welfare aspects in the past but is this the case now? If the industry has tidied itself up, how much of that is due to the past efforts of welfare activists? As far as the profession is concerned should NZVA be consulted for an opinion?

Taking the last question first NZVA has been consulting with SIBs to formulate comment. Clearly DCV and Sheep and Beef SIBs have very relevant opinions but do SIBs such as CAV and Industry have any stake in the game? DCV and Sheep and Beef would not be consulted on tail docking of dogs, this being seen as a CAV issue, so maybe it is not appropriate to consult CAV on live animal exports. EFAB would clearly be a SIB of interest as some members will be MPI employees and have experience in inspecting shipments for transport.

Horses for many years have been regular travellers and so Equine

Branch opinion would be relevant, even though some claim that the difference between horse transport and ruminant transport is like night and day. Horses travel business class by comparison and not for nothing is the lowest economy fare in public transport referred to as cattle class. In addition, horses more often than not travel to and fro, while ruminants are generally on a one-way trip.

"not for nothing is the lowest economy fare in public transport referred to as cattle class."

This brings us to the other factor – the destination, the welfare of the animals at the end of the voyage can be the bigger concern. Again, information beats supposition, for example sale of horses to China and Mongolia did raise concerns as to how these animals would be treated, but an Equine Health Association report found that they were prized animals and welfare standards were as high or higher than our own.

Similarly, a shipment of several thousand pregnant heifers to China resulted in three aborting on the way, probably a lower percentage than if they were kept on New Zealand farms. On the other hand, we have had horrific cases of sheep going through the tropics under severe stress and also there are issues such as halal and shechita slaughter which, especially to Western eyes, can be a welfare issue. A few short years ago our neighbours, Australia, hit the headlines with cattle being rounded up and sent to slaughter in Indonesia under truly barbaric conditions. The media outcry thankfully ended this awful business.

There was the case of the New Zealand shipment of cattle being destroyed by a storm off the coast of Japan, all on board being lost at sea. This incident brought all the activists to the fore highlighting animal welfare; yes, the cattle all died but so did the humans on the ship, including veterinary staff. It was a terrible tragedy, as an aeroplane crash is, but there was no mention of travelling conditions aboard the ship itself; facts were overlooked in the hysteria.

So, back to the original question, should NZVA be involved in giving an opinion? This really should be a rhetorical question only. Attitudes to animal welfare have definitely changed over time, when one considers a 1980 cartoon in the NZVJ, then around the turn of the Milleni-

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Fishing

Nagy and Tony rented a boat and went fishing. In a remote part of the lake they found a spot where the fish were really biting.

"We'd better mark this spot so we can come back tomorrow," said Nagy.

"O.K., I'll do it," said Tony.

When they got back to the dock, Nagy asked, "Did you mark that spot?"

"Sure," said Tony. "I put a chalk mark on the side of the boat."

"You idiot," said Nagy. "How do you know we'll get the same boat tomorrow?"



More Questions Than Answers

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um NZVA actually asked the question, should they be involved in animal welfare. The question should have been a statement, that no organisation is better qualified than the veterinary profession to comment on animal welfare.

Nature is very cruel and many species do exhibit troubling aspects, the cat playing with the mouse, orca playing with seals and the sight of wolves tearing bison or caribou slowly to pieces can be a distressing thing to see. That is how nature works but that is not an excuse for humans to follow suit. Being the only sapient species, it behoves the human race to treat animals with respect.

The veterinary profession can and should show a lead in this area however, despite the emotiveness at times in welfare issues, all opinion should be science based for the sake of credibility.

Which brings us back to the first question, viz the practice of live animal exports has been lacking in many animal welfare aspects in the past but is this the case now? There certainly has been dramatic improvement in many cases, and MPI inspections and veterinarians on board should provide adequate safeguards but does more need to be done? Even if the mode of transport passes muster should the ultimate destination also be a factor in deciding welfare?

As to the other question, viz, if the industry has tidied itself up, how much of that is due to the past efforts of welfare activists? It is difficult to give a reasoned response but one would suspect the answer would be a great deal.

In the final wash up it seems that NZVA should take responsibility for making a reasoned response.

However, it is not an easy thing to do, having to walk the line between the strident opinions of radical activists such as SAFE and PETA who dominate social media, whilst at the same time considering the wants of NZ Inc. and the farming industry, all the time making sure any response is based on good science.

RETR #bort From NZVJ 1980!

At dawn the telephone rings ...

"Hello Senor Gene? This is Ernesto, the caretaker at your country house."

"Ah yes, Ernesto. What can I do for you? Is there a problem?"

"Um, I am just calling to advise you, sir, that your parrot died."

"My parrot? Dead? The one that won the International competition or the other one?"

"The champion, sir."

"Damn! That's a pity! I spent a small fortune on that bird. What did he die from?"

"From eating rotten meat."

"Rotten meat? Who the hell fed him rotten meat?"

"Nobody senor. He ate the meat of one of the dead horses."

"Dead horse? What dead horse?"

"The thoroughbred, Mr. Lucky. He died from all that work pulling the water cart."

"Are you insane? What water cart?"

"The one we used to put out the fire."

"Good Lord! What fire are you talking about, man?" "The one at your house! A candle fell and the curtains caught on fire."

"What the !!! But there's electricity at the house!!!! What was the candle for?"

"For the funeral."

"What damn funeral?"

"Your mother-in-law's. She showed up one night out of the blue and I thought she was a thief, so I hit her with one of your new golf clubs."

There was a long silence ...

"Ernesto, if you broke that golf club you're fired!"

UV Light +s and -s

It sounds a great idea, using ultraviolet light to disinfect air spaces and surfaces, leaving no chemicals hanging around in the atmosphere, but how good is it?

Actually the science behind it is quite sound but, like many things in nature, not all is perfect. There are pluses and minuses.

Ultraviolet light (UV) is a type of naturally present electromagnetic radiation that is in sunlight and actually makes up approximately 10% of the total light generated by the sun. UV light is electromagnetic energy with wavelengths shorter than visible light but longer than xrays.

The wavelength of this light ranges from 10nm to 400nm and is classified into three sub-bands; UV-A, UV -B, and UV-C. Earth's atmosphere ever sources of UVC radiation exist and are dangerous when not used properly; these are things like welding torches, mercury lamps, and germicidal UV-C lighting. UV light with wavelengths less than 290nm are considered to have "germicidal" properties

UVB is the second shortest wavelength and the main culprit of sunburn. It's mostly absorbed by the ozone layer but still gets through. There is a strong link between UVB rays and skin cancer. UVB rays do age skin over time.

UVA is the longest wavelength, penetrating the deepest and causing the vast majority (upwards of 95%) of UV radiation getting through earth's atmosphere. This is the form of radiation that causes skin aging, like spots and wrinkles. UVA rays



absorbs ultramagnetic radiation with wavelengths less than 290nm, meaning that most of the UV-C and UV-B generated by the sun is blocked by the planet's ozone. This is why the ozone hole is a serious ecological problem.

UVC is the shortest wavelength of the three forms of UV. The shorter the wavelength, the more harmful the UV radiation. UVC isn't able to penetrate earth's atmosphere, howcan tan your skin right away, and do appear to be linked to cancer. UVA rays, unlike the others, penetrate glass and clouds, causing harm on overcast days or via your windshield.

It was discovered in the late 1800s that UVC light can actually be used as a UV light sanitizer with the ability to kill up to 99.9% of germs. The technology was put to use in the early 1900s in Europe for water purification and is still used today. A UVC light sanitizer acts by penetrating the thin wall of a small microscopic organism and destroying its nucleic acids.

"purveyors of UV C light technology claim that it will kill up to 99.99% of pathogens on surfaces and in the air, but there are some drawbacks"

This disrupts the DNA structure and either kills it or renders it unable to reproduce - and therefore harmless. Inactivation of microorganisms results from destruction of nucleic acid through induction of thymine dimers. Bacteria and viruses are more easily killed by UV light than are bacterial spores.

Purveyors of UV C light technology claim that it will kill up to 99.99% of pathogens on surfaces and in the air. but there are some drawbacks. UV radiation has several potential applications, but unfortunately its germicidal effectiveness and use is influenced by organic matter, wavelength, type of suspension, temperature, type of microorganism, and UV intensity, which is affected by distance and dirty tubes. The application of UV radiation in the health -care environment (i.e., operating rooms, isolation rooms, and biologic safety cabinets) is limited to destruction of airborne organisms or inactivation of microorganisms on surfaces.

There are also claims that there have been no reports of microbes demonstrating an ability to build an immunity to light-based methods, but this is not entirely accurate.

Research has indicated that following UV-C exposure, microorganisms possess two mechanisms for selfrepair, referred to as Photoreactivation and Dark Repair.

UV Light +s and -s

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Photoreactivation:

Photoreactivation is a biological process observed in certain organisms, particularly bacteria and viruses. Exposure to visible light following damage from UV triggers enzymatic repair mechanisms within the organism's DNA.

When microorganisms are exposed to UV light, particularly in the UV-C range, the UV photons cause damage to the DNA structure, resulting in the formation of pyrimidine dimers. However, in the presence of visible light, specific enzymes called photolyases become activated. These photolyases can recognize and bind to the damaged DNA sites. facilitating the reversal of the DNA damage. Essentially, photoreactivation allows microorganisms to repair the DNA damage caused by UV radiation light, increasing their chances of survival.

Dark Repair:

Dark repair, also known as nucleotide excision repair, is another biological process observed, particularly in bacteria. It involves repairing DNA damage caused by UV radiation in the absence of visible light.

In the absence of visible light, specific enzymes and repair pathways become activated to identify and repair the damaged DNA segments.

During dark repair, enzymes recognize the lesions in the DNA strand and excise the damaged portion, replacing it with newly synthesized DNA and restoring the original DNA sequence. Dark repair is an essential mechanism for microorganisms to maintain genome integrity and ensure survival following exposure to UV.

These mechanisms can revive a considerable portion of the microorganisms originally killed by UV-C light, reducing the overall effectiveness of the disinfection process.

Conclusion:

The concept is sound, UV C light is a useful tool in disinfecting air spaces and some surfaces, where there is no risk of shadows.

It is fine for things such as Covid masks but ubiquitous organisms using photoreactivation and dark repair, can survive just as they can develop resistance to chemicals.

The best ways to avoid resistance are still to use combination disinfectants such as SteriGENE or chemicals such as activated chlorine dioxide, as in Swift sachets, which have a physical rather than a chemical action.

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Writing

Can you write a whole paragraph without the letter A?

I wouldn't recommend it.

Honestly, your sentences will just sound wrong. Everyone will notice you're doing something different.

Your writing won't flow smoothly. You'll use weird words. It's not worth the effort involved in spending time online looking up tons of synonyms which don't feel right, just to produce weird, stilted prose.

You'd be better off giving up, to be honest.

Of course being Kiwi, you would then finish the piece with the little word eh!





NEIT

One of the major issues facing the equine industry is identification, vitally important in the case of a disease outbreak. Being able to quickly and efficiently trace and identify the horses in New Zealand is critical to a successful disease response and minimising the potential cost a response may have on the industry. By looking at past outbreaks in both our own country and overseas we know that having the tools to understand the complete population is one of the best assets you can have for a response.

While the thoroughbred and standard bred industries have embraced the concept of identification for many years, going from branding to the modern technique of microchipping, the pleasure horse market has been a little left behind by technology.

Currently, there is a discrepancy of 40,000 in the estimated number of horses in NZ. The reason for this is that there is no over-arching method currently in place to capture the entire equine population in NZ. Without understanding the entire population and where its location is



we lose precious time in a disease response.

This is an issue that has occupied the New Zealand Equine Health Association (NZEHA) for a number of years now, looking for a suitable partner with whom the scheme can be coordinated.

A number of overseas options were considered but finally an association has been made with CAV, the companion animal veterinarians, who already have some horses being microchipped on the Eastern Coast of the North Island after last year's cyclone Gabrielle devastation.

The highly successful National Animal Identification & Tracing (NAIT) model has been followed even down to the format of the name; this one being the National Equine Identification & Tracing scheme, known as NEIT.

A logo has been agreed upon and the scheme launched at Equifest 2024 in Taupo in October. The NEIT database aims to launch in August

"Currently, there is a discrepancy of 40,000 in the estimated number of horses in NZ."

2025, with all foals born from this crop onwards to be registered. The sole purpose of the NEIT system is outbreak readiness and efficient disease response in the face of a disease incursion.

A horse only needs to be registered once with a one-off cost of \$15 to cover the lifetime of that horse. Horses will be uniquely identified with a microchip, a safe and globally recognised identification method. Proactive horse owners will be able to register microchipped horses born before August 2025.

This project is led by the NZEHA, a non-government body, on behalf of the NZ equine industry.



SteriGENE User Safety

All disinfectants are potent biocides so have potential to be harmful to the user. When we look at the safety profile of SteriGENE the biocidal mechanism is important. We want potent biocidal activity yet a high safety profile, and the key is the formulation of the product.

There is no single molecule chemical that has both high potency and is also gentle on the environment or the user. The answer lies in combinations of ingredients working together in synergy.

SteriGENE has two quaternary ammonium compounds combining with a chemical from the biguanide class, binding together to form a complex known as a halogenated tertiary amine. Along with highly specialised surfactants these chemicals penetrate and strip the microbial cell wall then act on the DNA of the microbe ensuring rapid biocidal activity.

In addition, SteriGENE is in microemulsion with very low surface tension, all of which allows not only deep penetration of surface cracks and crevices but also rapid cell wall penetration.

The simple prokaryotic cellular structure of microorganisms provides little resistance to the active ingredients of SteriGENE, but the hugely more complex eukaryotic structure of the mammalian cell membrane means that SteriGENE is not cytotoxic to mammalian tissue so it is safe for the handler to use.

Furthermore, the extremely high potency means that higher dilutions can be used, thus resulting in less chemical overall being inserted into the environment, and also less risk to the handler.

These factors, along with the total biodegradability of SteriGENE make it not only one of the most effective disinfectants on the market but also among the safest to use.

Despite this information it is wise to treat all chemicals with respect, hence the conservative warnings on the product material safety data sheet.





The wife cried out, "What are we going to do?"

"Nothing," said the husband.

"The lion got himself into this mess, let him get himself out of it!"

Golfing Row

Three members of a golf club were arguing loudly while the fourth member of their group lay dead in a bunker.

A club official was called to calm the row.

Hunting

A big game hunter went on a safari with his wife and mother-in-law.

One evening, while asleep in the jungle, the wife awoke to find that her mother had gone.

Rushing to her husband she insisted on both of them trying to find her mother. "What's the trouble?" the official asked.

"My playing partner had a stroke," said one of the angry men, "and these two #%#%s want to add it to my score!"

The hunter picked up his rifle, took a swig of whisky and started to look for her.

In a clearing, not far from the camp they came upon a chilling sight: the mother-in-law was backed up against a thick impenetrable bush with a large male lion facing her.





Animal welfare is our business



Sounds

The world's leading expert on European wasps walks into a record shop. He asks the assistant "Do you have 'European Vespidae Acoustics Volume 2? I believe it was released this week."

"Certainly," replies the assistant. "Would you like to listen before you buy it?"

"That would be wonderful," says the expert, and puts on a pair of head-phones.

He listens for a few moments and says to the assistant, "I'm terribly sorry, but I am the world's leading expert on European wasps and this is not accurate at all. I don't recognize any of those sounds. Are you sure this is the correct recording?" The assistant checks the turntable, and replies that it is indeed European Vespidae Acoustics Volume 2.

The assistant apologizes and lifts the needle onto the next track.

Again the expert listens for a few moments and then says to the assistant, "No, this just can't be right! I've been an expert in this field for 43 years and I still don't recognize any of these sounds."

The assistant apologizes again and lifts the needle to the next track.

The expert throws off the headphones as soon as it starts playing and is fuming with rage.

"This is outrageous false advertising! I am the world's leading expert on European wasps and no European wasp has ever made a sound like the ones on this record!"

The manager of the shop overhears the commotion and walks over.

"What seems to be the problem, sir?"

"This is an outrage! I am the world's leading expert on European wasps. Nobody knows more about them than I do. There is no way in hell that the sounds on that record were made by European wasps!"

The manager glances down and notices the problem instantly.

"I'm terribly sorry, sir. It appears we've been playing you the bee side."