ETHICAL AGENTS
VETERINARY MARKETING

EA NEWS

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No Need to Panic

Inside this issue:

Special points of interest:

* A look at the 3rd world veterinary situation and how lucky we are.
* The world's only pure white kiwi on display
* Synchrony now that eCG is a no no.
* A look at colour perception and preferences in horses.

There was a perfect storm a couple of years ago when it looked like there would be a nationwide shortage of lignocaine injection right at the peak of veleveting season. This would have been a major animal welfare issue but disaster was averted thanks to prompt action by both industry and regulators.

The good news from all of that is that industry is well placed to cover any similar such eventuality. This year there was a rumour that the situation was going to recur simply because one supplier could not get stock.

In this crazy year of Covid rumours can rapidly gain critical mass but that is all it really is, just a rumour.

So far there is no shortage of lignocaine this season, Ethical Agents has abundant stocks of Lopaine and a short supply line as stock is manufactured just across the ditch. This means that the company can react quickly if there is such a shortage but clinicians can take comfort in the fact that stock levels are high, shelf lives are excellent and more is under order.

Gilt edged guarantees can never be given especially in a year such as this. There is so much disruption world wide and already there are reports of shortage of raw active ingredient but EA has always had an ear to the ground and is prepared.

As stated above there is plenty of stock on hand for current use, all with excellent shelf life, and more being manufactured ahead of the next peak in sales at the end of the year.

There is little chance of the company, or the nation, running low on Lopaine this or any other year.

We have plenty of stock and are constantly monitoring the situation as animal welfare is our

Animal Medication in the 3rd World

Some interesting work has come out of recent work looking at availability of medicines in third world countries. Brooke Action for Working Horses and Donkeys is an international animal welfare organisation that works to strengthen animal health systems across Asia, Africa, Middle East and Latin America.

While their focus is on working equids, Brooke Action mentors and trains over 4000 local vets and paravets who treat all species.

Their experience on the ground plus global data has identified that there is a desperate lack of access to essential medicines, especially NSAIDs, a class of drugs we simply take for granted these days in the Western World.

This is a critical animal health and welfare issue, as well as contributing to AMR and the spread of zoonotic diseases, which are critical One Health issues.

These statistics from Ethiopia Government Health Post Records were formed from a survey of all cases (ovine, bovine, caprine, canine, feline and equid) seen in 13 government health posts/clinics in January 2020. In total 695 case records were collected including species, assumed diagnosis, treatment provided and duration of treatment.

These statistics support Brooke Action teams experience in the field and findings from Animal Health Mentoring Framework results.

Approximately. 60% of all cases seen in Ethiopian government health posts require either pain relief or anti-inflammatory drugs. Of the 695 case records 409 cases indicate a diagnosis that is painful or inflammatory meaning that NSAIDs are indicated.

However approximately only 1% of all cases seen in government health posts receive any form of pain relief. NSAIDs used were older types, either paracetamol, phenylbutazone or dipyrone (a drug banned in most developed countries because it can cause serious or fatal agranulocytosis).

"we were not too far removed from today's third world!"

In addition 100% of cases receive systemic anthelmintics or antimicrobials, often in combination together. 63% of all cases were given systemic anti-microbials and 37% of all cases were given anthelmintics.

87% of all cases were treated with one or a combination of 3 drugs: Oxytetracycline 27%, penicillin/streptomycin combination 24% and Ivermectin 37% .

Brooke Action feel it must be extremely de-motivating to train as a veterinarian for 5 years and then essentially spend your days giving a combination of only 3 drugs.

This also indicates the challenge that we would have in motivating/building confidence to change this behaviour should more medicines become available.

These statistics support the theory that lack of access to non-steroidal medicines (pain relief) results in an over reliance on antimicrobials and anthelmintics, therefore directly contributing to AMR and an immense threat to One Health.

Animal health and welfare is severely compromised by the unavailability of NSAIDs. Case records indicate surgical procedures occurring with no pain relief or anaesthesia and a large occurrence of infectious/inflammatory diseases where NSAIDs would be a staple treatment.

From this information a couple of staggering points emerge. First of all it is really only in the last few decades that our clinicians have had untrammeled access to high quality NSAIDs; meloxicam for example was only patented for human use in 1977, used in animals in the 1990s and only approved in cats in most jurisdictions in 2007.

Even ketoprofen, considered an older drug, was first approved as late as 1980 and took a few years to reach our shores.

Older practitioners will recall that in the meantime one of the mainstays, especially in rural practice, was penicillin/streptomycin; we were not too far removed from today's third world!

Secondly it may be surprising, but should not be, to realise what a vital part pain relief plays in reducing drug use overall, in particular crucial antimicrobial use and the role in reducing antimicrobial resistance.

Manukura

Manukura is a white kiwi bird - the only known white kiwi in the world! She was born at the National Wildlife Centre Pukaha, in the Wairarapa region, on 1 May 2011.

Manukura is not albino (where there is a lack of melanin that makes pigmentation white and features pink eyes), but, pure white, which means she is the rare progeny of two parents who carry the recessive white feather gene. A small number of North Island brown kiwi carry the recessive white gene, which both the male and female must have to produce a white chick.

Manukura's parents came from predator-free Little Barrier Island (700 kilometres, 435 miles north of Pukaha) along with 28 other kiwi in 2010 in the single largest translocation of kiwi known.

The purpose of the translocation was to boost kiwi population at Pukaha. The result of that breeding season was 14 healthy chicks, most of which have now been released into our forest.

Elders from the Rangitane o Wairarapa iwi (the local tribe) saw the chick as a tohu (sign) of new beginnings and gave her the name 'Manukura', which translated means "of chiefly status".

At the National Wildlife Centre, kiwi eggs are collected at night when the male is off the egg and out feeding. They are brought into the kiwi nursery where they are incubated and hatched at around 80-90 days.

The chicks are raised in captivity until they weigh 1.2 kg when they are released into the wild.

Visitor numbers at the centre have soared since Manukura captured world-wide attention.

Unfortunately female kiwi are generally stroppier than males and harder to handle because of this and their comparative size, and Manukura is particularly aggressive to other kiwi, so much so that staff cannot put others in with her. This could mean she may well never mate but the gene is still out there in the wild.

With their white plumage shining at night it could be thought that white kiwi are more vulnerable than brown to predators but that is not actually the case because predators relied mainly on all kiwis very strong, distinctive smell to pinpoint them before they could see them.

White kiwis are just a colour variation of the regular North Island brown kiwi, but with only around 70,000 kiwis in the wild, a number that is sadly decreasing by around 1400 per year, the white kiwi is going to remain an extreme rarity.

Bible Lessons

Nine year old Johnny was asked by his mother what he had learnt at Sunday School.

"Our teacher told us how God sent Moses behind enemy lines to lead the Israelites out of Egypt.

When he got to the Red Sea he had his engineers build a pontoon bridge and they all got across safely.

Then he used his walkie-talkie to radio headquarters for reinforcements.

They sent over bombers to blow up the bridge and all the Israelites were saved,"

"Is that really what your teacher taught you?" his mother asked.

"No. But if I told it the way the teacher did, you'd never believe it!"

Synchrony and Welfare

A few short years ago it became fashionable to utilise eCG in cattle breeding programs. A major part of this market in this area of the world was cornered by Bioniche, distributed here by what was then Bayer. Some time ago Bioniche was bought out by rising French giant Vetoquinol and a couple of years ago disturbing stories of animal welfare concerning the harvesting of eCG from mares arose.

To their credit Vetoquinol immediately discontinued the product, leaving the market open to competitors. It now really is up to clinicians whether to continue to prescribe eCG to their clients or use an alternative program for animal welfare reasons. Farmers have had a very hard time of it in the media over recent years on issues of animal welfare but cannot be criticised here unless fully informed.

The question is how will farmers respond if fully informed?

That seems to have been answered very well going by an advertorial in the veterinary only section of the September/October issue of the magazine Agribusiness. The article focused on a veterinary practice and covered how they changed to a system not using eCG, the reasons for that decision, how they sold the idea to farmers and the farmer buy in to the idea.

By now we are all pretty familiar with the traditional synchronisation system; injection of GnRH and insertion of a progesterone device at day 0. On the seventh day the device is removed and prostaglandin F2α (PGF2α) is injected both to induce luteolysis and to allow the continuing development of the dominant follicle of the next wave. In turn, this follicle will be induced to ovulate by the second GnRH injection on day 9 of the protocol. Insemination should be performed blindly 16–24 hours later.

This strategy allows all the cows designated for AI to be inseminated at a similar time postpartum, and the pregnancy rate in the herd thus improved.

Researchers found that injecting eCG on day 7 along with the prostaglandin had beneficial effects and there seemed to be sound reasons for this approach which was heavily promoted by various marketers.

However the animal welfare claims around the treatment of the horses when collecting eCG became too loud to ignore. Welfare is something that concerns all veterinarians and farmers are much more aware of welfare issues now than in yesteryear.

To quote the advertorial in Agribusiness the practice found that continued scrutiny of animal welfare, particularly on issues such as winter grazing had helped to sensitise farmers to public opinion and the importance of best practice in all that they do. This meant that clients accepted the changes without question, even though it meant an extra visit for a second prostaglandin injection.

This extra cost was mitigated a little by the practice making an all-inclusive fee for the program rather than charging per visit.

The take home message is that farmers do care, however the advertorial also promoted a program that may not actually be the most efficient.

Prior to last mating season on 2019 research work done in New Zealand showed a 3% increase in pregnancy if their racemic cloprostenol dose is increased from 2 ml (500 µg) to 3 ml (750 µg) per cow. This tallied with other data from around the world showing that the response rate in cows with a partially sensitive (or refractory) corpora lutea aged between 2-5 days, when the sensitivity towards PG is questionable. This can be improved by either increasing the dose rate or giving a second injection 24 hours later.

"and of course the cows would be quite receptive to not having yet another injection"

Clearly the program used in the advertorial utilised the second injection at 24 hours approach.

However when we look at the work done by Montaser et al comparing racemic cloprostenol with dinoprost and d cloprostenol it appears that the pure potency of the d cloprostenol may make it more effective in the presence of prostaglandin dehydrogenase and so offer a more economical solution.

In addition Valldecabres-Torres et al, indicated that there is a farther increased benefit with an increased dose of d cloprostenol, 300 µg in place of 150 µg.

Therefore, for a better response with refractory corpora lutea in a blind synchronisation program, the options are:

1) If using racemic d/l cloprostenol, or dinoprost, give an extra injection thus increasing the workload and the cost of treatment.

2) If using racemic d/l cloprostenol, or dinoprost, increase the dose and also the cost of treatment

3) Get similar results, with no cost increases, using a standard dose

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Synchrony and Welfare

Group	Follicular size (mm)	Days to heat	1st insemination pregnancy rate (%)
Dinoprost 25 mg	11.17±0.433	3.7± 0.26	10
d/l cloprostenol 500 µg	11.53±0.33	3.3 ± 0.21	30
d cloprostenol 150 µg	15.5±0.82	3.6 ± 0.31	40

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(150 µg) of d cloprostenol (Dalmazin)

4) If cost is not the object get the best results using 300 µg of d cloprostenol (Dalmazin)

So a single injection of Dalamzin of either 150 mg or 300 mg would give results at least as good as the double injection of d/l cloprostenol with the added advantage of not requiring the extra visit.

In this way animal welfare can be satisfied with eliminating eCG and of course the cows would be quite receptive to not having yet another injection, with no loss of efficacy.

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The Crash

A cop came upon a terrible car crash in which the driver and passenger had been killed. As he surveyed the wreckage a little monkey darted out of the bush and hopped around the crashed car.

The cop looked down at the monkey and said, "I wish you could talk.'

The monkey nodded vigorously.

"You can understand what I am saying?" said the cop.

The monkey nodded.

"Well did you see the crash?"

The monkey nodded.

"What happened?"

The monkey pretended to have a can in his hand and put it up by his mouth.

"They were drinking?

The monkey nodded.

"What else asked the officer.

The monkey pinched his fingers together and held them to his mouth, sucking in his breath quickly.

"They were smoking marijuana too/' said the cop.

The monkey nodded.

"Whoa, you are saying the couple were drinking and smoking pot, what were you doing in all this?"

Driving motioned the monkey.

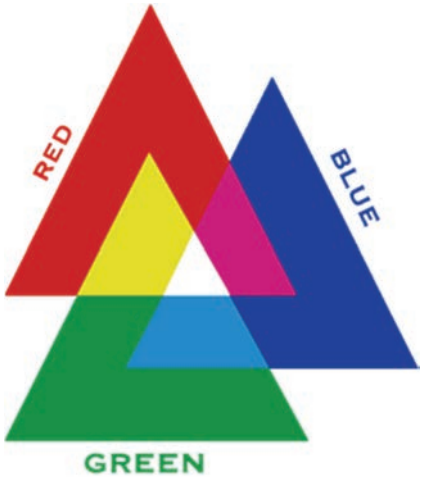
Horses and Colour

Some fascinating research has been done recently on colour appreciation in horses, not only on what colour ranges horses have in their vision but also on what colour preferences if any, that horses have.

This is not just an academic exercise, there are some practical ramifications also.

First of all is the matter of spectrum. Most humans have what is known as trichromatic colour vision and can see the four basic hues of red, green, blue, and yellow as well as an array of intermediate hues, like orange (yellowish-red) or violet (reddish-blue), and thousands of shades. This is thanks to the three types of photoreceptors or cones in the retina.

The three types of cones are L, M, and S, which have pigments that respond best to light of long (especially 560 nm), medium (530 nm), and short (420 nm) wavelengths respectively. The colours these receptors are most responsive to are red, green and blue. Thus trichromatic colour vision is accomplished by using combinations of cell responses.



If all three receptors were stimulated simultaneously and at equal intensity, the eye would perceive the colour white. This is essentially the opposite of running white light through a prism to separate it out. However, if the intensity of one wave is diminished, the end colour would change. All three colours have to be active for this to work.

This is the same principle as that used in colour television sets. A monitor or TV screen generates three colours of light (red, green, and blue) and the different colours we see are due to different combinations and intensities of these three primary colours.

If only two wavelengths were used, they could not be combined. Dichromatic animals can match any colour they see with a mixture of no more than two pure spectral lights.

Primates are the only known placental mammals considered to be trichromatic, most other mammals are currently thought to be dichromatic, with only two types of cone.

Dichromacy in humans, known as colour blindness is a colour vision defect in which one of the three basic colour mechanisms is absent or not functioning. It is hereditary and sex-linked, predominantly affecting males (95% of colour blind people are male).

Dichromatic vision may improve an animal's ability to distinguish colours in dim light; the typically nocturnal nature of mammals, therefore, may have led to the evolution of dichromacy as the basal mode of vision in placental animals. This was a factor used in WWII in the Pacific where colour blind troops were considered the best scouts in the jungle as it was believed they could perceive subtle changes in background foliage, such as camouflage, better than normal sighted troops.

So now we have established that horses with their dichromatic vision cannot make out

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Figure 1. Colours and rows of the buckets used in the study. (A) red, (B) light green, (C) yellow (D) green (E) light blue, (F) turquoise. (1.) 1st row, (2.) 2nd row, (3.) 3rd row, (4.) 4th row, (5.) 5th row, (6.) 6th row. A total of 12 buckets of 6 different colors (2 buckets of each color) were used in the study. There were about two meters between the buckets, which were attached to the side fences with rope. Each day, the buckets were shifted by one row, and thus the buckets were each tested in all positions.

Horses and Colour

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all the colours that humans can with trichromatic vision the question then is, do horses have colour preferences?

If they do have preferences what is the relevance practically speaking?

Researchers recently explored colour preferences through the use of different coloured water buckets. Preference was determined based on how much water was consumed from galvanized steel buckets painted one of six colours: red, yellow, green, light green, light blue, and turquoise.

Six horses, three Thoroughbreds and three Haflingers, were maintained on the same diet throughout the study (1-2 kg of forage, 0.5-1 kg concentrate per 100 kg of body weight). They were turned out in paddocks each day for seven hours for the duration of the study period, which lasted 18 days. Six buckets, one in each of the six colours, were attached to the fence equidistant from one another, about two meters. Researchers shifted bucket positions each day so that every bucket was in every position along the fence.

Based on water intake, researchers found that horses preferred to drink from the turquoise buckets, which is a mixture of blue and green. There are studies showing peaks in spectral sensitivity, meaning that horses see blue and green colours better than other colours.

Other researchers have stated that horses can discriminate yellow and blue, but that they may have deficiencies in discriminating red and green.

Preferences for the colours, from highest to lowest, were turquoise, light blue, light green, green, yellow, and red. Also, the animals were more attracted to the light colour tones (light blue and light green) than to the dark colour tones (red and green).

In light of these results, the researchers suggested that the use of turquoise or light blue buckets might encourage horses to drink.

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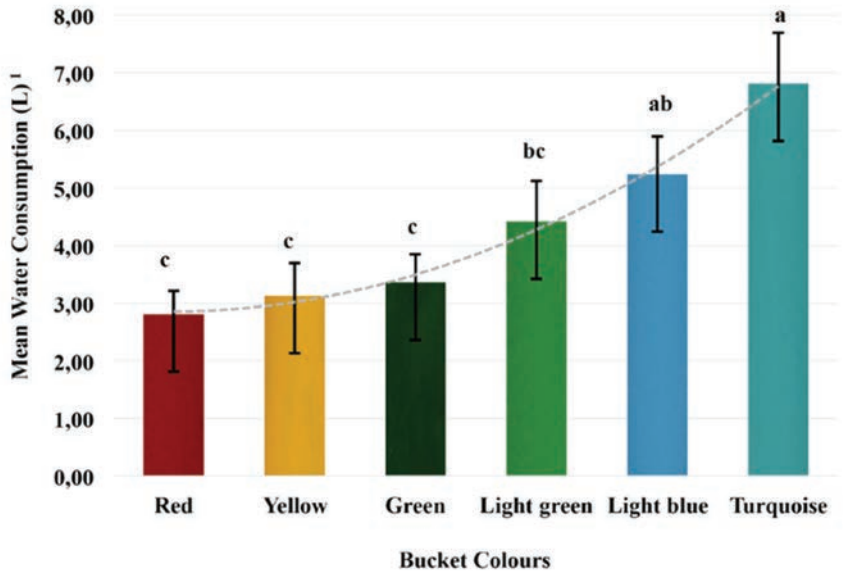

Figure 3. Mean (columns) and their standard errors (bars) for water amount consumed from coloured buckets by horses. a, b, c: Values with different superscripts in the same column for each section are significantly different ($P<0.05$). (2 horses, 18 days = 36 observations for each colour).

Why Here?

A moth went into the podiatrist's office and the podiatrist said, "What seems to be the problem?"

The moth replied, "what's the problem? Where do I begin?"

For one thing I am breaking my back day in and day out, working long hours for next to nothing at a thankless job where my horrible boss is always yelling at me.

Then I come home and my wife doesn't appreciate me, the kids are brats and my dog won't fetch the newspaper.

Everything's terrible! I am really at my wits end and I don't know what to do."

"Wow," said the podiatrist. "Clearly you're troubled.

But this is a podiatrist's office, why did you come in here?"

The moth replied, "The light was on."

Rags to Riches

The CEO of a large bank in Manhattan walks to the corner where a shoe shine is located.

He sits on the couch, examines the Wall Street Journal, and the shoe shine gives his shoes a shiny, excellent look.

One morning the shoeshine asks the Executive Director: “What do you think about the situation in the stock market?

The Director asks: ‘Why are you so interested in that topic?

"I have a million dollars in your bank," the shoeshine says, "and I'm considering investing some of the money in the capital market."

“What is your name?” asks the Director. “John Smith,” he replies.

The Director arrives at the bank and asks: “Do we have a client named John Smith?”

“Certainly” answers the Customer Service Manager, “he is a highly esteemed customer. He has a million dollars in his account.”

The Director comes out, approaches the shoeshine, and says “Mr. Smith, I ask you this coming Monday to be the guest of honour at our board meeting. Tell us the story of your life. I am sure we will have something to learn from you.”

At the board meeting, he introduces him to the board members. “We all know Mr. Smith, who makes our shoes shine in the corner; But Mr. Smith is also our esteemed customer with a million dollars in his account. I invited him to tell us the story of his life. I am sure we can learn from him.”

Mr. Smith began his story. “ I came to this country fifty years ago as a young immigrant from Europe with an unpronounceable name. I got off the ship without a penny.

The first thing I did was change my name to Smith. I was hungry and exhausted. I started wandering around looking for a job but to no avail. Suddenly I found a coin on the sidewalk. I bought an apple. I had two options: eat the apple and quench my hunger or start a business.

I sold the apple for two dollars and bought two apples with the money. I also sold them and continued in business. When I started accumulating dollars, I was able to buy a set of used brushes and shoe polish and started polishing shoes. I didn't spend a penny on entertainment or clothing,

I just bought bread and some cheese to survive. I saved penny by penny and after a while, I bought a new set of shoe brushes and ointments in different shades and expanded my clientele. I lived like a monk and saved penny by penny. After a while I was able to buy an armchair so that my clients could sit comfortably while cleaning their shoes, and that brought me more clients.

I did not spend a penny on the joys of life. I kept saving every penny. A few years ago, when the previous shoe shine on the corner decided to retire, I had already saved enough money to buy his shoeshine location at this great place.

Finally, three months ago, my sister, who was a prostitute in Chicago, passed away and left me a million dollars.”