



ETHICAL AGENTS
VETERINARY MARKETING

EA NEWS

August 2019

Edited by:
Dennis Scott BVSc
MACVSc

EA Veterinary Marketing Ltd
54 Hobill Ave Wiri
PO Box 97-110 Manukau City
Manukau 2241

Ph 09-262-1388 Fax 09-262-1411
Freephone 0800 800-624
email info@ethicalagents.co.nz
website www.eavm.nz

Inside this issue:

Equine Mobility	2
Treating Backyard Chooks	4
Dosing Backyard Chooks	6
Canine Mobility	7



Special points of interest:

- * Comparing regimes for equine joint problems
- * A discussion on withholding times for backyard poultry, something that general practitioners need
- * Weight loss an important tool in canine anti-inflammatory regimes,

Keeping In Mind

In marketing products there are always the odd one or two that need continual reminders because they have unique points of difference.

A standout is Electromycin, the hypochlorous acid based antiseptic that has so many superior qualities. What it does not have is bright florid colouring, being essentially colourless, so that not only does it have perception problems but also is easily forgotten. It is a little twist on the old out of sight out of mind mantra.

It is one that is well to keep in mind because the microbial kill rate, high safety margin and lack of resistance development really do put it at the forefront of antiseptics.

Ethical Agents Veterinary Marketing have been in the disinfection and antiseptic market for decades, notably being responsible for the absolute market leader in the disinfection field, SteriGENE. The company is a leader in the field of antimicrobial therapy and really does not believe



there is an antiseptic on the market to challenge Electromycin.



Similarly, in the cluttered reproduction market and the huge noise made about double dosing racemic cloprostenol, it is easy to overlook the fact that pure d-cloprostenol gives the same benefits at a single dose rate.



Clients using Dalmazin, along with its stalemate the long acting GnRH Dalmarelin report very satisfying results, without needing increased dosages.

Equine Mobility

NSAIDs, glucosamine and hyaluronic acid have all been promoted heavily over the last few decades for combatting arthritic problems in horses, and other animals.

All have strengths and all have weaknesses. NSAIDs are very effective in reducing pain and inflammation but really only treat the symptoms and not the cause. They also are problematic for long term use due to toxicity. Glucosamine and hyaluronic acid based products are nutraceuticals that have no therapeutic value per se but provide the building blocks for the body to take care of itself. Their use is preventative and, while it may be argued that they are useful in clinical disease they are only adjuncts to treatment, just like feeding energy and vitamins aids in recovery.

NSAIDs

In the equine the most practical NSAID for long term usage is still phenylbutazone, first discovered around 1940. This is because it is easily administered in oral powder form. More recently meloxicam oral suspensions have come into vogue and meloxicam has some advantages but expense is the issue, especially with long term use.



Phenylbutazone is banned from use in food producing animals and ACVM class horses as food animals but virtually all horses being considered for long term anti-inflammatory use are expensive

breeding if racing animals or family pets. It is not illegal to treat a horse with bute if it is not going to enter the human food chain.

It is still preferable to have drug washout periods in long term use and arthritic conditions actually lend themselves to that regime very well. Arthritis in all species typically has periods of flare up then settling down. It is good practice to have constant provision of a nutraceutical, which will mostly suppress signs of arthritis and to keep the NSAID on hand for administration during periods of flare up.

Hyaluronic Acid



Hyaluronic acid is a special mucopolysaccharide occurring naturally throughout the body. Its function in the body is, amongst other things, to bind water and to lubricate movable parts of the body, such as joints and muscles. Hyaluronic acid is one of the most hydrophilic molecules in nature and can be described as “nature’s moisturizer”.

The joint fluid in the body mimics the oil in a car engine. At regular intervals we replace the oil in our car engines because the heat and

friction breaks down the oils viscosity. The oil becomes thinner and less able to protect the metal surfaces from excessive wear. It is the same with joints. In humans ageing is the main factor but the wear and tear from concussion affects the joints of performance horses.

Research has shown that horses produce 30 – 160 mg of hyaluronic acid each day. This hyaluronic acid is incorporated into synovial fluid and cartilage. However, inflammation resulting from exercise leads to a hastening of the breakdown of hyaluronic acid, which in turn leads to effusion, reduced joint fluid viscosity and a viscous cycle of further inflammation. High molecular weight hyaluronic acid keeps protein out of the joint but when hyaluronic acid breaks down, water and fibrin follow protein into the joint fluid. This leads to effusion, synovial distension, pain and disturbances to function of villi in the borders of the joint space and reduced hyaluronic acid secretion.

Not all hyaluronic acid products are effective. The size of the hyaluronic acid molecule is measured in a unit called Daltons. Natural hyaluronic acid has a molecular weight of 1 million Daltons or more and studies have shown that low molecular weight hyaluronic acid material does not have the same properties as natural or supplementary high molecular weight hyaluronic acid.

Synovate HA has a molecular weight of 1 to-1¼ million Daltons so it is the optimal sized molecule of hyaluronic acid for the horse.

Hyaluronic acid has a very short half-life in horses, especially after intravenous injection where blood levels have been shown to return to normal within 3 hours. This rap-

(Continued on page 3)

Equine Mobility

(Continued from page 2)

id clearance of hyaluronic acid from injections suggests that regular daily oral administration will be useful.

Oral supplements are easier to use and less expensive than parenteral treatments. Given the rapid clearance of hyaluronic acid from the blood and synovial fluid after parenteral administration, a daily oral supplement may be more physiological.

Oral supplementation can be used to augment parenteral treatment and may provide a more constant level of supplementation of hyaluronic acid to maintain concentrations of hyaluronic acid in the horse's joints.

Glucosamine

Glucosamine is an amino sugar and precursor of glycosylated proteins and lipids. Since glucosamine is a precursor for glycosaminoglycans, and glycosaminoglycans are a major component of joint cartilage. Glucosamine has been promoted to stimulate synthesis of synovial fluid, inhibit degradation, and improve healing of articular cartilage.

As well as being a component of cartilage glucosamine is a precursor of hyaluronic acid. Hyaluronic



acid in turn makes the synovial fluid. Glucosamine must combine with a glucuronic acid molecule to make hyaluronic acid.

So, in summary:

Hyaluronic acid is incorporated into synovial fluid and cartilage

Inflammation resulting from exercise leads to a hastening of the breakdown of hyaluronic acid

Low molecular weight hyaluronic acid material does not have the same properties as natural or supplementary high molecular weight hyaluronic acid.

Glucosamine is a precursor for glycosaminoglycans, and glycosaminoglycans are a major component of joint cartilage

As well as being a component of

cartilage glucosamine is a precursor of hyaluronic acid

So What and Where?

As noted above the ideal would be to feed a nutraceutical and resort to an NSAID during flare ups. But what nutraceutical? Hyaluronic acid or glucosamine, or both?

The answer is rather empirical and there are data in human medicine attesting to the benefits of combining the two. However, for practical and economic reasons, generally it is one or the other in the equine world.

Glucosamine can be seen as a building block for hyaluronic acid but GLUCOS-A-FLEX from KER also contains a blend of glucosamine hydrochloride, vitamins, minerals, amino acids and antioxidants. These include Zinpro Performance Minerals® organic copper, which has been shown to assist with the formation of connective tissue, bones and joint cartilage. Organic zinc supports cell division and protein synthesis for skeletal growth and repair.

Synovate HA, also from KER, helps manage horse joint health proactively by preventing the loss of hyaluronic acid, it is high molecular weight sodium hyaluronate for horses in an easy-to-administer liquid.

GLUCOS-A-FLEX is the slightly more economical of the two and is in powder form rather than a liquid. GLUCOS-A-FLEX may be more indicated for constant feeding, especially for pleasure horses. On the other hand Synovate HA while suitable for horses of all ages, disciplines, levels of exercise and performance is targeted for horses undertaking high intensity daily exercise, horses showing signs of joint disease and after surgery for joint disease.

Shopping

Wife: I am heading to the store, do you want anything?

Husband: I want a sense of meaning and purpose in my life ... I seek fulfilment and completeness within my soul ... I want to connect to God and study the spiritual side of me ...

Wife: Be more specific - beer or vodka?

Faith Healer

Tony asks Nagy, "How did you get on at the faith healer meeting last night?"

Nagy replies, "He was absolute rubbish. Even the fella in the wheelchair got up and walked out!"

Backyard Chooks and Antimicrobial Residues

Backyard poultry are technically food-producing animals as poultry can be defined as all birds that are reared or kept in captivity for the production of meat or eggs for consumption.

New Zealand is unique in the world in being free of the three major exotic avian diseases – Avian influenza (bird flu), Newcastle Disease and Infectious Bursal Disease (IBD) – which makes it one of the healthiest places to raise chickens.

Commercial poultry producers are represented by Poultry Industry of New Zealand (PIANZ), an association which has its own antimicrobial policy. Large poultry producers have their own in-house veterinarians who oversee disease control and are responsible for implementing the PIANZ policy.

In recent years there has been seen a dramatic increase in free range poultry raising, especially with back yard flocks so that veterinary practices, both rural and urban, are being called upon to treat poultry. Therefore guidelines are needed to assist general practitioners in treating domestic poultry.

Backyard poultry have certain specific points of difference and, as eggs are sold or consumed any prudent use guidelines must consider residues. These are less relevant for the meat as most flocks are regarded as pets so are not eaten. However egg residues must be considered not only from a viewpoint of toxicity to the consumer but also because of concern about long-term effects on human gut flora with exposure to antimicrobial medication.

It is important to point out that lipophilic drugs in particular may concentrate in the yolk from where there is no drug metabolism. A chicken or duck's ovary contains

approximately 14 egg yolks, all at various stages of development so withholding times can be long. Physiology of egg development suggests that egg-residue risk is relatively higher in birds with slow egg production, as drug exposure of the follicle may result in long-lived drug residues in yolk.

"These are less relevant for the meat as most flocks are regarded as pets so are not eaten."

If the withholding period is unavailable MPI has default withholding periods for birds, including chickens, of 63 days for meat and 10 days for eggs.

In Australia medications registered for use in poultry can be found on the PubCRIS section of the AVPMA website (<https://portal.apvma.gov.au/pubcris>).

However data is a little misleading in that the compounds marked as DNU (do not use) are only marked that way by the registrants because they do not have the residue data to support a withholding time. As use is "off label" the practitioner has to resort to literature to elucidate reasonable withholding periods. Further confusion can arise as some publications are looking at time to maximum allowable residue whereas others are looking at time to undetectable residues, so there may be discrepancy when doing direct comparisons.

Muñoz et al suggested an egg withholding time of 9 days for oxytetracycline while Omija et al found oxytetracycline detectable in egg yolk for up to 13 days. Physiology of egg development suggests that egg-residue risk is relatively higher in birds with slow egg production and the first study was in white Leg-

horn chicken that lay eggs daily so they will have a shorter period than breeds that lay less often.

Atta et al suggest at least 5 days for trimethoprim/sulphadiazine combination.

As a general rule of thumb, Goetting recommends a one month withholding period on eggs after any drug administration, not just antimicrobials.

The British Small Animal Veterinary Association has an eminently practical approach and advises that, with regard to egg withdrawal periods, if there is a milk withdrawal period for the product, this should be used as a guide with 15 days added on to take into account the developing egg yolks.

Common conditions that could require anti-microbial use in poultry include:

Bacterial upper respiratory tract infections

Bacterial metritis

Bacterial egg-related coelomitis

Pododermatitis with secondary bacterial infection

Trauma with open wounds, e.g. animal attacks

Upper respiratory infection is a very common presentation in backyard poultry, and the signalment usually involves recent introductions. There are both viral and bacterial aetiologies, and some viral diseases can have secondary bacterial infection. Viral causes include infectious laryngotracheitis, and infectious bronchitis. Bacterial causes include primary pathogens such as *Pasteurella multocida* (fowl cholera), *Avibacterium paragallinarum* (infectious coryza), *Ornithobacterium rhinotracheale* and *Mycoplasma*. Cytology on exu-

(Continued on page 5)

Backyard Chooks and Antimicrobial Residues

(Continued from page 4)

date will assist in identifying primary or secondary bacterial pathogens and is recommended prior to commencement of treatment. PCR diagnostic testing is highly recommended, particularly when considering whether to medicate the rest of the flock. Lincomycin/spectinomycin is a common treatment.

Pododermatitis is the most common musculoskeletal complaint in backyard chickens, and usually originates from husbandry and hygiene issues. Heavy-bodied birds are over-represented. Not all birds with pododermatitis have secondary bacterial involvement, so the clinician should perform cytology on exposed or swollen tissue to see if infection is present. Many cases simply require husbandry changes, with improved perching and better hygiene, along with temporary bandaging to remove pressure from the affected area.

In production birds, egg-related coelomitis is significantly associated with the presence of egg yolk free in the coelom, infected with avian pathogenic *E coli* (APEC)2, 3. Possible routes of infection include translocation of intestinal *E coli* or ascending infection through cloaca, oviduct, infundibulum and

"The British Small Animal Veterinary Association has an eminently practical approach"

tivity is highly suggested to guide antimicrobial selection.

Metritis is not uncommon, often presenting as soft shelled eggs or pathological-appearing eggs, and is usually treated with broad-spectrum anti-microbial medication. Access to the reproductive tract for sampling is difficult, although sometimes samples may be taken from the inflamed vaginal opening, via the cloaca. It is difficult to get a sample that is not contaminated from cloacal organisms, although cytology can be helpful.

General infections, such as deep tissue infections after animal attacks, are usually treated with broad-spectrum anti-microbial drugs.

Amoxicillin/clavulanic acid provides a good spectrum of activity against the bacteria normally present in canine oral flora.

Crabb listed the high importance bacterial diseases of poultry as: *E. coli* *Erysipelothrix rhusiopathiae*

into coelom. C y t o l o g y should be performed on all ascitic cases, after coelomocentesis. Culture and sensitivity is highly suggested to guide antimicrobial selection.

Pasteurellosis Necrotic Enteritis (*Clostridium perfringens*) Spotty Liver (*Campylobacter* spp.)

References:

British Small Animal Veterinary Association <https://www.bsava.com/Resources/Veterinary-resources/Medicines-Guide/Backyard-poultry>

Muñoz R, Cornejo J, Maddaleno , Araya-Jordán C, Iragüen D, Pizarro N, San Martín B. Withdrawal times of oxytetracycline and tylosin in eggs of laying hens after oral administration, *J Food Prot.* 2014 Jun; 77(6):1017-21. doi: 10.4315/0362-028X.JFP-13-440.

Omija B, Mitema E, Maitho T. Oxytetracycline residue levels in chicken eggs after oral administration of medicated drinking water to laying chickens. *Food Addit Contam.* 1994 Nov-Dec; 11(6):641-7.

Atta A, Samia A, Depletion of trimethoprim and sulphadiazine from eggs of laying hens receiving trimethoprim/sulphadiazine combination. *Food Control* 12 2001 269-274 in backyard poultry, Avian and Pharmacology Chapters ANZCVS Science Week 2019

Crabb Antimicrobial Use in Poultry Challenges and opportunities for stewardship Faculty of Veterinary and Agricultural Sciences University of Melbourne, Parkville, Victoria 3010, Australia

Goetting V, Lee KA & Tell LA. Pharmacokinetics of veterinary drugs in laying hens and residues in eggs: a review of the literature. *J Vet Pharmacol Ther.* 2011; 34:1-36.

Watts, Diseases of Backyard Poultry in New Zealand, *Surveillance* 40 (1) 2013

Black, Bacterial and parasitic diseases of New Zealand poultry, *Surveillance* 24(4) 1997

Rare Parrot

A man looking for a unique type of pet was intrigued by a pet shop advertisement for a parrot that talked and laid square eggs.

Off he goes to the pet shop and asks the owner, "Does it really lay square eggs?"

"Yes it does," says the shop owner, "look in its cage"

Sure enough there was a square

egg sitting in the bird's cage.

"And it also talks?" enquired the prospective owner.

"Well yes," said the pet shop owner, "but it only has three words. It says them every time it lays an egg."

"What does it say?" asked the customer.

"Ohhhh myyyyyy god!"

Dosing Backyard Chooks

Get your medications and other tools ready beforehand so you don't have to fumble with opening pill bottles or packages while trying to wrestle with a chicken.

- 1) Get a nice thick towel and place your chicken in the middle.
- 2) Firmly but gently wrap your chicken up so their wings are tucked inside the towel. This may make it easier and prevent wing flapping and slaps to the face.
- 3) With one hand hold onto the chicken's head. Place your thumb and forefinger at the hinges of the chicken's beak and pry it open, you will have to use the middle finger of your right hand to depress

the lower beak so you can hold it fully open.

- 4) And then pop the tablet in, good idea to follow up with a finger to make sure it goes down, hold the beak closed and give her throat a couple of rubs. Don't worry about being bitten, they can't really bite you (chooks don't have teeth) and if their beak closes down on your finger it doesn't hurt.
- 5) Try and apply the medication to the dorsal area of the mouth cavity as the glottis is in the ventral area. This avoids risk of tracheal blockage.
- 6) Take the pill with the other hand and poke your finger

"they can't really bite you (chooks don't have teeth)"

down the back of the chicken's throat. You can actually put your finger very far down without hurting the chicken.

- 7) Hold the beak closed and give her throat a couple of rubs.

If you have to give liquid medications, you can follow the same process but replace your finger with the medication syringe and just squirt the medicine out once you have the syringe down the chicken's mouth

Old Friends

Two elderly ladies had been friends for many decades.

Over the years, they had shared all kinds of activities and adventures. Lately, their activities had been limited to meeting a few times a week to play cards.

One day, they were playing cards when one looked at the other and said, "Now don't get mad at me, I know we've been friends for a long time, but I just can't think of your name!"

I've thought and thought, but I

can't remember it. Please tell me what your name is."

Her friend glared at her. For at least three minutes she just stared and glared at her. Finally she said, "How soon do you need to know?"

Geriatric Medication

A doctor who had been an 80-year-old woman's GP for most of her life finally retired.

At her next checkup, the new doctor told her to bring a list of all the medicines that had been prescribed for her.

As the doctor was looking through these his eyes grew wide as he realized Grandma had a prescription for birth control pills. "Mrs. Smith,

do you realize these are birth control pills?"

"Yes, they help me sleep at night."

"Mrs. Smith I assure you there is absolutely nothing in these that could possibly help you sleep!" said the doctor.

She reached out and patted the young doctor's knee and said, "Yes, dear, I know that. But every morning, I grind one up and mix it in

the glass of orange juice that my 16-year-old Granddaughter drinks.

And believe me it definitely helps me sleep at night."



Canine Mobility

The witch doctors selling magnets often talk of drug free pain relief and, while a lot of their science is warped, over reliance on drugs can be a detrimental. This is even recognized by the purveyors of anti-inflammatory medications, each claiming to be safer than the other.

No wonder then that long term arthritic cases have seen a search for alternative therapies, including nutraceuticals. Sometime the solution is hiding in plain sight.

Recently there was a case highlighted in the media of a grossly overweight dog (45kg!) with problems being taken to an Auckland veterinary practice to be put down. Instead of destroying the dog the vet, to their credit, convinced new owners to take it over and put it on a strict diet.

The dog lost a considerable amount of weight and, after a little time, was back to being fully mobile.

This sort of story corresponds well with data presented at a plenary session at Science Week on the Gold Coast this year. Conference plenary sessions can be a pig in a poke at times but they can often throw up food for thought.

This was the case with the plenary given by highly qualified sports medicine specialist Dr Adam Castricum.

While focusing his talk on human medicine he had some enlightened words on the value, or rather the

lack of values, of some modern treatments for chronic joint problems. At one stage he particularly looked at knee problems and the amount of knee replacement surgery being advised.

Not only did he feel that knee replacement surgery was over prescribed he also went as far as to say that in most cases it was nothing more than a placebo. According to Castricum there are many better options.

One of these options is weight reduction, with his research showing that, for knee pain, a 10% loss in body weight resulted in a 30-50% reduction of pain sensation. This is a dramatic figure but it certainly makes good sense with the big question being can such a theory be transposed to the animal world?

Just like knee replacement surgery in humans, long term NSAIDs have been used almost as a placebo in the veterinary world, with pharmaceutical companies vying for length of activity claims.

However both human and veterinary pharmacologists are aware of the dangers these drugs can provide if used on a continual base.

Alternative medicine proponents jumped on the glucosamine bandwagon with some enthusiasm.

We do know that glucosamine can alleviate some joint health problems but acts more as a suppressor rather than a therapeutic, hence

the reason most glucosamine based products are considered as nutraceuticals rather than remedies in themselves.

Arthritis has a pattern normally; it comes and goes. Therefore a common recommendation has been to feed a glucosamine product regularly to help keep problems under control, and only resort to NSAIDs whenever there is a flare up.

This presentation by Castricum suggests that a multimodal approach may well be in order, especially with overweight arthritic animals.

Nutraceuticals can be useful but are not therapies in themselves. They can validly be prescribed for long term use. NSAIDs are better reserved for the intermittent flare up encountered with arthritis.

However weight reduction, especially in large breed or overweight dogs, can reduce the number of these flare ups and obviate the need for a lot of medication – and it is a lot easier on the owners' pockets.

Reference: Navigating Emerging Biotechnology Interventions in Medical Science: Where Current Practice and Innovation Meets the Evidence & the Patient Dr Adam Castricum, Australasian College of Sport and Exercise Physicians, Olympic Park Sports Medicine Centre, AAMI Park, Melbourne, Victoria, Australia



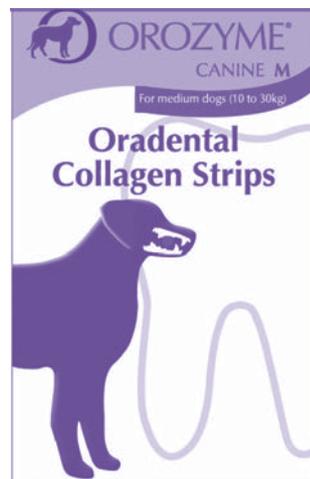
In the Mirror

After a conference Tony and Nagy are in this bar that has mirrors around the walls.

After a few rounds of drinks, Tony says, 'hey Nagy, there's two blokes over there that's the spitting image

of you 'n me, let's go over and have a yarn with them"

.Nagy looks up and says, 'nah, sit down Tony, they're coming over here."



Solving an Engineering Problem

The big company had a problem. They sometimes shipped empty toothpaste boxes without the tube inside. This challenged their perceived quality with the buyers and distributors.

Understanding how important the relationship with them was, the CEO of the company assembled his top people. They decided to hire an external engineering company to solve their empty boxes problem.

The project followed the usual process: budget and project sponsor allocated, RFP, and third-parties selected.

Six months (and \$8 million) later they had a fantastic solution— on time, on budget and high quality. Everyone in the project was pleased.

They solved the problem by using a high-tech precision scale that would sound a bell and flash lights whenever a toothpaste box weighed less than it should. The line would stop, someone would walk over, remove the defective box, and then press another button to re-start the line.

As a result of the new package-monitoring process, no empty boxes were being shipped out of the factory.

With no more customer complaints, the CEO felt the \$8 million was well spent. He then reviewed the line statistics report and discovered the number of empty boxes picked up by the scale in the first week was consistent with projections, however, the next three weeks were zero!

The estimated rate should have been at least a dozen boxes a day. He had the engineers check the equipment, they verified the report as accurate.

Puzzled, the CEO travelled down to the factory, viewed the part of the line where the precision scale was installed, and observed just ahead of the new \$8 million dollar solution sat a \$20 desk fan blowing the empty boxes off the belt and into a bin.

He asked the line supervisor what that was about.

"Oh, that," the supervisor replied, "Bert, the kid from maintenance, put it there because he was tired of walking over, removing the box and re-starting the line every time the bell rang."