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## Inside this issue:

|                                       |   |
|---------------------------------------|---|
| Wound Antisepsis                      | 2 |
| Liquid Versus Powdered Disinfectants  | 3 |
| AMR Risk - Food and Companion Animals | 4 |
| Pet Laundry                           | 6 |
| Fizzy Horses                          | 7 |



## Hot Blood, Warm Blood, Cold Blood in Horses

Have you ever heard the term “cold-blooded” for a horse?

If someone in your boarding barn is talking about a new horse and says it’s a warmblood, what does that mean?

Since all horses are mammals and are therefore physiologically warm-blooded, the designations don’t initially make sense.

These informal terms are used to group different breeds loosely by their temperament.

Arabian and Thoroughbred horses usually fall into the hot-blooded group, as they tend to be

a bit more nervous and energetic than some other equines.

Cold-blooded horses encompass the draft breeds such as Percherons, Shire horses, Clydesdales, and Belgians.

Large-boned and heavy-bodied, these horses were developed to use in draft and agricultural work, and were selected for a calm temperament.

Warm-blooded horse breeds were produced by crossing hot-blooded and cold-blooded horses.

Many countries developed strains of these



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horses that could be used for riding or for drawing wagons and carriages.

Dutch Warmblood, Hanoverian, Holsteiner, and Trakhener horses are usually calmer than Thoroughbreds, but have the ability to move more athletically than the heavier draft breeds.

Warmbloods are often the type of choice for many disciplines such as dressage, driving, and eventing.

Source: KER Newsletter

## Highlights Inside

Powder disinfectants and very strong antiseptics have become populist over the years, mainly due to marketing; neither really stand up to scientific scrutiny.

Antiseptics need to be non irritant, especially to

open wounds, and liquid disinfectants offer so much more in animal care.

Populism has seen the food animal industry pilloried over the years regarding antimicrobial resistance whereas small

animal use has just been an afterthought. It now seems the opposite should be the case.

We look at all this, plus an article on fizzy horses following the front page theme of hot, warm and cold blood horses.

## Wound Antisepsis

For faster healing wound antisepsis is a major factor, meaning use of either antibiotics or antiseptics. The predominant difference between antibiotics and antiseptics is that antibiotics work more specifically, allowing bacteria an opportunity to mutate and form resistance, whereas antiseptics work at all levels of cell biology, so bacterial resistance is less likely to occur. Thus, for open wounds antiseptics are the preferred option.

However, when it comes to dilution rates of antiseptics, stronger is rarely better. Apart from the fact that waste can occur, there are also problems with efficacy, especially with the popular and reliable iodine-based antiseptics.

While some concerns exist about cytotoxicity and delayed healing, iodine's broad-spectrum antimicrobial activity and ability to penetrate biofilms make it a popular choice for wound management. In some cases, iodine dressings have been associated with delayed healing, due to high concentrations.

For example, 10% tincture of iodine is generally considered more irritating than 2% tincture of iodine. The higher concentration of iodine in the 10% solution leads to a greater risk of irritation and potential chemical burns.

This is because free iodine is irritant. The irritant properties of iodine can manifest as skin irritation, redness, swelling, or even chemical

burns, particularly with higher concentrations.

Both 2% and 10% tincture of iodine contain free iodine, which is the active ingredient responsible for its antiseptic properties. However, the higher concentration in the 10% solution means there is more free iodine available to cause irritation. This is a classic case of the stronger solution being less efficacious.

Povidone-iodine (PVP-I) is different, while tincture of iodine contains free iodine, povidone-iodine is a different formulation where iodine is bound to a carrier molecule. The free iodine concentration in PVP-I is significantly lower, making it less irritating than tincture of iodine.

Povidone-iodine is a complex of iodine and polyvinylpyrrolidone (PVP), which acts as a carrier and solubilizing agent. Free iodine is the active agent and the free iodine released from the complex is what provides the antiseptic and antimicrobial action.

Povidone-iodine's free iodine concentration, which is its active antimicrobial component, follows a bell-shaped curve when diluted. This means that as a 10% povidone-iodine solution is diluted, the free iodine concentration initially increases, reaching a maximum at a certain dilution (around 0.1%), and then decreases with further dilution. This paradoxical behaviour is due to the dynamic equilibrium be-

tween the povidone-iodine complex and free iodine.

In short, when a 10% PVP-I solution is diluted, the free iodine concentration initially increases. This is because dilution disrupts the complex, releasing more free iodine until an optimum dilution is reached.

The free iodine concentration reaches a maximum at a specific dilution (around 0.1% for PVP-I), and then decreases with further dilution. The antimicrobial effectiveness of PVP-I correlates with the concentration of free iodine, meaning that the solution is most effective at the dilution where the free iodine concentration is highest.

This phenomenon is important in clinical settings because it highlights the importance of using the appropriate dilution of PVP-I to achieve optimal antimicrobial activity.

For example, studies have shown that dilutions between 0.1% and 1.0% povidone-iodine correlate with increased free iodine levels and are associated with optimal antimicrobial efficacy.

So in conclusion, for both iodine tincture and povidone iodine, strong 10% solutions are not as effective in wound healing as are 2% tinctures or solutions between 0.1% and 1.0% povidone-iodine.

## Curfew

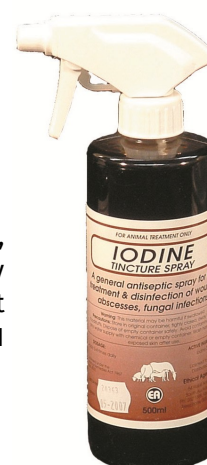
Nagy goes on holiday and is booking into the guest house. Looking around reception he notices a sign on the wall.

He asks the owner, "What time do you get in?"

The owner looks confused and says, "Well, I'm the owner, I live here. Why do you ask?"

Nagy says, "Well, on that sign there it says that guests have to be in before you are!"

The owner replies, "No, it actually says, 'Guests must be in before 1 am'."



## Liquid Versus Powdered Disinfectants

When it comes to maintaining gold-standard biosecurity in veterinary clinics, choosing the right veterinary disinfectant is critical. Whether it's for treatment rooms, animal housing, or high-touch surfaces, your disinfection program needs to be effective, safe, and practical for daily use.

Two common disinfectant formats are liquid concentrates and powdered disinfectant concentrates. Let's break down the key differences and why more animal health professionals are moving towards proven liquid solutions like SteriGENE for reliable veterinary infection control.

### **Why Liquid Concentrate Disinfectants Are Preferred in Animal Care**

Liquid concentrate disinfectants have become a trusted choice in many veterinary and animal care settings — and for good reason:

#### **Simple and Consistent**

Liquid concentrates are easy to dilute accurately, minimising the risk of mixing errors. Consistent dilution means consistent results — a must for effective animal clinic hygiene.

#### **Broader Biosecurity Protection**

A quality liquid disinfectant like SteriGENE provides broad-spectrum efficacy against bacteria, viruses, fungi, and spores — helping clinics maintain strong biosecurity cleaning standards.

#### **Gentle on Equipment**

Liquid concentrates are generally less corrosive than powdered products. SteriGENE even contains built-in corrosion inhibitors, helping protect costly veterinary equipment, surfaces, and tools.

#### **Longer Shelf Life After Mixing**

Once mixed, SteriGENE stays effective for **up to 6 months** (with tap water) or **12 months** (with demineralised water). That means less frequent preparation and less chemical waste — saving time and money.

#### **Safer for Your Team**

Handling liquid disinfectants is safer than dealing with powders. For example, SteriGENE shows only mild skin irritation in testing, even with concentrated contact — lowering the risk to staff.

#### **Environmentally Responsible**

Many liquid concentrate disinfectants, including SteriGENE, are available in eco-friendly formulations — supporting sustainability targets alongside infection control.

### **Where Powdered Disinfectants Can Fall Short**

While powdered disinfectant concentrates have long been used in animal health, they come with limitations:

#### **More Complex to Prepare**

Powders must be measured and mixed with precision. In busy clinics, this increases the chance of dilution errors, which can reduce disinfection effectiveness.

#### **Shorter Stability Once Mixed**

Many powdered disinfectants remain stable for just a week after mixing. Frequent remaking means more time spent mixing and more waste.

#### **Higher Corrosiveness**

Powdered solutions can damage metal instruments and pit plastic surfaces — leading to costly repairs or replacements.

#### **Added Health Risks**

Handling powdered chemicals requires more PPE and strict care to avoid skin contact, eye exposure, or inhaling dust — adding steps and risk to daily routines.

### **The Bottom Line: SteriGENE Liquid Disinfectant Delivers Confidence**

In modern veterinary clinics and animal care facilities, reliability, safety, and cost-effectiveness matter. A high-performance liquid concentrate veterinary disinfectant like SteriGENE provides consistent, broad-spectrum protection while being gentle on equipment, safe for staff, and easy to use.

For clinics seeking to strengthen their biosecurity cleaning protocols and reduce downtime caused by mixing errors or short product life, liquid concentrates are a smart choice — now and in the future.



## The Arrest

LAPD stopped a driver only to find the car wasn't stolen and there were no stolen goods or drugs found.

The driver was sober AND had a full licence and no demerit points.

A LAPD spokesman said,

"We had no option but to fine him \$180 for wasting police time."

## AMR Risk - Food and Companion Animals

One of the most respected speakers at Science Week this year was Professor Luca Guardabassi, a veterinary microbiologist from Italy who now works at the University of Copenhagen. He gave several pertinent lectures but two related specifically to the dangers of AMR (Antimicrobial Resistance) being transmitted from animals to humans; the first paper was regarding food animals and the other related to companion animals.

The organisms of major concern are methicillin resistant *Staph aureus* (MRSA), methicillin resistant *Staph pseudo-intermedius* (MRSP) and extended spectrum beta-lactamase (ESBL) producers, mainly *E coli*.

MRSA and MRSP have an altered target, and resistance transmission is via clonal propagation whereas ESBL involves an enzyme mechanism and propagation is horizontal, so is plasmid mediated.

The *mecA* gene that is mainly responsible for MRSA does not readily transfer to humans but ESBL type resistance does readily transfer.

Thus, the risk seems vastly different between food animals and companion animals, and not in the way one might imagine.

**"the risk seemed vastly different between food animals and companion animals, and not in the way one might imagine."**

We are all aware of the fact that antimicrobial-resistant bacteria and genes can be transmitted from farms to community and clinical settings through the food chain or direct contact with animals, potentially contributing to treatment failures, increased mortality, and higher healthcare costs.

Thus, AMR poses a dual threat via the food chain: the direct transmission of resistant pathogens and the indirect spread of resistance genes.

However, quantifying the contribution of veterinary AMU to AMR in human infections remains highly challenging due to complex ecological interactions, geographical variations, and evolving usage and AMR patterns.

This complexity is further compounded by co-selection - a phenomenon in which AMR genes are maintained or amplified through exposure to chemically unrelated antimicrobials or non-antibiotic substances, such as heavy metals - making risk management even

more challenging than risk assessment. An example was given of zinc oxide. Resistance genes for zinc and antibiotics may be located on the same genetic element, such as a plasmid, allowing them to be transferred together, (this may be an issue in NZ considering the amount of zinc supplementation in the autumn).

Direct infection by zoonotic pathogens is one pathway and there is strong evidence linking veterinary AMU to AMR in zoonotic pathogens such as *Campylobacter* and *Salmonella*. For instance, the use of fluoroquinolones in poultry has been closely associated with the emergence of ciprofloxacin-resistant *Campylobacter jejuni*, a major foodborne pathogen.

**"paradoxically, this is more of an issue in companion animals, as outlined below."**

However, although this resistance is clearly linked to antimicrobial use in animals and foodborne transmission is relatively common, its impact on human health is limited, as most foodborne infections

*(Continued on page 5)*

## Demob Bonus

It's demob time in the army, and as things have gone so well there's a new wheeze.

"Every retiring soldier is entitled to a bonus," says the captain. "You'll be awarded \$10 for every centimetre measured between the two body parts of your choice. Private, you're first."

"I'll have it measured from my feet to the top of my head," he says.

Out comes the tape, and it comes to 175cm, so he leaves \$1750 richer.

"Corporal?"

The corporal's a lanky guy, so he chooses to be measured from the tip of one outstretched hand to the other. A few minutes later he's \$1830 to the good.

"Right, sergeant, you're the last."

"I'll take it as the distance from my

left eye to my right eye," the sergeant replied.

"You sure?"

"Absolutely."

He takes off his sunglasses and the captain steps up. "Hang on, sergeant, where's your right eye?"

"I left it at the battle of Jebel Akhbar," the sergeant says. "I'll take a cheque."

## AMR Risk - Food and Companion Animals

(Continued from page 4)

are self-limiting and rarely require antimicrobial treatment.

Similar evidence exists for livestock-associated methicillin-resistant *Staphylococcus aureus* (LA-MRSA), which also has a well-documented animal origin. However, its impact on public health remains relatively limited, primarily affecting regions with intensive livestock production and low background prevalence of MRSA in the human population.

There is also an issue with AMR transmission in uropathogenic *Escherichia coli* but, paradoxically, this is more of an issue in companion animals, as outlined below.

Horizontal gene transfer via commensal bacteria of animal origin is the other possible mechanism, but evidence linking veterinary AMU to AMR in commensal opportunistic pathogens via horizontal gene transfer is less consistent and often contradictory.

Despite the high prevalence of ESBL-producing *E. coli* in animals and their potential for gene transfer via conjugative plasmids, large-scale epidemiological studies have found limited overlap between human and food animal ESBL genotypes.

Several recent studies conclude that only a limited proportion of human infections caused by ESBL-producing *E. coli* are attributable to food.

## Drinking

Bloke went into a bar with a giraffe. They each sat on a barstool and the man started ordering beers for the pair of them.

After quite a few beers had been drunk the giraffe slid off the barstool and spread out on the floor, all legs and neck.

The concluding remarks were “While there is strong evidence linking AMU in food animals to the emergence of AMR in foodborne pathogens isolated from human infections, the impact of indirect transmission via horizontal gene transfer appears more limited than previously thought and varies by region, depending on local AMU practices.

**"Therefore, livestock resistance is not the big issue but dogs can be reservoirs of this gene for the human population."**

Nonetheless, even if only a small fraction of human deaths is attributable to veterinary AMU, a precautionary approach is justified."

On the other hand, there is a much higher use of broad-spectrum antibiotics in dogs and cats than in food animals. The two major risk factors are previous antimicrobial use and hospitalization.

The important factor is that transmission can be two-way, animal to human or human to animal.

MRSA is generally of human origin and is high in veterinary staff, but dogs act as a reservoir in the household. In contrast MRSP is rare in humans, although higher in veterinarians, and humans act as a reservoir to the dog population.

For ESBL the major resistance gene in livestock is CTX1, whereas in both dogs and humans it is CTX2.

Therefore, livestock resistance is not the big issue but dogs can be reservoirs of this gene for the human population.

To quote from this paper's conclusion:

“Evidence strongly supports the role of dogs as both reservoirs and vectors on antimicrobial-resistant *E. coli* within households.

Genetically identical or closely related strains have been found in dogs and their human cohabitants, including during UTI in human and dog patients.”

So, the overall conclusion from the two papers was that AMR risk from food animal use is not as severe as depicted in many media but, conversely, the risk from use in small animals is greatly underestimated.

The take home messages for veterinarians were antimicrobial stewardship, infection control, inform the owners of potential risks of resistant bacteria and to “educate owners of the risks from raw pet food.”

For owners the message was to practice hygiene and protect the vulnerable.



## Pet Laundry

There is no hard and fast rule about how often to wash pet's paraphernalia but generally people probably aren't laundering them as often as is recommended.

Beds and blankets should really be washed every one to two weeks and collars, leashes and toys monthly or when they look dirty and smelly.

Domestic pets are highly attuned to scents, and what is appealing to humans may not be as appreciated by pets, for example the freshly shampooed dog immediately wanting to roll in cow manure to get rid of, what to human noses, is an appealing rose scented smell.

There are a number of pet accessories that can go in the washing machine such as: pet beds with removable covers, pet clothing, soft toys, some hard plastic or rubber toys, collars and leashes made of washable materials, blankets.

Cleaning a pet's things in the washer requires some extra steps to ensure they come out clean and damage-free.

Check the care tag. Before washing check the care tag for washing instructions.

The symbol indicating an item is machine washable is a basin; the symbol for hand-washing is a basin with a hand in it; the symbol for do not wash is a basin with an X over it.

De-fur before washing. Remove as much fur as possible before putting items in the washing machine by brushing off, shaking out or vacuuming fur and other debris.

Running a rubber glove or sticky roller over be-furred items is another way to quickly remove fur from launderable items.

Pre-treat stains. Pre-treat visible stains before laundering. Most pet messes are bio-based protein stains, and are best treated using an enzyme stain treatment product.

Use protective washing bags. Place small items like booties or sweat-ers, and long, thin items like leashes, collars and bandannas in pro-

TECTIVE mesh washing bags to prevent them from getting lost, damaged, tangled or wrapped around other items in the load.

Many detergents and other laundry products, including fabric softeners and scent beads, contain strong fragrances, as well as harsh chemicals, like bleach or ammonia, and dyes, which can cause allergic reactions. If possible, run an extra rinse cycle to help remove detergent residue.

For extra hygiene it is better to avoid detergents altogether and replace with SteriGENE, especially if the pet has been sick, or their belongings are contaminated in some way.



## Dust to Dust

A little boy came downstairs crying late one night. "What's wrong?" asked his mother.

"Do people really come from dust, like they said in church?" he sobbed.

"In a way they do," said his mother.

"And when they die, they turn back to dust?"

"Yes, they do."

The little boy began to cry again.

"Well, under my bed there's someone either coming or going."

## Fizzy Horses

The term fizzy horse has been used for horses with a nervous temperament and also for others that become more unpredictable as feed levels are increased or if the diet is unbalanced. Like the term colic, fizzy horse is a symptom, not a diagnosis, and the condition may have a variety of causes.

A lot of focus is given to nutrition and the misnomers of 'hot' and 'cool' feeds. It really is a case of managing energy levels with workloads and high-performance horses require high energy grains, although these are not as readily digested in the large intestine as forage.

Overfeeding grains to horses not in heavy work will definitely have them show up as hyper-excitable 'fizzy' horses; much like the celebrated sugar rush young children are supposed to experience from eating sweets.

Electrolyte balance can also be a factor as electrolytes are important in nerve conduction and horses

lose much more sodium, in particular, and potassium than humans when they sweat.

Electrolyte therapy has come a long way in the decades since the old acid/alkali based principles of the 1980s, and modern theory is that it is best to simply replace the electrolytes that horses use in sweat.

Sedalyte is formulated to contain the electrolytes that horses lose in sweat, and with heavy sweating the answer is to simply add more Sedalyte. It is because SedaLYTE's balanced formulation more closely mimics the actual composition of a horse's sweat that it is so effective at helping to prevent poor performance due to sweat loss.

Low calcium following extensive sweating by the horse is generally accompanied by hypomagnesaemia, which leads to anxiety and increased neuromuscular excitability. These "fizzy" horses respond to a high magnesium electrolyte.

Most proprietary mixes focus on

sodium and chloride, but magnesium is an important element lost in sweat. Replacing other electrolytes but not magnesium may result in horses being hyperactive or "fizzy". SedaLYTE's balanced formulation, replacing what is actually lost in sweat is of major benefit to these "fizzy" horses.

Soft hands for the rider, balancing energy levels of feed to work load and replacing electrolytes lost in sweat, as Sedalyte does, are simple ways to avoid fizzy horses that do not require expensive, complicated diets.



## Adoption

A husband and wife who worked for the circus went to an adoption agency.

Social workers there raised doubts about their suitability.

The couple produced photos of their 50-foot motor home, which was clean, well maintained and equipped with a beautiful bedroom for the child.

The social workers raised concerns about what sort of education a child would receive while in the couple's care.

We've arranged for a full-time professional tutor who will teach the

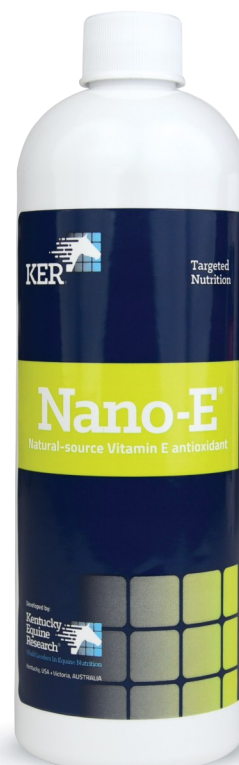
child all the usual subjects, along with French, Mandarin and computer skills."

The social workers expressed concern about a child being raised in a circus environment.

"Our nanny is a certified expert in paediatric care, welfare, and diet. In addition, there are 17 other children who travel with their circus parents."

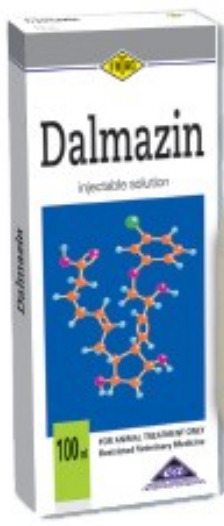
The social workers were finally satisfied. They asked, "What age child are you hoping to adopt?"

"It doesn't really matter, as long as the kid fits into the cannon."





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## Fishy Story

A man calls home to his wife and says, "Honey, I have been asked to go fishing up in Canada with my boss and several of his friends.

We'll be gone for a week.

This is a good opportunity for me to get that promotion I've been wanting so could you please pack enough clothes for a week and set out my rod and tackle box.

We're leaving from the office and I will swing by the house to pick my things up.

Oh! Please pack my new blue silk pajamas.

"The wife thinks this sounds a bit fishy but being the good wife, she

does exactly what her husband asked.

The following weekend he comes home a little tired but otherwise looking good.

The wife welcomes him home and asks if he caught many fish?

He says, "Yes! Lots of Walleye, some Blue gill, and a few Pike, but why didn't you pack my new blue silk pajamas like I asked you to do?"

The wife replies, "I did, they're in your tackle box."

