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## Pet Dental Market Research

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Market research carried out in the UK by Animalcare showed that periodontal disease is the most common infectious disease in dogs. Because of this the dental home care product market is huge, however veterinarians' portion of this is small (<5%).

There is a new generation of pet lovers shaping the pet market worldwide, namely millennials. Oddly enough millennials are defined as those born from 1981 to 1996 and the next generation, born around the millennium itself are defined as generation Z - go figure!

35% of millennials in UK own a pet, the largest portion of all generations. They are also pet parents in that 75% will buy luxury goods for their pets. They are described as confident, curious, info-centric and digitally orientated – loving user-generated content and valuing online recommendations.

As to the pet market itself no company has a full range of products or

trust of the vet and the large pharma companies do not play in this segment of the market.

For dental products, few products have science behind them so choice of products comes down to what the owner and animal accept. This means

inversely proportional to effectiveness.

For the industry then the problem to solve is to find an easy-compliance product that truly works.

Animalcare have cracked that with their new patented water additive Plaqtiv+.

Unlike some products on the market, this VOHC approved product has science behind it and is simple to use, ensuring compliance.

It is also the basis of the 3 phase plan devised by Ethical Agents Veterinary Marketing, which is outlined in the main article in the centre of this newsletter.

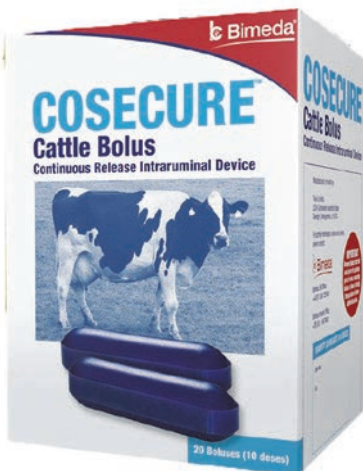
The veterinary profession is in danger of losing this lucrative market to the pet shop industry just as it lost much of the equine dental market and the cattle scanning market to lay operators.

The EA 3 Phase Plan, as outlined on pages 4-6, gives an ideal opportunity to claim it back.

Simple, easy to use, effective and backed by science.



that the biggest challenge for vets is owner compliance to dental recommendations (<50%). Generally owners lack education in this area of their pet and so ease of use in dental products is



## Why Glass Boluses?

Glass is formed by heating materials to a molten state, then cooling the ingredients fast enough to prevent crystallization. As the glass cools, the atoms become locked in a disordered state similar to that of a liquid before they can form the crystalline state of a solid.

As glass is neither a liquid nor a solid, but instead has the qualities of both, glass exists as a separate type of matter.

**"a matrix claim for even dissolution does not make logical sense."**

We tend to think of glass as just glass but, just as there are many different types of plastic there are also different types of glass.

Soda lime glass, is the most prevalent type of glass, about 90% of glass manufactured is soda-lime. The first material is silica, or silicon dioxide, which makes up 70% of the finished product.

Another 15% is made of soda, or sodium oxide, which lowers the silica's melting temperature, and lime, also known as calcium oxide, makes up another 9% to act as a stabilizer.

It is a softer glass, which is an asset because it makes fabrication via cutting easier, but this does mean it is less scratch-resistant than other types of glass. It is used in the majority of commercial glasses such as windows, bottles & jars and drinkware.

Borosilicate glass is composed of at least 5% boric oxide.

Creating borosilicate glass requires higher temperatures than those necessary for the production of regular glass, although this also accounts for its higher heat re-

sistance, making it ideal for oven and laboratory glassware.

Lead crystal glass is used for decorative glassware. Lead glass is often desirable for a variety of uses due to its clarity.

The term lead crystal is, technically, not an accurate term to describe lead glass, because glass lacks a crystalline structure and is instead an amorphous solid.

The use of the term lead crystal or just "crystal" remains popular for historical and commercial reasons, and because "lead" sounds toxic to consumers.

We also have soluble glass. Normally glass is extremely chemically inert. If you kept washing a glass it would really only disappear because of erosion.

Potassium water glass is a potassium silicate alloy that has a very wide range of applications in the chemical industry, processing and construction due to its good water solubility. It has a lower melting temperature and lower running costs. Potassium waterglass is used for the production of paint .

Phosphate glass was originally designed for optical fibres it was found to be not suitable for this use as phosphate glass alone is prone to attack by moisture (i.e. soluble glass).

Cosecure boluses turn this solubility into an advantage with soluble phosphate glasses doped with trace element nutrients for controlled release. This is much more consistent and steadier than release from matrix boluses.

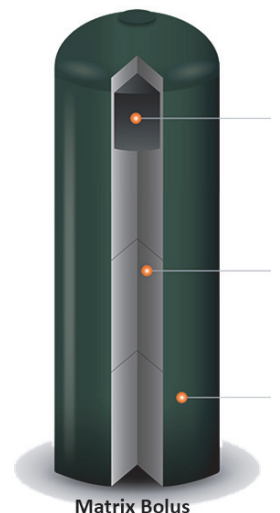
Matrix boluses have a resin based covering and are open at one end.

Release of the active ingredients is from that open end so it stands to reason that it cannot be as steady and consistent as dissolution from along the length of a glass bolus.

While manufacturers of matrix boluses claim even dissolution in the IVS, they state that dissolution may be aided by boluses rubbing together in the rumen.

Thus, a matrix claim for even dissolution does not make logical sense.

Soluble glass boluses do not suffer from these inconsistencies, steadily dissolving over time all along the length, giving a much more controlled release of active ingredients.



**The gradual dissolution of a Cosecure Cattle bolus**

# Injections Versus Boluses

What are the differences between boluses and injections for supplying minerals to cattle?

First of all, there is the problem of toxicity. Injections can be irritant, especially copper and selenium, and so result in unsightly lesions or even discarded portions at meat-works.

This is not such a problem with boluses which are enteric based rather than parenteral and generally are absorbed from the interior of the rumen.

The one exception is calcium boluses. Work by Aage Hojberg in Denmark showed that calcium boluses

were an animal welfare concern. Calcium salts are very irritant to mucosa and the bolus tends to fall to the bottom of the rumen holding a high concentration of the salt directly against the mucosa; this results in severe burning.

So, apart from calcium boluses the toxicity issue is advantage one to the boluses.

Injections are quick and easy to administer, more so than boluses so this is an advantage. They are less labour intensive unless a bolus can supply multiple ingredients, obviating the need for other injections.

However, on the labour side of the equation all copper injections have a label statement advising against doing other procedures (drenching, pour ons, other injectables, etc. at the same time.)



There is no such cautionary advice with boluses meaning that these procedures can be undertaken.

From a labour-saving perspective this means less yarding and also lower labour cost.

Economy would seem to favour injections but this difference is not so strongly emphasized if multi mineral boluses are taken into the picture.

Another parameter not often considered is consistency of blood levels. Injections have a peak absorption and a trough meaning levels can fluctuate.

With boluses absorption is slower and steadier, although this particularly applies to the soluble glass

bolus, as seen on page 2, with the matrix boluses being more variable.



Parameter	Advantage	Comment
Lesions	Bolus	Except calcium
Administration ease	Injection	Exception – multiuse bolus
Economy	Injection	
Consistent blood levels	Bolus	Particularly glass bolus

## Crossword

On holiday in Glasgow Nagy starts talking in a bar to a local who is doing a crossword.

“Need any help?” says Nagy.

“I’m stuck on one – trapped on a desert island, eight letters,” says the Scotsman.

“Marooned,” volunteers Nagy.

“Thanks, I’ll have a pint of lager,” responds the local.

## Job Interview

Reaching the end of a job interview, the Human Resources Officer asks a young engineer fresh out of the Massachusetts Institute of Technology, “And what starting salary are you looking for?”

The engineer replies, “In the region of \$125,000 a year, depending on the benefits package.”

The interviewer inquires, “Well, what would you say to a package of

five weeks vacation, 14 paid holidays, full medical and dental, company matching retirement fund to 50% of salary, and a company car leased every two years, say, a red Corvette?”

The engineer sits up straight and says, “Wow! Are you kidding?”

The interviewer replies, “Yeah, but you started it.”

## 3 Phase Plan

### The Science

Periodontal disease is reported to be the most common disease seen in small animal practices and the main cause of tooth loss in dogs. Surveys have shown that around 85% of dogs and cats require dental care; while the main problem for humans is tooth decay, dogs and cats are most likely to suffer from periodontal disease. In fact, periodontal disease is so common that it affects the vast majority of dogs and cats over 3 years old.

Plaque becomes pathogenic over time - not much time usually - whereby calculus is inert and forms more slowly on top of undisturbed plaque. In itself the significance of calculus is the rough surface that encourages more plaque to form, apart from being unsightly.

We all realise that the gold standard for preventing tooth decay in household pets is daily teeth brushing to prevent plaque build up. The big problem is that the vast majority of clients are loathe to do that, or at least not as diligent as they should be.

Like anything in life, if there is an easier option people will tend to choose it, even if it is not the most efficient. Thus, over the last few decades, there has been an explosion of technology in the chew and supplement markets with products designed to help reduce plaque and tartar formation.

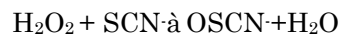
There are two main mechanisms by which these products work, the peroxidase system and seaweed extract.

The enzyme complex contained in saliva - the peroxidase system - is an important factor in the maintenance of a healthy mouth. This is the basis for the Orozyme Range,



which has proven to be very effective over the years.

This system comprises three main elements, salivary peroxidase (also known as lactoperoxidase), thiocyanate (SCN<sup>-</sup>) and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>). The reaction produced by this system results in the production of the powerful oxidising ion, hypothiocyanate (OSCN<sup>-</sup>), as illustrated below:



Hypothiocyanate has an inhibitory effect against a number of oral bacteria including the common cariogenic species *Lactobacillus*, *Streptococcus*, and *Actinomyces*. It has been demonstrated that at least 80% of the main strains of anaerobic bacteria responsible for periodontitis are sensitive to the hypothiocyanate peroxidase system.

The efficiency of this system obviously depends greatly on the level of salivation. This, in turn can be affected by various factors including breed, type of diet and administration of particular medicines. Where production of saliva is not optimal the efficiency of the lactoperoxidase system will be compromised.

Since the development of the lactoperoxidase system further research has shown the benefits of seaweed extract which also can be shown to dramatically improve oral health.

The key ingredient is *Ascophyllum nodosum*, which is proven to reduce plaque, tartar and bad breath.

*Ascophyllum nodosum* is a small, soft seaweed that grows on rocks in coastal zones between high and low tide. It grows in freezing waters of the Atlantic Ocean below the Arctic Circle and is harvested in Norway, Scotland, Iceland and Canada.

*Ascophyllum nodosum* is the most studied seaweed in the world, and is proven scientifically and in field trials.

The two major features of *Ascophyllum nodosum* to consider in pet health are its ability to counteract plaque formation and its overall low palatability, an issue that needs addressing especially as it is mostly small fussy breeds that suffer from gingivitis.



Miniature and toy dog breeds are predisposed to periodontal disease and in 2018 Gawor *et al* developed a placebo-controlled, double-blind, randomized study to determine the effect of 90-day administration of edible treats containing *Ascophyllum nodosum* on plaque and dental calculus accumulation on the teeth of dogs, as well as on other param-

(Continued on page 5)

## 3 Phase Plan

*(Continued from page 4)*

eters characterizing canine oral health status

**Therefore the 21% reduction from the simple to use water additive is not to be sneezed at!"**

The consumption of edible treats containing *Ascophyllum nodosum* efficiently decreased plaque and calculus accumulation in the investigated dogs. Dogs treated with *Ascophyllum nodosum* also exhibited significantly better oral health status than those in the placebo-control group.

Vetnex has developed a variety of *Ascophyllum nodosum* dental products to improve the palatability of this seaweed including flavoured powders (salmon, kangaroo) and tasty chews (salmon, beef liver). These flavours make the Vetnex Dental products attractive to even the fussiest eater and overcome the one and only drawback of feeding seaweed-based products to pets.

It is "The Treat that treats" and, with five different flavours clients can rotate and keep the treat interesting for the pets.

Vetnex Plaque Control Dental Chews are available as a powder to sprinkle on feed and also as chews, but they are chews with a difference. Other dental chews rely

purely on mechanical effect to try and reduce plaque whereas Vetnex Plaque Control Dental Chews contain *Ascophyllum nodosum*. The natural compounds in the seaweed come out through saliva and work on the bacterial biofilm to reduce plaque or tartar forming on the teeth, providing a natural protection on the teeth. A unique double action.

The only drawback with chews, as compared to brushing, is that, mechanically, chews are mainly effective on molars and premolars but have limited effect on incisors and canine teeth.

Now that we have left the 20<sup>th</sup> Century well behind, being almost up to a quarter of the way through the 21<sup>st</sup> Century, it is clear that the technology is not stopping. As well as the two revolutionary chew and supplement systems Animalcare, provider of an excellent lactoperoxidase range, have now developed a simple drinking water additive that also aids in plaque reduction. This represents a major breakthrough using trademarked Xpersiv™ anti-biofilm technology.

Called Plaqtiv+ water additive, it has now received VOHC approval and is the first water additive product globally with a tartar claim.

With its patented Xpersiv™ technology, Plaqtiv+ binds minerals,



making them unavailable to form tartar, without minerals, maturation of the biofilm is impaired, weakened tartar softens and begins to break off. In a randomised controlled study of 32 dogs: Plaqtiv+ water additive delivered a 21% reduction in calculus at 12 weeks vs control (p=0.05).

*(Continued on page 6)*

## The Punchline

Nagy and Tony are walking down the street thinking of something to do.

Nagy turns to Tony and says, "Let's go get a drink, there's this new place that does THE best punch you'll ever drink."

So they make their way to the bar and walk straight up to the bartender.

Nagy says, "Bartender, two glasses of your best punch please."

The bartender replies in a stern voice, "If you want some punch

you're gonna have to get in line like everybody else."

Nagy and Tony turn and look around but there's no punch line...

## 3 Phase Plan

(Continued from page 5)

### The Science (Cont,)

While tooth-brushing is cited as the gold standard, it has to be used daily to achieve a significant degree of efficacy. This is often just not possible in the 'real world' and a more flexible approach can be helpful, with products such as water additives and gum sprays offering a practical, less time-consuming solution in some circumstances.



Some critics may think a 21% reduction with the water additive does not sound absolutely massive but it is

actually substantial and was significant enough to satisfy the judges of the much-vaunted VOHC committee. It does compare well with the gold standard of brushing teeth.

Toothbrushing decreases plaque by 37% if done daily, 25% if done every other day, and 10% if done weekly. *Therefore the 21% reduction from the simple to use water additive is not to be sneezed at!*

It is a great step forward if nothing else is done and, if used with other sprays, supplements or chews, will soften plaque and make the task of the latter products so much easier and more effective. Occasional toothbrushing can be combined with the water additive to increase efficacy without increasing effort.

For scale and polish candidates the water additive can be used at least 1 month before the procedure to soften calculus. After the procedure, when brushing is not possible, the water additive can be a good alternative.



The ideal time to start a dental care routine is when pets are still young.

Start with spray, then wipes, then toothpaste.

If owners don't manage to progress all the way to toothpaste, they can combine with the water additive for maximum effect.

### The Plan

Thus EAVM have developed a 3 phase dental plan:

**Phase 1:** Drinking Water Plaqtiv+ - *lower level*

**Phase 2:** Vetnex and/or Orozyme Supplements - *Medium level*

**Phase 3:** Toothpaste - Orozyme with brushing - *High level*

(Combination of all 3 phases)

Plaqtiv+ is the easiest product to use – simply add 2 capfuls to 600 ml of the pet's drinking water. Hands-off administration quickly becomes a daily habit, meaning high adherence and reliable efficacy.

Hence, whatever dental care phase the owner employs, it makes really good sense to also utilise the Plaqtiv+ water additive -to be sure, to be sure, to be sure!

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## SteriGENE Effective Against FMD



The latest news for SteriGENE is that it has been proven effective for foot and mouth disease control with the latest tests hot off the press.

Canine parvovirus, a small unenveloped virus, has always been a difficult virus to kill.

Foot and mouth disease, being a picornavirus, is known as being even more difficult to neutralize.

Official communications attest that a picornavirus, represents the most biocide-resistant class of viruses and efficacy against picornaviruses indicates efficacy against all other veterinary viruses.

Therefore, along with the higher efficacy against Canine parvovirus, compared to other disinfectants on the market, as outlined in our last newsletter, efficacy against foot and mouth disease virus indicates

that SteriGENE has no peer in the field of virus neutralization.

*Reference: Test Report: BS EN 14675:2015, Blue Test Laboratories, 5 Robroyston Oval, Nova Business Park, Glasgow, UK, G33 1AP. Data on file, available upon request.*

Of course in today's environment a strong disinfectant has to be not only highly effective but also eco-friendly. The two priorities are seldom compatible.

Yet despite the high efficacy of SteriGENE it is also very environmentally friendly, being 100% biodegradable.



SteriGENE has proven to be completely degraded in the environment after 28 days, which really puts it in the company of fruits and vegetables, i.e. it has proven to be a clean green disinfectant, not only tough on germs while being kind to surfaces but also completely biodegradable, hence friendly to the environment.

*Reference: Technical Bulletin No. 270 TriGENE Advance- Biodegradability Test, SafePharm Laboratories Ltd, Shardlow Business Park, London Road, Shardlow, Derby DE72 2GD United Kingdom. Data on file, available upon request.*

And of course, with the 1:100 dilution it is extremely economical and simple to use!

*Dear Customer  
Now the Queen has passed on all monetary notes are no longer valid and need to be replaced with ones with King Charles III picture on them. Please send in your old notes and we will send you new ones.  
Mr Andru Baylee  
Bank of England  
PO Box 1414  
Lagos  
Nigeria*

## The Pizza

An Italian businessman goes to Indonesia for a business trip. He hates Indonesian food, so he asked the concierge in his hotel, "Is there any restaurant where I can find Italian food here?"

The concierge says, "You're lucky sir, a new pizza restaurant just opened and they deliver."

The businessman asks for the restaurant's number, goes back to his room, and orders the pizza.

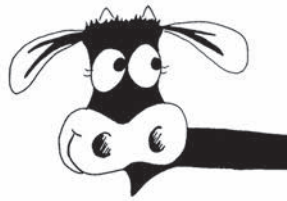
30 minutes later, the delivery person shows up with the pizza. He takes the pizza and starts to eat it.

Suddenly he's sneezing uncontrollably and shouting to the delivery

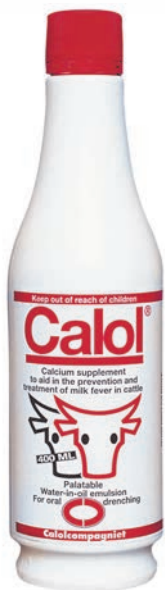
person, "What did you put on this pizza?!"

The delivery man bows deeply and says, "We put exactly what you ordered on the phone, sir.

It's pepper only"



Animal Welfare is Our Business



## The Fiancé

A young woman brought her fiancé home to meet her parents.

After dinner, her mother told the girl's father to find out about the young man.

The father invited the fiancé to his study for a talk.

"So, what are your plans?" the father asked the young man.

"I am a biblical scholar," he replied  
"A biblical scholar, hmmm?" the father said. "Admirable, but what will you do to provide a nice house for my daughter?"

I will study," the young man replied, "and God will provide for us."

"And how will you buy her a beau-

tiful engagement ring, such as she deserves?" asked the father.

"I will concentrate on my studies," the young man replied, "God will provide for us."

"And children?" asked the father. "How will you support children?"

"Don't worry, sir, God will provide," replied the fiancé.

The conversation proceeded like this...and each time the father questioned; the young idealist insisted that God would provide.

Later, the mother asked, "How did your talk go, honey?"

The father answered, "He has no job, he has no plans, and he thinks I'm God."

