

COMMERCIAL BULLETIN

# ALOE VERA NUTRACEUTICALS FOR PETS



The nutraceutical pet market is growing; take part of this new trend by adding Aloe Vera to your Nutra-formulas

AMB Wellness a Client Centered in Aloe Vera Bulk Supply

## GET THE BENEFITS OF ALOE VERA IN YOUR VETERINARY FORMULAS

Pets are living longer and subsequently developing age-related problems similar to their human guardians. People are taking clues from their own ways of staying healthier by eating better and taking supplements, which is particularly important as veterinary healthcare costs rise.

Pet supplements represent an emerging market segment that provides additional entry points and reinforces loyalty to the “natural” pet category. While consumers have always connected nutrition with long-term health of their animals, pet owners are now going beyond the blind acceptance that pet foods provide “everything” needed for a full and long life and seeking out supplements capable of optimizing their “furry friends” life. Supplement manufacturers are responding with innovative formulas, be one of them, by adding Aloe Vera to your existing or new formulas.

Pet owners have become more demanding in their purchases, and the days of offering pet products that simply mirror what is available for humans, such as granola bars or oxygen-enhanced water for dogs, are numbered. Education is still the key to selling dietary supplements and it behooves manufacturers to appreciate thoroughly the intended functionality of a particular product as well as its active ingredients to sort out which supplements are “therapeutic” and which ones are “treats.” This distinction is not as easy as it sounds because supplements are no longer just available in pill form; increasingly, functional ingredients are appearing in toppers, gravies, foods and snacks. Pet food companies market their diets as providing more than “nutritional adequacy” by adding functional ingredients that help maintain skin and coat condition, joint flexibility, digestive healthiness and immune strength.





## BE PART OF THE FORTIFIED AND FUNCTIONAL LINE FOR PETS WITH ALOE VERA

Aloe Vera is perhaps the most versatile plant on earth. Packed with vitamins, minerals, polysaccharides, phytosterols, antioxidants and amino acids, this one plant is as effective for internal concerns as external ones, and as popular for looking better as for feeling better.

Aloe Vera is extremely nutritious and safe to eat in regular consumption as a beverage, juice or powder mixes. Due to the large amounts of minerals, antioxidants and vitamins, Aloe Vera is the perfect dietary supplement, it has shown bio-enhancer and excipient properties to release other active ingredients, acting as a powerful vehicle as well.

**Today more than ever, pet owners and breeders have to maintain a good standard of health for their animals**

Our large selection of premium quality Aloe Vera ingredients makes easy to achieve your formulation goals. Choose from our Innovaloe line (with a maximized content of polysaccharides), our fresh pressed gel juices in different concentrations or work with us to develop your own Aloe Vera ingredient according to your needs and specifications. Whatever you are looking for, AMB Wellness has it! The pet nutraceuticals market has been experiencing rapid growth, showing no signs of slowing down, take this advantage.

Many health complaints can be alleviated in animals through feed supplements with Aloe Vera gel, the plant is a useful dietary supplement that fulfills an important role in the prevention, aftercare and monitoring treatment of diseases in the context of a holistic therapy. Aloe Vera enhances pet's diets and deliver them daily values of necessary vitamins, minerals and other natural compounds, as aminoacids, mineral, polysaccharides, and other more.



Today pet's owners want to make sure their dogs live vigorous, healthy lives and have realized that traditional pet foods don't always provide all the nutritional building blocks needed to accomplish this, create a product line to safeguard their wellbeing and vitality with Aloe Vera. Enter this market and respond to this growing demand with innovative products that are well formulated and contain ingredients that match the specific needs of the Nutraceutical pet market.

## ALOE VERA IS A NATURAL FUNCTIONAL INGREDIENT THAT ENHANCES AND SUPPORTS WELLBEING FOR YOUR PETS

Pet owners purchase food supplements to ensure their pets receive the proper nutrition, which might be lacking in off-the-shelf pet foods. Even though an excess of “lifestyle” pet foods are marketed, some veterinarians worry that such foods provide only basic protein, fat and fiber, plus a few vitamins and minerals. Since pets do not have the varied diets that humans do, they can quickly become susceptible to increased risk of disease and poor health when their food lacks certain nutrients. Pets are living longer than ever, pet owners often choose supplementation in order to help maintain health and ease age-related aches and pains in their older companions.

There is a growing trend to treat pets as family members. Pet owners said they refer to themselves as their pet’s “mom” or “dad” and want to care for their animals in the best way possible. Put simply, people want good health for their pets the same way they want it for their children.

Because supplements are readily available in food, drug and mass retail outlets and heavily discussed in consumer magazines and newspapers, there is greater understanding and appreciation for the roles they play in promoting health and vitality. The use of supplements for pets is a logical extension of such increased awareness.



## CONDITION-SPECIFIC & AGE-SPECIFIC FORMULAS DOMINATE

For the most part, the trends in the pet supplement market mirror what's happening in the human dietary supplement market today, where formulations continue to move away from general wellness, such as multivitamins and standalone minerals, toward age-related, condition-specific products that address health issues such as obesity, diabetes, arthritis and cardiovascular and vision dysfunctions. The same is happening within the pet supplements market, but faster.

When supplements first appeared in the pet arena, a majority came in the form of vitamin and mineral formulas, then joint support and skin and coat maintenance supplements came along. Now there are products that address more specific conditions, such as cataracts, memory loss, liver health and incontinence. Some formulations even address hip and joint dysfunctions of certain breeds, as well as behavioral disorders associated with household stress or separation anxiety.

Like humans, pets are also living longer. In fact, according to the American Veterinary Medical Association, 44% of dogs are older than six, while in 1987 only 32% lived past this age. The situation is similar for cats: 44% are older than six versus 28% in 1987. This aging pet population has created a demand for natural supplements that target pets' physiological needs.



### Why all the interest in pet supplements?

Natural ingredients are perceived to have an edge over conventional pharmaceuticals because they rarely cause side effects or interact with prescription drugs. Supplements have been shown to be safe when used judiciously.



## PRODUCT OPPORTUNITIES: FORTIFIED PET FOODS

Pet food manufacturers recognize the importance of supplemental nutrients in promoting health, as well as reducing the effects of certain conditions in animals.

Other drivers behind consumers with pets searching out functional ingredients for their pets include:

- The growing elderly pet population. Older animals are prone to many of the same types of chronic conditions that plague elderly people, including cancer, cardiovascular disease, arthritis, cataracts and even thinning hair.
- Rising veterinary healthcare costs. Just as consumers are looking to reduce their own healthcare costs by purchasing natural foods and nutritional supplements, they are equally interested in taking charge of the health of their dogs, cats and other companion animals by purchasing products that promote health and vitality.

- The perception of natural ingredients as safer alternatives to pharmaceuticals. Nutraceuticals rarely cause side effects or interact with prescription drug. While there are a few reported adverse events with supplements, they don't compare to the potential adverse reactions of pharmaceuticals.

Dietary supplements for animals such as vitamin and mineral products have been marketed for many years. Most of these products include ingredients that are approved food additives. Today, FDA accepts the marketing of oral supplements for animals provided there is a "recognized benefit, purpose or utility" and they are not a substitute for a complete and balanced diet or represented to prevent or cure disease.

### Aloe Vera enhance pet's health

Aloe Vera is an excellent natural option for this pet market, containing stabilized gel from the inner part of the Aloe leaf. It contains over 75 known active compounds in natural balance which helps maintain good health in animals as well as in people. Aloe has the effect of tonic; they support the immune system, healthy appetite, vitality and energy in active animals, lessening their sensitivity to external irritants. Aloe Vera is an ideal supplement that maintains pets in top form.



## PET HEALTH IS A TOP PRIORITY FOR CONSUMERS, USE ALOE VERA!

We would like to introduce you to this growing market, let's develop new products with Aloe directed to the pet's market under the natural nourish line. Consumers in the small animal market are interested in ingredients they feel will offer their pets the best quality of life as well as the greatest longevity. Pet owners are choosing premium food, and they expect the nutrients, minerals and vitamins to provide benefits to their pet's health, expecting supplements that would be source of many specific ingredients to aid in treating various health conditions.



Pet health is a top priority for consumers, and the functionality of products influences buying decisions. Manufacturers are introducing more and more pet food variants to address different aspects of pet health. Pet supplements are defined as either dietary or therapeutic supplements. Dietary supplements (also called dietary nutrients) are substances added to petfoods to make them nutritionally complete and balanced. Therapeutic supplements (also called nutraceuticals) are foods or food nutrients that are taken orally to provide a health benefit, either for prevention or treatment of disease.

### Be part of dog and cat foods functional formulas market

These pet supplements assert the ability to help manage several different health concerns, following the lead of human dietary supplements for conditions that include cardiovascular, bone and joint, eye and cognitive health; condition-specific pet supplements are one of the fastest growing segments in the pets market. Supplements that benefit pet joint health, hair, skin, coat condition and anxiety are showing the most growth.

Formulate products with Aloe Vera and empathize on healthy benefits for pet markets. Today a different mindset addresses different consumer desires when it comes to their pets.

### Bioavailability of nutrients:

Aloe Vera is unveiling a nutritional breakthrough that will help pets well-being. It has been claimed that the polysaccharides in Aloe Vera gel have therapeutic properties such as immune-stimulation, anti-inflammatory effects, wound healing, promotion of radiation damage repair, anti-bacterial, anti-viral, anti-fungal, anti-diabetic and anti-neoplastic activities, stimulation of hematopoiesis and anti-oxidant effects.

## ALOE VERA AND THE IMPORTANCE OF SUPPLEMENTAL NUTRIENTS IN PROMOTING HEALTH

Antimicrobial, antiviral, antifungal, antioxidant and other activities of Aloe's compounds are well described and backed up by numerous scientific reports. In the meanwhile, an increasing number of studies addressing the gastrointestinal effects of Aloe Vera; Aloe Vera and probiotics combined may aid intestinal microflora, gut morphology, gastric emptying and activity of endogenous digestive secretions. Acemannan, a compound found in Aloe Vera gel, stimulates immune system response. The gel is gentle enough to use on delicate eye and ear tissue and makes a versatile topical treatment and well as nutritional supplement. Aloe Vera can complement many treatments and boost the effectiveness of some medicinal substances by increasing their rate of absorption.



Aloe's polysaccharides contribute on drug absorption due to its enhancing properties. Currently, the new trend in the global Aloe Vera market are the use of Aloe Vera considering it as vehicle of other actives, as vitamins, minerals, aminoacids, botanical extracts and so on, also as bioavailable enhancers of herbal origin. The results of a study of two different Aloe Vera preparations indicate that Aloe improve the absorption of the vitamin C and E. The absorption is slower and vitamins last longer in the plasma with Aloe, this increases bioavailability of vitamin C and E in human. Consumers are increasingly looking for ways to eat healthier with foods that contain unique ingredients formulated to provide more than traditional nutrition. This same view is taken when purchasing pet foods.



## ALOE VERA AS A BIOAVAILABILITY ENHANCER (1, 4, 16)

Aloe Vera is a very promising future nutritional herbal bio-enhancer (4). Aloe Vera powder has shown to increase the solubility of water- insoluble drugs. The concentration of Aloe Vera is directly proportional to the drug release; Aloe Vera can be used as a bioavailability enhancer.

“Bioavailability enhancers are drug facilitators, they are the molecules which by themselves do not show typical drug activity but when used in combination they enhance the activity of drug molecule in several ways including increasing bioavailability of the drug across the membrane, potentiating the drug molecule by conformational interaction, acting as receptors for drug molecule and making target cells more receptive to drugs. A ‘bioenhancer’ is an agent capable of enhancing bioavailability and bioefficacy of a particular drug with which it is combined, without any typical pharmacological activity of its own at the dose used.

These are also termed as ‘absorption enhancers’ which are functional excipients included in formulations to improve the absorption of a pharmacologically active drug.

Nutritional bio-enhancers enhance absorption by acting on gastrointestinal tract. Antimicrobial bio-enhancers mostly act on drug metabolism processes.

There are several mechanisms of action by which herbal bio enhancer’s act. Different herbal bio enhancers may have same or different mechanisms of action. Nutritional bio enhancers enhance absorption by acting on gastrointestinal tract. Antimicrobial bio enhancers mostly act on drug metabolism processes.

### Need for bioavailability enhancers

Lipid solubility and molecular size are the major limiting factors for molecules to pass the biological membrane and to be absorbed systematically following oral or topical administration.

Several plant extracts and phyto-constituents, despite having excellent bioactivity in vitro demonstrate less or no in vivo actions due to their poor lipid solubility or improper molecular size or both, resulting poor absorption and poor bioavailability. It is often found that, when individual constituents are isolated from the plant extract there is loss of specific bio-activity.

Sometimes some constituents of the multi- constituent plant extract are destroyed in gastric environment when taken orally. They reduce the dose, shorten the treatment period and thus reduce drug resistance problems. Due to dose economy, they make treatment cost-effective; minimize drug toxicity and adverse reactions. Aloe Vera is a very promising future nutritional herbal bio-enhancer, take advantage in your functional release formulas.

## ALOE VERA FOR PETS, IS A NUTRIENT DELIVERY SYSTEM DESIGNED BY NATURE

Today more than ever, pet owners and breeders have to maintain a good standard of health for their animals. This includes animal medical care and the correct daily supply of nutrition. Often major health problems arise in animals because of over feeding and the mal-nutrition of essential basic nutrients.

Adding Aloe Vera gel to pet food formulations can ease a lot of problems with domestic animals; the plant is not a universal remedy but it does supply a reasonable amount of micronutrients which fulfil - within a holistic therapy - an important task in the prophylaxis, after treatment and accompanying treatment of illnesses.

### Applications of Aloe Vera drink gel:

#### **1. Aloe Vera for healthy joint function.**

Joint products, which often target senior pets, represent 30% of dog supplement sales and 17% in cats. Osteoarthritis affects up to 20% of dogs over 1 year of age, according to the American Veterinary Medical Association.

Joint blends with Aloe:

- Aloe Vera with glucosamine and chondroitin (alone or in combination).
- Aloe Vera with methylsulfonylmethane (MSM)
- Aloe Vera with green-lipped mussel (*Perna canaliculus*).
- Aloe Vera with hyaluronic acid (HA) and collagen type II.
- Aloe Vera with Capsaicin.
- Aloe Vera with boswellia.
- Aloe Vera with yucca.
- Aloe Vera with omega 3 fatty acids are also formulated into joint support products for their anti-inflammatory properties.

Pet supplements are plentiful, with formulas designed to support the health of animals both young and old. Natural compounds such as Aloe Vera, curcumin and boswellia are well known for managing inflammation, so these are often formulated in pet supplements along with chondroitin, glucosamine and MSM for joint support.

Aloe Vera with Glucosamine and chondroitin are critical components of cartilage, but the body's natural production diminishes with age. Many manufacturers formulate these chondro-protective nutrients into their pet foods to help stimulate cartilage metabolism and inhibit its degeneration as well as provide anti-inflammatory properties





## FOCUS YOUR FORMULA ON NATURAL MARKET

### 2. Aloe Vera for Skin and Coat Health.

Skin and coat supplements represent 21% of supplement sales in dogs and 22% in cats. • Aloe Vera with omega 6 fatty acids, but not enough omega 3 fatty acids.

- Aloe Vera with Fish oil or other marine sources contain high levels of EPA and DHA,
- Aloe Vera with omega 3 fatty acids capable of modifying inflammatory skin responses.
- Aloe Vera with Wild, non-farm raised Alaskan salmon oil from sustainable resources is an excellent source of biologically available omega 3 fatty acids.

Aloe Vera mixed with fatty acid supplement in the form of fish oil to improve skin and fur health and eggshell membrane for joint health. These ingredients are derived from animal food sources and are backed by published research demonstrating their safety and efficacy in multiple animal species.

**3. Aloe Vera mixed with vitamin and minerals.** Although sales of general pet one-a-day multivitamins are declining, they still represent 24% of sales in dogs and 29% of cat supplement sales. However, there are increasing numbers of formulas that combine condition-specific blends as:

- Aloe Vera with antioxidant.
- Aloe Vera with vitamins.
- Aloe Vera with minerals to promote immune health and overall vitality.

(Aloe Vera gel improves the absorption of both the vitamin C and E. The absorption is slower and vitamins last longer in the plasma with aloe, this increases bioavailability of vitamin C and E in human).



### 4. Aloe Vera for digestive health.

As human studies validate that solid intestinal health may bolster longevity, pet owners recognize the importance of a balanced GI flora in their own animals.

- Aloe Vera with probiotics to help normalize and maintain the balance of the intestinal flora.
- Aloe Vera with prebiotic fibers, such as inulin and oligofructose, to improved digestive health, overall function and immunity.

# ALOE VERA IS THE KEY TO THE HEALTHY AND LONG LIFE FOR PETS

## 5. Aloe Vera with stress and anxiety ingredients.

Dogs are social animals that if left alone, may exhibit undesirable behaviors associated with stress, fear and anxiety, such as restlessness, excessive whining and barking, and adult destructive chewing and house soiling.

- Mix Aloe Vera with relaxing herbs
- Aloe Vera with essential oils
- Aloe Vera with natural pheromones can be helpful for reducing nervousness, anxiety and motion sickness.



## 6. Maintaining Eye Health.

Older animals are at risk of developing senile cataracts, there is a leading cause of low vision among older dogs and, very rarely, cats.

- Aloe Vera with carotenoids lutein and zeaxanthin.
- Aloe Vera with vitamin E.
- Aloe Vera with lycopene.
- Aloe Vera with antioxidant vitamins C and E.
- Aloe Vera with zinc.
- Aloe Vera with flavonoids such as bilberry, black currant, and green tea.
- Aloe Vera with French Maritime pine barks extract.
- Aloe Vera with omega 3 fatty acids DHA and EPA are beneficial as “vision support” supplements.

## 7. Aloe Vera with Prebiotics.

Aloe Vera with Fructooligosaccharides (FOS) act by stimulating the growth of Bifidobacterium species in the large intestine. Not much is known about the correct and effective dosage levels of prebiotics for dogs or cats, but preliminary evidence seems to indicate that very low levels (0.3% of a dog's diet) are most effective and produce the least number of side effects (bloating, gas, etc.) Prebiotics are non-digestible food ingredients that stimulate the growth of beneficial bacteria that have the potential to improve host health, inhibiting the growth of pathogenic microorganisms.

Aloe Vera with probiotics:

- Aloe Vera with Lactobacillus acidophilus
- Aloe Vera with Bifidobacterium bifidum.



## ALOE VERA CONTAINS MACRO AND MICRO NUTRIENTS

### **8. Aloe Vera with *Lactobacillus bulgaricus*.**

To help fill nutritional gaps, Aloe Vera with probiotics is a useful tool to improve pets' digestive health. The use of probiotics has shown improvement in the digestive health of pets, as well as farm animals. In a controlled study using the probiotic *Bacillus coagulans*, feed efficiency and healthy growth was enhanced in farm animals and birds.

Help to keep harmful bacteria from colonizing and creating digestive problems, and thus support the body in fighting illness and disease. If beneficial bacteria become depleted or the balance is disturbed, potentially harmful (pathogenic) bacteria can overgrow. Probiotics are live cultures unstable at temperatures over 75 degrees and thus need be applied to pet foods after cooking. Most veterinarians feel that standalone supplementation is more efficacious. Probiotics are friendly bacteria.



**9 Aloe Vera with Omega 3 fatty acids from fish oil** or other marine sources contain high levels of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) capable of modifying inflammatory skin responses of healthy dogs. Pet foods supply ample omega 6 fatty acids, but not omega 3. Omega 9 fatty acids have no benefit to dogs or cats. Flaxseed oil contains alpha-linolenic acid (ALA), but its conversion by the body to EPA and DHA is slow and inefficient, and thus flaxseed oil does not appear to be as effective as fish oil in reducing inflammation. Selecting ingredients that are natural and already present as part of an animal's diet is the best option for pet formulas.

### **10. Aloe Vera with Antioxidants such as vitamins C and E, zinc and other trace elements**

help neutralize the effects of stress and environmental irritants. Although dogs— unlike humans—manufacture vitamin C, many veterinarians look at it as a “conditionally essential” nutrient helpful in times of stress. Pet owners like to see this vitamin in pet foods as well as vitamin E.

Aloe Vera contains antioxidants; they are free-radical scavengers that protect cells against structural damage induced by free radicals which mainly attack cell membranes, protein structures and nucleic acids. Both are integral to any functional pet food formula. Aloe Vera has naturally antioxidants (vitamin E, vitamin C and glutathione, for example) and free radicals ensures effective cell protection. Increased production of free radicals (e.g., the ageing process, exercise, stress, disease, etc.) demands a supply of increasingly efficient antioxidants for our longer-living companion animals. Continuously improved nutrition in pet diets and fine-tuned veterinary medicine are raising the life expectancy of companion animals.

## USES PET FOOD INDUSTRY

- Aloe Vera in pet food grade powders.
- Free flowing powders with low moisture (<5%) for pellet, chow or bulk powder.
- Loading factors from 5% to over 70%, depending on the material.
- Enhance aroma, taste, color.
- Blend multiple oils into one.
- Aloe base nutritional powder.
- Juices.
- Chewable tablets.
- Soft chews.
- Granules.
- Semi-solids.



## Uses Animal Feed Industry

- Use ALOE VERA plus oil in animal grade powders.
- Mix with existing formulas.
- Apply as an add-on supplements to existing feed.
- Blend existing proteins, pigments, other additives with an O2P powder.
- Does not alter existing feed aroma, taste, color or texture.
- Load factors ranging from 5-70%.
- Higher moisture content for ease of blending into existing feed(s).



## RECOMMENDED DOSAGE OF ALOE VERA IN FINISHED PRODUCTS

Ideal for animals in recovering or run down, it helps to promote and maintain all round good health. Aloe Vera Juice is non-toxic, non-irritant and can benefit all animals with its remarkable qualities. Ideal to use as a tonic for run down, recovering, lethargic or retired older pets.

Animal	Weight	Daily minimum Aloe amount
Hamster, Mouse	0-100 g	2 ml
Rat, Chinchilla, Guinea Pig, Rabbits	400 g - 2 kg	4 ml
Cat	3 -6 kg	10 - 20 ml
Dog	3 - 6 kg	10 - 20 ml
Sheep, Pig	Approx. 150 kg	100 - 120 ml
Cow	Approx. 500 kg	200 - 250 ml
Horse	Approx. 500 kg	200 - 250 ml
Calf, Foal, Pony	100 - 200 kg	100 - 150 ml

### Flavor can be added onto the Aloe Vera juice:

- Chicken broth-based drink with aloe juice.
- Fatty acids –based drinks flavored fish with aloe juice.
- Artificial Powdered Beef Flavor \*
- Artificial Powdered Meat Flavor\*
- Natural Meat Powdered Flavor\*
- Natural Chicken and Fish Powdered Flavor\*
- Sweet Apple and Molasses Flavor\*

These Flavor Bases are used in canine, feline, and equine (horse) juices, chewable tablets, soft chews, granules, and semi-solids to produce the most palatable and stable dosage forms available today.\*  
Pet Flavors Inc.(MR)

**\*Other flavors suggested are:**



- Artificial Grilled chicken flavor
- Artificial turkey gravy flavor
- Artificial chicken breast flavor
- Artificial roasted chicken flavor
- Artificial liver flavor
- Artificial meatball flavor
- Artificial pork flavor
- Artificial salami flavor
- Artificial salmon flavor
- Artificial shrimp flavor
- Artificial sweet potato flavor
- Artificial pumpkin flavor
- Artificial Peanut butter
- Artificial Carrot flavor
- Artificial Egg flavor
- Artificial top sirloin flavor
- Artificial beef fat
- Artificial bacon cheddar flavor



\* These Flavor Bases are used in canine, feline, and equine (horse) juices, chewable tablets, soft chews, granules, and semi-solids to produce the most palatable and stable dosage forms available today from Gold Coast ingredients Inc(MR).

Aloe drinking gels can help maintain all the signs of a healthy animal. Suitable for all, the liquids are readily absorbed into normal feeds, though some animals prefer them in their water. They help maintain a healthy appetite, suppleness and energy levels.



## ANIMAL FEED PRODUCTS

Animal feed materials and ingredients generally do not require registration by the APVMA if they meet the following requirements:

- They are fed as part of the normal diet of an animal.
- They are intended solely for nutritional purposes and are only represented as being suitable and used to help maintain natural or normal health, production, or performance.
- They do not contain medications or other active constituents.
- They do not make any health, production or performance claim.

Although the APVMA does not regulate feed materials and ingredients, they do regulate feed medications, supplements and additives—unless they have been specifically excluded in the Agvet Code Regulations(link is external).

Animal feed products fall into the following categories: some are specifically exempt from requiring registration; others require registration. Following are descriptions of the requirements for:

- Non-medicated feed products.
- Feed supplements.
- Feed additives.
- Medicated feed products.
- Products excluded by the 2015 stock and pet food reforms.

### 1. Non-medicated feed products

Non-medicated feed, feed premixes and feed ingredients fed as part of the normal diet of an animal, that are represented only as being suitable and used to help maintain natural or normal health, production, or performance, and that are intended solely for nutritional purposes, do not require registration.

Feed products must look, smell and taste like feed, be freely consumed as part of the animal's natural feed intake, and must not make any representation or claim on their label or other promotional material. They should not be represented as containing any active constituents on their labels or promotional material, and their label should contain a statement such as 'animal feed/premix/ingredient'. They should clearly state the feed ingredients they contain.

They should not use the heading 'for animal treatment only' but may use the statement 'for animal consumption only' to identify them as an animal product but differentiate them from veterinary products or medicines used for animal treatment.

## 2. Feed supplements

The APVMA regulates feed supplements unless they have been specifically excluded from requiring registration.

Nutritional supplement products, including premixes, blocks and licks (provided they are not medicated) are specifically excluded from requiring registration provided that:

- They are presented in whole food or in a food premix or as a block or a lick for voluntary ingestion, or they are presented with directions to administer in the feed for voluntary ingestion (as opposed to being administered in water or as a paste or drench, or by stomach tube).
- They are represented only as being suitable 'to supplement diets where levels may be low', or words to that effect.
- To be excluded from registration, the feed supplements must be freely consumed as part of the animal's natural feed intake and they must not make any representation or claim on their label or other promotional material. They should not be represented as containing any active constituents on their labels or promotional material, and their label should contain a statement such as 'Nutritional supplement product for inclusion in animal's feed.'



Product has no therapeutic effect'. The label should also clearly state the ingredients the product contains, as well as the inclusion rate, expressed as a quantity per kilogram of feed (not per kilogram of animal body weight). The words 'dose', 'dose rate', 'dosage', 'administration' and so on should not be used on product labels or promotional material as feed supplements by definition are not administered or dosed. The heading 'for animal treatment only' should not be used; instead the statement 'for animal consumption only' may be used to identify it as an animal product but differentiate it from medicines that are used for animal treatment. Products that are not clearly identified as feed supplements may require registration.

Examples of excluded nutritional supplements are vitamins, minerals, amino acids and fatty acids that are essential for the maintenance of life, that are fed to rather than administered to animals, and that comply with all of the above requirements.

Any supplements that do not comply with all of the above requirements and any supplements represented as being suitable for, used for, or capable of curing a condition or disease, will require registration as complementary animal health products (or in some cases as pharmaceutical products).

## ALOE VERA IS PERHAPS THE MOST VERSATILE PLANT ON EARTH, PACKED WITH VITAMINS

- Veterinary nutraceutical products such as oral vitamins, minerals, amino acids and fatty acids, and other nutrients or food-based derivatives such as glycoaminoglycans when used at daily doses higher than the normal daily nutritional requirement.
- Veterinary therapeutic diets.
- Veterinary probiotics (directly-fed microbials).
- Veterinary prebiotics and enzyme products.
- Veterinary homeopathic remedies.

Read Excluded feed supplements that do not require registration—acceptable nutritional messages for examples of the type of nutritional messages that can be used with animal nutritional supplements without the need for them to be registered. Confusion often arises with supplements that are capable of performing several functions depending on dose, form and route administration.

Vitamin E is an example of a supplement with this potential for confusion. When added to animal feed 'to supplement diets where levels may be low', it is an excluded feed supplement. However, when added to animal feed to cure a non-specific disease or condition that occurred as a result of a deficiency in the diet, it is a complementary animal health product, and when added to animal feed to cure white muscle disease in lambs or tying-up in horses, it is a pharmaceutical veterinary medicine.



### 3. Feed additives

The APVMA regulates feed additives unless they have been specifically excluded.

Substances that are added to animal feed that are not feed or nutritional ingredients or veterinary medicinal constituents are called 'non-active constituents'. These additives do not require registration provided they are listed in the Animal Feed Reform 2014 or Excluded stockfood non-active constituents order(link is external) and are used for the purposes listed and at concentrations consistent with the purpose listed in the order.

Animal feed additives that are not recognized feed ingredients or excluded feed supplements and that do not comply with the above requirement, or are represented as being suitable for, used for, or capable of curing a disease or condition and not supplied by a veterinarian will require registration.



## REFERENCES

- Effect of Aloe vera preparations on the human bioavailability of vitamins C and E. Vinson JA, Al Kharrat H, Andreoli L.
- TEER measurement techniques for in vitro barrier model systems: Balaji Srinivasan, Aditya Reddy Kolli, Mandy Brigitte Esch, Hasan Erbil Abaci, Michael L. Shuler, and James J. and In Vitro Drug Absorption Enhancement Effects of Aloe vera and Aloe ferox Catharina BENEKE , Alvaro VILJOEN , Josias HAMMAN • Aloe gel and whole-leaf raw materials: Promising excipients for the production of matrix-type tablets. Tafara Jambwa, Alvaro Viljoen and Josias Hamman.
- Bioavailability enhancers of herbal origin: An overview. Kritika Kesarwani and Rajiv Gupta
- Hamman JH (2008) Composition and Applications of Aloe vera Leaf Gel. Molecules 13: 1599-1616.
- Habeeb F, Shakir E, Bradbury F, Cameron P, Taravati MR, et al. (2007) Screening methods used to determine the anti-microbial properties of Aloe vera nergel. Methods 42: 315-320.
- Ni Y, Tizard IR (2004) Analytical methodology: the gel-analysis of Aloe pulp and its derivatives. In: Aloes The Genus Aloe, Reynolds T (ed.), CRC Press: Boca Raton pp: 111-126.
- Ni Y, Turner D, Yates KM, Tizard I (2004) Isolation and characterisation of structural components of Aloe vera L. leaf pulp. Int Immunopharmacol 4: 1745-1755.
- Davis RH, Di Donato JJ, Hartman GM, Haas RC (1994) Anti-inflammatory and wound healing activity of a growth substance in Aloe vera. J Am Podiatr Med Assoc 84: 77-81.
- Yagi A, Kabash A, Okamura N, Haraguchi H, Moustafa SM, et al. (2002) Antioxidant, free radical scavenging and anti-inflammatory effects of Aloesin derivatives in Aloe vera. Planta Med 68: 957-960.
- Ramachandra CT, Srinivasa Rao P (2008) Processing of Aloe vera Leaf Gel: A Review. Am J Agric Biol Sci 3: 502-510.
- Aloe vera Mucilage as Solubility Enhancer in Tablet Formulation. Habibur Rahman\*, Telny Thomas Chungath, Kuppusamy Selvakumaraswamy and Chandrasekar R . PSG College of Pharmacy, Coimbatore, Tamil Nadu, India
- Skin permeation enhancement potential of Aloe Vera and a proposed mechanism of action based upon size exclusion and pull effect. Cole L1, Heard C.
- Intestinal drug transport enhancement by Aloe vera. Chen W1, Lu Z, Viljoen A, Hamman J.
- 89. Chandra PS, Chaudhary M, Pasricha R, Ahmad A, Sastry M. Synthesis of gold nanotriangles and silver nanoparticles using Aloe vera plant extract. Biotechnol Prog. 2006;22:577-583.
- Evaluating aloe vera powder as bioavailability enhancer. 3rd World Congress Bioavailability & Bioequivalence Vamshikrishna and Habibur Rahman.