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Food and ingredients

Healthy-weight management plus diets and ingredients improving pets' health.

Alternative proteins

Edible insects, lab-grown meats and marine ingredients in pet foods.

Global pet industry

Regional versus global sourcing and a closer look at the Asian pet industry.





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Highlights this issue



8

Food and ingredients

Health claims about pet food abound, but what does the research say? How healthy are ketogenic and grain-free diets, functional ingredients, yeast and biotics? And how can pet professionals help fight pet obesity?



28

Alternative proteins

The search for sustainable ingredients continues. What are the latest insights, developments, opportunities and challenges around alternative protein sources like insects, marine ingredients and lab-grown meat?



40

Accessories

The accessories market is expanding with new products and services that support owners to keep their pets fit and healthy. Wearables fitness technology is a growth market, and pet product designs responding to the aesthetic needs of pet parents and comfort needs of young pets are trending.



50

Global pet industry

Like in many parts of the world, pet markets in Japan, China and Thailand have boomed during the pandemic. Thailand now ranks number 4 among the world's pet food-exporting countries. But exporting to regions like the EU and US has its challenges, so read our expert advice.

And further in this issue

Editorial	3	Calendar of events Contact us	71
Upcoming issue	5	Advertisers index	72
Pet industry highlights	6	Colophon	72

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Hopeful, healthy and more sustainable

With increasingly widespread vaccination coverage, the first in-person industry events have taken place. So while it is still uncertain how things will develop over the next few months, there now seems to be some light at the end of the tunnel. It is not long till Zoomark in Italy – the next issue of PETS International will have a Zoomark special. And hopefully we can welcome you to our own GlobalPETS Forum 2022 in January. We are hearing a sigh of relief from the industry that things seem to be returning to normal.

One thing the pandemic has brought with it is a stronger focus on health, as owners try to keep their pets healthy too. From grain-free to ketogenic, in this issue we dive into different diets and other ways to attain and maintain a healthy weight in pets – including exercise and fitness for optimal wellness.

An even hotter topic is alternative proteins. The environment seems to be screaming at us to reconsider our consumption and save resources. With more humans jumping on the 'alternative protein' bandwagon, pet innovations are following suit. Changing regulations have allowed the insect protein market in particular to pick up steam. We explore the topic further, looking closely at the health benefits. You will also discover more about lab-grown or cultured meat in pet food.

How has the Asian pet industry been doing during COVID-19? What can we expect for the future? We take a closer look at Chinese, Thai and Japanese markets and investigate the pet healthcare landscape in Asia.



And while Asia offers a lot of potential for Western companies, importing into new markets in the EU and US is no less promising. So we also have a good look at the requirements for entering those regions.

Finally, how are our supply chains holding up during increased demand and supply disruptions? Decisions on local or global sourcing may well become the balancing act for the future.

Philippe & Corine

Philippe Vanderhoydonck, Managing Director
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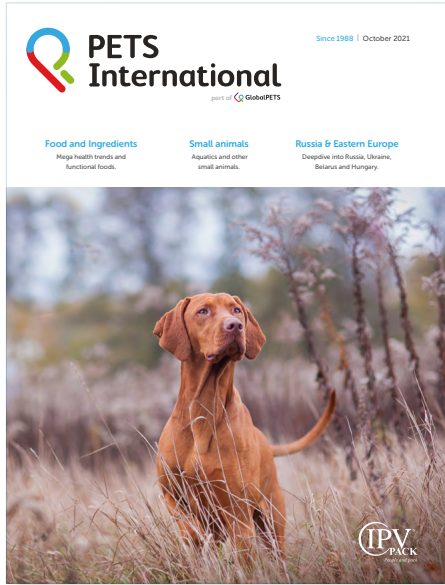
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Upcoming issue October 2021



Health trends

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Italian market

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Belarus

Other pets

Aquatics market

Underdeveloped accessories market

Russia and Eastern Europe

Hungary

Ukraine

October issue | Advertising deadline: 10 September 2021 | Publication date: 15 October 2021

Contact head office (see page 72) or local representatives (see page 71).

Pet industry highlights



ParkZoo

22 to 24 September 2021
Crocus Expo, Moscow
Russia



Zoomark

10 to 12 November 2021
BolognaFiere, Bologna
Italy

Stay up to date with the upcoming events
in the pet industry



For the latest event information check:
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A first: £1 billion in retail revenue for Pets at Home

With total group sales of £1.1 billion (\$1.56 billion / €1.3 billion), UK retailer Pets at Home grew by 7.9% compared to the year before. While their revenue increased, the total number of transactions declined by 4.9% to 60 million. They saw strong growth in subscription customers and their loyalty clubs experienced record periods of new customer registration. One of the keys to acquiring new customers has been their 452 stores across the UK, as a one-stop shop for pet owners.



Online retailer Zooplus hits projected targets for 2021

zooplus

After a strong first quarter, the company is on track to achieve

€2.14 billion (\$2.54 billion) in sales for 2021. Group sales for the first 3 months of 2021 increased by 16% to €508.6 million (\$603.9 million), compared to €439.9 million (\$522.3 million) in the first quarter of last year. The revenue retention rate of existing customers stood at 97% and the number of active repeat customers increased by 15%.

Rohatyn Group to sell pet care platform Pet Network

Private Equity firm A&M Capital Europe is to acquire the omnichannel pet care platform that is active in south-east Europe – Croatia, Romania, Slovenia, Serbia and Bulgaria. It was created in 2018 through the acquisition and merger of Pet Centar, Animax and Mr. Pet. The company operates more than 150 physical stores across these five countries plus various e-commerce channels.

European pet food industry grows 2.8% to €21.8 / \$26 billion



In its annual statement, the European Pet Food Federation, FEDIAF, reported that 88 million European households now own a pet. These households also spent €21.2 billion (\$25.3 billion) on services and products, €1.5 billion (\$1.8 billion) more than the previous year and an increase of 7.6%.



Pet industry highlights



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Italian pet food sales reach new high

During the pandemic in 2020, the pet food market in Italy grew both in value (4.2%) and volume (2%) to €2.26 billion (\$2.68 billion). While there are now more than sixty million pets in total in the country, cat and dog food continue to be the most significant categories in the sector. Cat food represents 53.2% of total market value in grocery stores, traditional pet shops and pet shop chains, at just over €1.2 billion (\$1.4 billion). This is up 5.9% compared with 2019. Dog food represents the remaining 46.8% of the market, valued at around €1 billion (\$1.2 billion). This is also growing, more than 2.3% compared to 2019.



Cinven acquires majority stake in Italian pet care chain Arcaplanet

As part of the transaction, Cinven and Arcaplanet will jointly acquire Maxi Zoo Italia – the third-largest pet care operator in the Italian market and a subsidiary of Fressnapf Group. The combination of Arcaplanet and Maxi Zoo Italia (together 'the Arcaplanet Group') creates one of the leading pet care platforms in Italy, selling food and non-food products in approximately 500 stores across Italy as well as online.

Canadian retailer Pet Valu goes public

Pet Valu Holdings, the retailer from Ontario with 600 locations, has priced its initial public offering on the Toronto Stock Exchange. This IPO is expected to generate gross proceeds of about CAD\$275 million (€186 million / US\$220 million). Pet Valu was taken private in 2019 by Roark Capital Group for about CAD\$144 million (€97 million / US\$116 million).



General Mills completes acquisition of Tyson Foods treats

General Mills has completed a \$1.2 billion (€1 billion) acquisition of Tyson Foods treats. With its Nudges, Top Chews and True Chews brands, the US business is now officially part of General Mills. The Tyson Foods pet treats portfolio generated more than \$240 million (€202 million) in net sales in the 12 months ended 3 April 2021. As part of the deal, General Mills also acquired a manufacturing facility in Independence, Iowa.







Food and ingredients

Read about five key findings from a US survey among pet parents. And discover five ways in which pet professionals can support healthy weight management. Plus, get some interesting insights on grain-free and ketogenic diets, biotics, yeast, and more.

Not all fat is ketogenic	10
A closer look at fibre in grain-free diets	12
Is grain-free pet food better for dogs?	15
Yeast: a pet food ingredient of the future	16
How functional ingredients can improve the metabolism and health of pets	17
Five key findings from pet parents in 2021	19
Using biotics to create health-enhancing, marketable pet products	22
Healthy weight management	24
A healthy and sustainable source of omega-3s for pets	27



Not all fat is ketogenic

The ketogenic diet is often advertised as having health benefits for dogs, despite physiological differences between people and pets. What does the research say, and why is MCT oil essential?

Keto in humans

The ketogenic diet aims to induce the state of ketosis: when the brain, heart and muscles obtain energy from ketone bodies rather than from glucose. Humans can achieve ketosis by combining low-carbohydrate and high-fat meals with fasting. The energy requirement of the main organs is then satisfied through the metabolism of fats.

Ketogenic diets have been shown to reduce seizures in some human patients with epilepsy and are also suggested to slow down the growth of some tumours and support cancer treatment. However, long-term compliance with the restrictions is often unrealistic due to varying efficacy in individuals, poor palatability and adverse effects like gastrointestinal symptoms, pancreatitis, nutritional deficiencies/diseases, cardiac

disease, or urolithiasis. The concept has therefore spurred scientific debate and criticism, and more research is still needed to formulate safe universal conclusions.

A dog is not a human

Ketosis is not so readily achievable in dogs. Dogs are carnivores, accustomed to longer breaks between meals and much less dependent on carbohydrates.

Consequently, they produce and utilise ketone bodies after overnight fasting more quickly than humans. Merely supplementing carbs with fat will not sufficiently increase the level of ketone bodies in their blood. To induce the state of ketosis in canines, the diet must contain specific fats high in ketone precursors: MCT fatty acids (C8 and C10).

What is MCT oil?

Medium-chain triglyceride (MCT) oil is produced from selective fatty acids contained in vegetable oils (coconut and palm). MCTs are liquid lipids consisting of medium-length saturated fatty acids having 6, 8, 10 or 12 carbon atoms. Contrary to longer-chain fatty acids in regular dietary lipids, MCT fatty acids do not require postdigestion transport systems to reach, enter and cross the gut wall. Instead, they diffuse into the blood, straight into the liver, where they are scaled down to ketone bodies. In concentrated MCT oils, most fatty acids fractions are caprylic (C8) and decanoic (C10) acids.

High hopes, but no safe bets

There is some evidence that ketone bodies in dogs have direct anticonvulsant activity and that the alterations in neuronal metabolism and neurotransmitter function in ketosis may be beneficial in epilepsy. Similarly, there is preliminary evidence that MCT-rich diets may hinder the progression of certain cancers. However, there is neither a clearly proven and widely accepted mechanism for the neuroprotective effects of ketones, nor conclusive trial results concerning cancer treatment.

Risks in dogs

Apart from the lack of positive research findings, the induction of ketosis in dogs involves a possible substantial caloric reduction and lower palatability. Subsequently, diets with very high fat content (> 60 metabolisable energy from fat) entail a risk of pancreatitis development due to a possible inadequate quantity and poor quality of protein. ♦



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A closer look at fibre in grain-free diets

Sales of complete and balanced pet food diets labelled as grain-free have increased significantly over the past decade.

Perception of grain-free

Owners often perceive grain-free diets as a healthier option than pet foods containing grains as a source of starch. A study by Banton et al. (2020) found that owners of dogs with a presumed food allergy were four times more likely to select 'no grain'. Pet owners are often influenced by claims such as 'limited ingredient diet', 'sensitive skin/stomach' and 'exotic protein'.

Digestibility

Grain-free diets replace grain ingredients with tubers and legumes to achieve the starch minimum for successful extrusion. Nevertheless, each class of alternative starch sources has a unique nutritional composition that will affect diet processing and digestibility. Moreover, most grain-free diets are formulated with a combination of carbohydrate sources, making it challenging to estimate the digestibility of the final product.

In terms of protein sources, it is important to consider the amino acid composition in pulses (peas, lentils, chickpeas, dry beans) as they are often high in lysine and low in methionine, plus they have a different fibre content and different characteristics. Research by Carciofi et al. (2008) found a higher large intestinal fermentation for legume-based diets as they contain a greater concentration of soluble fibres (legume oligosaccharides) compared to cereal grains. The overproduction of gases and short-chain fatty acids can attract water-increasing faecal bulk.

Benefits and risks of fibre content

Dietary fibre content has multiple beneficial effects on postprandial glucose and insulin responses, intestinal integrity and microbiota. Additionally, it affects gastric emptying and gastrointestinal transit time. Nevertheless, it has been hypothesised by Pezzali et al. (2020) that high-fibre diets can increase susceptibility to taurine deficiency in dogs linked to obligatory

bile acid conjugation and enterohepatic circulation for the reabsorption of taurine. They propose that high-fibre diets may increase faecal output and losses of taurine-conjugated bile. The higher rate of microbial fermentation would lead to more efficient taurine degradation and consequently to a decrease in enterohepatic circulation and recycling of taurine, resulting in the risk of taurine insufficiency and dilated cardiomyopathy (DCM).

Formulating a grain-free diet

Multiple factors should be considered when formulating a grain-free diet, including differences in nutrient digestibility and bioavailability, fermentability, quantity and characteristics of fibre in the final product. In addition, possible interactions between nutritional components of the diet, especially when using novel ingredients, should be evaluated.

Caution is advised when the inclusion of legumes and tubers exceeds the concentration previously investigated in research studies. Additionally, plant-based ingredients tend to have lower small intestine digestibility for protein compared with animal protein. To avoid amino acid deficiencies, pet foods that contain substantial amounts of legumes and tubers and lower proportions of animal protein should address amino acid imbalances through the addition of alternate ingredients or fortification.

Moreover, as proposed by Mansilla et al. (2019), for high-fibre diets containing high levels of oligosaccharides, fortification of taurine and other sulphur amino acids should be considered. ♦



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Is grain-free pet food better for dogs?

Many dog owners assume that wolves are the ancestors of dogs and that grains should not be part of their dog's diet. But are the eating habits and digestive tract of our domesticated four-legged friends really identical to those of wolves?

Influences on canine digestion

Wolves live by hunting, which means they feed mostly on meat, offal, and bones. This is why it is often assumed that grains are not necessary in dog food or that dogs cannot tolerate them.

However, a study by Erik Axelsson et al. (2013), has revealed that human eating habits have greatly influenced those of dogs and that the canine digestive tract has adapted over time. It appears that dogs have a genetic predisposition to digest starchy foods, and can therefore easily digest and assimilate starch and vegetable protein. The study also shows that dogs are not, as previously assumed, exclusively carnivores. Instead, they are omnivores.

Likewise, the assumption that natural dog food should contain no grains is false. There are many types of grains that provide dogs with vital nutrients such as carbohydrates, proteins, fats, vitamins, minerals, and trace elements. Grains are also a source of valuable dietary fibre to ensure good digestion.

Two types of grain-free dog food

In terms of grain-free dog food, a distinction can be made between high-carbohydrate and low-carbohydrate complete foods.

Grain-free, high-carbohydrate complete foods use starch sources such as potatoes, cassava, lentils, beans, and peas. Although the food is grain-free, it contains a high proportion (approx. 30-55%) of carbohydrates. In contrast, grain-free, low-carbohydrate complete foods contain less than 20% carbohydrates and generally comprise up to 40% more protein and/or fat. This is significantly higher than the recommended amount and may increase the risk of kidney disease in older dogs. A totally carbohydrate-free diet is not suitable for dogs as it lacks polysaccharides and could lead to abnormal intestinal motility and diarrhoea.

Conclusion

Food that contains grains is not harmful to dogs. In fact, grains are excellent ingredients in dog food; they are primarily a source of carbohydrates and provide our four-legged friends with energy. However, they are not essential for a dog's health. Above all, dog food should always reflect the individual requirements of the dog, regardless of whether the food contains grains. The most important factor is balanced dog food that is nutritionally suitable for the breed and size of the dog. ♦



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Yeast: a pet food ingredient of the future

Yeast and yeast-based ingredients are often used in the pet food industry because of their functional advantages and impact on product taste.

Yeast in plant-based meat-free pet food

In view of the increased interest in plant-based diets, yeast is likely to become more popular in pet food. Although yeast is a living microorganism, it does not have a nervous system, that is, it does not feel pain. This makes yeast an attractive ingredient for meat-free diets, and it is particularly well-suited for vegan dog food. Besides that, it is a sustainable source of protein with a much lower carbon footprint than meat. Therefore, some industry experts and start-ups regard fermented yeast protein as the protein of the future in dog food.

Nutritional benefits

Many studies have already been done on the palatability effect of yeast, but there is still potential for more interesting findings, particularly with respect to various combinations of dietary ingredients. Skin and hair health, gut health and immunomodulatory properties as well as levels of protein, amino acids, nutrients and minerals; these are all topics that continue to be explored.

Popular yeast-based ingredients

A by-product of brewing, brewers' yeast is a source of protein and B vitamins. It is used as a natural flavour enhancer, sometimes in synergy with other complementary ingredients.

Mannan-oligosaccharides (MOS) are used in pet food due to their prebiotic effect: they increase the colonisation of the intestine with beneficial microflora,

reduce the risk of colonisation with pathogens, perform immunomodulatory functions and promote the excretion of toxins.

1.3-1.6 Beta-glucans form another structural and functional component of the yeast cell wall. They are an effective modulator of both innate and acquired immunity and can increase the effectiveness of antibiotics in infections caused by antibiotics-resistant bacteria.

Inactivated selenium yeast is a source of organic selenium which means that it is more easily digestible by the body.

Unique additive

Two years ago, in cooperation with well-known manufacturers of yeast-based ingredients, Kormotech started a project with the biotech company Enzym to develop a unique additive with an immunomodulatory effect. One of the main components of the additive is a special yeast. This additive is still under development and will be added to some of Kormotech's products. The research phase of this project is expected to be completed in early 2022. ♦



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How functional ingredients can improve the metabolism and health of pets

In the search for food that promotes animal health, functional ingredients are gaining more space in pet formulations.

Food for animal health

The search for sound habits that help to achieve a long and healthy life is a reality for humans and, consequently, for companion animals. Food plays a fundamental role in the goal of meeting energy and nutritional needs, as well as being a great ally in the search for the well-being and longevity of dogs and cats. In the quest for food that promotes animal health, functional ingredients play an important role.

Pet food allergies

During their lifetime, animals are exposed daily to a large amount of potential allergens that can cause food hypersensitivity. Food hypersensitivity occurs in 10% of dogs and cats with skin diseases, and corresponds to about 5% of allergic cases, constituting the third most frequent allergic dermatopathy among dogs and cats. Most protein allergen components have a molecular mass above 10 kDa. These proteins with high molecular weights are water-soluble, thermostable, resistant to acids and proteolytic digestion and, therefore, they are more likely to initiate an allergic response in the animal.

Hypertension in pets

Hypertension is a common illness in cats and is often associated with underlying illnesses. In this context, enzymatically hydrolysed proteins can be applied in diets to treat and prevent hypertension, with the advantage that these proteins are natural molecules without the unwanted side effects of many medicines used to correct this disorder.

An *in vivo* study with healthy cats comparing a diet formulated with Chicken Protein Hydrolysate from BRF Ingredients and another with conventional poultry by-product meal, showed that cats fed Chicken Protein Hydrolysate tend to have less serum angiotensin-converting enzyme (ACE) activity than those fed with conventional poultry by-product meal (126 against 142 U/L, $p=0.09$). In other words, the inclusion of hydrolysed proteins in diets for cats can cause ACE inhibition, preventing the increase in blood pressure in animals.

Proven benefits

The use of functional ingredients in pet formulations is a reality in animal nutrition and BRF Ingredients' Chicken Protein Hydrolysate is considered one of the best for improving animal health. Produced by enzymatic hydrolysis, it generates peptides with molecular mass up to 3kDa and high digestibility, which are known to have different bioactivities in the animal's body, exerting immunomodulating, immunostimulant, antibacterial, antioxidant and antihypertensive activity. This functional and hypoallergenic ingredient stands out for being a product with proven features and guaranteed quality. ♦



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Five key findings from pet parents in 2021

The most recent FONA International survey reveals some interesting insights relating to pet food, including about product claims, flavour and feeding behaviour.

Annual survey

Every year, FONA International fields a survey of cat and dog parents in the US to understand what matters most to the primary household shoppers for pet food, treats, supplements and medication. This year, hundreds of cat and dog owners were asked about a wide range of subjects including product claims, ingredients and feeding behaviour. Here are five interesting findings.

1. Flavour is important

Pet parents were asked to rank the importance of 12 different attributes of their pet's food. 'The food is a flavour my pet likes' rose to the top position for cats, and came in second – behind 'The food has balanced nutrition' – for dogs. Other attributes on the list included affordability, limited ingredients, and natural and organic ingredients.

2. 'Human-grade' claim is confusing

The Association of American Feed Control Officials (AAFCO) in the US has given no official definition for the term 'human-grade', even though this claim is appearing frequently on store shelves.

Top five most important attributes of pet food

Rank	Dog parents	Cat parents
1	The food has balanced nutrition.	The food is a flavour my pet likes.
2	The food is a flavour my pet likes.	My pet enjoys eating the food.
3	My pet enjoys eating the food.	The food has balanced nutrition.
4	The food is affordable.	The food is affordable.
5	The food is formulated for my pet's age.	The food is formulated for my pet's age.

Without regulation of this claim, pet parents are left to interpret this term for themselves. Over half of the pet parents surveyed felt that 'human-grade' food should be safe enough for humans to eat, while more than a third felt the food should have a high nutritional value. These expectations set a high standard for manufacturers and ingredient suppliers who are looking to capitalise on a human-grade claim (see figure 1).

▶ SEE NEXT PAGE

Food and ingredients

Figure 1

What does the term 'human-grade' mean to you?

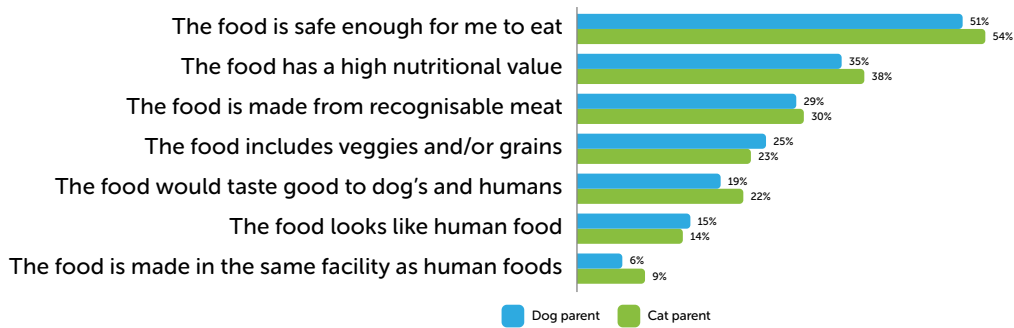


Figure 2

Please select the need-states listed below that your pet is currently taking supplements and/or treats for.

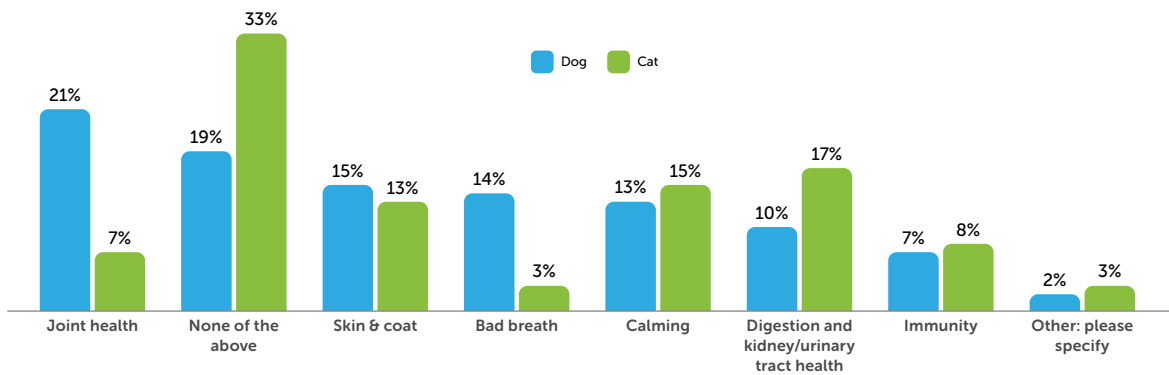
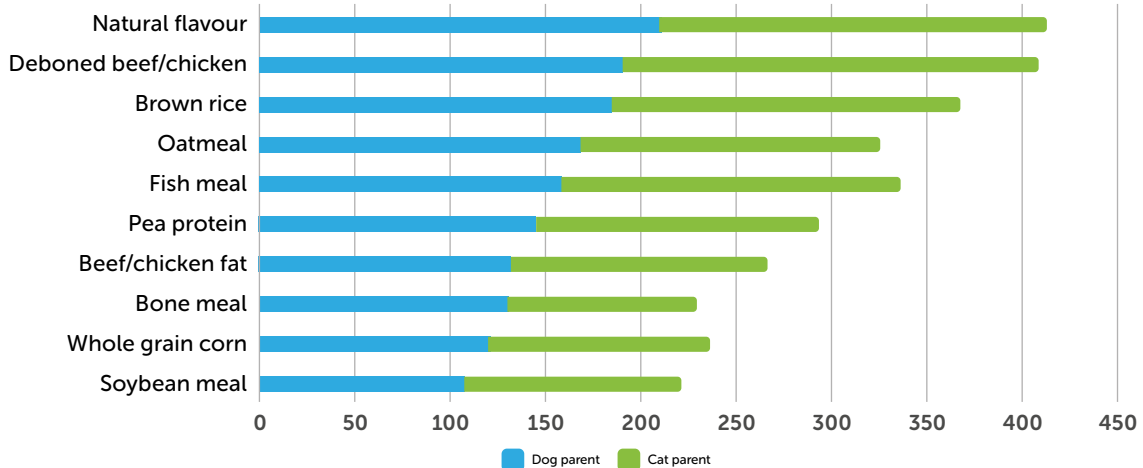


Figure 3

Top ten most accepted ingredients

Number of pet parents indicating ingredient is 'acceptable' vs. 'unsure' or 'unacceptable'



3. Functional treats offer potential

Function is key. In fact, 64% of dog parents and 42% of cat parents in the survey indicated that they currently feed their pet supplements or treats that include functional ingredients. The needs vary: 'joint health' leads the way among dog parents as the reason for purchase, followed by 'skin & coat'. Among cat parents, 'urinary tract health' was the leading reason for purchase, followed by 'calming'. Manufacturers can look to natural flavours like mint, vanilla and lavender to align with the functional benefits of these products (see figure 2).

4. Mixing wet and dry food is a special treat

Mixing wet food with dry kibble is a growing trend among pet parents. In this study, 31% of dog parents and 41% of cat parents indicated that they regularly feed their pet a combination of wet and dry food. When asked how often they mix their pet's food, the largest group of cat and dog parents – 40% and 38% respectively – indicated that they mix the food 'occasionally as a special treat'. Wet food packaged in small plastic trays was popular with combination feeders, suggesting that affordable flavour variety plays a part in this trend (see figure 3).

5. Natural flavour is highly acceptable

Parents of humanised pets demand clean labels for their pet's food and treats. When presented with a list of 19 common ingredients found in dry dog or cat food, pet parents overwhelmingly approved of natural flavour. In fact, 83% of dog parents indicated that natural flavour was acceptable, ranking it higher than any other ingredient – including deboned beef (76%), brown rice (74%), oatmeal (85%) and beef fat (52%). For cat parents, natural flavour was second only to deboned chicken (83%), with 78% approving of its inclusion in their cat's food or treats. ♦



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Using biotics to create health-enhancing, marketable pet products

Biotics can be used to create pet products with improved health benefits and marketable points of difference.

What are biotics?

Biotics are those ingredients that can affect the microbiome of the pet, such as fibre (beet pulp, tomato pomace, cellulose), prebiotics (inulin, chicory, fructooligosaccharides, galactooligosaccharides), probiotics (Bifidobacteria, Lactobacilli, Pediococci, Bacilli) and postbiotics (non-living yeast or bacteria products). The design of a pet food product starts with ensuring well-formed stools. The fibre component of the diet is critical to achieving this in normal, healthy pets, but maintaining well-formed stools does not end with dietary fibre sources.

The benefits

Prebiotics and probiotics can be a powerful tool to help avoid poor stools by achieving healthy

gut microbiota populations and have also been associated with reduced faecal odour. Both prebiotics and probiotics have also been shown to improve the immune response of the host. While research continues to clarify the role of probiotics, multi-species research indicates some probiotic strains can have systemic (beyond the gut) effects which result in health benefits related to weight management, skin health and brain function.

Postbiotics

Increased usage of the term 'postbiotics' over the past few years indicates the growing interest and awareness. While definitions vary, postbiotics generally consist of non-living microbes and/or their components that can provide a health benefit.

Food and ingredients

One example of a postbiotic commonly used in the pet food industry is brewer's yeast – part of a residue left over after the fermentation process to produce an alcoholic beverage. Brewer's yeast often contains a highly digestible form of protein as well as savoury compounds that are important in driving product palatability. While brewer's yeast is derived secondarily, after the primary production of alcoholic beverages, certain strains of yeast and bacteria are also grown under defined and controlled conditions that can repeatedly and reliably produce a product with desirable health benefits. The specific underlying mechanisms impacting health are still being defined.

However, some postbiotic products have been shown to impact localised gut microbiota as well as systemic (peripheral) immune cells. An example of a novel postbiotic is a new human health-oriented product (a combination of a probiotic and a postbiotic) that includes a specific protein (postbiotic) that can be further expressed by the probiotic to create a satiety

benefit. This example provides a glimpse into the future of precision nutrition and the role postbiotics will play in both pet health and human health.

The future

Evidence continues to grow for the role of biotics in pet health. Several commercial sources of biotics are available for inclusion in pet products. Many of the above-mentioned compounds fit within the regulatory framework found both in the US and Europe. So isn't it time to consider biotic-designed pet products for pet well-being? ♦

To learn more about biotics and how to use them, watch this video:
bit.ly/3hCAL5a



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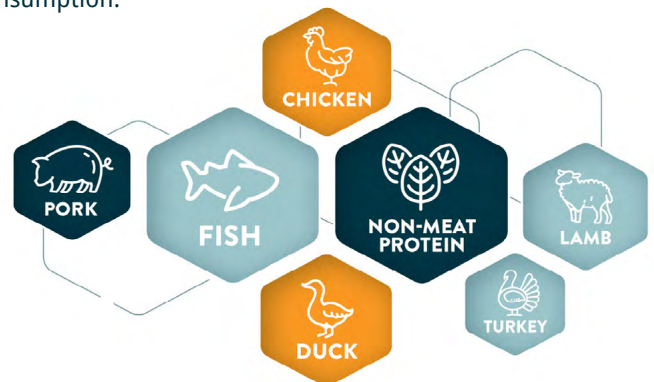
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Healthy weight management



In the EU, obesity levels among pets are rising steadily. Read FEDIAF's five tips for industry professionals to help pets live longer, healthier lives.

The benefits of an optimal weight

In the EU, obesity levels among humans have risen steadily since 1975 and a similar trend is apparent among pets. Vets have reported that 51% of dogs, 44% of cats and 29% of small mammals are overweight or obese. Pet obesity is frequently associated with other conditions such as arthritis, diabetes, and heart disease, whereas chronic disease is delayed – and life expectancy increased – in pets of optimal weight. Here are five tips to help the pet industry promote healthy weight management:

1. Adhere to the nutritional guidelines

It is important that pets are fed a nutritionally balanced diet from day one. The best option is to feed a complete food – or in combination with appropriate complementary foods – specifically formulated for the pet's life stage. Manufacturers and other pet

professionals should all be familiar with FEDIAF's Nutritional Guidelines, a review of the NRC data and other existing science, peer-reviewed by independent veterinary nutritionists throughout Europe. All manufacturers that adhere to this code are supplying safe, nutritious and palatable products.

2. Communicate feeding guidelines

To help owners maintain a healthy weight for their pets, it is vital to communicate the importance of following the feeding guidelines, controlling portion size, and treating pets kindly. To accompany the Code of Good Labelling Practice, FEDIAF has developed an e-learning tool that helps manufacturers and the pet trade understand the basic functions of on-pack and off-pack product communication. This better equips manufacturers to provide owners with sensible advice.

3. Share additional nutrition facts

Employees and consumers alike benefit from more knowledge about pet food topics, ranging from carbohydrates and additives to homemade diets and raw foods. Communicating facts like 'treats should equate to no more than 10% of a pet's calorie intake' can help make pets healthier. FEDIAF offers more than 20 useful factsheets.

4. Educate owners about maintaining a healthy pet lifestyle

As part of their marketing strategy, pet professionals should educate owners about regularly monitoring their pet's weight, and also about the importance of maintaining a healthy and active pet lifestyle incorporating play and exercise into the daily routine. Many manufacturers produce useful body condition charts that can be shared with owners to help them recognise a healthy shape.

5. Advise owners to seek more help

Pet professionals and manufacturers should encourage owners to ask for help if they have serious concerns. A vet should always be the first point of contact to rule out any underlying health conditions, but weight issues can sometimes be resolved by simply reducing or increasing calorie intake plus adapting exercise plans. In the case of an underlying health condition, the pet may require a specific food for PARTICULAR NUTritional (PARNUT) purposes that can help them live longer, healthier lives. Veterinarians can advise on which product to choose. ◆



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A healthy and sustainable source of omega-3s for pets

One of the best ways to keep pets healthy and happy is by having a well-balanced diet that gives them all the essential nutrients they need.

Antarctic krill – the superior source of omega-3s

Omega-3 fatty acids have wide-ranging positive health effects for cats and dogs at every life stage. That is why choosing pet food with omega-3 is the first step to ensure pets can benefit from this important nutrient regularly.

There are several sources available that can be added to provide pets with omega-3 fatty acids. For example, Antarctic krill, tiny crustaceans present in the Antarctic waters, are rich in omega-3s in phospholipid form. The omega-3s in phospholipid form are easy for a pet's body to transport and incorporate into cell membranes in tissues and vital organs where they are needed most.

The phospholipid advantage

Referred to as the 'molecule of life', phospholipids are natural, integral parts of animal cells that help maintain the strength, flexibility, and integrity of cells and cell membranes. Recent studies have shown that the phospholipid-bound omega-3s from krill are more effective in raising omega-3 levels in a dog's body compared to triglyceride-bound omega-3s, such as those found in fish oil (Burri et al., 2020).

Unlike triglycerides, phospholipids are also water-soluble. This distinctive feature of phospholipids allows omega-3s to move differently in the body than triglycerides. Therefore they are more effectively

integrated into cell membranes, so our pets can take advantage of the health benefits of these essential fatty acids in a more efficient way.

More than omega-3s

In addition to its phospholipid advantage, krill is also naturally rich in choline, astaxanthin and marine proteins. Choline is essential for a healthy liver and important for brain and muscle health. The antioxidant astaxanthin, known as a natural protectant, helps to boost a pet's immune system, being 100 times more effective than vitamin E.

A sustainable choice

Antarctic krill is considered one of the most sustainable sources of marine omega-3s in the world. And that is because its harvesting maintains the long-term sustainability of the Southern Ocean's ecosystem and protects all Antarctic species.

The fishery in the Antarctic Ocean is managed and regulated by the Commission for the Conservation of Antarctic Marine Living Resources. When looking for marine sources of omega-3s, pet food brands and consumers should also choose products that are certified by the Marine Stewardship Council (MSC). ♦



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Alternative proteins

As global food systems – and the planet – come under increasing stress, the search for alternative proteins is heating up. We dig into the latest science, insights and developments around insect protein, as well as the prospects for cultured meat in pet foods.

Health benefits of edible insects in pet food	30
When it comes to sustainability, insect products are what they eat	32
Lab meat could be the next thing for pets	34
Alternative proteins –	
A bowlful of opportunities and challenges	37
Marine ingredients in petfood	38

Health benefits of edible insects in pet food

Sustainable, ethical and health-promoting: edible insects are an exciting resource, not just for pet food but also for pharmaceuticals. How much do we know?

A hot topic

Edible insects are a hot topic in academia and industry, attracting attention as a more ethical source of nutrients, more sustainable, and health-promoting for humans and animals. In the European Union, pets and aquatic animals can be fed with the black soldier fly larvae (BSFL), an exciting resource not just for food but also for pharmaceuticals.

Nutritional value

According to numerous analyses of their nutritional value, edible insects are an excellent source of proteins (up to 65% of dry matter in house crickets), essential amino acids, iron and zinc, and vitamins (B group, A, D, E, K). Their inferior quality of essential fatty acid composition could easily be improved by adding certain fatty acids, such as oleic or lauric acid, to insect feed.

The carbohydrates present in insects (6.71–15.98%) are primarily found in the insects' outer skeleton, in the form of the polysaccharide chitin, the most

abundant polysaccharide after cellulose. But what adds value to the edible insects is the bioactivity of these compounds, known for their protective effect on gut health and immunity. These effects provide an example of the fascinating emerging field of nutritional immunology.

Antimicrobial properties

Insects are a natural source of antimicrobial peptides (AMPs); ancient evolutionary weapons effective against bacteria, viruses, and fungi. AMPs that have already been determined and defined in BSFL are attacins, cecropins, defensins, diptericins, and knottin-like peptides. Naturally, the antimicrobial effect of BSFL extracts can not be attributed to AMPs only, since numerous other active compounds have yet to be determined.

Antimicrobial enzymes and proteins, essential for recognising and binding pathogens, have already been identified in BSFL. Chitin is an antimicrobial with a wide range of target microbes, but it also has

fat-reducing effects and it improves feed conversion in poultry. Dietary supplementation with chitin in farmed fish showed that chitin has antimicrobial, growth-promoting, antioxidant activity and immune-stimulation effects.

The deacetylated form of chitin, chitosan, is also known for its antimicrobial, antioxidant, antiulcer, wound healing, antihypertensive and hypolipidemic effects. Lauric acid found in BSFL is also gaining focus in nutrition and pharmacological studies since it has been found to have antimicrobial and immunomodulatory properties.

The research

The palatability and digestibility of dog and cat food based on edible insects have been investigated in many studies. However, only a few studies (with a limited number of animals) have investigated the health effects of edible insects in dogs. In one study, dogs were fed with roasted and ground cricket meal for 29 days and their blood tests came up in the reference range for healthy dogs. In another, a case series in 20 dogs with atopic dermatitis evaluated the effect of a new, commercially available insect protein-based dry food on the symptoms of food allergies and found some symptoms improved.

Clearly edible insects add value to pet food and potentially have plenty of health benefits. However, their health effects need to be studied better in companion animals – not just because the evidence is scarce, but also for the pleasure of gaining exciting, new knowledge about their actions. ♦



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When it comes to sustainability, insect products are what they eat

Easing regulatory restrictions on permitted substrates for insect farming would boost sustainability, industry voices say.

Lots of protein, small footprint?

When US-based EnviroFlight first began producing insect meal from black soldier fly larvae, they imagined their product would fill a niche providing a needed protein alternative to aquaculture. The majority of their business today is backyard chickens – and increasingly, pet food.

“Our whole point behind making these products specifically for pets is... we like the sustainability of it,” according to Carrie Kuball, the company’s vice president of sales and marketing. “You can produce a lot of protein on a very small footprint of land, compared to traditional sources like soy.”

But depending on how and where they are made, Kuball said, some insect meals have a smaller footprint than others. Emissions from freighting insect meal over oceans, for example, can erode the product’s environmental benefits, Kuball said. Or the energy sourced to raise and process insects can influence the product’s final footprint.

According to Kees Aarts, CEO of Dutch insect ingredients manufacturer Protix, renewable energy can

reduce the carbon footprint of an insect product by as much as 40-50%. The company has also recently launched an insect puree product that requires even less processing and energy than their more conventional insect meal products.

Conventional substrate, conventional problems

The most influential – or at least most widely recognised – factor driving the perceived sustainability of insect meal is the substrate on which the insects themselves are reared. Since its creation in 2012, the International Platform of Insects for Food and Feed (IPIFF) has held that insects’ greatest environmental potential is their ability to create a circular economy by upcycling food waste. However, in the EU and most other jurisdictions, government regulations restrict the use of some waste streams in raising insects, on account of safety concerns.

“Diversifying the spectrum of authorised substrates for insect farming would also help reduce the food waste burden, as some of these products intended for human consumption presently are downcycled or

even landfilled or incinerated,” said Constantin Muraru, communication and research manager for IPIFF, in a statement.

While researchers assemble initiatives aimed at answering regulators’ safety questions, insect meal products currently on the market are typically reared on agro-industrial by-products already in use more broadly as feed for livestock. This could introduce some of the same upstream sustainability concerns present in conventional protein sources – deforestation from soy production, for example.

Tailored solutions

Research into these substrates suggests that while species such as black soldier flies thrive on a variety of industrial waste streams, the nutritional value of the final insect product could also vary depending on the quality of the substrate on which they are raised.

According to a January 2021 paper from the Journal of Insect Science, black soldier fly larvae grew to larger final weights when raised on conventional diets containing corn and soybean meal than when raised on okara, a by-product of soy milk production.

It is not surprising that insects, like most species, grow more readily on food with higher nutritional content, according to Christine Picard, an associate professor of biology at Indiana University – Purdue University, Indianapolis. But that need not rule out using industrial waste products to raise insects, she said: diets could be easily supplemented to adjust for specific nutritional outcomes, or producers might find the lower cost of feeding waste products offsets a longer growing time.

Even when insects are raised on more nutritious substrates such as corn and soybean meal, causing them to compete more directly with conventional protein sources, they still boast higher feed conversion

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rates than livestock, which means they consume fewer total resources per unit of protein, Picard said. So, whether or not the insect industry realises its circular economy vision, she said, she still believes there is a place for insect protein amid growing demand for sustainable products.

Sustainability potential

Loosening regulatory restrictions on the use of insects in pet food may be the best sustainability strategy of all, according to Kuball. While a small percentage of the population may choose a pet food product based on its environmental footprint, the vast majority of consumers are simply looking for a product that performs consistently across their pet’s life span. Current limitations restricting insect meal to adult dog food only, she said, may well be the biggest factor preventing insects from achieving their true sustainability potential. “It is really a missed opportunity due to limits on our finished product,” she said. ♦



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Lab meat could be the next thing for pets



Lab-grown meats in pet food are getting closer. How close?

The lab-meat alternative

Meat and dairy account for an enormous 14.5% of global greenhouse gas emissions, according to the UN's Food and Agricultural Organization, which is one reason so many more consumers around the world are turning to plant-based diets.

Chicago-based Because, Animals looks one step further than plant-based pet food. The company uses technology to create cell-grown meats in a laboratory with the goal of commercialising these products to sell to pet owners.

Growing edible meat

How does the process work? Scientists use extra cells from an animal, feed them the correct nutrients like amino acids, sugars and oxygen, and they grow. They do not grow into a calf or a goat kid, but they do grow into edible meat.

It sounds like science fiction, but it is not. "Cell-based meat will be here sooner than we think," says Kara Nielsen, director, food and drink at WGSN, a trend forecasting company based in New York City, which lists lab-grown meats as a top trend for 2021. Nielsen explains that, along with scaling up processes and preparing for launch, it is the regulatory process that will be a significant hurdle in the commercialisation journey for cell-based meats. Nevertheless, she expects to see them available within three years.

Consumer acceptance

She is right that there will be significant hurdles. "Pet owners will take some time to accept cell-created meats as a safe, healthy and nutrient-dense alternative to meat," says Dr Michelle Burch, DVM, at Safe Hounds Pet Insurance. In fact, a 2017 European study found acceptance of cell-created meat is low, due to the perceived lack of naturalness.

Alternative proteins

Shannon Falconer, the founder of Because, Animals, disagrees. "Meat is meat," she says, but she is sticking to pet food and not making human meats for a couple of reasons: The first is perception. We humans are unlikely to want to eat meat produced by the same company making dinner for our four-legged friends; the second is that meat for humans has to look like meat; food for pets does not have to be pleasing to the eye.

Competitively priced

Nielsen expects cell-based pet food to be pricey to begin with. However, she points out, with the growing numbers of people who consider their pet a family member, there are already people paying a premium for pet food. "Chances are there will be an audience who will pay a premium for this."

Falconer asserts her food will be competitive. "Our products need to be affordable. When we first launch our cultured meat products, they will be priced competitively with other premium pet food brands, such as Orijin, Open Farm and Honest Kitchen," she says.

Because, Animals will start with a cat treat that has been developed from mouse cells and following that a cultured mouse cat food – whether wet or dry is still to be decided. Cultured wet or dry dog food made from rabbit cells will be the third launch. The advantage of using cells from mice and rabbits, Falconer says, is most commercial pet food uses chicken, beef, or fish, which are the main allergens for cats and dogs. In contrast, her cell-based meats will be "a protein source that is more appropriate for our pets."

Moreover, she points out, cultured meat has the advantage that she can feed the mouse (or rabbit) cells certain nutrients and those cells will respond accordingly and produce those nutrients.



Is lab meat the future?

One concern of Dr Joanna Woodnutt, MRCVS, head veterinarian at BreedAdvisor.com, based in Guernsey, United Kingdom, is that cell-based meat has unknowns. "We have no information about the long-term health consequences of eating artificial meat. One concern is that this rapidly-dividing tissue culture has a higher likelihood of becoming cancerous."

Dr Burch is more bullish about cell-based meats. "I would feed my pets cell-based meat as long as the food was from a reputable company that has ensured feeding trials have been performed to ensure quality and nutrient profile. As our population grows and the need for a sustainable food source increases, I believe cell-based meats are the future." ♦



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Alternative proteins

A bowlful of opportunities and challenges

Alternative proteins are a solution to the ‘protein gap’ but implementing them in pet foods is not without its challenges. Food neophobia is one of them.

Mind the protein gap

Growing global demand for food combined with consumer concerns around sustainability and animal welfare are driving the development of alternative proteins derived from novel sources like plant-based, algae, insects, mycoprotein and cultured meat for human consumption.

And, following the humanisation trend, as with humans, so also for pets. The humanisation of pet food is visible in human preferences, for example, for organic, free-range, or vegetarian food, human food safety management systems and human food ingredients.

However, when it comes to implementing alternative protein ingredients in pet food, a number of challenges arise, from industrial scale-up to meeting consumer expectations, food neophobia and food safety.

(Pet) food neophobia

Whether it is the introduction of sushi into Western diets or the practice of irradiating foods, history teaches us that consumers are often sceptical about new foods and new technologies. Evidence shows that consumer acceptance of alternative proteins such as insects and cultured (lab-grown) meat is linked to uncertainty and neophobia: the fear of something new. Consumers have expressed food safety concerns, for example, about the transfer of pathogens or chemical contaminants into insect-based ingredients like protein.

Whether these concerns are genuine risks or only perceived, overcoming neophobia requires early consumer engagement during the development lifecycle to minimise the challenges around successful implementation. Canadian researchers have studied the effect of changing from animal-based to plant-based diets on neophobia. This highlighted the need for better knowledge of the time taken for dogs to overcome neophobia when fed with alternative, plant-based protein diets. The complexity around the dog’s preferences and the owner’s perception of the feeding experience was also identified as a research need.

Understanding food safety issues

With growing interest in alternative proteins, many researchers have highlighted the need for better understanding of the factors affecting food safety. This is important when we consider implementation in pet food, as research also indicates that pet owner awareness of ingredient food safety is an important factor in pet food buying decisions.

Innovation in pet food has always had to overcome challenges and the key to future success in implementing alternative proteins is collaboration across all stakeholders. ♦



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Marine ingredients in petfood

Fishmeal and fish oil tick all the boxes when it comes to meeting the essential pet food requirements of safety, palatability and nutrition.

Key consumers

Fishmeal and fish oil have long been used in the aquaculture sector and also for pig and poultry feed. The FAO, in its State of World Fisheries and Aquaculture 2020 report, notes that they are considered 'the most nutritious and most digestible ingredients for farmed fish, as well as the major source of omega-3 fatty acids (eicosapentaenoic acid [EPA] and docosahexaenoic acid [DHA]).' Aquaculture uses about 80% of fishmeal and fish oil globally.

But other sectors, including the pet food sector, have increasingly become key consumers of these ingredients. Conservative estimates by IFFO, The Marine Ingredients Organisation, put fishmeal consumption in pet food globally at 174,600 metric tonnes in 2019 and fish oil use at 116,400 metric tonnes.

High-quality nutrition

Fishmeal is well known for its high-quality protein content and excellent balance of amino acids. Its lipid content should also be valued for the strategic role it plays in nutrition, as it is rich in omega-3 and phospholipids. Phospholipids are responsible for important biological functions in animals and are easily digested and absorbed. The fatty acids from both fishmeal and fish oil differ from those found in vegetable meals and oils in that they are high in the long-chain omega-3 fatty acids like DHA and EPA, whereas vegetable meals and oils are high in the short-chain omega-6 fatty acids.

Assuring safety, the marine ingredients industry relies on decade-long datasets of information relating to feed ingredient safety whether supported by the Codex Alimentarius Commission (Codex) standards,



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national regulations, or a combination of both. In addition, the MarinTrust Standard is widely applied, certifying over half of all sourcing and production of marine ingredients worldwide.

Circular and sustainable

An increasing trend is the use of by-products as raw material to produce fishmeal and fish oil. By-products result from the processing of either wild-caught fish or aquaculture processing and refer to some parts of the fish (head, tail, et cetera) which are not used. All this raw material can represent between 30 and 70% of the wet weight of the fish, depending on the species, and is considered valuable raw material. The utilisation of by-products helps reduce waste and is a perfect example of how the circular economy mindset can be implemented.

IFFO has calculated that currently around 31% of the world's marine ingredients production comes from by-products. More specifically, about 27% of fishmeal and 48% of fish oil comes from by-products.

IFFO, the Marine Ingredients Organisation, puts fishmeal consumption in pet food globally at 174,600 metric tonnes in 2019 and fish oil use at 116,400 metric tonnes.

This trend towards greater use of by-products is very promising for the future as it supports a growing availability of sustainably sourced, nutritious raw materials suitable for a wide range of markets. ●



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Accessories

More and more products are now on offer to keep both new and long-cherished pets safe, happy and physically fit. Wearable fitness technology is a growing market, as are carefully designed pet products that meet the aesthetic needs of pet parents and the natural needs of puppies and kittens.

Pet brands harness well-being	42
Pet fitness as part of a modern lifestyle	44
Getting a home ready for a new pet	46
Jelu-Werk GERMANY	49

Pet brands harness well-being



There are plenty of opportunities for products and services that foster emotional connections while helping pet owners to monitor and manage the physical and mental wellness of their pets.

Investing in a longer life

Most pet owners are committed to ensuring that their pets live a long and healthy life. So, they want a variety of functional health and wellness benefits in the pet food and treats they purchase. With veterinary bills typically high, pet owners are looking for support in managing their pet's health in a preventative way. This 'spend a little to save a lot' approach is even more appropriate now, considering the widespread unemployment and economic instability because of the COVID-19 pandemic.

Selling health benefits

Pet food and treat brands are responding to this consumer need by launching products that

feature multiple health benefits. Gut health has the potential to have a big impact on overall pet health and wellness, and well-supported claims on the effectiveness of specific ingredients give brands the opportunity to set themselves apart in meaningful ways. In the US, Acana's Lamb & Apple Recipe dog food highlights the fibre content of sweet potatoes to help support healthy digestion and overall gut health.

Calorie watching

Pet obesity continues to be at the forefront of pet well-being, so pet owners are now not only looking for calorie-controlled foods for themselves. In South Korea, for example, LG sells Sirius Will chewing gum for dogs which contains konjac, that is rich in dietary



fibre. The weight management snack provides under 10 calories per piece and is derived from natural ingredients.

Innovative tech

Chinese electronics brand TCL has introduced the MOVETRACK Pet Tracker, taking its first step towards the pet wearables market. This device can be attached to a pet's collar and provides real-time location tracking using technologies like GPS, Bluetooth and Wi-Fi. If Bluetooth enabled, users can create a virtual leash and receive notifications if their pets leave an editable area of up to 10 metres. An e-badge QR code is used to help others to contact the owner if they find the lost pet. If needed a LED

light that can be remotely activated helps to locate a lost pet in a dark environment.

There is also increasing demand for health tech functions for pets, such as heart rate monitoring, suggested activity levels and remote diagnoses – just as there is much demand for their human counterparts.

Keeping pets calm

Mental and emotional health is fast emerging as a top health concern too, not least because of the negative psychological impact of the COVID-19 pandemic. While many studies are still exploring the impact of COVID-19 on pet behaviour, there are already indications that the pandemic may also be affecting pets. This means considerable potential for products, services and solutions to monitor and manage pets' mental health.

From the US comes VetIQ's Hickory Smoke Flavored Soft Chews, which are said to have a calming effect on a dog's nerves and help maintain a normal and relaxed disposition. While in South Korea, the AI-powered emotion-detecting dog collar developed by the Petpuls Lab analyses the bark sound, classifying it into 1 of the 5 categories of emotion – happy, sad, anxious, angry or relaxed. ♦



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Pet fitness as part of a modern lifestyle

Wearable fitness technology is a growth market. But are pet owners making good use of the support available to keep their pets fit and healthy?

More walkers

The human fitness trend continues to grow, and the impact of COVID-19 and lockdowns has been seen in increased outdoor walking and hiking. A Mintel study shows that sign-ups to exercise tracking app Strava grew by 2 million a month during 2020, with uploads of outdoor walks increasing by a third. 30% of 55-64 year-olds and 24% of 16-24 year-olds in the UK have started walking (compared to 16% in 2018 for the younger age group).

Overweight and diabetes

Obesity in pets caused by overfeeding and lack of exercise is still very much a concern. In the US in 2020,

Mintel findings show that 56% of dogs are estimated to be overweight. There has been a 911% (!) increase in diabetes in dogs and cats since 2011.

As pet industry trends tend to follow the human market, it is not surprising that pet fitness accessory sales are really on the rise. A good example is wearable technology. With adults tracking their fitness using special watches and phone apps, pets are also benefitting. The global pet wearables market is estimated to reach \$4.6 billion (€3.9 billion) by 2027 (Grand View Research study 2020). This includes predicted market growth in the Asia Pacific region, mainly China and India.

Tracking and monitoring health

So how does wearable technology help with pet fitness? Pet fitness technology uses a wide range of innovations – Wi-Fi enabled RFID sensors, GPS trackers, motion sensors, Bluetooth, accelerometer sensors, camera, transmitters and antennae. Wearable technology does not just track where the dog – or cat – wanders each day. It also monitors the amount, type and extent of their activity. Statistical tracking measures the pet's rest patterns and calories burnt, as well as their heart rate. This provides the pet owner with measurements that can even predict and diagnose medical problems. So veterinary professionals can use this data not just to treat ill health, but also to monitor changes that may lead to problems.

Pet fitness industry is helping humans too

The industry can help set exercise goals for both dogs and their owners. Just 30 minutes' exercise each day is not hard to achieve and can reduce the risk of developing diseases such as type 2 diabetes and many forms of cancer. That is good news since most 'fitness' discussions can seem daunting.

Wider benefits of fitter pets

If pet health deteriorates, insurers are likely to carefully check the type of veterinary costs incurred and alter insurance premiums to match. A situation where owners can provide tracked, vital details about how fit their pets are, in order to keep their insurance costs down, is one of the many benefits of wearable technology. ♦



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Getting a home ready for a new pet

Pet product design is constantly evolving, as it responds to increasingly specific requests for reconciling the natural needs of puppies and kittens with the aesthetic needs of pet parents.

Keeping them in ... or out!

The arrival of a new family member involves strategic planning and some clever tricks. Whether it is an apartment or a detached house, whether there is a terrace or an entire garden available, the first thing to be looked at is how to keep the pet where they should be, rather than where they should not.

There are plenty of effective solutions on the market for every situation. Anti-escape and anti-jump nets are examples. Practical containment boxes and quick-installation gates are extremely useful for limiting areas of the home to where young pets can move safely. And tech devices for indoor and outdoor monitoring allow a progressive degree of autonomy.

Puppy training

An important part of puppy life is, of course, toilet training. Absorbent mats and litter boxes become inevitable furnishing accessories. What is on offer is varied enough to meet all consumers' needs. Even pee cones and turf that can be placed on an apartment

terrace or balcony to simulate natural situations and encourage the young pet to learn.

Happy littering

Various kinds of litter boxes and trays can be tried to see what the kitten prefers: open or closed, plant-based litter that can be disposed of in the toilet or crystal granules with odour-absorbing and diagnostic monitoring functions.



Accessories



The quality and quantity of the litter, as well as the position of the box, are what makes a cat decide whether it is happy to use it. There are even litter boxes specifically designed for placing in the owner's toilet, allowing a cat to share the space.

Natural feeding

Food bowl design is very important for correct intake of the meal and for hydration. Resistant and non-porous materials guarantee good hygiene and no breakage, but it is the design that characterises each bowl, making it appropriate for all muzzles and needs.

For kittens, it is best to use feeding stations designed to take into account the correct inclination of the head and the cat's natural body posture while eating. Double feeding bowls are being produced less now, respecting the feline instinct for well-spaced food and water. Drinking fountains or troughs that can be connected to taps indulge the cat's natural preference for running water.

Designed for comfort

By making use of the latest research, plus recommendations from veterinarians and behaviourists, pet product design can respond to any need in terms of comfort. There are many innovative products on the market, such as thermo-regulating kennels and materials that simulate a massage to help stem the separation anxiety typical of puppies. Or memory foam pillows that comfort young animals. And wellness stations with mental activation games to help puppies reconcile their natural instincts with the conditions of domestic life. ♦



Marta Murelli

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TROPICAL Tadeusz Ogrodnik
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Cat litter that conserves resources

Jelu-Werk develops and manufactures natural fibres for litter products, pet food and animal feed: purely natural products for all aspects of keeping animals. In doing so, the company attaches maximum importance to superior quality, sustainability and resource conservation. Its latest product is a particularly absorbent clumping litter made from wood fibres.

How it all started

Jelu-Werk is a medium-sized family firm in Germany that has been manufacturing natural fibres and flours for over a century. Under the stewardship of the third generation of the Ehrler family, the company is a symbol of tradition, quality and innovation, always paying attention to what its customers need. It is located at the heart of a nature conservation area and uses regionally sourced raw materials where possible. These are processed purely mechanically, thereby giving rise to neither waste products nor emissions.

Dietary fibre for pet food

The company uses innovative methods to turn renewable and sustainable raw materials such as wood, lignocellulose and cellulose into versatile natural fibres.

The purely vegetal fibres constitute a functional additive that improves the properties and production processes for many products. The company supplies its natural fibres to the food industry and manufacturers of pet food and animal feed as well as to the technical industries. In the food industry, innovative fibres from Jelu-Werk are used as dietary fibre to improve the nutritional properties of food. They are also added to pet food and animal feed to increase the proportion of dietary and crude fibre. This promotes and aids gut health and metabolism in animals, helping to keep them healthy.

Highly absorbent clumping litter for cats

The company recently developed a clumping cat litter made from wood fibres.

With its high absorbency and clumping capacity, the new cat litter has already won over many cat owners. In contrast to the widely available mineral cat litter, this new product is made from renewable raw materials. It thus conserves resources, is compostable and can be disposed of in small quantities in the toilet.

The company markets its new clumping litter under the Cosycat brand directly to consumers. It also supplies it to retailers and the industry in private label form. ◆

◆ **Jelu-Werk J. Ehrler GmbH & Co. KG**
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jelu-werk.com





Global pet industry

A global pet industry means importing, exporting and deciding between regional and global sourcing. And what about the Far East? How is the pet industry doing there?

Japan's pet market on the rise	52
Rising awareness of the need for pet healthcare in Asia	54
Thailand expects further growth of pet food exports	56
China pet industry trends in 2021	58
Quality and compliance key to successful exporting to the US	60
The 'CCC' of pet food or ingredient exports to the EU	63
Being transparent about your supply chain to satisfy your customers	64
Regional versus global sourcing – An update	66
Let your retailers do your talking	68

Japan's pet market on the rise



As one of the biggest markets in the Asia Pacific region, Japan is fascinating to analyse.

Land of cats and dogs

In 2020, Japan's pet market was worth \$14.8 billion (€12.4 billion), up by 3.4% compared to 2019. It is expected to grow at a rate of 4.9% by 2022. Most pet supplies are purchased through home centres, discount stores and, increasingly, e-commerce channels – with Amazon Japan in the lead.

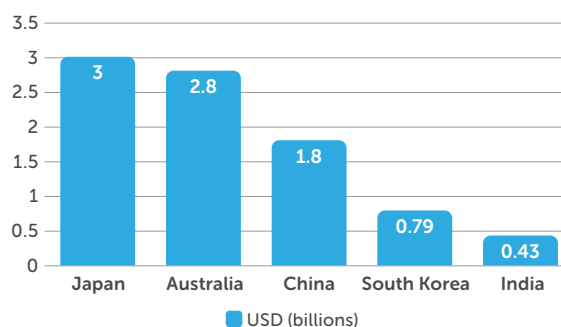
Dogs and cats are the primary pets in the country, at 8.5 million and 9.6 million respectively in 2020. As a result of COVID-19, prices for puppies and kittens remained high the whole year, instead of the usual summer season discounts. Japan is the 5th largest market globally for dog ownership and 10th for cat ownership.

Fish and birds are more popular as small pets for Japanese households than rabbits and hamsters, but even then Japan does not rank among the top 20 global markets in these categories.

Pet food sales

In 2020, pet food sales within the Asia Pacific region reached \$18.2 billion (€15.2 billion), with Japan comprising the majority, at \$3 billion (€2.5 billion).

Pet food market in APAC



44% of Japan's total pet food consumption in 2020 came from imports, led by Thailand (33%), the US (16.4%) and France (16%), so there is still a strong reliance on non-domestic products. Despite this high level of import, Japanese pet owners are inclined to purchase locally manufactured goods, as they present a higher level of trust in terms of food safety and security.

Dry versus wet

In 2019, dry dog food accounted for 67.3% of total dog food sales. While this category saw a 5.1% year-on-year decrease, wet dog food increased by 8.1%. In terms

Japan is the 5th largest market globally for dog ownership and 10th for cat ownership.

of cat food, dry offerings also dominated, at a 63.9% share. However, semi-moist cat food experienced a significant increase of 365% compared with 2018, and other wet foods also saw a boost.

Pet life indoors

Due to limited outdoor space, especially in city-based apartments, many Japanese pet owners keep their pets inside most of the time. This applies to 90.4% of cats and 84.7% of dogs, creating a higher demand for products that address deodorisation and hygiene.

Increased focus on premium

Japanese consumers are willing to spend money on high-quality premium food and are always on the lookout for products that can meet the nutritional requirements of their pets. Those labelled as free of allergens and preventing sickness are particularly gaining popularity. This is reflected in brand names, such as Inaba's Zeitaku (meaning 'luxury'), and Unicharm's Gran Deli.

Sales of larger bags of pet food have declined, in favour of select items with a high price that more appropriately meet a pet's individual needs. In 2019, the premium pet food segment was worth \$687.5 million (€575.6 million), a 3.7% increase on 2018. As premium becomes the norm, brands are launching 'super premium' lines that emphasise further added benefits, such as organic and gluten-free ingredients. ♦



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Rising awareness of the need for pet healthcare in Asia

The pet healthcare industry in Asia is relatively new but evolving at a steady pace. What are the latest developments?

Demand prompts investment

Pet owners' willingness to find the best treatment for their pets, coupled with the increasing demand for veterinary medicines, is prompting leading pharmaceuticals to invest in the Asian pet healthcare market. It has also led to the opening of pet care centres and veterinary hospitals providing 24/7 services.

Veterinary innovations

East Asia is the epicentre of all technological advances in pet healthcare in the region. Increasing awareness of the importance of pet health, plus the rising adoption of pets in China and Japan, has created an ideal environment for leading healthcare companies to expand their footprints.



Boehringer Ingelheim, for instance, acquired equity in the China-based New Ruipeng Group (NRP Group) in September 2020. NRP Group is a renowned veterinary care and e-commerce business that serves the Chinese pet healthcare market. Similarly, in August 2020, Merck Animal Health acquired the worldwide rights to Vecoxan® (diclazuril), an oral medication to prevent coccidiosis in ruminants. Vecoxan is available in South Korea and Japan.

Tele-health

In the wake of the COVID-19 pandemic, many veterinary hospitals are working towards providing continuous care and support for pets across the region. In June 2021, DCC (Dogs Cats & Companions) animal hospital in India decided to start providing virtual tele-health services to meet the demand for reliable and accessible pet healthcare in the country.

Emotional benefits

As in the rest of the world, closer relationships with pets have led to the humanisation trend. This has triggered pet adoption and next-generation innovation in pet healthcare – especially in Asia. Coupled with the growing awareness of the benefit of a pet for the human state of mind, this is expected to substantially influence the pet healthcare system in Asia.

Insurance for assurance

Losing a dog or a cat as the result of a car accident, or unexpected serious health issues, creates an emotional burden as well as a financial one. That is why pet owners in Asia are increasingly seeking health insurance for their pets, and this has led to the emergence of a multitude of pet insurance schemes.

According to some reports, the number of pet insurance clients in China has skyrocketed – from less than 5,000 clients to a baffling 160,000+ clients in the past 5 years. Similarly, rapid pet adoption rates



and rising per capita expenditure on pet healthcare in Japan has led to a surge in pet insurance policy sales.

Oral care campaigning

Periodontal disease is increasingly diagnosed and treated in pets across the globe, especially in dogs and cats. And dental problems often lead to other major health issues.

To tackle this, several organisations across Asia are running major awareness programmes and ‘dental camps’. Plans for setting up multi-speciality hospitals and surgery facilities dedicated to the treatment of pet and farm animals are also ongoing in various countries in the region. One example of this is Tata Trust partnering with the People for Animals organisation to develop state-of-the-art hospitals and emergency clinics for the provision of veterinary health care.

Huge strides

Even though the pet healthcare system in Asia is in its infancy, it is taking huge strides forward in providing highly effective pet care. This will greatly improve the lives of many pets and also make a contribution to finding new ways to deal with disease. Growing expenditure on pet well-being is expected to lead to further transformation of the pet healthcare industry in Asia. ♦



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Thailand expects further growth of pet food exports



During COVID-19, the Thai domestic market has been booming. But not only the domestic market has been given a boost.

Pets as family

Just like the rest of the world, the Thai pet market has grown during the COVID-19 pandemic, with more people working from home and adopting pets. It also seems to be a growing trend that couples decide to adopt pets rather than have children, and single people get a pet as a companion. More pets means more demand for pet products.

Another reason for current market growth is that pets are increasingly considered family members. So price is no longer the main consideration when buying pet food. It is more important that the food is appropriate to the pet's age and provides all the necessary nutrients.

Export market

Thai pet product manufacturing is considered to be of the same high standard as other Thai products

exported to markets across the world. Research conducted by the Thai Pet Food Trade Association (TPFA) shows that Thailand ranks number 4 among the world's pet food-exporting countries, behind Germany, the US and France.

Manufacturers' own brands account for 20% of Thai dog and cat food exports. The other 80% are OEM/private labels for renowned brands across the world. The top 5 Thai export markets last year were the US, Japan, Italy, Malaysia and Australia.

Impact of tariffs

One critical factor in the export market growth is import tariffs for Thai pet food. The present rate is, on average, 0-5%. If the importing country has a foreign trade agreement with Thailand, import tariffs do not apply.

TPFA

The Thai Pet Food Trade Association currently has 11 members. They produce mainly wet dog and cat food using fish, including tuna, as well as fish blood and bones plus other ingredients. Most of the members are canned tuna and tuna product manufacturers, so tuna by-products can be perfectly utilised as ingredients for pet food.

As pet food is twice as expensive as food for human consumption, and has higher profit margins, this has encouraged many Thai entrepreneurs to set up new companies – or expand existing processing lines – to manufacture dog and cat food. They also see bright future prospects for the pet food industry.

Future growth

In 2020, Thailand exported 609,001 tons of pet food, valued at \$1.6 billion (€1.3 billion). Compared to 2019, this is a volume increase of 13% and a value increase of 19%.

In 2021, Thai pet food exports are expected to expand by at least 10%. Comparing the quantities during the first 5 months of 2021 with the same period in 2020 shows that export value has already increased by 25%, while volume has increased by 19%.

The TPFA estimates that Thailand will rise to 3rd place globally as a pet food exporter, and that the industry will become even more important as income generator for the country. ♦



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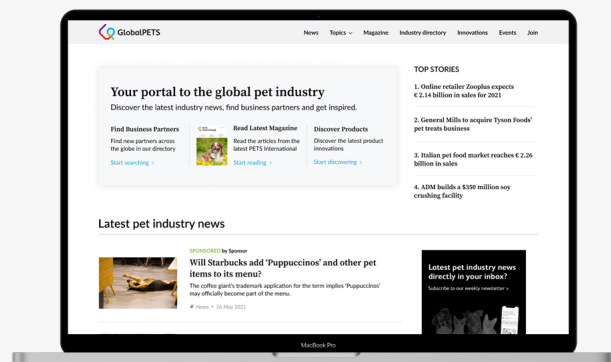
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China pet industry trends in 2021



Today's pet consumer in the world's most populous country is young and upwardly mobile. The COVID-19 pandemic has made them more particular about the products they buy for their pets.

Growth rates

Chinese pet industry sales reached almost ¥300 billion (\$46.3 billion / €38.5 billion) in 2020 – a compound growth rate of 32.8% between 2015 and 2020. The pandemic was certainly responsible for part of this rapid growth.

Based on an increase in average income and the number of Chinese pet owners, iResearch has predicted a 14.2% compound growth rate for the next 3 years, making the market worth ¥445.6 billion (\$68.8 billion / €57.2 billion) by 2023.

Millennial pet parents

Young, highly educated, a high income and married: that is the current profile of many pet parents in China. Millennials account for 27% (born since 1985) and 33% (born since 1990) of pet ownership. The proportion of

women is higher than that of men. 70% of pet owners have a Bachelor's degree. Pet owners value health, happiness and hygiene.

Effect of the pandemic

The shift to online has accelerated since the pandemic started. More time spent with pets has driven growth of overall pet supply consumption, with pet parents paying extra attention to the health of their pets. Visits to physical stores may have decreased, but the premiumisation trend continues.

Product sales have been affected by the pandemic because of problems with shipments, customs clearance, distribution and contact with manufacturers and agents. Fewer exhibitions and trade shows have also reduced exposure opportunities for new brands and products.

Focus on functional food

Natural and organic foods are popular, and Chinese pet parents are keen on food with multiple benefits: immunity strengthening, gastrointestinal conditioning, calcium supplementation and skin care.

Pet product consumers also value brands, whether imported or domestically produced, and generally focus on the quality and safety of food. They are increasingly price aware, and this has provided opportunities for cost-effective domestic brands.

Picky about snacks

Snacks are purchased more frequently than food. Pet parents appreciate quality but still look at cost when shopping for snacks. They care about nutrients, packaging specifications and freshness. In terms of ingredients, their prime consideration is the type of meat, with preferences for chicken, beef, duck and fish. For snacks, the function is vital. Is it gentle on the pet's

stomach? Good for picky eaters? Stops teeth grinding? There is less of a focus on brands in this pet food category.

Smart and convenient care

Grooming and sanitary products have a high repurchase rate. Most pet travel supplies are consumer durables, and the purchase frequency is relatively low.

Compared with general pet products, pet care consumers are attracted to innovation, safety and design. Although convenience is also highly valued, it is smart products that are preferred by pet parents – meeting their needs to save time and effort. ♦



Meadow Zhang

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Quality and compliance key to successful exporting to the US

If your company would like to export pet food to the largest market in the world, what requirements should you expect to face?

Going global

Over the last 30+ years, there has been a steady increase in globalisation as supply chains expand. In 2019, global pet food sales totalled \$93.9 billion (€79.6 billion). In the US, pet food and treats sales totalled \$42 billion (€35.6 billion) in 2020, making it the largest individual country market.

Federal requirements

Oversight and approval of products entering the country starts at the national level, with the US Food and Drug Administration (FDA). US Customs and Border Patrol supervises the import process.

Most pet food products do not require FDA authorisation, but the finished product's ingredients must meet criteria in 1 of 3 categories. The first is as an approved food additive, a category that requires full FDA safety and efficacy review. The second is ingredients generally recognised as safe (GRAS), which may have undergone a formal review. The final

category is products that meet ingredient definitions under the Official Publication of the Association of American Feed Control Officials (AAFCO).

State requirements

AAFCO is an organisation that operates under FDA approval via a memorandum of understanding. It is composed of federal and state feed control officials, including most regulators for animal feed products in the US. Under the US regulatory scheme, pet foods or facilities must be registered at state level, with most states conforming to the agreed AAFCO framework. Requirements, durations and fees vary from state to state.

Facility registration

Once you understand how your product is classified, you must ensure that your facility has been registered with FDA. Registration is a fairly straightforward process that has to be done once every 2 years. All facilities that manufacture, process, pack or hold food to be consumed in the US are required to be registered.

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The 'CCC' of pet food or ingredient exports to the EU

Bacteria and viruses do not stop at borders ... and it is not only pandemics that cause serious harm to humans or animals.

100 years of trading codes

When zebu cattle were exported from India to Brazil in 1920, the ship went via Antwerp and a major rinderpest outbreak occurred in Belgium. This incident led to the League of Nations setting up the OIE (World Organisation for Animal Health) to establish rules for the international trade in animals and animal products and prevent the global spread of zoonoses.

Since 1924, the OIE has drawn up detailed hygiene and trading rules for 117 animal diseases in Terrestrial and Aquatic Animal Codes, including model veterinary health certificates. These form the basis for animal and animal product trade in all countries and regions, and are recognised by the WTO in trade disputes.

Rules and more rules?

With all these internationally recognised OIE rules, why are there so many national and regional veterinary regulations and import health certificates? Because each country or region remains responsible for protecting their own territories, farmers and consumers on the basis of risk assessment and risk management.

The EU follows a strict, 3-fold approach for animal and animal product imports, including pet food and pet food raw materials of animal origin. So before you can export to the EU, the 'CCC' must be fulfilled.

1. Country must be checked

If a 3rd country wishes to export to the EU, there is a thorough check, including inspection visits, to verify whether veterinary and hygiene legislation, its application and its enforcement comply with the EU's high standards.

2. Commodity must be approved

Once the country is approved, EU official lists determine which commodities may be exported from that country. These lists also show whether a specific commodity, such as poultry, beef, ostriches, insects, pet food or honey, may be shipped to an EU country or region. This can depend on the epidemiological situation in the 3rd country or an assessment of the reliability of the local veterinary services.

3. Company must be EU listed

Safety and hygiene also depend on the company handling or processing the animal products. That is why the EU requires all exporting 3rd country entities to be officially EU listed. 3rd country authorities must notify the EU about each company. ♦



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Being transparent about your supply chain to satisfy your customers

What is the story behind a product? Today's consumer is not only attracted to the colour of the packaging. They need to know more to make their choice.

What, where and how

It is younger generations who ask questions about a product's origin, its ingredients and the circumstances in which employees work. They are willing to pay more for sustainable goods with a transparent and inspiring story.

And not just consumers demand more information. European Commission proposals for a Corporate Sustainability Reporting Directive and the EU Taxonomy Act show that transparent communication about the supply chain has entered the domain of legal compliance. Information that builds the story for consumers also provides your license to produce.

Collaboration platforms

There are different ways to achieve sustainability and transparency. For common commodities with a significant impact on our planet, companies can participate in collaborative platforms, such as the Round Tables on Responsible Soy and Sustainable Palm Oil, Better Cotton Initiative and CEO Water Mandate.

Sharing success

Although these platforms help organisations to better understand their supply chain, it may not be sufficient for consumers and investors. Mobilising your supply chain partners and collaborating on sustainability goals is another proven method. Decide on a timeline to meet the required standard and plan how to work together on that journey. Involve your investors too. Negotiate with them on lowering loan interest rates if you exceed your goals, and raising them if you do not achieve the targets. That is sharing the effort to become more sustainable.

Does your company really care?

People want to know what a company cares about – what corporate social responsibility actually looks like. What are the company's mission and values? How are products manufactured? Is it a purpose-driven company? And what is it trying to build for us as a society? In recent McKinsey research in Europe, 63% of consumers said they considered a brand's promotion of sustainability to be an important purchasing factor. This applies to pet products too.

Global pet industry

A personal story builds your relationship with the consumer. It connects them with the person who made their pet product or produces its ingredients. This requires close collaboration with suppliers.

Details and data

Find a good balance in providing enough and understandable information while avoiding a sense of 'greenwashing'. Talking clearly about what sustainability means to you, with detailed and feasible claims, does build trust. It also enhances collaboration within your supply chain. Tell people who follow you on social media where they can find further information, data and reports.

Transparency is essential for business

For companies in the pet industry, communicating transparently about a responsible and sustainable

supply chain is the key to a good consumer relationship. And as future generations and institutions are expected to become more demanding in the coming years, now is the time to step up and build your story together with your supply chain partners. ♦



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Regional versus global sourcing

An update

The re-opening of the world economy is causing a rise in food commodity prices, while import dependence is stretching trade and the environment to the limits. Time to look at the pros and cons of regional sourcing.

Climate and market changes

The COVID-19 pandemic, extreme weather events and trade wars have put the spotlight on global sourcing with its risks, uncertainty and volatility. All of this tests the strength and resolve of global supply chains.

With the pandemic going into a new phase, the pet sector finds itself confronted with the effects of global instability. The current high demand for raw materials is forcing producers to raise the prices of dog and cat food.

Matching supply and demand

Global sourcing is not simply an option. With a growing world population and the size of demand for food commodities, it is a necessity. But its limits are also becoming more apparent and relatively small supply reductions can have a major impact.

In a recent GMP+ International webcast, Michael Magdovitz, senior analyst for agri markets research at Rabobank, called the supply and demand gap for commodities as corn, wheat and soy 'an extremely worrying situation'.

In addition to these challenges, consumers are increasingly asking for supply chain visibility and

transparency, especially with regard to greenhouse gas emissions and deforestation. And because consumers also value price stability, infinite global sourcing puts the food supply chain in a challenging spot.

Lower carbon footprint

More and more governments and supply chains are exploring the options for increased regional sourcing to maximise the use of locally-produced ingredients.





China and the UK, among others, have come up with guidelines to boost this move toward localisation. For good reason: research in Europe has shown that the carbon footprint of locally-produced soy is significantly lower than from soy imported from South America.

Momentum is growing. The acreage for European soy production, for example, has doubled over the past decade and ample potential remains. Russia, Ukraine and Italy are the largest soy-producing countries in Europe. Although their yearly output is nowhere near that of Brazil, their carbon footprint is considerably lower.

Wanted: transparency

Increasing regional sourcing of food ingredients offers more than just sustainable production, bringing with it the benefits of regional value chain development and less dependence on imports and global disruptions. Local production also brings the opportunity to 'reconnect' consumers with producers, providing that desired transparency. And what really makes it a win-win scenario, is that it immediately relieves the pressure on valuable ecosystems in different parts of the world, most notably those in South America.

Challenges remain

Regional sourcing still cannot easily replace the capacity of global sourcing. And will consumers be willing to pay a premium for locally-produced ingredients? All things considered, regional supply chains offer countless opportunities worth exploring. And food companies that succeed in getting ahead of the curve will definitely reap the benefits down the road. ♦



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Let your retailers do your talking

The best marketing is by word of mouth, whether from consumer reviews, social media comments or a salesperson's recommendation.

Product research online

Today's pet care consumers are sophisticated and thorough. When it comes to purchasing decisions for their four-legged family members, they do their research. This is now easier than ever, so many pet consumers make their choices before they even enter a shop.

Online reviews and social media groups have made in-the-moment purchasing decisions almost a thing of the past. Pet owners may not be *cynical* about marketing, but they can often tell when they are being marketed to. Or at. And why trust an ad when you can get real opinions from real people?

Human connection

But who are those 'real people'? They are the people patrolling the aisles and cash registers of local brick-

and-mortars. And those boots-on-the-ground retailers have more influence than you would think in today's increasingly online world: a 2017 Mindtree study in the US showed that 84% of consumers ranked a salesperson's information as 'very helpful' in making a purchasing decision.

As more and more people treat their pets like humans, that human connection *should* make all the difference. A retail employee is often the last person a pet consumer talks to before making an actual purchase. If you can make that retailer an advocate for your brand, then your brand or product name might be the last thing the consumer hears before heading home with your product. So despite all the time they spend online, human advocacy matters, especially at the point of purchase.

If you can make that retailer an advocate for your brand, then your brand or product name might be the last thing the consumer hears before heading home with your product.

Capturing retailers' hearts and minds

How do you make a salesperson approach a customer who has been staring at the stacks of pet food bags for a while and say, "I feed my dog (YOUR BRAND) and he loves it!" How do you turn the retailer into a brand advocate?

The first answer will be familiar: *Know your audience*. You have to know who these retail employees are in order to connect with them. Fortunately, many of them will overlap with your end-user audience – most people working in pet retail will be interested in pets themselves. So if you know your end-users, you will already understand your potential retail advocates.

How to win them over Bribe them

Just kidding (sort of). Free samples for retail employees are a sure-fire way to win them over. If you truly believe that your robotic nail grinder is the best way to trim a pet's nails, why not offer a few for salespeople to try out? They will then remember that you provided them with the sample, and that may well come to mind the next time a customer scans the pet grooming aisle. You want potential advocates to have happy emotional associations with your brand.

Appeal to what they value

You also win retailers over just by being what they want you to be. Let us say that you know that the typical salesperson is a millennial or younger. How do you connect with that person? Well, we know that many of them care about certain issues, and want brands to make a difference. So you can win them over by not only being socially responsible but also including them in your efforts. For instance, if you have recyclable



packaging, build a story around why, and make the retailer believe that recommending your product over others helps save the world. Make the retailer the hero of your story.

Engage them

Find your audiences online. Seek out their groups and interact with them. At the very least, you will better understand the mindset of those who can single-handedly make a sale for you. Best-case scenario is that you have honest conversations about topics they care about. And best-best-case scenario is that the topic is your brand.

Reasons to believe

In the end, the key to winning anyone over is to give them reasons to believe. So if you can give a salesperson a true reason to believe in your product, they will do your marketing for you. ♦



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Advertisers index

AFB International.....	23	Kemin Nutrinsurance Europe Srl.....	2
AM Nutrition As.....	11	Laroy Group nv	65
Bacterfield GmbH	13	MSM Petfood Srl.....	4
Cat Litter Company	47	P.l.a.y. Pet Lifestyle And You Inc.....	45
Collar Company.....	48	Petrebels.....	back cover
Entobel.....	31	Premier Nutrition.....	39
Fihumin-Gesellschaft m.b.H.	36	Royal Avebe.....	21
Furajny Hraný Ltd.	inside front cover	Tianjin Ranova Petfood Co., Ltd.	14
Hipromine S.a.....	33	Tropical Tadeusz Ogrodnik	48
IPV Pack S.r.l. Unipersonale.....	62	West Paw	67
Italfeed Srl.....	25	Yantai China Pet Foods Co., Ltd....	inside back cover
Jelu-Werk J. Ehrler GmbH & Co./ Cosycat	53	Zoomark International/ Promopet Srl.....	61

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See page 5 for subjects. Contact head office (below) or local representatives (page 71).

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