THE OFFAL TRUTH

Formulating biologically appropriate foods for nutrition and craveability.

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Many pets are considered cherished members of the family, and pet owners gravitate toward pet foods and treats that they themselves find palatable from both a physical perspective and ingredient label. The challenge is that ingredients identified as “by-product,” “rendering” and “meat meal” may not sound appealing to humans, but in many instances, these are the ingredients cats and dogs require for optimal health.

“Consumers today have a better understanding of the link between diet and health and vitality for themselves and for their pets,” says Sharon Durham, marketing communications manager, Ziwi U.S.A., Overland Park, Kansas. “Grain-free and natural are the norm in premium pet foods, and the trend is now toward biologically appropriate, limited-ingredient, whole-food diets.”

The pet food industry is evolving and becoming more sophisticated. This is apparent by the aisles dedicated to product in mainstream supermarkets, as well as the volume of stand-alone pet supply stores and online outlets. In the past few years, more new and modern pet food forms can be found in all these channels.

“Before the pet industry was commercialized, our four-legged friends got table scraps, those leftovers from our human food,” says Sandra Grossmann, business development manager, Camlin Fine Sciences LLC, Urbandale, Iowa. “Once pet food became a viable industry, which has now been for more than two decades, we began feeding our four-legged family members commercial pet food.”

“There are frozen, freeze-dried, dehydrated and combination products,” Grossman says. “What these innovations have in common is that they are nutritionally balanced and complete. And most contain by-products of the meat industry.”

Understanding by-product

As the saying goes, one man’s trash is another man’s treasure. This is something cheesemakers learned, as it was not long ago that whey, the by-product of cheesemaking, was a waste stream. Now, cheese is produced to make whey, which is a premium protein used by body builders and health enthusiasts.

Pet food processors have discovered that treasure may be found among the various forms of by-products from animal butchering. Fresh variety meats, also known as offal, contribute valuable nutrition and flavors that cats and dogs crave. The term offal refers to the internal or-
"Organs are a vital part of cats’ and dogs’ natural diets, as they provide essential nutrients not found in muscle meat."

Sharon Durham, Ziwi USA

"Protein meals made from offal, trim and less popular cuts, such as necks and backs, are high in protein, low in ash, and fat content can be lowered to below 10% if desired," says David Meeker, senior vice president of scientific services, National Renderers Association, Alexandria, Virginia. "Rendering these materials is a food safety preventive control. Rendering gives the protein meals a long shelf life and allows extended shipping."

Raw product must be heated as quickly as possible to destroy inherent enzymes and bacteria that could degrade the fat and protein. In order to cook uniformly, raw product is chopped into small pieces. This also increases production rates and decreases energy costs. Modern cookers are controlled to reach the critical temperatures without overcooking, which can destroy nutrients and digestibility.

"Rendering of old had some unearned and earned knocks that belie where the industry is today," Meeker says. "Today there is more sorting of raw materials, more lines and plants dedicated to pet food, more attention to safety and quality, more attention to meeting customer needs and accommodating customer specifications. Anyone avoiding rendered products for reasons of quality, nutrition or reputation should take another look."

Whole prey nutrition
Pet owners must never forget that even after thousands of years of domestication — archaeological records show the...
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David Meeker, National Renderers Association

RedBarn offers single-ingredient dog chews made from organ meats, such as this beef esophagus, that are inherently high in omega fatty acids.

First undisputed dog remains buried beside humans 14,700 years ago — cats and dogs are still carnivores from a biological standpoint. Although dogs are able to exist on properly balanced meatless diets, according to Meeker, cats are obligate carnivores and require meat products in their diet due to their taurine requirement and inability to convert carotene to retinol. This means that a vegetarian diet does not supply enough vitamin A to cats. Both species thrive on whole prey nutrition.

"Their digestive systems are optimized to metabolize and utilize the natural nutrients present in animals and their organs. In the wild, carnivores will usually first open the abdominal cavity and chest of their prey to consume the flavorful and highly nutritious organs," Durham says. "Organs are a vital part of cats' and dogs' natural diets, as they provide essential nutrients not found in muscle meat."

Compared to muscle meat, organ meats have higher levels of B vitamins and are also rich in minerals, such as phosphorus, iron, copper, magnesium and iodine. Organs are also a good source of fat-soluble vitamins A, D, E and K.

"Much like their ancestors and wild counterparts, domestic dogs and cats relish and thrive on a diet that includes offal," Durham says. "Tripe, in particular, is an amazing natural palatant and is often recommended to entice fussy eaters and pets with diminished appetites."

Ziwi includes heart, liver, lung, tripe and kidney in all of its cat and dog foods, and its air-dried dog treats. Air-drying is a natural way to preserve meat that eliminates the need for artificial preservatives, sugars or preservatives. The company's slow, gentle, twin-stage air-drying process crafts a food that is as nutrient-dense and digestible as a completely raw diet but safe, clean to handle and can store for up to 21 months, according to the company.

In keeping with a true, limited-ingredient diet profile, Ziwi uses only organs from the same protein source as the muscle meat in each recipe. "Although all organs offer great palatability, green tripe — one of the most expensive offal ingredients to source — provides vitamins, minerals and amino acids, and acts as a natural palatant," Durham says. Liver is one of the most nutrient-dense foods available. It is particularly rich in vitamins A and B12. Heart is a natural source of taurine, a vital amino acid, and lung is high in iron, as well as vitamins B12 and C. "Grass-fed beef and lamb kidney is rich in omega fatty acids, which provide, among other health benefits, anti-inflammatory properties, and is also a great source of thiamin, riboflavin and iron," Durham adds.

Tamara Granger-Peet, marketing and technical support for K-9 Kraving, Boesl Packing Co., Baltimore, Maryland, agrees that green tripe, which is the nutrient-rich lining of the stomach of a ruminant animal such as a cow, deer or bison, increases the prey-drive of picky eaters. "It's also a great source of omegas to nurture skin and coat quality," she says.

At K-9 Kraving, pet food products are made from trim, heart, liver, gizzards, fresh ground bone, whole fish, beef tracheas, veal tendons, duck feet, duck and turkey necks, green tripe, bull pizzle, clean beef tripe and more. "We've tried making treats from pig testicles and beef tongue," Granger-Peet says. "They were fabulous but too expensive, same with chicken feet."

"We don't like the thought of slaughtering animals any more than other animal lovers do, but it's an unavoidable fact," Granger-Peet explains. "So why not use as much of the animal as possible? The sacrifice has happened. Let's make the most of their physical gifts."

New Tripe Twist from Redbarn Pet Products L.L.C., Long Beach, California, is designed for dogs that love a chew that is flaky and savory. This rawhide alternative is highly palatable, contains no grains or gluten, and is free from any additives, preservatives, hormones and chemicals. It's a natural, single-ingredient beef tripe chew sourced from free-range cattle.

Redbarn's Braided Esophagus Sticks and Rings are chews designed to help support healthy teeth and gums by breaking down plaque and tartar buildup. They also provide mental stimulation, which can help relieve boredom and
frustration. These innovative single-ingredient dog chews are made from beef esophagus, as the name suggests, and are inherently high in omega fatty acids, which help support a healthy skin and coat.

"In nature, there are no synthetic food supplements," says Frank Burdzy, president and CEO, Champion Petfoods L.P. Edmonton, Alberta, Canada. "That's why we strive to use the whole animal to make our biologically appropriate foods. When sourced from organs and edible bones, vitamins and minerals are highly bioavailable, making nutrients in the food easily absorbable by dogs and cats."

Champion Petfoods has two manufacturing locations. The original NorthStar Kitchens is in Canada. DogStar Kitchens, Bowling Green, Kentucky, opened in 2016. The company sources sustainably raised and harvested food ingredients from nearby farmers, ranchers and fishermen. Many of its dry foods and snacks feature the meat of multiple animals and recipes inspired by a natural diet of whole prey animals. There are other products that are single animal proteins. All products exclude high-glycemic carbohydrates, vegetable proteins and synthetic supplements.

"Our whole prey ratios are full of flavor compounds, each with a unique odor signature," Burdzy says. "Cats and dogs are able to recognize these compounds with their highly developed senses of smell, which in turn attracts them to their food."

The sustainability story
The topic of sustainability is not limited to the human food chain. Pet food processors must also address their use of resources. The good news is that offal and rendered ingredients are highly sustainable, as they meet the needs of the present without compromising the future.

This is because humans, in particular Americans, who have the largest — by a huge margin — ownership of domestic cats and dogs in the world, tend to only eat the muscle meat from food-producing animals.

"If it were not for the pet food industry, millions of tons of valuable organ meat and meat by-products would go into landfills every day," Grossman says. "The rendering industry is doing a good job being resourceful with all parts of the animal. A chicken comes with head and feet. Not just the breast meat and the wings. And there is more to a cow than just the ribeye."

Meeker says, "Utilizing offal and other by-products of the human meat supply chain for the highest possible use improves the sustainability of animal agriculture as well as the pet food industry. If pets were to be fed meat products otherwise intended for humans, not only would the price of pet and human food rise, but many more resources and acres of farm land would be needed to fill the demand."

Part of the sustainability story is that every pound of by-product protein used in pet food prevents a pound of human food from being diverted. The use of offal plays a huge role in the sustainability of the U.S. food supply, according to Kelly Scott Swanson, professor, Department of Animal Sciences and Division of Nutritional Sciences, and adjunct professor, Department of Veterinary Clinical Medicine, University of Illinois at Urbana-Champaign, Urbana, Illinois. "Not only do these secondary products provide nutrient-rich ingredients for animals, including pets, but they are critical component of the [global] human food supply chain," she says. "We are quite picky and wasteful here in the U.S., as we reject many edible items that are not considered by-products in other areas of the world."

For livestock slaughtered in the U.S., as much as 40% of the carcass is not used for human consumption. "If not
for animals consuming these secondary products, much of it would go to landfills,” Swanson says. “This would be a burden in terms of environmental footprint, cost and a few other potential issues.”

Every year the North American rendering industry recycles about 60 billion lbs. of discarded animal material from livestock, poultry and aquaculture farming and processing, food processing, supermarkets and restaurant industries, according to the National Renderers Association. From that material, renderers produce approximately 11 billion lbs. of fat and oil products and 10 billion lbs. of protein products. When used for animal feed ingredients, this is equivalent to corn and soybeans grown on 6.3 million acres of U.S. cropland.

While today’s consumers are trying to get a handle on where their own food comes from, very few have the time or energy to understand the nutritional needs and sourcing issues with feeding cats and dogs. Explaining the use and benefits of offal and the rendering process can be challenging.

“The types of processing that occur is probably even less understood,” Swanson says. “The primary product and secondary product discussion topic may be represented in many ways. I like to relate it to meat-based products that most people are familiar with.” She provides the example of meats obtained from beef cattle and consumed by people. The range starts with filet mignon, and other premium cuts, and ends with hot dogs and beef casings and chitterlings. Each product is unique in its origin, processing type, taste, cost, etc., but all are considered to be acceptable foods in the U.S., Swanson explains.

Many products shunned by Americans are nutritious ingredients that are highly palatable and digestible by pets. Pet food marketers need to better communicate not only the sustainability but also the nutrition piece. “Seeing offal described as a by-product of human food processing may give some consumers the impression that organ meat is inferior, or that it is a low-cost alternative to muscle meat,” Durham says. “In reality, key organs, such as heart, lung and liver, are more costly than muscle meat. Brands that choose to include these organs are doing so because it’s the right thing for the pet, not because it increases their bottom line.”

Granger-Beck says, “Offal can be very good and received well if presented honestly. Consumers are getting more savvy. It’s refreshing. It’s not so much offal that is their concern in their pet’s food and treats, it is the misrepresentation of offal as something else on a lot of packaging.”

The K-9 Kraving brand is direct and upfront. Products carry names such as Green Tripe Cookies, Dried Beef Trachea and Dried Duck Feet.

“It’s very important that brands do not cast offal and other by-products in a bad light,” Meeker concludes. “As more people tune into the sustainability message and take a global view of human needs, I’m optimistic that the reputation of the term by-product can be rehabilitated.”