

Rendered Products in Pet Food

Delivering protein and sustainability

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Americans currently have an estimated 170 million pet cats and dogs, outnumbering children by a 4-to-1 margin (APPA 2016). Many of these animals live inside homes and are important members of the family. As with humans, the nutrition, health, and lifespan of these furry companions are top priorities. The emotional tie that people have with their pets and the increasing humanization of these animals in society is reflected in the steady growth, marketing trends, and spending patterns of pet-related products and services. Although American pet ownership numbers have remained relatively stable over the past few decades, annual pet expenditures in the United States have grown from approximately \$17 billion in the mid-1990s to over \$60 billion today (APPA 2016).

The largest industry serving pets is the production of pet food and treats, which is nearing the \$25 billion mark in the United States and is over \$70 billion worldwide. Revenue growth in the United States is not due to greater volume sold but to a shift toward higher-quality products that are more expensive. Although price, marketing terminology, or pet food category do not necessarily translate to quality, products deemed to be superior by owners are often chosen. Pet food trends are increasingly following that of human food, with the terms “natural,” “organic,” and “fresh” being increasingly used.

In addition to the attention these particular product segments have received lately, the ingredient and nutrient profiles of pet foods are heavily scrutinized by today’s consumers. Although domestic dogs are now more omnivorous in nature – they evolved eating high-protein, high-fat diets – cats are still strictly carnivores today. Therefore, protein is the nutrient class that usually attracts the most attention, with diets containing increased amounts and animal-based proteins being more popular. The terminology used on pet food labels is also important, with many owners preferring ingredients similar to those listed on human food labels.

The rendering industry plays an important role in the production of commercial pet foods, with about 30 percent of animal protein meals and 15 percent of animal fats produced in the United States making their way into such products (Informa Economics 2011). While the pet food industry provides many opportunities for sustained or increased revenue for renderers in the future, several challenges and research needs also exist and must be considered.

First, on the positive side, consumers continue to demand pet foods containing increased protein concentrations and are often willing to pay a premium for those of superior quality. Second, animal-based ingredients have a high-protein quality (amino acid profile) in comparison to plant-based sources and are highly digestible if processed appropriately. Finally, rendered products are decidedly sustainable (Meeker and Meisinger 2015).

Moving forward in a world with a rapidly increasing human population and limited supply of land and water resources for food production, the use of sustainable ingredients in pet foods will be essential. For any food system to be sustainable, it must meet the needs of the present without compromising those in the future, considering environmental, economic, and social issues. Environmental factors to be looked at include global warming potential/greenhouse gas emissions (carbon footprint); land use; water use, acidification, and pollution (water footprint); and soil quality, waste management, and biodiversity of wild plants and animals.

When evaluating a food system where a standard of nutrition and health of the consumer must be maintained for it to be considered sustainable, the discussion should be taken one step further toward the concept referred to as “nutritional sustainability” (Deng and Swanson 2015). Nutritional sustainability is the ability to provide safe and adequate nutrition to maintain health in a population without compromising the nutritional needs of future generations (Swanson et al. 2013). Few ingredients or foods are either sustainable or unsustainable but rather are on a continuous scale of sustainability. A wide range of sustainability scores exist and depend on source (e.g., animal or plant), production strategy, global region, and more.

Although animal-based proteins and fats typically have a larger footprint than plant-based sources, the calculations are based on foods meant for human consumption. Rendered products are unique in this regard as they do not compete directly with human food. In addition to being safe and highly nutritious ingredients, animal proteins and fats are secondary products of



the human food system and essentially reduce the footprint of human foods. This will continue to be an important concept for the rendering industry to embrace and promote.

Despite the positives that exist, the rendering industry faces various pressures and challenges from regulatory bodies, animal activists, and pet owners. While few take it to the extreme by demanding the use of animals and animal products be eliminated altogether, a considerable portion of the population has developed a negative connotation with the term “by-product” when it comes to pet food. Although the pet food industry was established and is still largely based on the use of secondary products of the human food system, a perception of inferiority is often attributed to animal by-products. In addition to a few pet food companies that have aggressively marketed against the use of these ingredients in the recent past, the nonstop digital media that exists in the world today has likely contributed to this viewpoint. Furthermore, anecdotal evidence and opinions found on the internet are often accepted as facts. Similar to pet food companies that use animal proteins and fats in their formulas, the rendering industry must strategically and actively promote the benefits of their ingredients.

One of the best ways to demonstrate value and promote the use of rendered products is by conducting and publishing the results of novel research studies. Considerable emphasis must be placed on areas in need of immediate solutions and opportunities to demonstrate the high quality or value of these products should not be overlooked. For instance, ingredient consistency – in terms of nutrient profile, quality, and digestibility – is one of the biggest challenges with the inclusion of animal-based proteins and fats in pet foods today, and is an area in great need of research. The identification,

isolation, or testing of value-added products with specific nutrition- or health-related properties is another potential avenue of research. For example, the characterization and/or evaluation of novel ingredients or bioactive molecules of rendering streams, which could be done using a combination of chemical, in vitro, and animal testing, could be of great value to the industry. These are only a few of the many new research areas that pertain to rendered products.

In summary, the pet food industry has a history of steady growth and a future full of optimism. While the passionate consumer base driving the industry creates challenges at times, its continued demand for safe, high-quality, animal-based products provides the rendering industry with many opportunities. Those that identify, develop, and market value-added streams to their business and/or consistently produce and deliver superior ingredients to pet food manufacturers will reap the rewards the industry has to offer. **R**

References

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Pet Food Sustainability Paper Published

A peer-reviewed scientific paper entitled “Rendered ingredients significantly influence sustainability, quality, and safety of pet food” was published in the *Journal of Animal Science* in February 2015. The paper was written by Drs. David Meeker and Jessica Meisinger of the National Renderers Association and is available for download through *Render’s* website at www.rendermagazine.com/industry.

Highlights of the article are:

- Americans tend to eat only the muscle meat from each food-producing animal so using the by-products for pet food is one way to close the sustainability loop.
- Ownership of cats and dogs is high around the world and is only expected to increase.
- Dogs and cats are carnivores and although dogs are able to exist on properly balanced meatless diets, cats are obligate carnivores and require meat products in their diet.
- Rendered ingredients are excellent sources of protein, energy, and minerals, all of which are required in pet diets.
- As countries gain more wealth, their citizens eat more meat and own pets that also require food.
- Without affordable rendered ingredients, pet food would be more expensive.
- Using human-grade food for pet diets is unsustainable for a number of reasons, one being cost.
- Using first-use ingredients in pet food (such as mined phosphorus instead of meat and bone meal or soybean products) is unsustainable for the environment for many reasons, including requiring more fertilizer, fuel, and water.
- Rendering is one of the oldest forms of recycling and an important greenhouse gas avoidance technology.
- Rendering is a highly regulated industry that practices continuous improvement.

Of note in the article is that, “Recycling products that do not compete for human food resources and would otherwise be wasted, and sparing the amount of extra ingredients and the land, water, and nutrients to produce them, is the epitome of a sustainable process and essentially describes rendering.”

The rendering industry has an aggressive approach to animal food ingredient quality and safety. Nearly all rendering plants have quality and safety control systems in place via formal programs such as the *North American Rendering Industry Code of Practice*. A concerted effort is made to foresee product safety hazards that are likely to occur and to prevent those from happening. Testing is used to monitor and verify that rendering processes are correctly operated and managed. **R**