

A Proud Industry Educates

By Tina Caparella

Renderers “take something that nobody wants and turn it into something that everyone wants,” said Dr. Ken Wilson, Simmons Feed Ingredients, at the International Rendering Symposium held at the International Production and Processing Expo (IPPE) in Atlanta, Georgia, in late January. “We love what we get to do; it’s an awesome experience,” he added. The annual event is sponsored by the National Renderers Association (NRA) and geared toward educating some of the 30,000 members of the poultry, meat, and feed industries who attend the IPPE about rendering.

Simmons went on to explain that 50 percent of pet foods on the market contain animal proteins, making it an important customer for rendered products. He pointed out that the list of specialty ingredients in pet food has doubled in the last five years. In addition, the pet food industry has evolved in just the past 18 months.

“How much has rendering changed in that time?” Simmons asked. One area he said renderers need to focus on is customer perception and educating those who talk negatively about the industry or its processes.

“There is nothing ‘crude’ about our product,” he stated. Simmons also noted that variation of animal proteins and fats is of concern to pet food manufacturers and that there are opportunities for rendered proteins to be a source of omega fatty acids, amino acids, and vitamins.

James Emerson, Pilgrims, shared with attendees the real guts of a rendering plant by giving a virtual tour of its processes. He showed how raw material arrives at a facility and the various steps it goes through before the final protein or fat is shipped to the customer.

“We are frying chicken,” Emerson announced, explaining that cooker operations are like an art form, adjusting the temperature to accommodate the moisture content of the raw material. He noted that covers on screens assist with dust control but can make it difficult to inspect those screens. Meal storage is designed to keep the product dry and free of contaminants, with many new fat storage tanks now made of stainless steel to help meet new Food Safety Modernization Act (FSMA) requirements. Another area of great focus for renderers is the loading area to ensure sanitary conditions of products and prevent cross-contamination. In the end, for renderers, the real heart of their operations are the many pieces of equipment used to process raw materials into safe, usable products that the customer wants to buy.

“That is us in a nutshell,” Emerson said. “Recycling is our daily way of life.”

Presenting the rendering industry’s efforts on quality assurance was Dr. Ansen Pond, Darling Ingredients, who said that rendering has the ability to control, verify, and trace animal products to regulatory agencies and the public. He emphasized that programs are in place to ensure *Clostridium perfringens* and other bacteria are removed from raw materials in the rendering process. Pond encouraged renderers to talk with their suppliers and customers about

how to make all products cleaner and to promote biosecurity.

“It’s really going to take a team approach,” Pond declared.

NRA staff members also provided notable information, beginning with President Nancy Foster who described how the group promotes, protects, and defends the best interests of its members and the North American rendering industry. The association does this through biosecurity programs, regulatory work with federal agencies, lobbying Congress, international market promotion, communications, and partnership with the Fats and Proteins Research Foundation.

Kent Swisher, NRA international programs, provided statistics on rendered product production, consumption, and exports, which have all been challenging the past five years. In the United States (US), poultry is the largest consumer of animal protein meals at about 40 percent of production, followed by pet food at 31 percent, swine at 9 percent, exports at 8 percent, and cattle at 6 percent. On the fat side, 31 percent of production is used in the feed and food sector, 25 percent goes to biofuels, 23 percent is exported, and 21 percent is used in oleochemicals. Swisher also reiterated Simmons’ comment about the need to educate others on the misperceptions about rendered products.

Dr. Jessica Meisinger, NRA education, science, and communication, shared how rendering fits the definition of sustainable, which in turn helps animal feed and pet food manufacturers to be sustainable when using rendered proteins and fats. US renderers take nearly half of each livestock animal produced for food that is not intended for human consumption due to consumer preference and turns those products into valuable commodities for further use in feed, fuels, and oleochemicals. In addition, renderers collect and process half of the 4.7 billion pounds of used cooking oil that could otherwise be improperly disposed of and provide oils and grease for feed and fuels. Meisinger noted that as the humanization of pets increases, pet foods are becoming more like human food and less like livestock feed.

Dr. David Meeker, NRA scientific services, described the association’s future strategies, including wider recognition for the rendering industry’s safety programs such as the *North American Rendering Industry Code of Practice*, its high level of compliance with government regulations, and its quality products. He said that emphasis will also be placed on promoting rendering as the “greenest of the green” as well as its own sustainability and the sustainability it provides animal agriculture and feed manufacturers.

Dr. David Meisinger, Validus, explained that not only will auditing of rendering and feed processes now be required under FSMA regulation, but customers will also demand this in the future. He added that auditing should encourage continual improvement of operations rather than be a sign of failure.

Two researchers educated symposium attendees on various projects. Dr. Charlie Gooding, Clemson University, described the results of his examination of three alternative

methods of handling fallen animal carcasses and meat by-products from food animal slaughter – composting, anaerobic digestion, and rendering. He noted that rendering is well regulated by federal, state, and local governments as well as internally (industry) for safety, health, and environmental protection. Laws aimed at only health and environment are in place for composting and anaerobic digestion but vary considerably from state to state and do not address co-processing of meat by-products because it is not common practice. Gooding stated that research has shown composting and anaerobic digestion of meat by-products is possible but challenging.

When compared to aerobic degradation of meat by-products, Gooding’s research showed that rendering avoids 75 percent of potential greenhouse gas (GHG) emissions whereas composting of meat by-products emits three to five times as much GHG as converting all carbon in the material directly to carbon dioxide.

“Composting is terrible for greenhouse gases based on current data because of emissions of methane and nitric oxides primarily,” Gooding commented, who based his analysis on current data available. He concluded that a small farmer might favor composting due to cost but research shows that rendering is preferable with respect to biosecurity, environmental sustainability, and resource recovery for handling large quantities of carcasses and meat by-products.

Dr. Jesse Trushenski, Idaho Fish and Game, focused on both public and private aquaculture and the opportunities for rendered products as a fish meal and oil replacement in diets. She also delved into federal and state hatchery programs that replenish the nation’s waterways with fish for recreational use that also rely on formulated diets. Due to increased demand for fish meal and oil, not only are prices high but global supply is being depleted. Currently, two-thirds of global fish meal and 80 percent of fish oil is used by the aquaculture industry. Trushenski said fish meal and oil replacement attributes to consider are compositional profile and practical feeding value, economic and environmental costs of raw materials, and influence on animal performance.

“In most of these categories, rendered products are competitive,” she stated after sharing her research on beef tallow that appears suitable for certain species of fish. “The opportunities are really great – economically, environmentally, and sustainably – for rendered fats in fish feeds.” When asked about poultry by-product meal in fish feeds, Trushenski said while there is no recent research, the protein is being used in mid-level carnivore feeds, although some hatcheries are reluctant because they are unsure about fish performance.

The rendering symposium wrapped up with Kay Johnson, Animal Ag Alliance, discussing



James Emerson, Pilgrims, discusses rendering operations at the international symposium.

the challenges with media, especially animal rights groups and social media that now provide opportunities for videos and blogs to reach a broader and larger audience than ever before. She encouraged renderers to enhance the knowledge of issues by building proactive relationships with suppliers, customers, legislators, law enforcement, local media, and local community and business groups. Johnson also urged renderers to be transparent and take away the mystery of the industry by developing a website that includes images of people, especially employees, and videos showing the benefits of rendering. Renderers should also be engaged on Facebook, Twitter, YouTube, and with bloggers.

IPPE also featured many other educational forums, including the American Feed Industry Association (AFIA) Pet Food Conference. Jared Koerten, Euromonitor International, reported that the global pet care industry experienced \$105 billion in sales in 2015 and has seen a compound annualized

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How rendering compares to alternative methods of meat and by-product disposal¹

	Composting	Digester	Rendering
Controlled consistent process?	Little	Moderate	Full control
Timely processing of raw materials?	Weeks/Month	10+ days	Same day
Take surges/changes in raw materials?	Limits	Limits	Routinely
Greenhouse gases emitted?	Yes	CO ₂	Avoided
Wastewater controlled?	Not all	Yes	Yes
End products regulated?	Minimal	Minimal	Yes
Safely handles inedible meats?	No	No	Yes
Process regulated?	Little	Little	Yes
Kills pathogens reliably?	Spotty	Not all	Yes
End products safe for animals?	Hazard ²	n/a	Yes ³
Solids suitable for land application?	Fertilizer	May be toxic to plants ⁴	Fertilizer
Source of biofuel?	Uses energy ¹	Yes	Yes
Sustainable?	For plant material	If energy is cheap	For over 100 years

1. Compost and digester comparisons from Mata-Alvarez and Llabrés, 2000.
2. If meat included in compost, potential violation of 21 *Code of Federal Regulations* 589.2000/2001 and Swine Health Protection Act.
3. Use for animal regulated. Certain products cannot be fed to cattle and other ruminants.
4. Volatile fatty acids present in effluent may be toxic to plants.

growth rate of five percent over the last five years. Dog and cat food make up two-thirds of those sales, but pet treats were the best performing growth product as the humanization of pets continues. While US consumers spend the most on pet care globally (\$350 per year per household compared to \$57 global average), emerging regions outside the United States, Australia, and Europe will experience the biggest growth in volume, Koerten noted. Latin America is seeing a four percent growth rate, especially in Mexico where economy foods are the fastest-growing product at 11 percent per year. Koerten mentioned that raw freeze-dried pet foods are exploding onto the market.

AFIA's Gina Tumbarello highlighted trade issues for US pet food. In 2014, France, the United States, Germany, and the Netherlands were the top four global pet food exporters, but data reported in the first 11 months of 2015 shows Germany may perhaps surpass the United States and claim the number two export spot. US exports of all pet food have seen a downward trend since 2011, which is expected to continue into 2016; however, when just looking at dog and cat food, exports have remained stable. Canada is the top importer of US pet food, Japan is second, although declining due to a drop in

dog ownership and a competitive market, and Mexico is third with increasing demand. Tumbarello reported that Canada has a new pet food import policy with a second phase going into effect July 1, 2016.

Robert Prevendar, NSF International, also discussed audits, saying the Global Food Safety Initiative is the benchmark for third-party audits across the world. Although retail driven, more food processors are adopting it, including pet food manufacturers, as it has significantly raised the bar for food and feed safety expectations in North America. Prevendar encouraged attendees to engage management and build a team to ensure success in a company's food/feed safety program. In addition, companies need to be aware that it takes time to build these programs, which include a lot of documentation.

Dr. Dan McChesney, Food and Drug Administration (FDA)/Center for Veterinary Medicine, talked about upcoming FSMA requirements and the center's research into the growing trend of raw pet food. The concern is possible incidences of *Salmonella* and *Listeria monocytogenes*, which were showing an increase in these products in state-level samples. FDA's sampling revealed very little contamination leading the agency to conclude that consumers need to be further educated about the proper handling of raw pet food products. **R**