

Render

The International Magazine of Rendering

December 2017

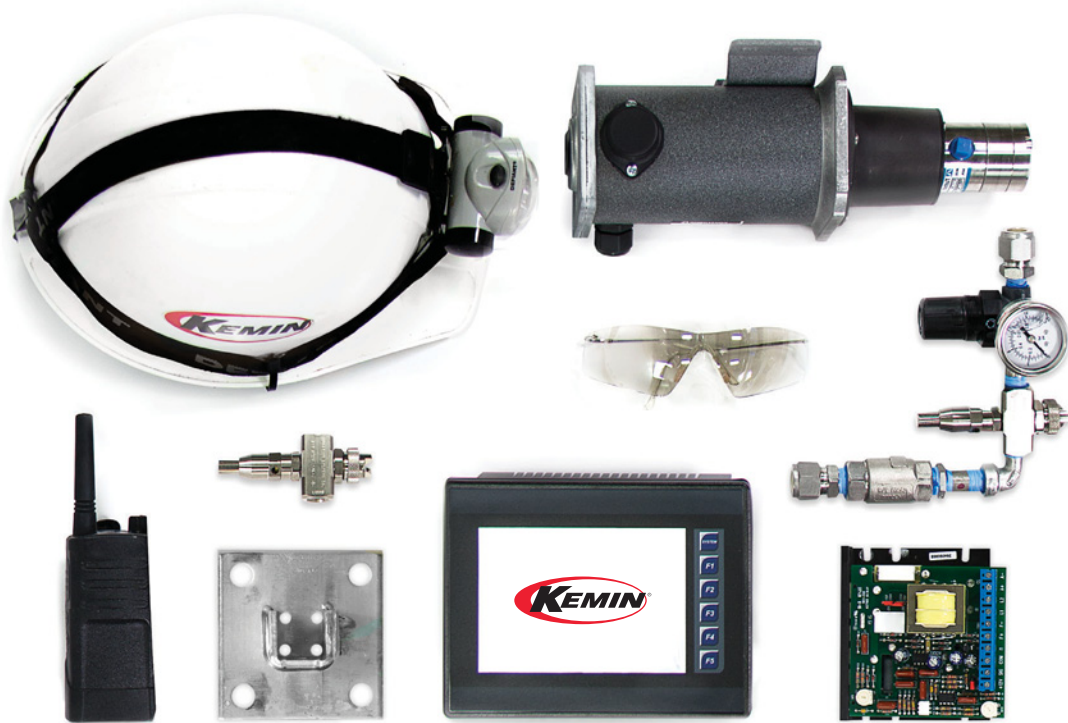


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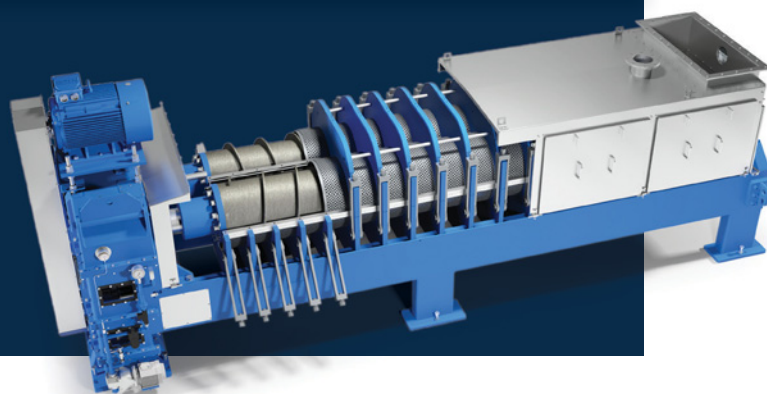
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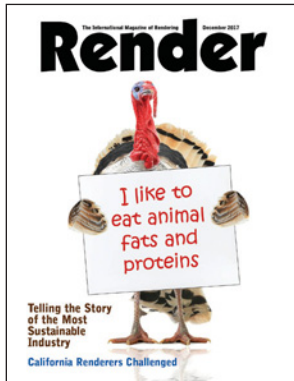
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On the Cover

Animal fats and proteins provide valuable nutrients needed by poultry at reasonable prices.

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Renderitorial

“Out with the grain and in with the farm-raised chicken,” promoted the pet food commercial recently seen on television.

“Our chickens are 100 percent veggie fed,” announced a poultry processor’s website.

Trends. Consumer demand. Marketing. Whatever you call it, statements like the above are coming out fast and furious these days and renderers need to take note.

Several articles in this issue of *Render* highlight choices being made on animal nutrition and regulations that stem from consumer trends and demand rather than science. A move toward all-vegetarian diets for poultry overlooks research that shows animal fats and proteins are necessary in poultry nutrition. In California, city government is specifically targeting rendering plants in an industrial area because of odor complaints from neighboring community members. Yet these regulations don’t affect other odor-causing industrial businesses.

Attendees at the National Renderers Association convention in October were told they need to tell their good story to educate the “conscious consumer” and downstream industries who are making decisions that could affect how renderers do business in the future. Renderers have known for years they can no longer remain “invisible” as they once were so many have gotten involved in their communities and invited local lawmakers into their plants to see first hand the environmental benefits of rendering. Yet rendering’s good story needs to be told over and over and over again – and louder than ever before.

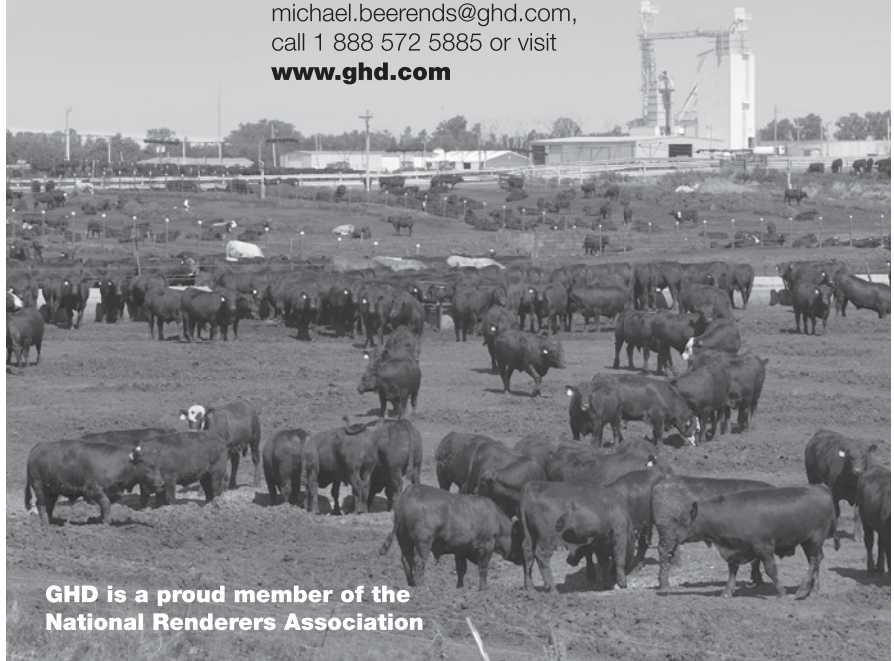
As Trent Loos, Loos Tales, expressed to renderers at their convention, “We’ve moved so far away from basic science that we need to get back to basics. Be your own ambassador, and start with your own family.”

So as you gather with friends and family over this holiday season and into the New Year, share with them the benefits of rendering. Tell them that without rendering, the turkey or ham or prime rib on the family dinner table wouldn’t be possible. Let them be your ambassador, too. **R**



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Biofuels Battle Heating Up

The decade-long policy war over the need for a Renewable Fuel Standard (RFS) is escalating and Armageddon may come in 2018 as combat heats up among biofuels makers, production agriculture, and the petroleum industry. There could be heavy casualties and no doubt more than a few victims of friendly fire.

Those who go to the mat to protect the RFS argue the program fosters use of alternative fuels, jump-starting an emerging industry, creating jobs, contributing to the economy, and accelerating America's rejection of imported petroleum, just as Congress – in its wisdom – knew it would. The government's program requires conventional fuel refiners to blend specified amounts of biofuels into their products annually.

The argument against the RFS is that the federal program creates an arbitrary market for biofuels, a market less robust without the government mandate. Petroleum companies find the program an expensive pain in the neck while others, including major livestock and poultry producer groups who want the RFS to disappear, contend the program has outlived its usefulness and is now superfluous to evolving demand for biofuels. Farmers and ranchers particularly believe that in the case of corn ethanol, and to a lesser degree soy-based biodiesel, biofuels illogically compete with human and animal food for plant feedstocks, holding per-bushel prices for these commodities at artificially high levels thereby inflating the cost of meat, milk, and eggs. Personal care product companies (e.g., soaps, detergents, etc.) also dislike the animal fat-based biodiesel side of the alternative fuels market arguing the cost of glycerine particularly is held unnaturally high.

If only the whole RFS/biofuels debate was so black and white. There is a good chunk of truth to both sides of the biofuel production/use issue. However, there are very few matters that politically inspire as much passion and street fighting as the ongoing need for the RFS, and its "currency" known as renewable identification numbers (RINs).

It is fair to say Congress generally hates the RFS. In fact, the program is so politically volatile that the 2016 presidential Iowa caucuses demanded support for and protection of the RFS as a pivotal candidate selection issue. While President Donald Trump swore undying loyalty to the RFS and everything for which it stands, then White House aspirant Senator Ted Cruz (R-TX), no fan of the RFS or any other federal biofuels support given his "Big Oil" state roots, shot directly at the RFS, yet won the Iowa caucuses handily.

For most lawmakers, however, to attack the RFS is to bring down the wrath of not only large, commercial biofuels refiners, but also thousands of small, backyard makers of corn ethanol, plant and animal-based biodiesel, cellulosic ethanol, and other biobased fuels, not to mention the plant biotechnology sector. To defend the RFS draws a bullseye on a lawmaker's back, a target at which large poultry integrators, meat processors, and others carefully aim. It is a classic damned-if-you-do, damned-if-you-don't political scenario, or as one Illinois House member once put it, "I can't win for losin' on this one."

All RFS fronts were relatively quiet this past summer when the Environmental Protection Agency (EPA) released in July its proposed RFS mandates for 2019, combined with what are called renewable volume obligations (RVOs), similar requirements of petroleum refiners. Biofuels makers and those who supply feedstocks thereto, including renderers, rejoiced when the agency returned to using statutorily set amounts of the various alternative fuels – levels significantly higher than computed during President Barack Obama's administration.

At the time, EPA Administrator Scott Pruitt said, "We are proposing new volumes consistent with market realities focused on actual production and consumer demand, while being cognizant of the challenges that exist in bringing advanced biofuels into the marketplace. Timely implementation provides certainty to American refiners, the agriculture community, and broader fuels industry, all of which play an important role in the RFS program." Truth be told, EPA is no great fan of the RFS program given its complexity and political volatility.

The proposal requires 19.24 billion gallons of biofuels overall to be blended into qualifying fuels, with 15 billion of that met by conventional or corn-based ethanol. The remaining 4.24 billion gallons of the mandate will be met by blending so-called advanced biofuels, including 238 million gallons of cellulosic ethanol and at least 2.1 billion gallons of biodiesel/renewable diesel. EPA also began a technical analysis to "inform a future rule to reset the statutory volumes for cellulosic, advanced, and total biofuels."

Comments were collected and in late October, the agency sent its final proposal to the Office of Management and Budget for final interagency review and sign-off, well ahead of EPA's statutory release deadline of November 30. At the same time, war clouds gathered quickly. Orbiting the RFS in the biofuels universe are related issues of high contention, including oil and gas interests wanting the RFS point of obligation – those responsible for ensuring blending at specified levels is occurring – shifted to the fuel wholesaler and demands by the ethanol industry that 15 percent ethanol (E15) blends be legally sold year-round, not just during warmer summer months. The Department of Commerce and International Trade Commission were also reviewing industry complaints of Argentine and Indonesian export biodiesel dumping brought by the National Biodiesel Board and others (see Biofuels Bulletin on page 26).

Critical mass was quickly reached on the policy side and then stuff hit the proverbial fan. Given the gross political sensitivity over protecting the RFS and getting as much alternative fuel into the marketplace as possible, Pruitt nonetheless stepped on a political landmine when EPA published in October a notice of data availability (NODA) on the biodiesel RFS. Pruitt, a native of Oklahoma and keenly aware of Big Oil's economic and political clout in his home state, got the notion that cutting the biodiesel RFS by at least 325 million gallons – or maybe cutting it to 1 billion gallons, the lowest

level allowed by law – might be a good idea. The agency also asked if EPA should allow cheap imported biodiesel to count against the RFS/RVO mandate.

Pruitt quickly learned how bad those proposals were.

Within hours of the NODA publication, the renewable fuel industry unleashed a hurricane of press releases attacking the EPA action and Pruitt. While the NODA sought information on Pruitt’s inclination to slash only the biodiesel RFS/RVO, the broad industry saw the action as a scary precedent and as the administration turning its back on a campaign promise of unending support for biofuels generally and the RFS program specifically.

Senator Charles Grassley (R-IA), Congress’ avenging angel for biobased alternative fuels, particularly ethanol in all forms, took to the Senate floor accusing Trump of bait-and-switch rhetoric on the RFS. Grassley demanded Pruitt meet with him and any other equally concerned senators to explain the agency’s actions. As those Senate battle lines were drawn, the chamber’s Environment and Public Works Committee very publicly postponed a scheduled confirmation vote on several EPA key nominees until lawmakers were appeased.

Grassley hit Pruitt with a letter signed by 34 bipartisan Senate members outlining in detail concerns with not only the RFS issue, but the proposal to permit ethanol imports to count toward mandated RFS volumes. This latter move, industry said, would spur imports, drop domestic production, and skew the price and market for RINs. Pruitt was also barraged with angry letters from the governors of Iowa, South Dakota, Missouri, Kansas, and Nebraska – the heart of biofuels country.

Trump ordered Pruitt to go to Capitol Hill, hat in hand, and make nice with Grassley and Senators Joni Ernst (R-IA),

Pat Roberts (R-KS), Deb Fischer (R-NE), Ben Sasse (R-NE), John Thune (R-SD), and Mike Rounds (R-SD). Pruitt, however, stopped short of verbal assurances to the senators that he would kill the NODA action, though he did indicate he looks favorably on allowing E15 to be sold year-round. While most of the irate lawmakers reportedly left the hour-plus-long session in Grassley’s office reassured that Pruitt understands their concerns, Ernst, who placed the formal stranglehold on the fate of those EPA program management nominees, decided to trust but verify. She demanded in writing Pruitt’s commitment to do the right thing by biofuels and the RFS before she lifted her hold on the agency nominees.

Trump and Pruitt both personally called Iowa Governor Kim Reynolds and Kansas Governor Sam Brownback to reiterate administration support for ethanol, biodiesel, and renewable fuels broadly. Reynolds was widely quoted, saying the conversations were “constructive” and “positive.”

A few days later in a follow-up letter to the seven senators, Pruitt assured the lawmakers he is well aware “my responsibility...is to faithfully administer the laws passed by the US Congress. This agency must and will respect those laws.” His statement echoed assurances he gave many of these same Senators prior to and during his confirmation process when asked about his support for a strong RFS.

Pruitt assured the senators that the EPA will meet its November 30 statutory deadline to publish its final biofuels RFS/RVO for 2019. He said while it would be “inappropriate for him to prejudge the ongoing RFS/RVO process...preliminary analysis suggests that all of the final RVOs should be set at

Continued on page 18

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California Renderers Challenged

Continued grease theft and more regulations possibly targeting inedible meat product diversion are of great concern to members of California’s Rendering Industry Advisory Board (RIAB). The group met with California Department of Food and Agriculture (CDFA) staff in early November to hear updates on the state’s inedible kitchen grease (IKG) program and the ongoing efforts by the California Department of Resources, Recycling, and Recovery – or CalRecycle – to divert more “organics,” which includes food waste that could contain rendering raw materials, to anaerobic digestion and composting.

Paula Batareseh, chief of CDFA’s Meat, Poultry, and Egg Safety (MPES) Branch, presented the IKG program’s new mission, vision, and value statements along with the department’s three key focus areas related to rendering: carcass disposal due to natural disasters such as extreme heat or fires, permits for transporters of inedible packinghouse by-products, and IKG program enforcement and inspections.

“Renderers provide a very valuable service to the community,” stated Batareseh, who went on to highlight some of her goals as having MPES inspectors be the eyes and ears for all branch programs (including IKG) and working with renderers’ private investigators on grease theft cases. Education and outreach of local and state law enforcement as well as city and county district attorneys about the state’s IKG program are also a priority for MPES staff.

Jed Smith of Rio Valley Biofuels shared his experience with grease thefts in Southern California, voicing his frustration that law enforcement where his company collects used cooking oil is not aware of the state’s IKG program.

“The penalties, enforcement, and inspections currently in place are very important to me as a business owner,” he remarked. “Keep in mind no theft of inedible kitchen grease is too small because every gallon matters to my operation.” Smith added that the unlicensed collectors who buy stolen used cooking oil are creating an unfair playing field.

California State Veterinarian Dr. Annette Jones said there is increasing pressure on carcass disposal in some rural areas of the state due to lack of rendering services. California law requires carcasses and inedible meat products go to rendering. RIAB Chairman Michael Koewler, Sacramento Rendering Company, noted that collecting in areas of California that have minimal and scattered population/cities is logistically and economically difficult, especially now that the state’s diesel taxes have jumped up more than 20 cents per gallon.

One solution mentioned that could solve the predicament is to obtain state funding for carcass collection services in far-reaching sections of California similar to how CalRecycle provides funding for collection of organics for anaerobic digestion.

“It is time to insert ourselves into those conversations,” Jones commented. One area of concern renderers plan to engage with CalRecycle is regarding Senate Bill 1383 signed



With assistance from Baker Commodities Inc. and Darling Ingredients Inc. personnel, Sacramento Rendering Company hosted a plant tour for individuals from three California agencies - CARB, CalRecycle, and CDFA - to educate them on the services, benefits, and value that rendering and its end products bring to the state.

into law by California Governor Jerry Brown in September 2016. The bill establishes targets to achieve a 50 percent reduction in statewide disposal of organic waste from 2014 levels by 2020 and a 75 percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic disposal reduction targets. Prior legislation, Assembly Bill 1826 signed into law in October 2014, requires businesses to recycle their organic waste starting April 1, 2016, and requires local jurisdictions across California to implement organic waste recycling programs to divert organics generated by businesses beginning January 1, 2016.

Another agency California renderers want to educate about the benefits of rendering is the California Air Resources Board (CARB), which oversees the state’s obligation to reduce greenhouse gas emissions. One way of meeting the reduction goals is by including alternative fuels such as biodiesel and renewable diesel in the state’s transportation fuel. With the assistance of other California rendering company representatives, Sacramento Rendering hosted a plant tour for CARB, CalRecycle, and CDFA staff in mid-November to highlight the benefits of rendering and its finished products to the state’s communities, livestock producers, and feed and biofuels manufacturers.

“We’re not just recycling, we’re harvesting because these by-products have value,” said Shaun Griffin, Darling International Inc. “There is no part of the food animal that is not used today.” California renderers said they feel challenged by government entities that are subsidizing alternative disposal technologies for material that is already being collected, has economic value, and is used in feed, food, and industrial applications. Others voiced concern these other disposal methods do not ensure pathogen-free material.

“It makes me uneasy to think about keeping our livestock healthy without the rendering industry,” commented Jones. **R**

Los Angeles Rendering Facilities Face Stricter Rules

After years of delays, testimonies, and opposition from area renderers, the South Coast Air Quality Management District (SCAQMD) in Southern California unanimously adopted a new regulation on November 3, 2017, aimed at reducing odors from the region's five rendering plants in the Vernon area. The affected facilities are Baker Commodities Inc., Farmer John/Smithfield Foods, D & D Disposal Inc./West Coast Rendering Co., and Coast Packing Company located in Vernon, and Darling Ingredients Inc. located in the City of Los Angeles on the border of Vernon.

The district already requires control of high-intensity odors from cookers at the plants. However, the district stated that citizens in nearby communities claim the animal parts and carcasses that are handled and processed outdoors, along with the plants' wastewater treatment systems, cause a distinct unpleasant odor that can drift for miles and cause headaches, nausea, and respiratory irritation.

The affected rendering facilities have 90 days from rule adoption to conduct housekeeping standards including covering incoming trucks, washing out trucks before they leave the plant, limiting the time animal materials are allowed to remain outdoors, repairing cracks and holes in outdoor asphalt and concrete areas where liquid materials could accumulate, and other measures. Within 3½ years, rendering plants subject to the new rule must install either a total enclosure or a closed system for certain processes to keep odors from drifting out of their buildings and into the communities.

Darling Ingredients is currently constructing a new enclosed building that is ventilated to odor control equipment in order to meet the requirements of the new rule. It is expected to be completed in January 2018. Baker Commodities affirmed it has always utilized best management practices and the latest odor control technologies – and will continue to do so. The company will also enclose its raw material pits and wastewater plant to comply with the new rule.

As an added safeguard to the community, if SCAQMD issues a notice of violation to a facility for odors, or confirms three or more odor events within 180 days, the facility will have to submit an odor mitigation plan and take steps above and beyond rule requirements to minimize odors. Each facility will also have to post visible signs with the air district's 24-hour air pollution complaint hotline.

SCAQMD is the air pollution control agency for Orange County and major portions of Los Angeles, San Bernardino, and Riverside counties. **R**

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Benefits of Rendered Products

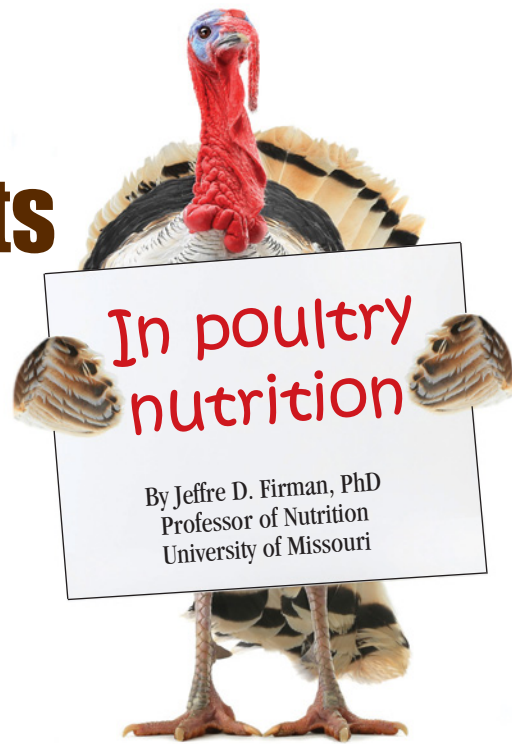
The poultry industry in the United States and worldwide has seen major changes in the past 50 years. Consumption of poultry and poultry products has increased dramatically over this time period and the evolution of the industry has resulted in advances in diet formulation as new ingredients and technology have become available. As this evolution took place, formulations became more sophisticated, moving from hand to computer, from a total protein basis to a digestible amino acid basis, and incorporation of a variety of micronutrient sources. All of this has led to reduced cost and maximum bird performance for the poultry industry.

The availability of a variety of rendered by-products has been of great benefit to the modern poultry industry, but due to changes in consumer preference and welfare standards, challenges to the poultry industry's use of rendered products need to be addressed so that these beneficial commodities can continue to be used.

Use of Rendered Products in Poultry Feed

There has been a long history worldwide of using animal proteins and a variety of rendered fats in poultry feed. Essentially all sources of proteins and fats have been and continue to be used in significant quantities in the United States with the primary issue being relative values compared to other protein sources such as soybean meal. Products currently being utilized include meat meals from ruminant, swine, and poultry as well as the blood products from these proteins, rendered fat from each of these sources, and feather meal. Additionally, there is now some limited production of whole hen meal made from spent laying hens. Each of these products has been used successfully at various levels in the rations of poultry of all types with the higher levels going into broilers and turkeys due to their higher relative protein needs in comparison to layers.

Animal proteins and fats provide nutrients needed by poultry at reasonable prices relative to competing commodities. There has also been some interest in replacement of a portion of the soybean meal in poultry rations with animal protein meals to improve performance. The oligosaccharide portion of soybean meal has been shown to produce some detrimental effects to poultry. This is thought to be due to a substance in the undigested portion of the product that irritates the footpad. The addition of animal proteins may improve performance over standard vegetarian diets. While these results may be due to high levels of limiting amino acids, it may also be explained by the reduction of poorly digested carbohydrates in the soybean meal. Previous work in the University of Missouri lab suggested that up to half of the protein source can be provided with mixed by-products if one formulates correctly. While each product has different nutrient contents and potential values, most are excellent sources of energy or high quality protein, highly available phosphorus, and other minerals.



Practical Use of Fat in Poultry Rations

The practical use of fat in poultry rations is straightforward, and the effects of fat addition are well understood. A minimum level of fat (usually one percent) is usually fixed into the diet for several reasons, but is typically done to assure sufficient quantities of linoleic acid. It also helps reduce dust levels of feed, lubricates equipment, and improves palatability of feed. This addition level is generally done regardless of cost. Levels beyond one percent of the diet are mostly used to improve growth rate and feed efficiency and are far more related to cost of the total diet relative to performance gains achieved.

A number of different fat sources are available for poultry from the rendering industry. The primary sources are poultry fat, tallow, yellow grease, lard, and blends. In other countries, there is considerable use of vegetable fats such as sunflower oil, soybean oil, or palm oil. Generally these fats are relatively expensive when compared to rendered products, resulting in lower fat utilization and thus lower metabolizable energy (ME) diets than in the United States.

Inclusion of rendered fats in poultry feed has many advantages, such as:

- concentrated source of energy and the main method of increasing the energy content of diets;
- increased growth rates, feed efficiency, and palatability of feeds;
- decreased feed intake and dustiness of feeds;
- good source of linoleic acid;
- lubrication for equipment in feed mills;
- increased rate of gain that could decrease age at market and increase throughput of housing systems;
- lower heat increment useful during heat stress to keep caloric intake up;
- possible slow gut transit of other feeds resulting in increased digestibility;
- possible "extra-caloric" effect that may be more cost-effective than other energy sources;

- concentrated feeds that decrease transportation costs for feed delivery; and
- use of higher levels of fat that could negate the effects of pelleting.

However, there are some concerns that should be noted with fat utilization, including:

- measurement of ME content can be somewhat difficult;
- potential for rancidity;
- equipment needs relative to fat additions must be adequate; and
- poor digestibility of saturated fats by the young bird.

One of the major concerns relative to fat usage is the actual ME value that should be assigned to each fat source. This number is often difficult to determine in a practical sense and may have little value in diet formulation (see tables 1 and 2). When analyzing energy content of fat, it is generally done indirectly by substitution of a portion of the ration fed in the ME determination. Additionally, fat may have an extra-caloric effect, whereby it affects the nutrient availability of other ingredients. This was noted in the University of Missouri lab where it was found that fat additions resulted in digestibility of meat and bone meal (MBM) being increased. This would explain why some ME values reported are greater than the gross energy values possible for fat as well.

Early work on use of fat in poultry rations generally indicated a higher ME value for unsaturated vegetable oils when compared to rendered fats or products with high free fatty acid content. However, when fed as a portion of a complete ration, most experiments have indicated no difference in performance parameters when different fat sources were fed (tables 1, 2). Several reasons may be postulated why the differences seen in energy value in an ME analysis do not translate into differences in actual performance when added to complete diets. One of these is that the improvement in utilization of other dietary components is equally enhanced by different sources regardless of ME content.

A more obvious answer may be the relatively small difference in ME content of a total ration at typical fat inclusion levels. In other words, if two fats of 7,000 and 8,000 kilocalories per kilogram (kcal/kg) ME are fed at three percent of the diet, the difference in ME content of the complete ration is only 30 kcal/kg, or less than one percent of the total dietary energy. This type of difference is very small and would be extremely difficult to pick up experimentally. In a study from the University of Georgia, a variety of fat sources were fed and differences of more than 4,000 kcal/kg were seen. However, when these same fats were fed to birds in a floor pen trial, no differences in gain, or feed:gain, were observed, indicating that the net energy available to the bird was comparable. Similar results were found in a more recent study from the University of Missouri lab and are shown in tables 1 and 2.

Increasing dietary fat improves feed efficiency but also may result in increased fat deposition. When turkeys were fed energy from 88 to 112 percent of the National Research Council suggested levels, birds showed increased growth rate (25.3 to 29.4 pounds) and dramatic changes in feed efficiency (3.41 versus 2.41 pounds feed:pound gain). While birds decreased feed intake in response to the higher energy diets

Table 1. Average broiler growth for birds fed a variety of fat sources

Fat source	0-3 week*	0-5 week*	0-7 week*
Soybean oil	0.77	1.92	2.85
Yellow grease	0.76	1.96	2.95
Poultry fat	0.76	1.93	2.92
Tallow	0.75	1.92	2.99
Animal-veg blend	0.74	1.89	2.96
Lard	0.75	1.88	2.97
Palm oil	0.75	1.95	2.94

*kg per bird per phase
No statistical differences between treatments.

in these studies, overall energy was higher with additional energy coming from fat additions.

Use of Animal Proteins in Poultry Rations

Animal proteins available from the non-edible portion of cattle/pig/poultry processing include meat meal, MBM, poultry by-product meal, feather meal, and blood meal. The products may vary based on input materials and the proportion of bone. Meat-based meals range from 50 percent to as high as 65 percent protein and may have as much as 5 percent available phosphorus as well as a variety of other nutrients. Feather and blood meals can have 80 percent crude protein, though the protein is not a well-balanced amino acid profile.

Protein from many of these products is highly digestible and cost-effective. Phosphorus is generally thought to be highly available although phosphorus from bone meal sources has been shown to be slightly less available than from dicalcium phosphate. However, more recent data indicate no differences in utilization of phosphorus from animal protein meals or dicalcium phosphate. Most nutritionists today assume 90 to 100 percent availability of phosphorus from rendered by-products.

Use of rendered proteins in poultry feed has many advantages. Some of the benefits of their addition are:

- competitive cost-wise relative to vegetable protein sources thus reducing total diet costs in most cases;
- source of high-quality protein that is highly digestible in most cases;
- may help balance out amino acid needs;
- provides a small increase in growth rates over vegetable protein-only diets in many cases; and

Continued on page 12

Table 2. Adjusted feed:gain ratios for broilers fed a variety of fat sources

Fat source	0-3 week*	0-5 week*	0-7 week*
Soybean oil	1.38	1.60	1.87
Yellow grease	1.38	1.56	1.85
Poultry fat	1.38	1.58	1.85
Tallow	1.40	1.61	1.83
Animal-veg blend	1.42	1.63	1.86
Lard	1.40	1.52	1.77
Palm oil	1.42	1.56	1.88

*kg:kg

- excellent source of highly available phosphorus and other minerals.

Some concerns that should be noted with utilization of rendered proteins include:

- poor quality control could result in decreased amino acid digestibility;
- proper formulation methods must be used for most effective use; and
- variation of product due to material mix and/or processing methodology.

Use of rendered proteins has been limited in the past for a variety of reasons. Older research indicates a growth depression if use exceeded certain limits, such as 7.5 percent of the diet. This occurred primarily due to the reduced digestibility of many products relative to soybean meal. Older data from the University of Missouri lab indicates almost 10 percent less digestible lysine in MBM than in soybean

meal. Thus as the levels of MBM increased in the diet, the level of lysine available for use by the bird decreased. While the routine safety factor covered this deficit to a point, an amino acid deficiency eventually developed and growth rate was depressed. Formulation on a digestible basis eliminates this problem and inclusion rate has become less of an issue. Additionally, more recently tested product has approached soybean meal in terms of amino acid digestibility.

Rendered proteins are heavily used in most rations for broilers and turkeys in the United States. While they may be utilized individually, in most cases the most cost-effective additions result from allowing the computer to select from a variety of available animal protein meals. Including multiple protein sources reduces cost, improves nutrient balance, and decreases nitrogen excretion.

MBM of porcine/ruminant origin is generally the most cost-effective source, followed by feed grade poultry by-product meals. MBM and poultry by-product meal are added as protein and phosphorus sources, with the latter generally being higher in protein/energy and thus commanding a higher value. When formulated on a digestible basis, the upper limit of these additions can easily exceed 10 percent from a growth standpoint, but are generally more based on cost-efficiency. If not formulating on a digestible amino acid basis, one should still look at digestibility of the product and set a maximum inclusion rate if there are substantial differences in digestibility from soybean meal. Given the quantity of data available, all poultry diets should be formulated on a digestible basis in the future. Table 3 shows the effect of additions of MBM and poultry by-product meal on diet cost in various scenarios.

In summary, rendered products provide valuable sources of highly available energy, protein, and minerals that should continue to be utilized by all aspects of the poultry industry. **R**

Table 3. Cost of broiler starter at different levels of MBM and poultry by-product meal (PBM)

MBM level	PBM level	Relative price of product	Price of broiler starter per ton
0%	0%	N/A	\$258.18
5.0%	0%	100%	\$255.12
5.0%	5%	100%	\$251.02
3.8%	10%	100%	\$247.13
5.0%	5%	110%	\$254.22
3.8%	10%	110%	\$251.56
5.0%	5%	90%	\$242.32
3.8%	10%	90%	\$235.72

Putting All-veggie Broiler Diets to the Test

In 2006, a large poultry and pork producer in Australia switched to an all-vegetable diet for their birds due to a contract feed manufacturer wanting to remove meat by-products from their mill. The result of this change was that as soon as the birds started on these diets, their droppings became very wet. The company had no choice but to continue with the diets, yet as time went on and the birds gained weight, the wet litter became a major issue.

The main effects were:

- Due to the wet litter, the shed floors became extremely slippery, the litter stuck to the birds' legs, and ultimately the birds suffered extreme ammonia burns to their legs and breasts.
- Feed conversions blew out dramatically causing the birds to remain in the sheds longer, subjecting them to unsuitable conditions and increasing costs to the company.
- Respiratory problems caused by high ammonia levels from the wet litter caused bird mortalities to increase dramatically.

The conditions in the sheds were so bad that work crews entering the sheds to pick up the birds complained about the slippery conditions on the floors and the high

levels of ammonia. Their pay was increased as an incentive to continue picking up the birds but eventually they refused due to the poor conditions. Management staff ultimately had to perform the final bird collections.

The company then organized a trial to see if the all-veggie diet was the cause of the wet litter and weight conversion problems. It was arranged so several sheds of birds were fed vegetable diets and several were fed diets with meat and bone meal (MBM) inclusion. The MBM diets were supplied by the company's feed mill.

The results were immediate. The birds fed the MBM diets had no wet litter issues, mortalities decreased, and feed conversions returned to very low levels. The birds fed the vegetable diets continued to have wet litter problems, high mortalities, and poor feed conversions.

The company repeated these trials on two occasions with the same results leading the poultry producer to go back to feed rations with MBM inclusion that was supplied by its own feed mill.

The Australian Renderers Association has published a white paper on MBM in broiler feed written by Dr. Kenneth Bruerton, Protea Park Nutrition Services. Contact Dennis King at dennis.king@ausrenderers.com.au. **R**



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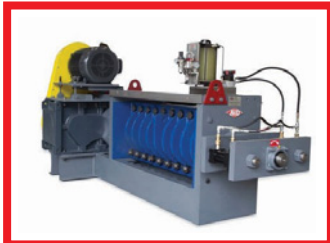
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Telling the Story of the Most Sustainable Industry

By Tina Caparella

In today's society of the "conscious consumer," sustainability of companies and industries is paramount. Fortunately, as recyclers of animal by-products where every part of a food-producing animal is used, rendering is one of the most sustainable industries and has been for generations. Yet renderers aren't getting credit for their important role in society. It's time for them to tell their story.

This was the message repeatedly heard by over 300 industry representatives who attended the National Renderers Association (NRA) 84th Annual Convention in Santa Barbara, California, in October. The group's communications committee is working on talking points to help tell their good story, such as:

- Consumers use rendered products every day in soaps, paints, varnishes, cosmetics, and pharmaceuticals, just to name a few.
- The rendering process' intense heat promotes biosecurity, making animal food ingredients safe for livestock and pets.
- A third of the biofuels produced in the United States (US) use animal fats and recycled oils as a feedstock.
- Rendering of animal by-products sequesters at least five times as much greenhouse gases as it emits and produces far fewer emissions than landfilling or composting.
- Rendering companies support their communities with jobs, taxes, and involvement.

Other individuals also believe renderers have a valuable story to tell. Damian Mason, a speaker on business and agriculture, told convention attendees that renderers give Americans the lifestyle they want by recycling the meat by-products they don't consume.

"The good news is that only two percent of Americans are vegetarians so people still want meat," he revealed. Mason encouraged renderers to view themselves as a product and a brand, and promote themselves as the American businesses they are that provide good paying jobs and a service to animal agriculture. He also urged them to look at their industry creatively much like other industries have, such as Starbucks reinventing how consumers drink coffee and the way Uber and Lyft have provided alternatives to taxis.

"Renderers need to jump on the food waste movement as 44 percent of all food is wasted," Mason added. "Don't be afraid to try something new. It will not kill you!"

Highlighting demographics was Ken Gronbach, KGC Direct LLC, who informed renderers that the 86 million millennials (ages 18 to 32) are the "generation of pets," animals that need food that rendered ingredients provide. This generation also makes purchases based on cause and will embrace rendering's green story. Gronbach noted that generation X (ages 33 to

52) has more than nine million fewer people than the baby boomers (ages 53 to 62) so embrace these employees or your competitor will steal them.

Trent Loos, Loos Tales and a rancher from Nebraska, said rendering adds value to the food chain and reiterated that consumers make purchasing choices based on how it makes them feel.

"The answer to telling rendering's story is to tell your story over and over and over again," Loos commented. "Become your own ambassador. You add value to every bit of the animal."

Randy Blach, Cattlefax, is always a favorite speaker at NRA's conventions and he brought good news, showing how the US cattle inventory is rebounding and animals are continuing to get heavier. Commercial cow slaughter is projected to increase by one million head through 2020 while steer and heifer numbers are slated to grow by nearly three million head over a four-year period to levels not seen since 2007.

"These numbers mean continued material coming to your rendering plants the rest of the decade," Blach stated. However, with no new packing plants of scale coming online soon, current capacities will be tested.

On the pork side, four million more pigs – resulting in 126 million head – are expected to be slaughtered next year. Since 1980, pork production has increased 1.3 percent per year on average. Total commercial broiler slaughter is predicted to be over nine billion head next year, up nearly two percent from 2017. Since 1980, poultry production has seen a 3.6 percent annual growth rate.

"We love protein," said Blach. "Numbers show substantial growth in all meat sectors with lots of raw material and tremendous opportunity for growth." However, exports will be key moving forward and animal agriculture is concerned about North American Free Trade Agreement (NAFTA) negotiations. US meat and poultry exports total 15.8 billion pounds valued at \$15 billion with 40 percent of all meat exports going to Mexico and Canada.

"NAFTA is a big deal," Blach confirmed.

Business Matters

NRA also conducted business meetings during the convention, focusing on the challenging export markets for rendered products, government support to help grow the biofuels industry, and hurdles to meeting new requirements under the Food Safety Modernization Act (FSMA).

David Meeker, NRA scientific services, said the direction of the Animal Protein Producers Industry was established long before FSMA and has proven beneficial toward complying with the regulation. One concern under the act is that required hazard disclosure statements can often conflict with the rendering process.

“Rendering controls the hazard but rendering does not control the recontamination,” said Ansen Pond, Pilgrims. “The end goal is to produce a safe product and rendering does that.”

Steve Howell, M4 Consulting, told members of NRA’s Biofuels Committee there is currently a biodiesel plant in almost every state in the country providing production capacity of nearly four billion gallons. He explained the trade case filed earlier in the year by the National Biodiesel Board coalition was not so much about imports of biodiesel but about creating a fair market as inputs for fuel produced in Argentina and Indonesia are cheaper than US producers can make the alternative fuel. Nearly one-third of biodiesel consumed in the United States in 2016 was imported. Howell declared that the biodiesel industry should be inclusive of all feedstock as all fats and oils are needed in order to advance the industry.

Steve Kopperud, Policy Directions, believes there is a very good chance the biofuel tax credits that expired at the end of 2016 will not be renewed by Congress any time soon.

“If you want it, find a way to pay for it,” is the tax reform mentality among legislators, he stated. Members of the NRA Legislative Committee expect less tax reform and more tax cuts coming from Congress, and support House of Representatives Bill 2946 that aims to repeal the 12 percent excise tax on heavy trucks, trailers, and tractors, the highest excise tax on any one industry or item.

International Interests

Reports from around the world highlighted the challenges and opportunities faced by renderers in other countries. Niels Leth Nielsen, European Fat Processors and Renderers Association, shared that although there are only a few cases of bovine spongiform encephalopathy in Europe, the government has accepted there will continue to be a low level of spontaneous or atypical incidents in the region. Andy Bennett, Australian Renderers Association, reported that renderers down under continue to have market issues with poultry meal in China and Indonesia despite Australia not having a case of avian influenza in years. Tallow prices and production in Australia are down due to a drop in beef slaughter while poultry is experiencing higher growth in consumption. Bennett revealed that in New Zealand four rendering plants have closed in the last two years due to diversification and consolidation as more production moves to independent rendering companies.

Lucas Cypriano, Associacao Brasileira de Reciclagem Animal (ABRA) in Brazil, showed how beef and poultry production have dropped slightly over the past two years while pork has increased by 2.5 percent and 5.1 percent in 2015 and 2016, respectively. Brazil has created a national biodiesel program that has inflated tallow prices significantly, from \$350 per metric ton (MT) to nearly \$900 per MT. Started in 2003, the program has set biodiesel inclusion rates in the nation’s diesel pool from a mandatory two percent in 2008 to the current eight percent inclusion rate.

“In my opinion, this tallow price is not sustainable,” Cypriano commented. “But the policy is good for renderers and there is hope it will stay in place.” The mandate increases



Damian Mason entertained renderers on how to stay relevant in a changing world. “What can you do to not become stagnant?” he asked.



Long-time industry members Owen Vickers (*left*), BHT ReSources, and Jay Wilkison, Chem-Aqua Inc., catch up at the convention’s tabletop exhibit.



Doug Smith (*left*), Baker Commodities Inc., and Mike Gilbert, Darling Ingredients Inc., discuss the complex biofuels market.

Continued on page 16

to 10 percent in March 2018 with thoughts that a higher inclusion rate of 15 percent is possible. Brazil's rendering industry is still emerging with a lot of raw material currently not collected.

NRA regional directors shared conditions around the world affecting US rendered product exports. Kent Swisher, NRA international programs, reported that animal protein and tallow exports so far in 2017 are trending upward, with Singapore's imports of US tallow jumping 195 percent due to renewable diesel producer Neste.

German Davalos, NRA regional director for Latin America, said members of a fish-free feed challenge see an urgent need to find alternative sources of protein in order for the aquaculture industry to further develop. He showed that between 2001 and 2016, Latin America's pet care industry grew at an average rate of six percent and that Mexico is the second largest producer of pet food after Brazil at 930 million MT per year. In 2016, Mexico saw 11 percent pet food growth in volume and 10 percent in value.

Peng Li, NRA regional director for Asia, divulged that Indonesia is the largest and most important market for animal



James Gong (*right*), Farmers Union Industries Inc., his wife, Zhan, and the next generation of renderers, their son, Nathan, enjoy the convention.

proteins as its total feed production in 2016 was 18.8 million MT and total aqua feed production was 1.6 million MT. China soap industry imports of US tallow continues to remain stable at 1 million MT per year.

Bruce Ross, Ross Gordon Consultants SPRL, said a new proposed renewable energy directive in the European Union (EU) does not include the current 10 percent mandate in transportation fuels after 2020 nor does it include double-counting for waste fats and oils used in renewable fuel production. This proposal means an uncertain future for used cooking oils and fats in EU biofuels and leaves renewable fuel decisions up to individual member countries. Currently, the EU biodiesel industry is in the "doldrums," Ross commented, operating at 55 percent of capacity, a situation that will not improve

due to recently reduced duties on imported biodiesel from Argentina.

Overall, the mood of US renderers at NRA's convention was encouraging with many new faces attending for the first time as the industry continues to provide valuable and sustainable services and products to the livestock industry, feed manufacturers, and renewable fuel producers. **R**

Bestwick to Lead NRA

The National Renderers Association (NRA) welcomed new officers at its annual convention in October.

Ridley Bestwick, West Coast Reduction (WCR) Ltd. in Canada, was named chairman for the next two years; Doyle Leefers, National Beef, was appointed vice chairman; and Michael Smith, Valley Proteins Inc., became second vice chairman.

Upon accepting his new position, Bestwick addressed the NRA Board of Directors, first thanking outgoing chairman Tim Guzek, Sanimax, for his many years of service and leadership to NRA. During his term as chairman, Guzek helped implement a new dues structure keeping the association financially sound and was key in ensuring the United States' Food Safety Modernization Act regulation was workable for renderers. He also helped keep NRA focused on its 2020 Strategic Plan.

"And, of course, behind successful leaders there is often a spouse who acts as a backstop and sounding board for the trials and tribulations," Bestwick noted. "Thank you, Rene, for supporting Tim in his role as NRA chair.

"When I think back on the chairmen who have led the NRA during my 22 years of involvement – Jerry Smith, Mike Koewler, David Evans, Mike Langenhorst, Humphry Koch, Doug Anderson, David Kaluzny II, Mike Riser, Michael Koewler, J.J. Smith, Kevin Golding, Ross Hamilton, and Tim Guzek – I am truly, truly humbled," Bestwick continued. "My goal over the next two years is to keep driving the strategic imperatives in NRA's 2020 Strategic Plan. I will also help find new products, attract new upstream and downstream NRA members, and protect and enhance the NRA brand. Our industry needs to be trusted by society.



NRA officers for the next two years are (*from left*) Doyle Leefers, vice chairman, Ridley Bestwick, chairman, and Michael Smith, second vice chairman.

"Thinking back to my first NRA convention in 1997 in Tucson, Arizona, Mike Meyers asked me, 'How was West Coast Reduction able to attract someone like you to an industry like this?'" Bestwick shared. "I was puzzled by the question, but the answer is clear. As Gordon Diamond [WCR chairman] often says, the rendering industry is 'the best,' meaning that the people are the best.

"I thank Gordon Diamond and Barry Glotman [WCR chief executive officer and president] for their support in me taking on this commitment. I look forward to serving the NRA over the next two years and as my mentor, Humphry Koch [WCR vice chairman], would say, 'serve to lead.'" **R**

Wintzer Honored for

The National Renderers Association (NRA) posthumously recognized Carl Wintzer, G.A. Wintzer & Son, with the Don Franco Distinguished Service Award at its annual convention in October. The award honors Wintzer for his outstanding leadership and contributions to the rendering industry before his passing in late December 2016.



Outstanding Leadership

As part of the fifth generation of Wintzers, Carl began working in the family rendering business right after graduating high school. Starting in 1973, he worked summers while attending college. He came on board full time in 1978 after graduating, working in all facets of the family business to learn the entire operation. Carl and his brother, friend, and business partner Gus took control of the company when their father Fred retired in 1989.

G.A. Wintzer & Son has seen a lot of changes and challenges in its 169-year history, but one thing has remained the same: the commitment the Wintzer family has to the rendering industry. One example is its tremendous support and involvement in the Fats and Proteins Research Foundation (FPRF). G.A. Wintzer & Son was one of the first contributors to FPRF when it was founded in 1964, with Fred making a \$17,000 donation to get the research group up and running. Today, due to Carl's leadership and foresight, the company continues to be one of the foundation's top eight contributors.

Carl served as FPRF chairman and was also one of the founding members of the Animal Co-Products Research and Education Center (ACREC) at Clemson University in South Carolina. Roughly 18 months after Dr. Gary Pearl first approached Clemson University about the ACREC concept, the ACREC Steering Committee was formed.

In 2004, Carl was a member of that committee and visited Clemson University on what would be the first of many visits. He became a well-known and much respected contributor to ACREC programs and was greatly adored by the faculty, staff, and students. Carl had a special passion for wastewater treatment systems along with scientific facts and figures. For 13 years, his quiet wisdom, intense love of science, delightful sense of humor, and always happy demeanor set the tone for ACREC projects.

In addition, Carl held positions with the Animal Protein Producers Industry, including as chairman during its transition from a stand-alone organization to a committee of the NRA.

Carl had a lifelong passion for learning and a strong belief in scientific inquiry and the application of new science to solve problems and foster innovation in the rendering industry. He was also skilled at plumbing and carpentry, and loved his cars and motorcycles, even biking to Sturgis in the Black Hills of South Dakota and driving his sports car from Ohio to Clemson University for FPRF meetings, examples of his zest for life.

Carl was a mentor to young workers in the plant who always had time to help others. A wise and fun-loving man, he was committed to living life to the fullest with a great sense of humor and a big grin. As a young boy, he excelled at sports,



Pittsburgh Steelers quarterback Ben Roethlisberger (*left*) talks football with Carl Wintzer at a chance meeting during the NRA spring meeting in April 2016.

continuing on to a successful college football career. Sports taught him that a well-coached team would succeed while a poorly coached one would fail. Carl encouraged all members of his team to pull with equal effort, with his actions always speaking even louder than his words.

Sadly, Carl passed away much too soon in December 2016 at the age of 61 and is dearly missed by all those who had the privilege of knowing him. However, his legacy lives on. His leadership and support of research have been instrumental in building a portfolio of projects that will help the rendering industry for years to come.

The Don Franco Distinguished Service Award was established by NRA in 2015 to honor a member, staff, or friend of the association for meritorious service to the rendering industry. Franco had a distinguished and lengthy career in government and the private sector, including in the rendering industry and agriculture. He served as both vice president of NRA's scientific services and president of the Animal Protein Producers Industry from January 1992 until his retirement in December 2002. Franco was one of the editors of *The Original Recyclers* and a contributing author to *Essential Rendering*. He cared deeply about the rendering industry and the plight of poverty in third-world countries. Franco passed away in January 2015.

R

amounts that are equal to or greater than the proposed amounts, including at least 2.1 billion gallons for biomass-based diesel (biodiesel/renewable diesel) in 2018 and 2019.” He also told the lawmakers he will not pursue regulations allowing biofuel imports to qualify as part of the RFS despite a letter from four major oil refiners pleading with him to do so.

Pruitt wrote he is still not sure his agency has the legal authority to issue a formal waiver of the current seasonal sales restriction on E15 but vowed to work with Congress to either clarify his agency’s authority on the matter or receive legal authority to issue the waiver. He also said he decided to not grant a petition to shift the point of obligation on RFS blending.

As word of Pruitt’s capitulation got out, senators representing the oil producing states of Texas, Oklahoma, Arizona, Utah, Pennsylvania, and Wyoming made their individual and collective frustration publicly known. In their own letter to Trump, the senators demanded a summit to talk about the RFS. They urged the White House to cut the RFS from its July proposal, saying absent such an adjustment, the current RFS mandates as proposed “will result in a loss of jobs around the country, particularly in our states.”

“We request that within the next three weeks, you convene a meeting regarding the RFS and pro-jobs policies with us, our Senate colleagues who previously lobbied you on behalf of the ethanol industry, and relevant members of your administration to discuss a pathway forward toward a mutually agreeable solution that will also save refining jobs and help unleash an American energy renaissance,” the lawmakers wrote.

Adding insult to injury, and taking a page from Ernst’s playbook, Cruz immediately slapped a formal hold on the nomination of Iowa Agriculture Secretary Bill Northey to be United States (US) Department of Agriculture undersecretary for farm production and conservation. The hold is Cruz’s response to the actions by Grassley and Ernst that forced Trump to publicly and extensively reaffirm support for the RFS.

“This has nothing to do with Bill Northey, they need to get that right, but I don’t see the connection,” a frustrated Ernst told a reporter. “He’ll be in charge of conservation programs; it will have nothing to do with the RFS. So why are they blocking him because of the RFS? Just because Big Oil doesn’t like it.”

As if the RFS sparring match was not enough, and as Ernst and Cruz enjoyed their finger-pointing exercise, combat broke out on another biofuels front – a new skirmish over RINs, the RINs market, and alleged manipulation thereof.

Pennsylvania Governor Tom Wolfe fired the first volley in late October when he formally requested Trump waive the RFS/RVO for northeastern US fuel refiners so that the price of RINs would drop significantly. For those who do not live for biofuels, a RIN is a 38-digit number identifying a specific fuel lot and can be bought and sold by refiners on a market of sorts to offset their legal RFS blending responsibility. Companies that refine, import, or blend fossil fuels must fulfill RFS mandates. To ensure compliance, obligated parties are periodically required to demonstrate they have met their RFS quota by submitting a certain amount of RINs to EPA. Because each of these RINs represents an amount of biofuel blended into fossil fuels, the RINs submitted to EPA are a quantitative representation of the amount of biofuel blended into fossil

fuels. Right now, RIN prices are high and markets are erratic. Wolfe says he is concerned that if RIN prices do not drop and stabilize, “the volatile market may lead to the closure of one or more of these merchant refiners, which would be devastating to the regional economy.”

The Wolfe letter escalated the RIN battle in early November when a bipartisan group of lawmakers formally asked the Federal Trade Commission (FTC) to investigate possible manipulation in the RFS market for RIN credits. In a letter to FTC, Senator Tom Carper (D-DE), along with five northeastern lawmakers, told the commission that RIN credit prices have fluctuated wildly, surging at times by 200 percent. Supporting the Wolfe letter, the lawmakers said oil refiners in eastern Pennsylvania have long complained the federal requirement to purchase RINs hurts profitability. The letter was signed by Senators Cory Booker (D-NJ), Bob Casey (D-PA), and Chris Coons (D-DE) as well as Representatives Lisa Blunt Rochester (D-DE) and Pat Meehan (R-PA).

Carper is the ranking member of the Senate Environment and Public Works Committee and no stranger to RFS and RIN issues. He has long wanted to see changes in RIN trading and said any legislation dealing with the RFS or RINs should include measures to increase transparency in the RIN market.

As the war expands, many lawmakers caught in the crossfire are hoping for a solution that will please everyone or get them off the hook. However, that likelihood is slim. For now, many members of Congress will hide behind the strategy to “let the RFS expire in 2022 and then be done with it.” During the Iowa caucuses, the so-called RFS expiration option was used often when candidates were quizzed about their dedication to the biofuels program.

However, there is a problem. The RFS does not expire in 2022. Upon closer reading of the authorizing legislation, it actually never expires. Not to put too fine a point on it, but in 2022 and thereafter, the EPA administrator, following some fairly broad guidelines set down by Congress, gets to set the RFS/RVO on an annual basis until Congress repeals or amends the law.

The most cogent explanation of the reality of the RFS lifespan is found in a 2016 farmdocdaily.illinois.edu article by Jonathan Coppess of the University of Illinois’ Department of Agricultural and Consumer Economics. He writes broadly on matters related to the RFS, RINs, EPA waiver authority, and so on.

Coppess writes, “As was pointed out...the RFS does not expire in 2022. The statute provides specific volumetric mandates in a set of tables that run through calendar year 2022. It also provides, however, that for those years after 2022, the EPA administrator is to establish the applicable volumes for each year. This is continuing and permanent authority for the RFS; the statute does not contain a sunset or end-date provision. After 2022, the applicable volumetric mandates for renewable fuels are to be determined by the EPA administrator, and based on analysis of the impact of the production and use of renewable fuels on various matters such as environment factors, US energy security, infrastructure, cost to consumers of using renewable fuels, and other factors including job creation and food and commodity prices.”

Will there be a peace accord on the RFS controversy, RIN market manipulation allegations, and a jarring realization that without congressional action this war could last forever? Look to 2018, unless the issue is just too hot for an election year. **R**



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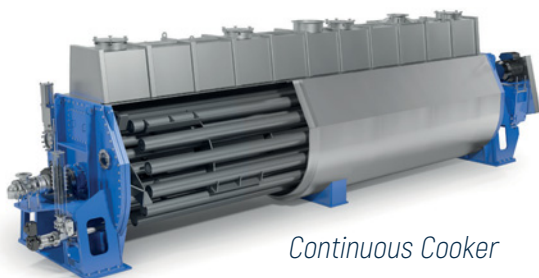
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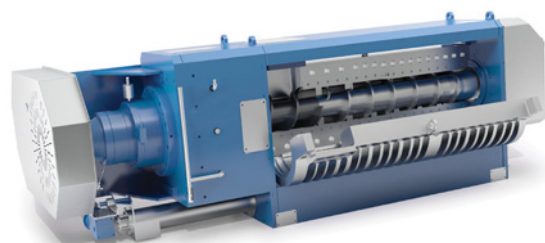
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Poultry Renderers get Hands-on at Seminar

By Tina Caparella

For this year's annual educational seminar in early October, the Poultry Protein and Fat Council (PPFC) chose a new location – Kansas City, Missouri – that proved to be quite beneficial. Not only were there a record number of attendees but poultry renderers were treated to a glimpse into how several equipment companies do business.

Haarslev Inc. and Jenkins Centrifuge Company LLC provided tours of their Kansas City facilities showing how rendering and centrifuge equipment is made, serviced, and repaired. Along with a close-up view of their machine shop operation, Haarslev presented expansion plans of its service facility that will include a manufacturing plant and warehouse. Jenkins also delivered a hands-on look at their machining processes and informed renderers how best to keep centrifuges running at peak performance.

"Grease is your friend when it comes to bearings," said Fred Turner, Jenkins' high-speed foreman.

"I was extremely happy with Jenkins' tour as they answered many of my questions and explained new ideas and ways other customers are extending the life of their equipment that I can utilize in the future," stated Jeremy Lienert, maintenance manager at Protein Products Inc. "Continuous improvement is very important. When you can be sent to a seminar like this one, you put in play a great way to save money or improve your facility after listening to a presentation."

Along with the tours, seminar attendees listened to various speakers discuss an array of topics.

Dr. Sara Cutler, Kemin Industries, addressed challenges of peroxide value testing, which is a measurement of oxidation in animal protein meals and fats. She noted that autoxidation is a chemical process that degrades the nutritional and aesthetic properties of the product, then warned that some chicken fats can oxidize further depending on the type of fat the chicken ate (i.e., vegetable versus animal).

"It's true that chickens are what they eat," Cutler commented. Peroxide value testing measures the hydroperoxide concentration at that point in time and does not predict the

future stability of the protein or fat. In addition, test methods vary and can have a big impact on results.

"One peroxide value does not tell you a whole lot so you really need to have a quality control program in place to determine a 'normal' range," Cutler stated.

Magnets are only getting part of the problem out of raw material, declared Craig Lorei, Eriez Manufacturing, since they only remove ferrous metals. A good metal program must include a metal detector in the processing line, specifically placed after a magnet. Lorei shared three types of magnets:

- ceramic, which targets medium to large tramp iron;
- rare earth, which targets small metals such as fines, shavings, rust and scale, and some work-hardened stainless steel; and
- electro, which are coils wound around a solid steel core used for their far-reaching magnetic fields with deep product burden depths.

Ceramic and rare earth metals are permanent and always activated whereas electromagnets can be switched off. Temperature can permanently destroy or kill a magnet as can physical impact, welding, and moisture, which cause rare earth to oxidize and expand.

"Safety third," not first, is the reality among many companies, according to James Howry, Georgia Tech Research Institute. However, worker safety has come a long way since before the 1970 formation of the Occupational Safety and Health Administration when 14,000 workers were killed each year. Today, that number averages about 4,800, still high. For perspective, Howry noted that since 2011, 6,831 American soldiers have died in the "war on terror" compared to 23,563 American workers who lost their lives in the workplace. Globally, more than 2.3 million workers die every year due to occupational hazards and work-related diseases.

Worker deaths and injuries in the United States cost employers plenty, averaging \$1 million per death and \$39,000 per disabling injury in wage and productivity losses and medical and administrative expenses. It is estimated employers



Steve Louderback (*left*) shows poultry renderers one of the many machines Haarslev uses to refurbish rendering equipment in the company's Kansas City, Missouri, plant.



Seminar attendees listen to Fred Turner (*right*) explain the importance of grease to bearings during a tour of Jenkins Centrifuge Company's Kansas City, Missouri, facility.

pay nearly \$1 billion each week for workers' compensation insurance and \$170 billion annually in costs associated with occupational injuries and illnesses. Howry pointed out that employers also suffer indirect expenses after a death or injury, such as training or replacement of employee(s), accident investigation, implementation of corrective measures, lost productivity, downtime and repair of damaged equipment and/or property, and possible rebuilding of the company's image. He showed how companies save from \$3 to \$5 for every \$1 spent on safety in the workplace and presented a safety-integrated process as one example of eliminating hazards.

"Every time there is an accident in your company, there is an imperfect process," he commented.

Dr. John Ross, Marshall Institute, explained how to preserve spare parts using a military-type approach as an example of how a company can strategize to reach its goal of decreased downtime. He offered a few things to consider when establishing a preventive maintenance routine:

- Bearings lose their original lubrication internally so expected shelf life is around eight years.
- Rubber belts and hoses begin to lose their moisture content after about two years on the shelf.
- Motors lose some efficiency with each rewind, translating to increased power consumption and shortened life span.
- Hydraulic cylinders should be stored vertically to prevent slip seals from losing their integrity.
- Larger and heavier belts should be stored "figure 8" style and flat on shelving protected from direct light.

Ross also presented steps to establish programs for care of motors, gearboxes, bearings, and other materials as well as showed images of how well-organized storage systems provide a better environment for spare parts.

Bacteria in wastewater can be good, said Dr. Cliff Lange, Auburn University, while influents to the wastewater stream from raw material trailer damage, plant wash down, and condensate can be an issue to a rendering plant, according to Josh Singleton, American Proteins.

"Influents are generally high in total suspended solids, oil and grease, nitrogen, ammonia, and phosphorus," Singleton noted. "High-temperature condensates can cause issues with mesophilic bacteria in an anaerobic lagoon." He shared how the company's Hanceville, Alabama, plant treats its wastewater that goes to an anaerobic lagoon before discharging to a public water treatment plant. The anaerobic lagoon is capped and creates biogas that is pumped back into the rendering plant, saving the company \$270,000 annually in natural gas costs.

"Overall, be mindful what everyone is doing in the plant as it could have a dramatic effect on your wastewater," Singleton stated.

Dr. Michele Sayles, Diamond Pet Foods, wrapped up the seminar with an overview of the Food and Drug Administration's new sanitary transportation rule. She gave the agency credit for listening to the feed and rendering industries and general public on how to make the final rule workable. Sayles said the regulation is not intimidating, but validating a sanitation cleaning system that works is proving difficult as no water is allowed.

"Lots of ideas are being tossed around," she remarked. **R**

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Renderers will Prevail

Editor's note – The following is a speech, in part, given by Tim Guzek, Sanimax, at the National Renderers Association 84th Annual Convention in October in Santa Barbara, California.

There have been numerous natural disasters in the United States (US) this year, especially hurricanes, putting 2017 in the top 10 historically for the most active hurricanes with 13 named storms and 8 hurricanes, 5 of which were classified as major. In 2005, there were 10 hurricanes and in 2004, 8. One of this year's major hurricanes, Maria, devastated Puerto Rico in late September, forcing the National Renderers Association (NRA) to relocate its annual convention from San Juan to Santa Barbara, California.

On the western side of the United States, terrible fires erupted in Northern California in October, destroying more than 7,000 homes and structures, killing over 40 people, and displacing 15,000 individuals.

As I wrap up my term as NRA chairman, let's look back over the past two years, especially this last year when the United States welcomed a new president and Republican-controlled Congress. During his campaign, President Donald Trump made several promises and slogans that could potentially affect renderers, such as:

- "Buy American – Hire American";
- ease of regulations – for every one new regulation, two need to be eliminated;
- rewrite the tax code;
- health care reform;
- infrastructure spending;
- stop illegal immigration; and
- improve exports and trade agreements so they are fair.

NRA had a strong voice and worked with Food and Drug Administration (FDA) regulators over the past few years on interpreting and implementing the Food Safety Modernization Act (FSMA). In addition, NRA staff served on a task force with the American Feed Industry Association and other interested parties to write curriculum that was used to train Animal Protein Producers Industry members on how to comply with FSMA and develop a food safety plan. This training was given both in person as well as online in conjunction with Kansas State University. Many FDA inspectors were also part of this educational opportunity.

As the American Association of Feed Control Officials continually reviews and updates feed and ingredient definitions, NRA staff is actively involved and attending committee meetings in an effort to look out for renderers' interests. So far, staff has been largely successful.

NRA's international marketing team – consisting of Kent Swisher, Peng Li, Bruce Ross, and German Davalos – is hard at work in front and behind the scenes advocating and supporting the industry's export market. They have been instrumental in

getting the China market back open for US tallow and also for reopening export markets for poultry and feather meals after many closed in 2015 due to avian influenza.

Each year in June, NRA hosts a Washington, DC, fly-in for its members. Anywhere from 30 to 45 renderers attend to listen to policymakers discuss subjects that affect the industry as well as meet with members of Congress and their staff to educate them on rendering and advocating on items that will improve the industry.

We all know that rendering has a great sustainability story. Two years ago NRA developed its strategic plan and several initiatives are already completed. Much more focus is now on communications with additional action plans identified and priorities established, such as a redesigned website and one-page documents with various messages about sustainability and the industry's branding. The new *NRA Update* e-newsletter is a good recent addition.

The industry has seen a nice upward trend of about 11 cents per pound for fat prices over the past two years, although prices have recently begun falling. There is some volatility with protein meal prices, but they remain fairly flat overall.

Current Issues

On October 4, 2017, the Environmental Protection Agency (EPA) issued a notice of data availability seeking to potentially further reduce the advanced biofuel and biomass-based diesel volumes required under the Renewable Fuel Standard (RFS). NRA staff and members were on top of this action, collaborating with the National Biodiesel Board to provide comments to the notice. It appears this issue is now behind us as Trump directed EPA Administrator Scott Pruitt to back off any changes that would dilute a federal mandate for biofuel use.

Iowa Governor Kim Reynolds stated, "I had a very productive call with President Trump. Both of them [Trump and Pruitt] affirmed to me their continued commitment to the Renewable Fuel Standard." A strong RFS helps renderers by creating alternative fuel mandates and increasing volumes that support the biodiesel industry, which uses 30 percent of US rendered fat and grease production as feedstock.

Steve Kopperud, Policy Directions, believes there is a good chance there will not be an extension of tax credits for biofuels from this Congress. If this proves to be the case, it is that much more critical to have a strong RFS to support the industry. Ideally, the rendering industry would like to see the tax credit extended for 2017 and 2018, incentives included in the 2018 farm bill, and support for a stronger biodiesel industry by increasing the volumes in the RFS, all which lead to better values and prices for rendered fats and oils.

On October 17, the US Department of Agriculture (USDA) announced it was withdrawing and not finalizing the Grain Inspection, Packers, and Stockyards Administration interim final rule regarding the scope of the Farmer Fair Practices Rules of

the Packers and Stockyards Act. The rules were intended to enhance the power of livestock growers in relationships with buyers and processors. Packers support the withdrawal.

The Clean Power Plan put in place under President Barack Obama requires states to meet specific carbon emission reduction standards. The plan also includes an incentive for states meeting standards on deployment of renewable energy. The recent decision by EPA to rescind the plan supports fossil fuels and not biofuels as much. Withdrawing could also lessen the importance of rendering's sustainability story. However, it is a clear signal that Trump, agriculture secretary Sonny Purdue, and Pruitt are serious about undoing many of the Obama-era regulations.

There has been a lot of talk on the North American Free Trade Agreement and its negotiations. NRA is advocating for (1) do no harm, (2) gain market access of meat and bone meal into Mexico, and (3) finalize the small ruminant rule to allow animal fats from Canada into the United States. The fourth round of negotiations closed in mid-October. If no deal is ultimately reached, tariffs could rise as they revert to World Trade Organization standards. Currently, rendered products move freely between Canada, Mexico, and the United States with no tariffs.

Issues of Concern to Renderers

There are various livestock/pet diet trends that are putting animal proteins in a negative light. One movement is toward an all-vegetable diet in poultry feed with many poultry producers claiming no animal or bakery by-products were fed to their chickens. Purdue touts "100% veggie fed" on its website, adding that "some chicken companies cut corners by feeding their chickens animal by-products like blood and bone meal. But all Purdue chickens are fed a 100% vegetarian diet, because we believe that if you wouldn't feed it to your family, we shouldn't give it to our chickens." Renderers and animal nutritionists know the value of animal proteins in a chicken's diet so this trend is ridiculous and primarily a marketing ploy.

Another top concern for renderers is food waste. The federal Food Recovery Act and some state-supported programs, such as in California, encourage

alternative disposal options that could potentially take away some rendering raw materials and dispose of them in a method that is not the best use according to EPA's hierarchy pyramid. The Food Recovery Act provides federal funding and loans for construction of large-scale composting and food waste-to-energy facilities.

Other issues on NRA's and the industry's radar include immigration, which agriculture and the meat industry depend on for their labor force, and the 2018 farm bill, which is renegotiated

every five years and includes funding for programs such as the Market Access Program and Foreign Market Development that is critical to NRA. NRA staff and its lobbyist are working hard and doing a great job for members in advocating for renderers' needs and staying on top of concerns and issues.

Positive News for the Industry

Despite some challenges, there is good news for the future of US renderers.

Continued on page 24



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Association *Continued from page 23*

After the severe lows of 2014, the US beef industry continues to rebuild its herd that will ultimately lead to more slaughter and rendering raw material. All major species are on track to post production increases:

- three to four percent more beef, following a four to five percent increase this year
- two to three percent more pork and chicken following record years
- two to three percent more turkey

All of this adds up to a record meat output increase of three to four percent.

According to the Food and Agricultural Organization of the United Nations, worldwide annual livestock production growth is expected to be 1.4 percent year over year through 2030 followed by 0.9 percent growth from 2030 until 2050. In the United States, meat consumption (beef, pork, and chicken) has increased to a projected 214.8 pounds per person per year.

Key items that will help the US rendering industry to be robust and ride the tailwinds to success are:

- increased exports and market access;
- supportive government toward agriculture;
- increasing animal production and slaughter as evident in the opening, or soon to be opening, of several new slaughter facilities; and
- the messaging of rendering and its sustainability. The NRA

Communications Committee is hard at work creating messages and tools to be used in telling this story.

Developed during NRA's strategic planning process is the group's mission: "To advocate for a sustainable food chain, public health, and the environment through the production and marketing of rendered products." To accomplish this, NRA:

- promotes effective public policy, regulation, and technology;
- encourages responsible business practices;
- supports free movement and market access of rendered products in domestic and international markets; and
- improves stakeholder awareness and understanding of the value of rendering.

Our story is "Rendering is Recycling." Our story is that over 50 billion pounds of raw material is converted into 20 billion pounds of finished products each year. These products are used as ingredients and feedstocks for a multitude of other products. Rendering's benefits to society and the environment continues to grow as animal agriculture grows.

It has been an enjoyable two years working with NRA members, staff, and others affiliated with this great industry.

Renderers provide essential services and products that are part of the sustainability chain and while the industry will always deal with issues and have headwinds that make our job difficult at times, renderers will prevail with more opportunities going forward. **R**

International Rendering Symposium Returns to IPPE

Hot topics in the rendering industry will be showcased at the annual International Rendering Symposium being held in conjunction with the International Production and Processing Expo (IPPE) February 1-2, 2018, in Atlanta, Georgia. Speakers will discuss emerging and challenging issues that the rendering industry is currently facing, such as pet food trends, American Association of Feed Control Officials (AAFCO) ingredient definitions, the Renewable Fuel Standard (RFS), changing social pressures, and other matters.

The two-day symposium, sponsored by the National Renderers Association, will open with a discussion about the current political climate and how it affects rendering. Presentations and speakers include:

- "AAFCO update and the status of ingredient definitions" by Leah Wilkinson of the American Feed Industry Association
- "The RFS: Why should the ag industry care?" by Mike Rath of Darling Ingredients Inc.
- "How the ag industry can adapt to rising social pressures" by Allyson Jones-Brimmer of the Animal Agriculture Alliance

Other symposium topics include today's pet food consumer, oxidation and its challenges, and how rendered ingredients stack up to other feed ingredients from a nutritional standpoint. The changing import/export climate will also be discussed, along with sustainability.

Symposium participants are invited to a networking reception on Thursday evening, February 1, following the first day's program.

Cost for the symposium is \$200 for registered IPPE attendees online or at the show. For the full agenda, visit www.ippexpo.org/edu_prgms or e-mail Jessica Meisinger at jmeisinger@nationalrenderers.com. **R**

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US Issues Antidumping Duties on Biodiesel Imports

On November 9, the United States (US) Department of Commerce (DOC) issued a final determination in a case brought by the National Biodiesel Board (NBB) Fair Trade Coalition regarding subsidized biodiesel imports from Argentina and Indonesia. Earlier this year, the DOC made a preliminary finding that Argentina and Indonesia provide subsidies to their biodiesel producers in violation of international trade rules. The November decision cements that earlier finding, and the cash deposit rates required of importers of biodiesel will be updated to reflect the final determination.

The DOC is requiring importers of Argentinian and Indonesian biodiesel to pay cash deposit rates ranging from 71.45 to 72.28 percent for biodiesel from Argentina, and 34.45 to 64.73 percent for biodiesel from Indonesia, depending on the particular foreign producer/exporter involved.

The NBB Fair Trade Coalition filed the petition to address a flood of subsidized and dumped imports from Argentina and Indonesia that has resulted in market share losses and depressed prices for US producers. Biodiesel imports from Argentina and Indonesia surged by 464 percent from 2014 to 2016, taking 18.3 percentage points of market share from US manufacturers. Imports of biodiesel from Argentina jumped 144.5 percent following the filing of the petition in March. These surging, low-priced imports prevented US producers from earning adequate returns on their investments and caused them to pull back on further investments to serve a growing market, according to NBB.

To successfully secure relief, a party must file not only with the DOC but also with the International Trade Commission (ITC). The DOC determines “whether the imports are subsidized and/or dumped,” while the ITC determines “whether the domestic industry has been injured” by reason of such unfairly traded imports. The DOC also decides the margin of duties to impose on imports based on the degree of dumping and subsidies found.

The ITC held a public hearing in early November in Washington, DC, where coalition members testified before the commissioners. The ITC is scheduled to hold its final injury vote on subsidies December 5. If the final injury vote is affirmative, the DOC will publish final countervailing duty orders on the question of subsidies.

The coalition filed both antidumping and countervailing duty petitions with the DOC. Antidumping petitions address concerns whether imports coming into the United States are priced below fair value. Countervailing duty petitions address subsidies provided by foreign governments benefiting the imported product. The November 9 decision was related to subsidies. DOC is scheduled to issue final antidumping determinations in early January that will be followed by another ITC injury vote regarding dumped imports.

In a related story, the Argentine government had requested negotiations for a suspension of the antidumping and countervailing investigation, which DOC would only agree

to if they ensured that injury to the US biodiesel industry is eliminated and the unfair trade practices are addressed.

“The [President Donald] Trump administration is committed to both free and fair trade and will defend American workers against unfair trade practices,” said Commerce Secretary Wilbur Ross. “Still, we are thankful to the government of Argentina for their proactive approach to solving this issue, and remain optimistic that a negotiated solution can be reached both with Argentina and with Indonesia.”

California Big User of Renewable Diesel, Home to New Plant

According to newly released data from the California Air Resources Board (CARB), about 50 percent of domestic US demand for renewable hydrocarbon diesel (RHD) – a biomass-based alternative diesel fuel made from hydro-treating fats and oils – comes from California, with the majority of the supply coming from Finland-based Neste plants in Singapore and Europe. Three other suppliers provide the balance of the demand – Diamond Green Diesel (a joint venture between Valero Energy and Darling Ingredients Inc.), Renewable Energy Group, and AltAir Fuels owned by Delek US. Only the AltAir plant, the smallest of the four, is located in California.

The state’s Low Carbon Fuel Standard (LCFS) credits reached a value of \$100 per metric ton (MT) in late October and remain around that level as of this writing. Some analysts predict the value will more than double by 2019, reflecting expected deficits in the program.

RHD generated almost 628,000 MTs of credits in the fourth quarter of 2016, up about 100 times from 2011. It should be noted there is somewhat limited supply of RHD given the small number of global production facilities. Diamond Green Diesel in Norco, Louisiana, is currently undergoing an expansion that will increase annual production capacity from 160 million gallons of renewable diesel to 275 million gallons and just announced it is analyzing an additional project to expand annual production capacity to 550 million gallons. Refiners and other LCFS credit buyers have paid close to \$650 million over the past year. Those costs are typically passed onto consumers at the pump. According to Leigh Noda, a senior associate at Stillwater Associates in Irvine, California, these credits will add 15 to 20 cents per gallon to the cost of fuel over the next two years.

The Golden State will soon be home to a new biodiesel plant and is welcoming a change of ownership in another.

Crimson Renewable Energy, the largest biodiesel producer in California, has again chosen BDI – BioEnergy International AG as the technology provider for a new biodiesel plant that will run alongside its existing facility. BDI completed two major upgrades at Crimson’s facility just last year. The new facility will

use BDI's RepCAT technology, a patented biodiesel production system for low-quality feedstock with high free fatty acids that uses a low-cost recyclable catalyst. The process avoids complex by-product treatment thus reducing operating costs and improving the quality of the biodiesel by-products. The Crimson plant is the first BDI plant in the United States and the third worldwide dedicated to recycling high free fatty acid fats, oils, and greases from metropolitan areas. The other two are in Hong Kong, where trap grease from local restaurants is converted, and the United Kingdom, where fatbergs from the London sewage system are used as feedstock for biodiesel production.

Agron Bioenergy LLC has sold its Watsonville, California, biodiesel plant to Western Iowa Energy LLC. Financial terms of the transaction were not disclosed but included a 15-million-gallon-per-year biorefinery and a small patent portfolio. Agri Beef Company of Boise, Idaho, previously owned the facility but ceased operations last year. Western Iowa Energy has operated a 45-million-gallon-per-year multi-feedstock facility in Wall Lake, Iowa, for over a decade.

EPA Reverses Course on RFS

Under direct pressure from the White House and a growing bipartisan chorus of United States (US) senators, representatives, state and city governments, and biofuels industry stakeholders, US Environmental Protection Agency (EPA) Administrator Scott Pruitt reversed course on a notice of data availability shortly after it was released in late September. The notice was an attempt to stall EPA's July proposed rule for 2019 biomass-based diesel renewable volume obligations (RVOs) under the Renewable Fuel Standard (RFS) and find ways to actually reduce them for 2018 and 2019. In July, EPA proposed RVOs of 2.1 billion gallons for biomass-based diesel in 2019.

In a letter Pruitt stated that, "EPA has not taken any formal action to propose this idea, nor will EPA pursue regulations," referring to the lowering of biofuel mandates under the RFS and allowing ethanol exports to count toward the mandate. Noting that it would be inappropriate for EPA to prejudge the outcome of the final rule for 2018 and 2019 volumes, Pruitt wrote, "Preliminary analysis suggests that all of the final RVOs should be set at amounts that are equal to or greater than the proposed amounts, including at least 2.1 billion gallons for biomass-based diesel in 2018 and 2019."

The National Renderers Association strongly supports a higher – not lower – RFS since both fuels are important markets for renderers. About 32 percent of US rendered fats and oils produced are used as feedstocks for biodiesel and renewable diesel production.

Industry Continues to Push for Extension of Tax Credits

On October 31, a diverse group of biodiesel producers, fuel retailers, and trucking interests sent a letter to the United States (US) Senate Finance Committee and the House Ways and Means Committee in support of extending and eventually phasing out the biodiesel blender's tax credit. The letter also outlined their opposition to shifting the credit to a producers'

credit as the tax-writing committees consider tax reform legislation.

David Fialkov, vice president of government affairs for the National Association of Truck Stop Operators, said in a statement, "The blender's credit has successfully incentivized fuel retailers to incorporate biodiesel into their fuel supply in a manner that enables them to lower their diesel prices. This benefits trucking fleets and drivers who get to pay less money for fuel and it benefits biodiesel producers who have a vibrant, growing demand for their product. The blender's credit is good for everyone."

The letter does not support a transition to a producer's tax credit. "Phasing out the blender's credit over five years makes sense in the context of comprehensive tax reform where Congress is looking to lower rates, simplify the tax code, and foster economic growth. Shifting to a producer's credit, on the other hand, is excessively complicated, would create a brand new tax expenditure, and would result in higher fuel prices."

Many US biodiesel and renewable diesel producers and advocates support the transition to a producer's credit as an effort to keep taxpayer dollars supporting domestic fuel production rather than going to foreign biofuel manufacturers.

Days after the letter was sent, a comprehensive tax reform proposal was released by the House of Representatives that disappointed National Biodiesel Board (NBB) members as it did not include an extension of the biodiesel tax incentives.

"For decades, stable federal tax incentives for oil and gas have contributed to the world-class, conventional energy industry of today, and NBB encourages legislators to create a similarly stable tax framework for biodiesel and renewable diesel," said Doug Whitehead, NBB chief operating officer. "As the process moves along, NBB stands ready to work with Congressional lawmakers to craft a robust biodiesel tax incentive that will provide public benefits such as rural job creation, a diversified national fuel portfolio, and fewer toxic pollutants in the air."

The National Renderers Association is also continuing to work with NBB and lawmakers to include biodiesel tax incentives in comprehensive tax reform proposals moving forward.

Monster Fatberg Turned into Biodiesel

A monster 250-meter-long (820 feet) fatberg – a congealed mass of fat, oil, grease, wet wipes, and sanitary products – discovered blocking an east London, United Kingdom, sewer will be converted to around 10,000 liters (2,641 gallons) of biodiesel. The biodiesel will create enough environmentally-friendly fuel to power 350 double-decker Routemaster buses for one day, according to Thames Water Utilities Ltd.

The United Kingdom's largest water and wastewater services provider teamed up with waste-to-power firm Argent Energy to transform what Thames Water calls "a gut-wrenching, rancid blob" into renewable fuel.

Continued on page 38

Species Test: What is Tolerable or Acceptable?

The global rendering industry can be a bit comparable to the new coffee hype. For centuries, people only drank coffee with or without milk and/or sugar. Today, no one wonders when someone orders a medium double-espresso-half-fat-soy latte with hazelnut flavor and sweetener. Tempora mutantur: Times change! As they do in the rendering industry. For decades, the rendering and feed industries knew only a few products:

- tallow, choice white grease, animal fat, poultry fat, yellow/brown grease, and used cooking oil, and
- meat and bone meal (MBM), feather meal, blood meal, and poultry by-product meal.

Today there is a broad range of different products, especially on the protein side. This development was mainly driven by the bovine spongiform encephalopathy (BSE) crisis that began in the United Kingdom in 1986. One of the first reactions toward controlling BSE was a ban on ruminant protein meal in ruminant diets and the removal of specified risk material from the feed chain. Additionally, the European Union (EU) implemented a new regulation that separates animal by-products into three different risk categories. Concerned by this new non-classical infection route via prions, the EU also took the precautionary measure of forbidding species-to-species feeding (i.e., no poultry-based protein to poultry, etc.). There was no scientific basis for this decision except the precautionary principle. Fortunately, countries outside of Europe have not followed this approach as the benefits are obvious. Poultry meal and feather meal, for example, provide the exact amino acid profile needed in poultry diets. It does not have to be artificially composed of from other protein sources.

Over the last seven years, the European feed and export bans for proteins were successively, but not yet fully, repealed. Since July 1, 2017, the EU allows the export of ruminant processed animal proteins (PAPs). Yet in non-European countries the request for pure poultry or pork proteins or ruminant-free proteins has increased. Some countries are even asking for pork-free PAPs. Nevertheless, in Europe two feed bans remain: the World Organization for Animal Health (OIE)-based globally applicable ruminant-to-ruminant ban and the European species-to-species ban.

However, the question arose, what does this ban mean? Some speak about “zero tolerance,” which is a contradiction in itself. Does zero mean zero as in no single particle? If so, what particle? Is there a tolerance above zero? The European Union Reference Laboratory for animal proteins in Gembloux, Belgium, developed and validated for over 10 years the DNA-based polymerase chain reaction method to detect certain species in feed. This past July at the Australian Renderers Association symposium on the Gold Coast of Australia, Dr. Kate Griffins from the National Measurement Institute confirmed that the European test methods give reliable and reproducible results. The published method so far for ruminant detection is a qualitative test and is positive for ruminant DNA content

above 0.1 percent. Unfortunately, the average detection level is far lower than 0.1 percent. A quantitative testing is not possible and thus normally non-relevant positives below 0.1 percent have appeared. The European rendering and feed industries alerted the European Commission that the tests are too sensitive. Even with strict cleaning procedures, dedicated transports, and single-species clients, the tests do sometimes confirm a positive result.

Due to the industry’s ongoing objections, the European Commission sent a request in October to the European Food Safety Authority (EFSA) to conduct a risk assessment. They will review and update the input data and, if necessary, the basis, assumptions, and structure of the current EFSA quantitative risk assessment PAP model for the introduction of an “action limit” above the current one. The focus is to estimate the cattle BSE risk posed by the possible contamination of feed with BSE-infected bovine-derived PAP. The envisaged deadline is June 30, 2018. It is assumed the EU will apply the results of this risk assessment for ruminant PAP in ruminant feed toward the thresholds of the species-to-species ban. The infection of poultry via a poultry agent is pure speculation as no parameters are known and cannot be calculated. The same applies for pork. Therefore the transfer of the BSE results to poultry and pork is not based on science.

As mentioned before, there is no scientific proof that there are other non-classical animal diseases that could be transferred by animal proteins. Contrariwise, classical disease pathogens are sufficiently destroyed during the sanitation process in rendering. Therefore, the ruminant-to-ruminant ban, which is defined and mandated by OIE, is the only ban that falls under risk perception. A threshold for this should be thoroughly and regularly assessed based on the current BSE risk prevalence to define which threshold/unavoidable inclusion of ruminant PAP is tolerable. This tolerance is thus a safety issue.

Contrary to the safety issue of ruminant proteins, all other issues are not risk based and should be considered a quality issue. Quality is always a matter that must be agreed upon between seller and buyer. The buyer defines what he is willing to accept and how to measure it. For example, a common quality specification in a contract is the protein content in meal or free fatty acid in fat. The species purity or the product being free of a certain species falls under the same rule. Pet food producers, for example, need a certain standard for labeling/declaration of ingredients. Yet taking into account that animal meals are only a portion of the diet and that labeling allows for certain deviations, an agreed purity of 99.99 percent would be an unnecessary request. A similar guarantee would never be asked of other natural ingredients as no one knows how many insects, reptiles, rodents, rabbits, birds, or even roes are co-harvested and end up in grain and corn. Audits and a communicative customer relationship are therefore a good basis for reliable quality.

This is relevant for the feeding of farmed animals as well. The total MBM feed ban in Europe was not a reaction to the ongoing MBM production but the possible cross-contamination in feed mills and on the farm. In fact, both feed mills and farms cannot be run like a sterile and clean laboratory, which means an exorbitant specification for rendered product can hardly be justified. If labs today can test species DNA per mill, in a few years they may be able to test DNA per million, billion, or trillion. Yet, will this be relevant for a business? On the other hand, livestock traditionally eat their own protein materials (i.e., feather picking by poultry, tail biting by pigs, and licking of newborn offspring by ruminants) so what is natural and what is not?

Therefore, a 99.99 percent pure pork or poultry protein is a clear quality requirement. The extra effort to produce it will have a higher price like low ash products or refined fats. Clients define what is acceptable.

With regard to ruminant or ruminant-free products, the whole feed chain must be considered. Cross-contamination at all stages must be taken into account, not just for one imported product. The EU is currently not in a position to control ruminant feed at all stages to allow ruminant PAPs back into non-ruminant feed. Contrary to the EU, countries worldwide are obviously more effective at checking ruminant feed for ruminant PAPs and at protecting their ruminant population even without a feed ban. Ruminant PAPs can be used in non-ruminant feed without harm. If non-ruminant PAPs are to be used in ruminant feed, competent authorities need to set a threshold and define what is tolerable because it was assessed as safe. **R**

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A Good Year for Research

Editor's note – The following is a speech, in part, given by Doug Smith, Baker Commodities Inc., at the Fats and Proteins Research Foundation annual meeting in October in Santa Barbara, California.

The Fats and Proteins Research Foundation (FPRF) is currently conducting some of the most progressive and potentially impactful research ever to advance the rendering industry. As the industry's research organization, FPRF works hard to ensure the research funded is relevant and valuable for renderers. This is vital to help ensure a healthy future for the industry.

FPRF has three important goals: to enhance use of rendered animal products, improve rendering technologies, and develop new applications. FPRF supports and welcomes research proposals from across the continent and beyond that focus on animal nutrition, novel uses, biosecurity, food safety, environment, and sustainability. This generates new knowledge to help renderers meet increased regulatory scrutiny and customer expectations.

FPRF had a good year in 2017 with continued partnership with the Poultry Protein and Fats Council that is expected to continue. The Pet Food Institute partnered with the foundation last year and new joint research is being proposed for the coming year. FPRF is currently funding 17 research projects at five universities across the country. With this tremendous traction, increased participation in funding is needed to keep up with the opportunities.

Founded in 2006 and located at Clemson University in South Carolina, the Animal Co-Products Research and Education Center (ACREC) was developed to advance the science and technology of animal by-products and the rendering process. Currently, there are 12 projects at ACREC that started in 2016 and 2017 and five projects at other universities such as Colorado State, Kansas State, Iowa State, and Kentucky. Four new proposals from other universities were reviewed in October with only the very best ideas funded in this competitive process.

The unique thing about Clemson is that rendering research has been conducted there for about 15 years now, developing a critical mass of faculty familiar with rendering. They are engaged in solving some of the industry's toughest challenges, including water cleanup, odor control, oxidation prevention, new products, and so on. ACREC director Dr. Annel Greene is the 2017 recipient of the FPRF Dr. Fred Bisplinghoff Research Innovation Award for her tireless work and leadership in developing the center (see story on next page).

Clemson researchers Vladimir Reukov and Alexey Vertegel received FPRF's Dr. Fred Bisplinghoff Research Innovation Award in 2016 for their work extracting a natural antioxidant from animal blood. They continue to make good progress on getting the product commercialized through their company, VRM Labs. Reukov and Vertegel are also using a by-product

from that project, red blood cells, to develop renderable flocculants for wastewater treatment. They have partnered with Dr. Rafael Garcia of the United States Department of Agriculture on that project.

Another project at ACREC aims to convert rendered fats into high-value omega-3 oils. This year, the team is scaling up the previously successful lab-sized experiment using engineered bacteria to convert saturated and monounsaturated animal fats into polyunsaturated fatty acids (PUFA) rich in eicosapentaenoic acid and docosahexaenoic acid, the two principle omega-3 fatty acids found in fish oil. The expected outcomes of this proposal include anon-pathogenic yeast strain capable of converting rendered fats into PUFA and other oleochemicals in large fermentation vessels at profitable yields.

Dr. Dan Whitehead has worked at Clemson University for six years solving odor problems. He researched synthesized modified lactide nanoparticles that bear functional reactive sites capable of capturing odor constituents associated with rendering. Using what he learned, Whitehead is now working to generate lower cost, effective odor control products from natural materials including clays and cellulose. This could be a huge breakthrough for neighbor relations and compliance.

Clemson scientists have worked to squeeze more fat out of crax, characterize meat and bone meal as a natural fertilizer, and use animal proteins as car parts and nursery pots. They have collected data used effectively by the National Renderers Association (NRA) to support rendering's sustainability claims and helped the industry refute false claims that feather meal was highly contaminated.

FPRF is funding a new research project to transform meat and bone meal into astaxanthin, a high-value natural antioxidant that gives salmon meat its rich pink color. The foundation has also financed a number of projects that may lead to better ways to extract proteins and fats from slaughterhouse and rendering wastewater and is currently funding a project to generate electricity and peroxide from wastewater.

Although not everything pans out as hoped, a steady flow of successes eventually ends up in some big home runs.

The foundation has a solid track record of success and has laid the foundation to use animal fat and used cooking oil to make biodiesel and validated rendering cooker temperatures to satisfy animal food safety regulations. FPRF research developed information published in a scientific journal to refute composting and anaerobic digestion as green rendering alternatives and established rendered proteins as legitimate ingredients for poultry, livestock, fish, shrimp, and pet foods.

There is good synergy between FPRF and NRA. NRA uses FPRF research results to promote and defend the industry to the public, media, regulators, Congress, and other stakeholders. Examples are the thermal validation

work, sustainability data, and lifecycle analysis for rendering used to enhance the industry's reputation and ability to operate. NRA also provides management support for the foundation that makes for good efficiency benefitting both organizations.

At a series of universities, a number of FPRF-funded projects were conducted on controlling *Salmonella* and other contaminants with the goal of continued improvement of rendered products while offering recycling services to society. Future projects may develop additives or filters to ensure *Salmonella*-free fats at the point of use. This will enhance animal food safety and would mean fewer problems for suppliers and customers alike.

FPRF could do more, accomplish more, and further enhance the future of rendering if more join the foundation. I invite you as renderers and partners in this wonderful industry to support FPRF with a contribution to help improve rendering operations and long-term strength. It is our future to create and the possibilities are tremendous. Yes, we are all fierce competitors in the market, but together we can keep building FPRF to fund major research that would be hard—or impossible—for each company to do alone. No one else will do this for the industry.

FPRF regularly has to turn down promising research proposals that could be funded with additional resources. With your support, FPRF could do more to benefit each company and the industry, which produce incredible products but also face major challenges. FPRF is an important part of solving these problems, whether it is odor, water quality, creating new markets, or better animal diets. I invite you to join us on this journey. **R**

ACREC Director Honored

The Fats and Proteins Research Foundation (FPRF) has presented Dr. Annel K. Greene, professor and center director of the Clemson University Animal Co-Products Research and Education Center (ACREC), its 2017 Dr. Fred Bisplinghoff FPRF Innovation Award. She was recognized for her long-term scientific support of the rendering industry and her creativity and leadership in developing the FPRF/Clemson University center for the benefit of the industry and sustainability.

From the conceptual idea of ACREC 14 years ago, through its development, and to the present, Greene has done an exemplary job of developing and running the center with solid and meaningful interactions with the rendering industry. In addition to this above-and-beyond service, Greene taught microbiology at several industry quality/safety training sessions and showed her impressive teaching skills. During the 14 years of ACREC, and for several years before that, she conducted numerous research projects on microbiology on behalf of the rendering industry, expanding renderers' knowledge in the area and helping develop strategies for product improvement. In addition, Greene has shown an uncanny ability to attract Clemson scientists outside rendering's



Dr. Annel Greene (left) is presented the Dr. Fred Bisplinghoff FPRF Innovation Award by Dr. David Meeker, FPRF director of research.

traditional disciplines to assist with ACREC projects and to develop multidisciplinary strategies for new uses for rendered products, problem solving for existing products, and developing new products.

The award was established in March 2015 and is given annually to an FPRF grant recipient who successfully completed research on behalf of the North America rendering industry that led to a substantial contribution to the existing body of knowledge, to an increased usage of rendered products, or to improvements in operations, product quality, and safety. **R**



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Turning Energy Buys into a Competitive Advantage

Energy procurement can be a significant competitive advantage for an organization when it is viewed as a portfolio with risk to be measured and managed instead of a simple transactional process. Energy markets are complex and dynamic with an extensive list of outside technical and fundamental forces influencing prices. Successful energy buying programs involve defining and prioritizing several types of risk, developing a strategy based on market outlook and a statistical analysis of potential outcomes, and ultimately being able to measure the results of the strategy.

A common misconception in energy procurement is that when all forecasted consumption has been locked in to a fixed price, 100 percent of the risk has been eliminated. The reality is there are several types of risk that impact an energy spend. Each of these risks must be managed in concert to best enhance an organization's energy program.

1. Budgetary risk is the most commonly managed type of energy risk. It is encountered in situations where the forward market and cash/index market prices rise. This can impact an organization's ability to maintain budget commitments if not enough of the anticipated consumption is locked in at a fixed price.
2. Opportunity risk is the inverse of budgetary risk. If much or all of the anticipated consumption is locked in at a fixed price, an organization cannot benefit from a bearish move in the forward market or soft cash/index market prices.
3. Consumption risk comes into play as organizations look to predict future consumption. Mergers, acquisitions, divestitures, demand management, and sustainability are at the forefront of many strategic plans. All of these significantly impact energy consumption and associated costs.
4. Term risk is managed when the term of energy contracts align with other commitments within an organization. Additionally, term risk contemplates the current forward market to evaluate market opportunity.

Establishing an organization's risk tolerance requires thoughtful contemplation and prioritization of each type of risk. For example, a business with slim profit margins and multi-year sales contracts should prioritize budgetary and term risk, building a strategy with higher fixed positions and longer tenors to mitigate the margin at risk associated with a bullish run in energy. Industrial clients with high swings in demand from day-to-day and flexible operational behavior would be best suited by first managing opportunity and consumption risk. The intentional cash/index exposure will allow for flexibility to shift operations from a higher price time period to a more favorable pricing condition and eliminate potential sell-backs into an unfavorable market.

The next step after establishing a risk tolerance is developing a strategy based on market fundamental influences,

technical influences, and outlook. The strategy development stage involves answering three common questions.

1. *When is the right time to buy?*

Traditional approaches will look at the period immediately before the existing contract end date, which can lead to missed opportunities or being forced to choose between the lesser of two evils (no fixed positions or a buy in an unfavorable market). A managed portfolio should always have a three- to five-year view into the forward markets, allowing for a full reciprocal historical trend analysis. This changes the deciding factor from "what is the lowest price today?" to "how does today's price compare to the minimum, maximum, and average price over the last five years?"

2. *What is the right term to buy?*

Sometimes company policy dictates minimum or maximum contract term. In the absence of that (or when an existing policy should be reevaluated), the three- to five-year view into the forward markets will highlight opportune tenors. Sometimes technical or fundamental shifts in the market can cause a backwardated condition, where a three-year fixed price is lower than a one- or two-year price. Also, the forward market has periods where the forward spreads (price difference between each future year's prices) collapse, making the difference between a 12-month and a 60-month price negligible.

3. *What is the right portion of forecasted consumption to buy?*

An energy program that is built on risk management will first look at the range of potential outcomes to understand the current market value of the portfolio as well as the cost and opportunity at risk. An industry-leading risk management platform metric will contemplate the thousands of potential outcomes, given the full exposure to the volatile index/cash markets, and convey best-case and worst-case scenarios. Alongside this, the current market value of the forecasted consumption is calculated. The difference between the current market value and the worst-case outcome is the cost at risk. The spread between the current market value and the best-case outcome is the potential opportunity. A company must then decide how much of the cost at risk they are willing to accept in order to retain some or all of the potential opportunity. For every megawatt hour or one million British thermal unit that is locked in at a fixed price, the cost at risk is constrained, but so is the potential opportunity.

To take it one step further, each market for natural gas and electricity is comprised of periods of relatively high volatility and prices (e.g., electricity for summer months during peak hours in Texas or natural gas for winter months in New England) and relatively low prices and volatility (e.g., electricity for late spring during off-peak hours in the Pacific Northwest). The decision of when to place fixed positions – which months and hour blocks – is arguably more important than how much to purchase. A thorough risk management analysis

will allow a company to understand the potential impact of a fixed price position to both the cost at risk and potential opportunity, essentially test-driving a strategy before executing it.

Once a strategy has been developed, the next step is to document it so it can be communicated internally for consensus among in-house stakeholders as well as benchmarked to be evaluated later. A record should be made of the market conditions at the time of execution, the full analysis of cost at risk and opportunity – with and without the chosen strategy – and the details of the chosen strategy including volumes to be fixed and associated price(s). The biggest measure of success for an energy portfolio management program is how well it performed relative to expectation.

Due to the in-depth analysis in the preparation stages of the process, a company will be able to tell (at any stage of their contract life):

- how much cost at risk was eliminated as a result of the fixed price positions;
- how much potential opportunity remains in the portfolio with fixed price positions;
- what the market value of the portfolio was at the time of contract or strategy execution; and
- what is the realized price inclusive of any fixed and index/cash market positions.

Comparing the realized price to the market value of the portfolio when the strategy was finalized allows a company to say, definitively, “This was the value of my strategic management.”

There are many forces impacting natural gas and electricity markets. Regulatory changes, supply/demand balance, weather shocks, geopolitical influences, sustainability initiatives, environmental legislation, innovation, and overall macroeconomic conditions will all influence the volatility, overall price movement, and liquidity of energy markets.

Energy procurement will ensure a company has the gas and power needed for operations. A successful portfolio risk management program allows a company to know when to buy, how long to buy, how much to buy, and how well the strategy performed. **R**

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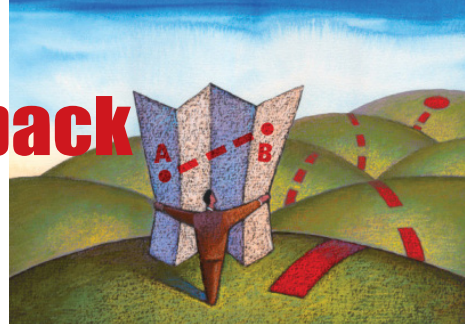
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Reconsideration and Rollback of Environmental Regs



By Robert T. Vogler, Valley Proteins Inc.

Editor's note – Robert T. Vogler is director of environmental affairs at Valley Proteins Inc. and chairman of the National Renderers Association's Environmental Committee. He holds a juris doctor degree from Duquesne University and bachelor of science degrees in agricultural engineering and agricultural science from Rutgers University.

The volume of United States (US) Environmental Protection Agency (EPA) regulations nearly occupies 90 percent of the 30,000 pages of federal regulation, dwarfing the scope of other agencies. Under President Donald Trump and EPA Administrator Scott Pruitt, it appears the ever-expanding scope of EPA's regulatory reach has, in large part, been stopped cold.

Early in his administration, Trump issued a number of executive orders to reduce regulations, including a "one-in-two-out" order requiring each agency to choose two regulations it will cut for every new rule it introduces. In addition, he ordered federal agencies to identify ineffective and burdensome regulations that should be repealed, replaced, or modified. Trump also issued orders specifically directing EPA to review its 2015 clean water rule, or "waters of the US" (WOTUS) rule, and the Clean Power Plan for possible repeal or revision.

This article will revisit environmental issues familiar to the rendering industry and largely discuss the efforts to reconsider and rollback recent regulatory pushes in those areas.

Waters of the US

In 2015, EPA put into effect a rule revising the definition of waters in the United States, greatly expanding the agency's jurisdiction over activities in wetlands, intermittent streams, drainage ditches, and upland areas. This was purported to clarify the scope of federal jurisdiction over upland and isolated waterways but was widely seen as a huge power grab by EPA and the Army Corps of Engineers. A nationwide stay on enforcement was issued in October 2015 and the case is now pending in the US Supreme Court to determine the procedural question of whether challenges such as this should be brought in federal district courts or federal courts of appeal.

Under Trump's executive order, EPA undertook a review of the WOTUS rule and has proposed a repeal in order to retain a more narrow definition of "navigable waters" consistent with court decisions on what constitutes federal jurisdictional over waters of the United States. In November 2017, EPA proposed delaying the effective date of the rule to provide regulatory certainty while it reconsiders the matter.

Ozone Rule

Also in 2015, EPA adopted a new National Ambient Air Quality Standard (NAAQS) for ground-level ozone, lowering the standard from 75 parts per billion (ppb) to 70 ppb, a level that will place a large portion of the expanding, robust economic areas of the country into non-attainment. Under the

rule, states were required to submit to EPA the designations of areas in their states as nonattainment by October 2017. Nonattainment areas likely will include metro areas in Arizona, California, Louisiana, Michigan, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Texas, and Virginia, among others. Nonattainment generally would result in further stack controls of volatile organic compounds and nitrous oxide emissions.

In June 2017, EPA announced plans to delay implementation of the rule by a year while it evaluated issues such as background ozone levels and the effect of international transport of ozone. In August, after 16 states sued over the delay, EPA reversed course and announced it would proceed with designating the nonattainment areas under the new rule. Meanwhile, the US House of Representatives passed a bill (H.R. 808) to extend implementation deadlines, including nonattainment designations, to 2025 and extend the review cycle from 5 to 10 years. The same bill is under consideration in the Senate (S. 263).

Emissions of ozone-forming compounds have been cut in half since 1980 resulting in a 33 percent drop in ozone levels, despite the fact that the previous ozone standard adopted in 2008 had not yet been fully implemented when the stricter 2015 standard was imposed.

Clean Power Plan

EPA's Clean Power Plan was put in place under President Barack Obama's administration and targets reduction of carbon dioxide (CO₂) emissions from existing coal-fired power plants by 32 percent and essentially bans the building of new coal-fired power plants. In 2016, the US Supreme Court granted a nationwide stay of implementation of the plan pending judicial review of its validity. In April 2017, the District of Columbia Circuit court temporarily suspended the pending lawsuit over the validity of the plan while EPA conducted a review. On October 16, 2017, EPA issued rulemaking to formally rescind the Clean Power Plan.

In August, the Trump administration took steps to formally pull out of the commitments to reductions in CO₂ that were made in the 2015 Paris climate agreement. These commitments were used by the Obama administration to justify the Clean Power Plan.

Despite these efforts to "end the war on coal," technological changes and the economic forces favoring the production of natural gas are likely to limit the recovery of coal production for power generation in the United States.

Endangered Species

In October, the House Natural Resources Committee approved five bills to modernize the Endangered Species Act. The act is seen by many as a tool used by wildlife advocates to block economic development, including logging, ranching, mining, and oil and gas development, as well as allocation of water in the west. Changes would likely make it more difficult

to list new species and allow greater input by the states.

With over 1,600 plants and animals protected under the act, less than 70 have recovered to the point of having protections lifted. The listing of hundreds of new species remains pending.

The potential for the presence of endangered species or their habitats complicates the ability to obtain federal permits for disturbance of wetlands or waterways, or to develop certain road, water, sewer, energy, and other infrastructure projects. It also may restrict the ability to disturb or develop in private projects involving an affected area.

Startup, Shutdown, and Malfunction

In 2015, EPA ordered 36 states to rewrite certain rules that allowed for waiving of emission penalties for excess emissions during startups, shutdowns, and malfunctions. EPA is revisiting this matter and has asked for postponement of the federal court case challenging this rule, pending completion of EPA's review.

Sue and Settle

On October 16, 2017, Pruitt issued a directive intended to shut down the Obama-era "sue and settle" practices. The directive states that "the days of regulations through litigation, or 'sue and settle,' are terminated. EPA will not resolve litigation through backroom deals with any type of special interest group."

It is contended that under "sue and settle" EPA would seek to resolve litigation filed against it through settlements in the courts by way of a secretive process that excluded the states and other interested stakeholders. This process was seen as a way to circumvent the public rulemaking process and bind EPA to de facto regulations and certain commitments without input from the affected stakeholders.

The new directive provides for, among other things, public notice regarding suits filed against EPA, involvement of the states and other stakeholders in any settlement process, and certain constraints on the terms of any settlements made. On October 5, 2017, the House of Representatives passed a bill (H.R. 469) that, if enacted into law, would require more transparency and accountability by all federal agencies in court settlements of this nature. R

Research to Evaluate *Salmonella* Risk in Animal Feed Production

The Institute for Feed Education and Research, along with several partners – including the American Feed Industry Association, National Pork Board, National Renderers Association, Poultry Protein and Fat Council, U.S. Poultry and Egg Association, and U.S. Soybean Board – has launched a new research project with the University of Arkansas to analyze whether animal feed contains any of the serotypes from the bacteria *Salmonella* that could pose a health threat to livestock. The yearlong project is aimed at helping the animal feed industry better understand if the bacteria is prevalent at their manufacturing facilities so that it can make more informed decisions on what additional safety measures, if any, should be taken to promote feed safety and protect animal health.

There are more than 2,500 strains, or serotypes, of naturally occurring *Salmonellae* present in the environment and in animals. Although humans who consume contaminated food or practice poor food handling can sometimes contract salmonellosis – a foodborne illness that is estimated to cost more than \$2.3 billion annually in medical care expenses and productivity losses – it is rare for animals to elicit the same response. The biology of many animals typically shields them from most strains of the bacteria; however, the Food and Drug Administration considers eight specific *Salmonellae* serotypes to be "hazardous" to five animal species – poultry, swine, sheep, horses, and dairy and beef cattle.

To prevent these serotypes of *Salmonella* from posing a risk to these animals, the six organizations formed a *Salmonella* in Feed Coalition, providing a \$50,000 grant to the University of Arkansas to conduct a thorough research analysis. The project will invite 250 animal food mills in the United States that produce livestock feed to voluntarily send samples of their commercial feed to the university for analysis. Kansas State University, another partner in the project, is developing guidance materials for the volunteers to explain how to collect the samples and will be providing sampling kits. The facilities will take the samples in the fall of 2017 and spring of 2018 from their bulk feed shipments. In all, 500 samples will be collected and analyzed.

Once the samples are received, they will be tested to see if *Salmonellae* are present. If the sample contains the bacteria, it will be further analyzed to determine the specific *Salmonella* serotype. Project results are expected at end of summer 2018. R



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Diversified Labs Offers Industry Scholarships

Peter Kendrick, chief executive officer at Diversified Laboratories Inc., believes that post-high school education is the key to changing a person's life trajectory. In support of this idea and in gratitude for the many years of patronage by the rendering industry, Diversified Laboratories is awarding \$25,000 in two scholarships to children of National Renderers Association member company employees, one for a four-year college and one for a two-year program.

A \$20,000 scholarship is being offered to a graduating high school senior (class of 2018) attending a four-year college/university while a \$5,000 scholarship is available for a student working toward an associate's degree or technical certification. Scholarship recipients must maintain at least a 3.0 grade point average in preferably one of the following fields: science, technology, engineering, mathematics, agriculture, medicine, or education.

NRA members are encouraged to distribute the scholarship information to their plant managers, workers, and company employees through company meetings or other communication efforts. The deadline for scholarship application submission is March 1, 2018. More information is available at www.diversifiedlaboratories.com. Diversified Laboratories has over 40 years of experience in providing testing services to renderers for detection of chemical contaminants.



Haarslev Reinforces Global Team

Haarslev has made three appointments to several of its global regions: Tony Johnson was named sales director Asia Pacific (APAC) and general manager of the APAC office; Henning Haugaard was named sales director North Europe and general manager of the Danish offices in Herlev and Sønderød, Denmark; and Maxim Kazlauskas was appointed general manager of Haarslev's Russian offices.

Johnson previously worked as an expat in Denmark to create the transition of Haarslev's European business to its current position. He will now take on the same challenge for the fast-growing APAC region and develop the regional headquarters in Kuala Lumpur, and manage the offices in Malaysia, New Zealand, China, and India.

Haugaard is a Haarslev veteran, having worked almost 30 years for the company. Four years ago, he took on an expat role to build the Haarslev business in New Zealand and Australia. After successfully growing the business in that region, Henning has now returned to Denmark to direct the local offices and the business in North Europe.

Kazlauskas started his career 15 years ago in the processing industry. Ten years ago, he joined Meyn Food Processing Technology B.V. as sales manager in Russia before serving as sales director the last few years. Kazlauskas has a deep understanding of the Russian processing industry and will lead the Haarslev offices in Moscow and Belgorod.

Mahoney Buys Waste Oil Recyclers

Mahoney Environmental, a leading recycler of used cooking oil for 65 years, has purchased Waste Oil Recyclers (WOR) Inc., a used oil recycling company based in Modena, Pennsylvania, a suburb of Philadelphia. The integration of WOR into Mahoney Environmental will allow for direct service to Mahoney customers throughout the Mid-Atlantic region.

The October 2017 acquisition will allow Mahoney Environmental to grow its reach nationally in the servicing of used cooking oil collection, recycling, and other back-of-the-house service needs of its customers.

NRA Welcomes new Team Member

Heather Davis has joined the National Renderers Association (NRA) as the coordinator of member relations and



Heather Davis

operations at the association's headquarters in the Washington, DC, area. Davis relocated from Des Moines, Iowa, where she was responsible for client relations, a well-functioning office, and legal assistance at a local law firm. From the East Coast, Heather will continue to pursue her bachelor's degree at Iowa State University with a focus in environmental science and sustainable policy.

OIE Opens US Office

The World Organization for Animal Health (OIE) has officially opened its United States (US)-based liaison office in College Station, Texas. The office is co-located with and hosted by the Institute for Infectious Animal Diseases, a member of the Texas A&M University system and an OIE collaborating center specializing in biological threat reduction.

The opening of a liaison office is a first for the organization. Traditionally, permanent official relations with OIE member countries as well as international and regional organizations are maintained through the official national delegate and the 12 regional representations covering every continent. While the OIE US-based liaison office does not change any traditional communication channels, the office will provide new avenues for engagement with US agencies and the private sector. It will also open additional lines of communication between OIE and US veterinary and public health parties allowing for better collaboration in disaster preparedness, emergency planning, and animal disease surveillance. **R**

RENDERING: THE GREENEST OPTION

A Comparison Of 3 Alternatives For Large Scale Processing of Meat and Meat By-Products

GREENHOUSE GAS PRODUCED
(*per 1000 kg of meat and meat by-products processed)

RENDERING

200 kg GHG*
RENDERING avoids at least **90%** of potential greenhouse gas emissions compared with industrial composting

2500-4000 kg GHG*

INDUSTRIAL COMPOSTING

ANAEROBIC DIGESTION

60-500 kg GHG*

Converts **99%** of meat & meat by-products into ingredients for animal feed, biofuel, fertilizer, industrial and consumer products

Recovered resources have a **HIGH ECONOMIC VALUE** \$\$\$\$

Established Industrial Process operating under and controlled by a **CODE OF PRACTICE** in line with federal regulations to control pathogens & ensure animal food safety

Regulated to ensure safety of employees, the public, & the environment by **STATES & the FDA, EPA, & USDA**

Although fossil fuel can be required to produce steam for heating, many renderers use their fat products to fuel boilers, **increasing energy independence.**

Nearly all **CARBON IS RETAINED** within rendered products and reused rather than becoming GHG

C 4

SMALL FRACTION of meat and meat by-products can be recovered as fertilizer

DIFFICULT to destroy pathogens

REGULATIONS on composting & anaerobic digestion vary from state to state
NO CONSISTENT FEDERAL REGULATIONS on air emissions or wastewater.

Low energy requirements but,

45-75% of the carbon in meat by-products is released as CO₂

4-20% METHANE and is released as CH₄, CH₄, CH₄ (with 25x the global warming potential of CO₂)

Recovered resources have a relatively **LITTLE ECONOMIC VALUE**

METHANE FUEL GAS
FERTILIZER

To destroy pathogens requires **STRICT TIME & TEMPERATURE CONTROL** without this control, pathogens and environmental problems increase **DRASTICALLY**

SEEPAGE CAN HARM people, animals, and plants

Low energy requirements **BUT** if digestate slurry is stored in open tanks greenhouse gas emissions are multiplied by 10x

January 2018

28th Annual Practical Short Course on Feeds and Pet Food Extrusion
January 21-26, Texas A&M University, TX • <https://perdc.tamu.edu/extrusion>

Association of American Feed Control Officials Midyear Meeting
January 22-25, Anaheim, CA • www.aafco.org

National Biodiesel Conference and Expo
January 22-25, Fort Worth, TX • www.biodieselconference.org

International Production and Processing Expo
January 30-February 2, Atlanta, GA • www.ippexpo.com

February

International Rendering Symposium
February 1-2, Atlanta, GA • www.ippexpo.com/edu_prgms

March

California Biodiesel Alliance Conference
March 1, Sacramento, CA • <http://californiabiodieselalliance.org>

Pacific Coast Renderers Association Annual Convention
March 1-3, Carmel Valley, CA • Contact Marty Covert at co@martycovert.com or (703) 754-8740

New Zealand Meat Industry Association Renderers Group Symposium
March 22-23, Waitangi, Bay of Islands, New Zealand
<http://mia.co.nz/what-we-do/events/renderers-symposium>

20th Annual International Aboveground Storage Tank Conference and Trade Show
March 27-29, Orlando, FL • www.nistm.org

April

Petfood Forum 2018
April 23-25, Kansas City, MO • www.petfoodforumevents.com

National Renderers Association Spring Meeting
April 24-26, Vancouver, BC, Canada • E-mail Marty Covert at co@martycovert.com

Visit www.rendermagazine.com for a complete updated list of industry meetings.

Qantas to Use Renewable Jet Fuel

Qantas has announced its Los Angeles, California-based aircraft will be powered by biofuel beginning in 2020, reducing the airline's carbon emissions on its planes operating between the United States (US) and Australia. The decision follows the Qantas Group's successful domestic biofuels trail flights in 2012.

Over the next 10 years, the airline will purchase eight million gallons of renewable jet fuel each year from US-based bio-energy company SG Preston. The fuel consists of 50 percent renewable jet fuel produced from non-food plant oils blended with 50 percent traditional jet fuel. Compared to standard jet fuel, the biofuel emits half the amount of carbon emissions per gallon over its life cycle.

Proposed Standard Supports Diesel and Biodiesel Quality

A proposed ASTM International standard will help characterize the quality of diesel fuels and biodiesel blends. The proposed standard is being developed by the committee on petroleum products, liquid fuels, and lubricants and will be used to separate and determine the content of aromatics, non-aromatics, and fatty acid methyl esters (FAME) in middle distillates, including biodiesel blends with up to 20 percent by volume of FAME. **R**

FSMA Guidance Documents Released

The Food and Drug Administration (FDA) recently issued two guidance documents for the feed industry to comply with several parts of the Food Safety Modernization Act (FSMA). The first document, #235, will help animal food establishments determine if they are subject to the current good manufacturing practice requirements in the preventive controls for animal food rule and provides explanation and recommendations for meeting the regulation.

The second is a Small Entity Compliance Guide to help small businesses understand the requirements of the Sanitary Transportation of Human and Animal Food final rule. In this guide, shippers, loaders, carriers, and receivers covered by the rule will find descriptions of the regulation in an easy-to-read question and answer format that includes information on topics such as training and record keeping. Small businesses have until April 6, 2018, to comply with this rule. FDA welcomes comments on both guides.

FDA has established a new web page listing compliance dates for rules that form the foundation of FSMA at www.fda.gov/Food/GuidanceRegulation/FSMA/ucm540944.htm. **R**



Photo: © PetSmart Patriots | BusinessWire 2016



RENDERING for GOOD

It is with tremendous gratitude that Canine Companions for Independence congratulates the National Renderers Association and salutes the generosity of its membership for the success of the 2017 Annual Convention's "Rendering for Good Silent & Live Auction." Thanks to NRA's efforts, the auction raised a total of \$21,000 to support CCI's Wounded Veterans Initiative.

Additional donations can be made by visiting www.cci.org and clicking Support Veterans under the Donate button.

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FOR SALE - Westfalia Deslugger Centrifuge-Clarifier with self-cleaning bowl. SA-60-06-177. Have manuals and all tools for the machine. Stainless construction, 40 hp, main drive motor. All electric switchgear H-beam mounted. Rebuilt, but used very little. \$60,000.

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We require a strong background in rendering/process operations, the ability to travel (not extensive), manage people and build relationships.

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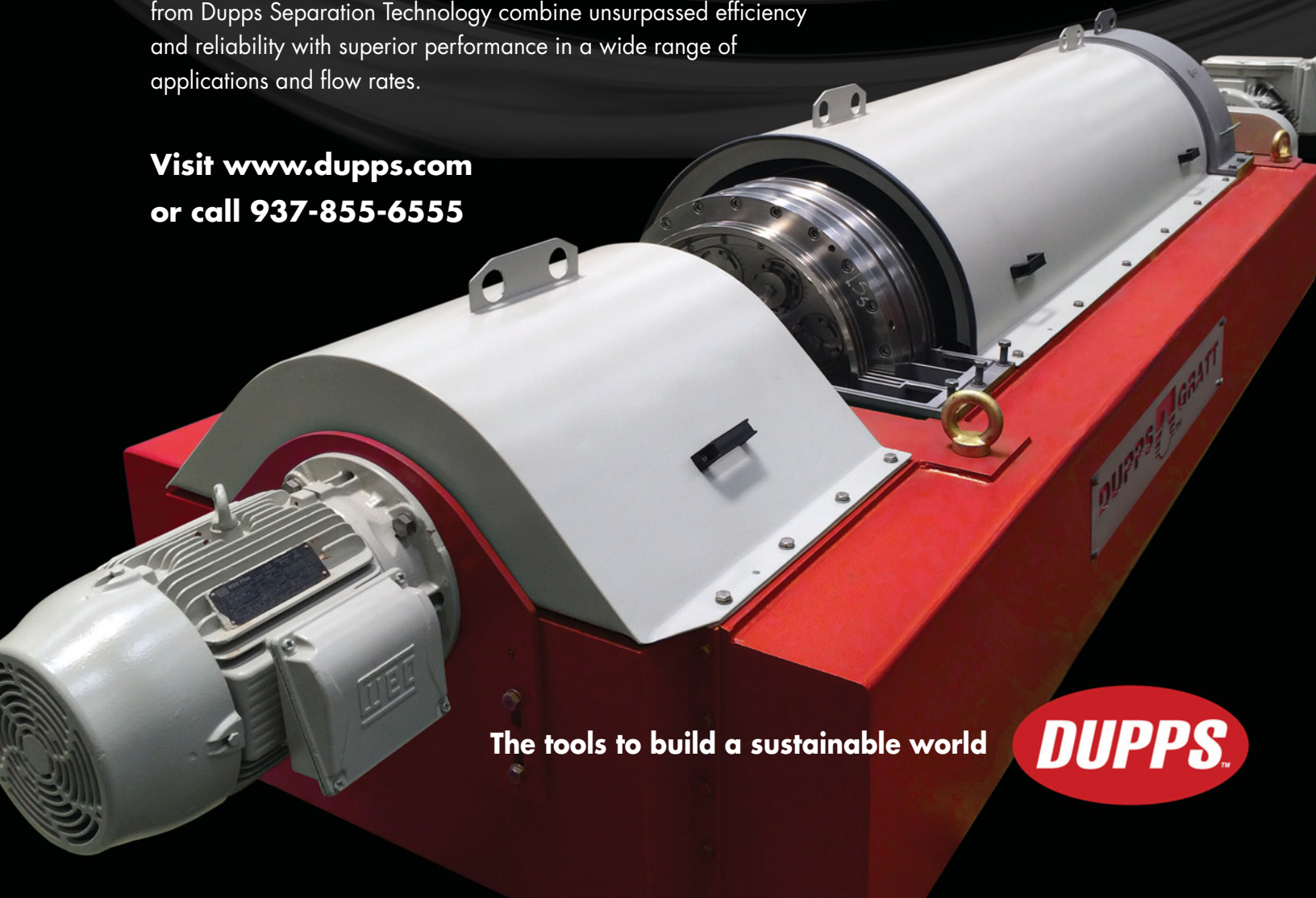
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