

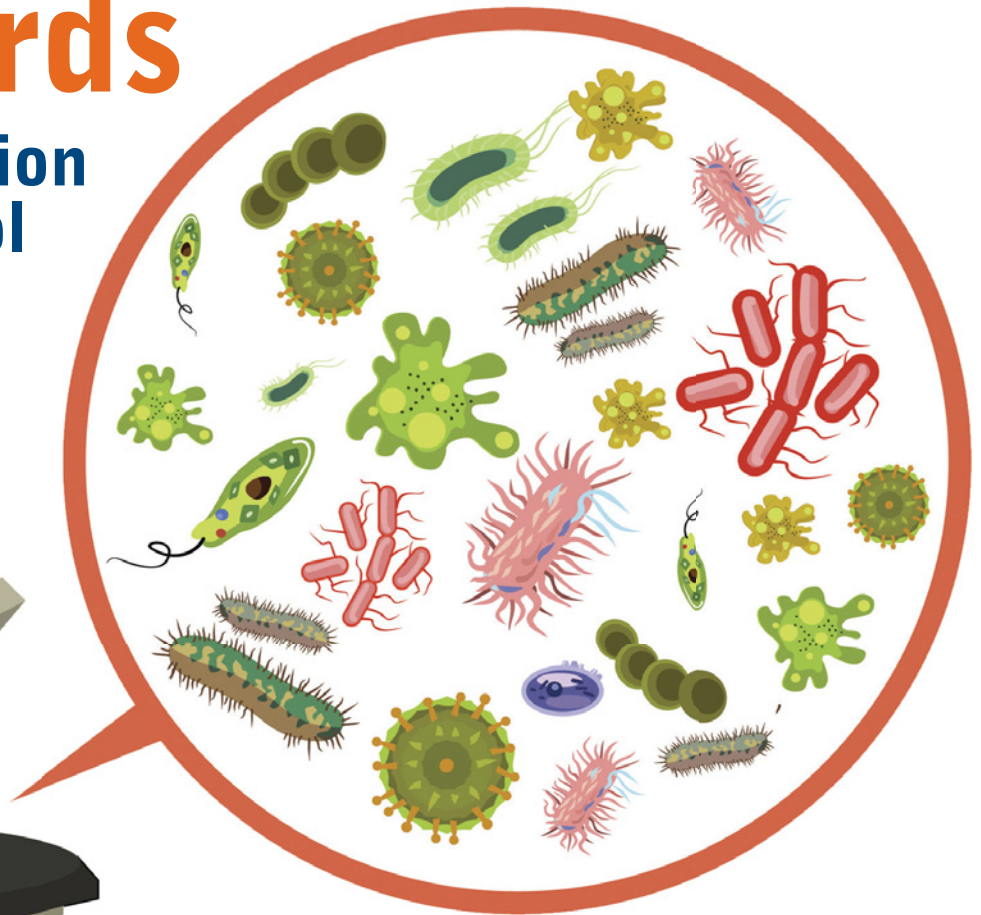
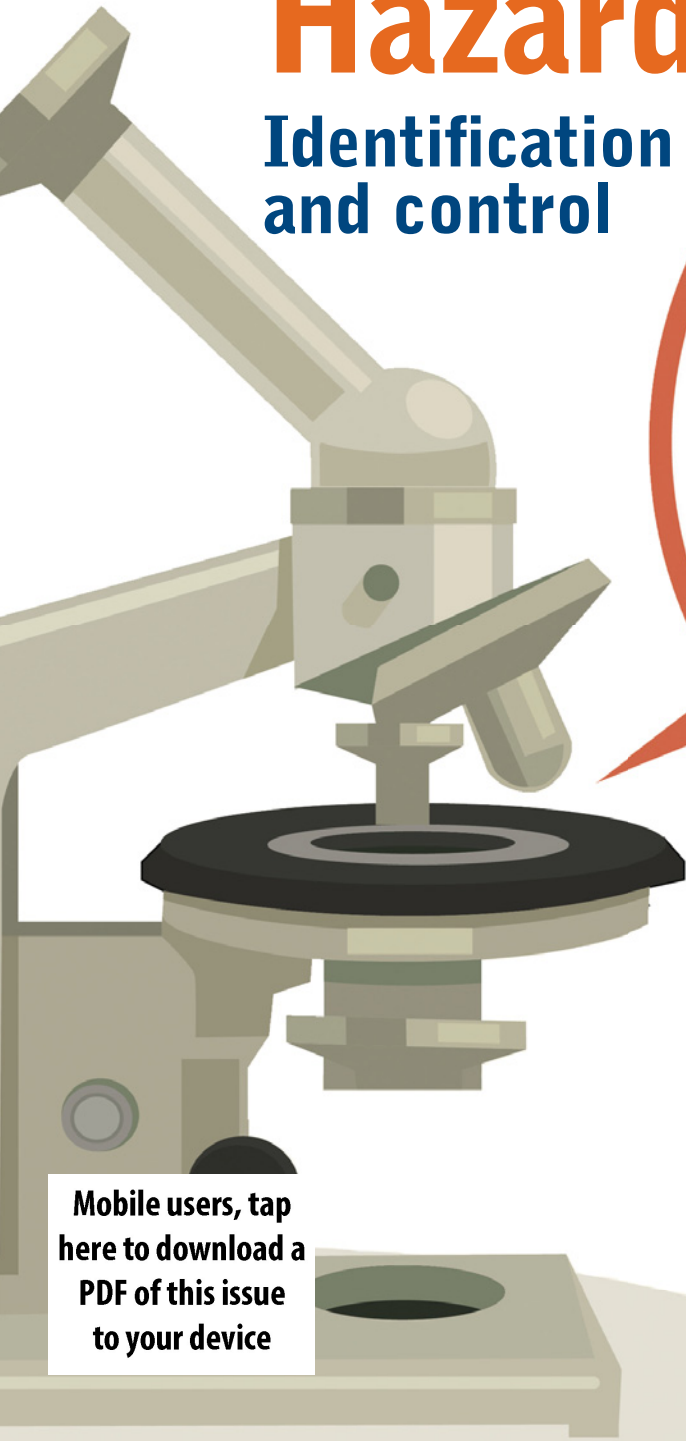
The International Magazine of Rendering

October 2017

Render

Biological Hazards

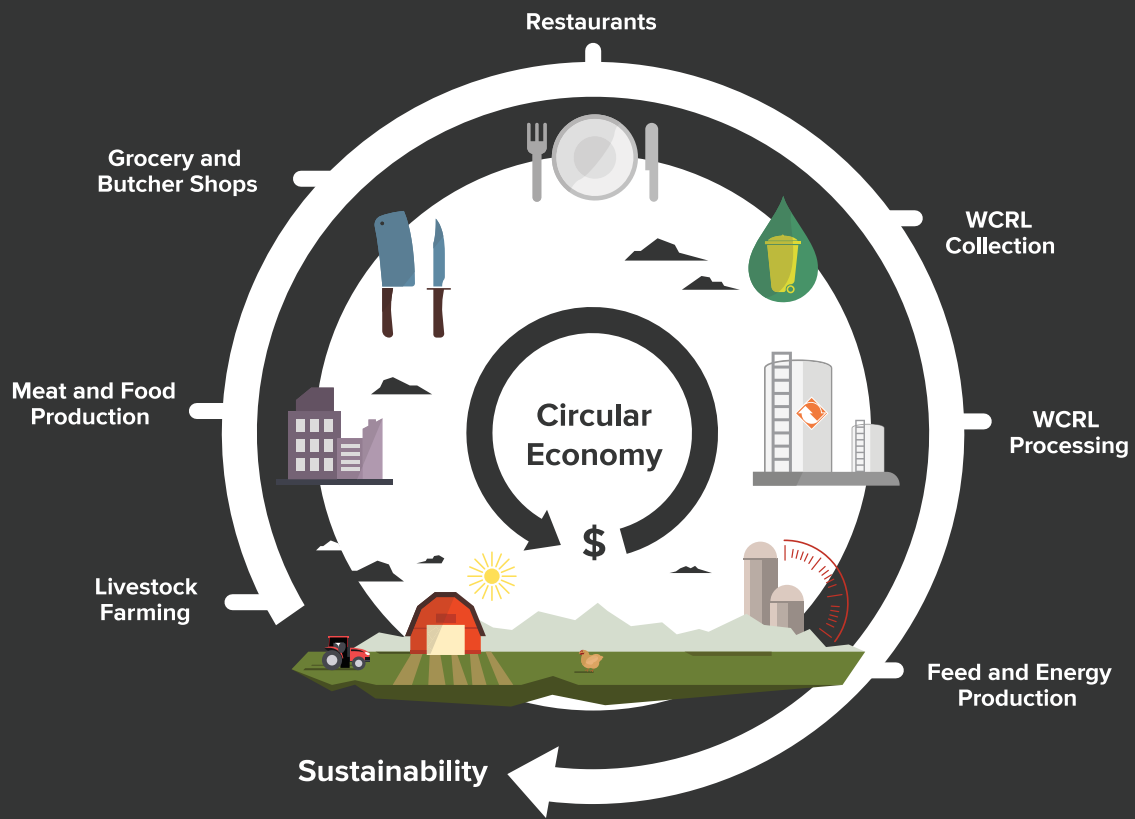
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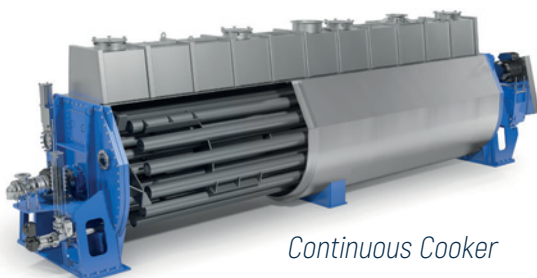
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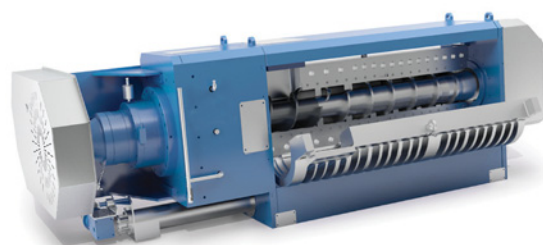
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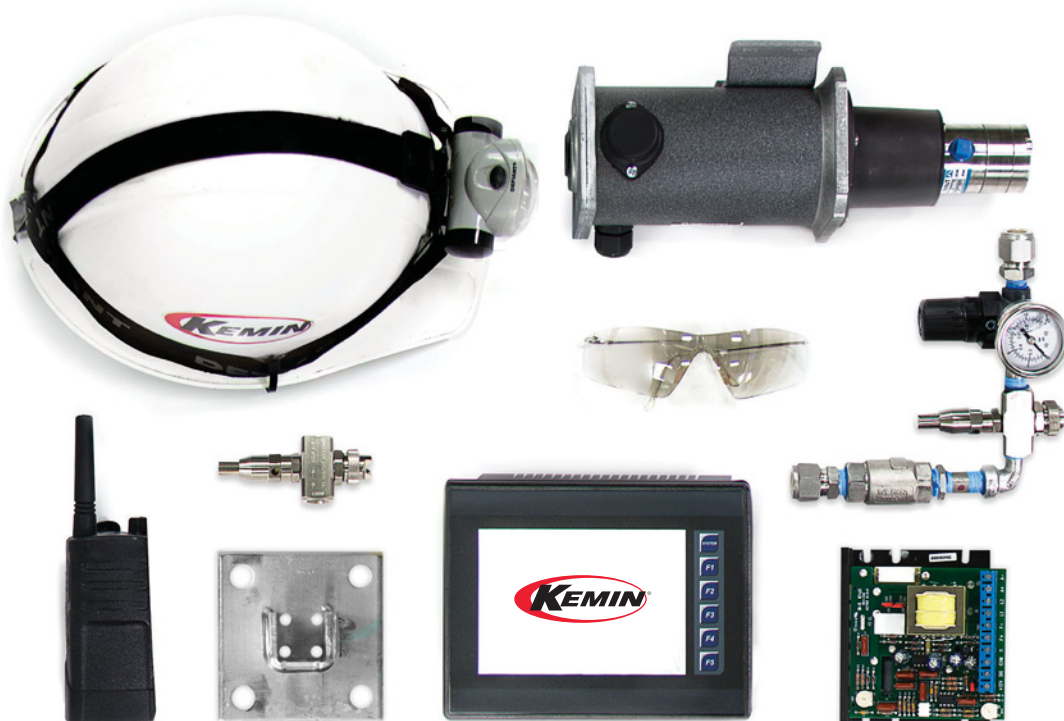


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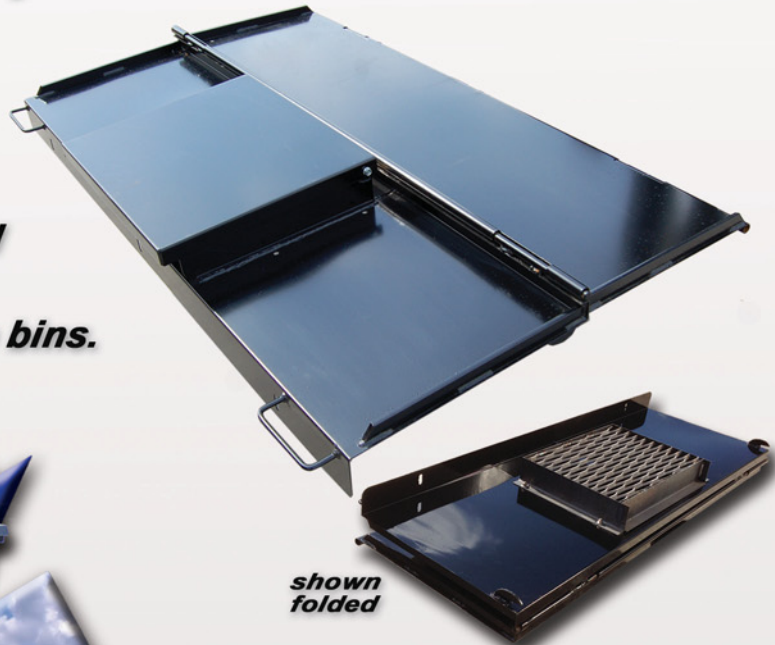
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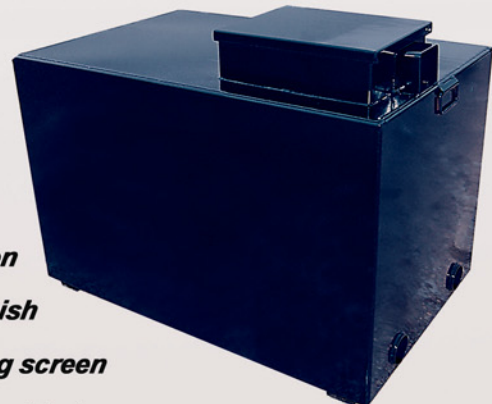


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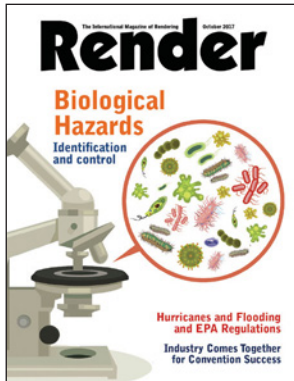
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On the Cover

Although rendering destroys most biological hazards, regulation now requires they be identified and controlled.

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Editorial Offices

1621 Glen Dr.
Placerville, CA 95667

Phone: (530) 306-6792

Fax: (530) 644-8429

editors@rendermagazine.com

www.rendermagazine.com



Editor and Publisher Tina Caparella

Associate Editor Lindsay O'Connor

Magazine Production Sierra Publishing

Contact the National Renderers Association at
500 Montgomery St., Ste. 310, Alexandria, VA 22314
(703) 683-0155 Fax (571) 970-2279
renderers@nationalrenderers.com
<http://nationalrenderers.org>

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Renderitorial

Mother Nature was in a very, very bad mood this summer.

Three massive hurricanes pummeled parts of Texas, most of Florida, and many beautiful Caribbean Islands that will take years to recover. Scores of people lost their lives, but considering the destructive nature of these storms, millions of people thankfully emerged alive, albeit battered.

While these storms are forecasted long before they hit, until they actually make landfall, there is no way of really knowing how severe things will get. Therefore planning ahead is imperative, if not regulated, as evidenced by several articles in this issue of *Render*. After a quick check around some of the damaged areas, it appears rendering plants emerged unscathed, although some of their employees were not so fortunate, suffering property loss due to flooding, fallen trees, or power outages.

Houston, Texas, was hit hard by feet of rain that created historical flooding. A handful of Darling Ingredients Inc. employees who work at the company's Houston plant lost their homes, personal belongings, and vehicles. A GoFundMe account has been set up to assist these individuals with recovery.

One colleague near and dear to *Render* who suffered loss in Houston is Bud Hughes of Travis Body and Trailer, a long-time advertiser and supporter of the rendering industry. He and his wife Janet escaped their home in the dark of night as floodwaters rose quickly, having only moments to grab their dog and a few items of clothing. Unfortunately, disaster struck just as Hughes was retiring after 26 years with the company.

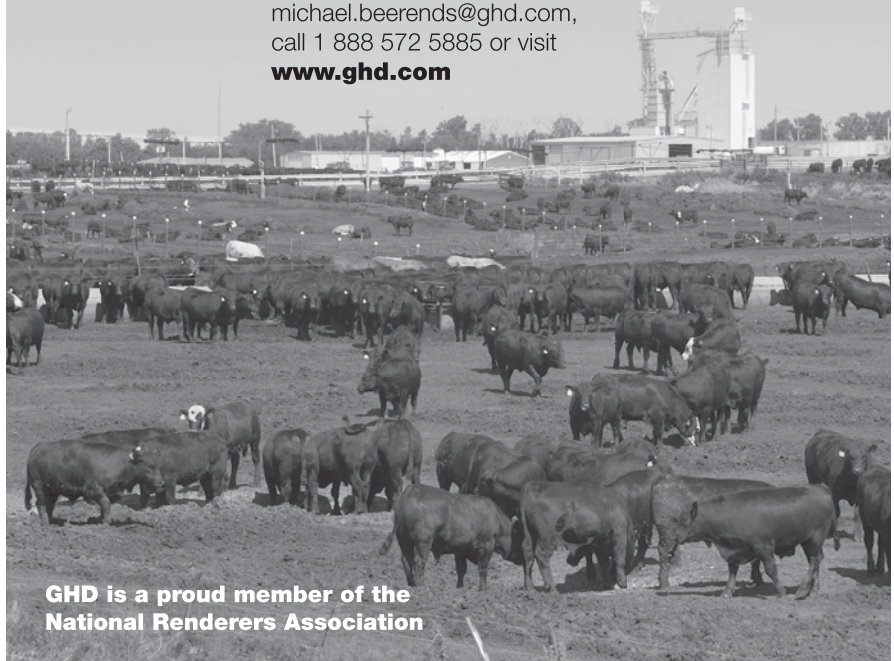
News out of Florida and Puerto Rico, where the National Renderers Association 84th Annual Convention was scheduled to take place October 23-27, was still emerging at press time. The positive news from all this destruction is that none of these rendering family members suffered loss of life or personal injury. However, emotionally and financially, it will be a long road ahead for those directly impacted.

We here at *Render* send prayers and healing thoughts to all those affected by these torrential storms as they emerge from their recovery. **R**



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Trade Balancing

Those with skin in the agriculture export game continue to hope President Donald Trump's ongoing threats – through tweets, speeches at political rallies, or off-the-cuff remarks – to “terminate” agriculture's favorite and most lucrative trade treaties are simply a New York City-style negotiating strategy. Yet the White House is moving forward on reinventing the North American Free Trade Agreement (NAFTA) and then will review all trade treaties currently on the books.

The Trump White House campaign spoke loud and long about United States (US) trade relations. NAFTA is “the worst deal the US ever signed,” the president declared often. Very early in his tenure he pulled the United States out of the Trans-Pacific Partnership (TPP), saying he is not fond of multilateral treaties because the United States inevitably gives more than it gets. The ongoing talks between this country and the European Union (EU) over a bilateral free trade agreement have effectively been put on hold. Now Trump is taking dead aim at the Korean-US (KORUS) free trade agreement. US agriculture, which reaps billions in tariff-free cross-border trade with NAFTA, is understandably nervous.

Agriculture interests continue to seize every opportunity to remind the White House – noticeably short on agriculture experts – that exports represent the only positive component in the US balance of trade. Further, agriculture preaches to anyone who will listen that livestock and poultry production – and the industries that serve them – have hit pretty static domestic demand. This means animal agriculture only expands when there are new markets for ramped-up production, i.e., selling meat overseas to an emerging middle class who demand animal protein. This also means meat production input industries – including rendered feed ingredients, crop producers who sell to feed companies, and feed producers – work hard to expand export of their own products, acknowledging their efforts come down to just how successful farmers and ranchers are in getting meat on ships and moving it overseas to expanded and new markets.

The United States currently enjoys 14 free trade agreements with 20 countries that collectively account for 10 percent of the world's gross domestic product and 43 percent of total US agriculture exports. On the books are treaties with Australia, Bahrain, Canada, Chile, Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Israel, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Singapore, and South Korea. Most of these treaties are bilateral deals, with the exceptions being NAFTA and the Dominican Republic-Central America-US Free Trade Agreement (DR-CAFTA). The oldest trade pact is with Israel, approved in 1985; the most recent treaties are KORUS and the Colombia and Panama free trade deals, all approved in 2012.

When it comes to value, the US Department of Agriculture (USDA) reports total free trade agreement partner imports of US “merchandise” hit about \$710 billion last year. At nearly 47 percent, aggregate US market share in those partner

countries is understandably much higher than in non-free trade agreement countries. As to the success of these treaties, the U.S. Chamber of Commerce, in a report used in its campaign to secure Trade Promotion Authority for President Barack Obama in 2013, cited the following USDA statistics about the various free trade agreements:

- Under the US-Chile agreement, US agricultural exports grew more than 525 percent, increasing from less than \$145 million in 2003 to more than \$900 million in 2013.
- Under the US-Peru agreement, US agricultural exports grew 230 percent, rising from under \$215 million in 2005 to more than \$700 million in 2013.
- Under DR-CAFTA, US agricultural exports doubled from \$1.9 billion in 2005 to \$3.8 billion in 2013.
- Under the US-Australia agreement, US agricultural exports increased nearly 240 percent, from \$410 million in 2004 to \$1.4 billion in 2013.

These markets have only grown larger in the last four years.

Pro-traders, however, argue that US exporters generally remain at a disadvantage in key foreign markets as US goods face an average global tariff rate of 5.9 percent, according to the World Economic Forum's Global Enabling Trade Report 2014. Another hurdle to US exporters is the sheer number of trade pacts among other nations. According to the World Trade Organization, 267 bilateral or multilateral free trade agreements are in force around the globe today. The United States is a party to just 20 of these deals, meaning US exporters are likely among a minority paying tariffs to sell their wares in key world markets.

The future of NAFTA talks at least was semi-assured when Secretary of Agriculture Sonny Perdue and chief White House economic advisor Gary Cohn, formerly of Goldman Sachs, sat down with the president this summer to explain “Trumpian” statements about killing off the tripartite treaty were not helpful to folks in this country or industries that rely on Mexico and/or Canada as markets and points of production. Perdue, stressing the importance of NAFTA to agriculture, brought along a map showing where the voters who elected Trump – mainly rural and blue collar voters – live and work. Trump tempered himself, if only temporarily.

The United States is now hip-deep in renegotiation of NAFTA and, agreeing with partners Canada and Mexico, aims to wrap up the rewrite – fingers crossed – by the end of 2017. US agriculture demands one commitment from the White House, namely to “do no harm” to the cross-border benefits currently enjoyed by agriculture, manufacturing, and other industries. That objective is shared by Canada and Mexico, both of which acknowledge the significant economic bounty NAFTA has brought them since it was signed.

As of this writing, negotiators are getting ready for the third round of talks, this time in Ottawa, Canada. During the

first two sessions, the United States laid out its goals for NAFTA 2.0 in strong language; Canada and Mexico were more low-key.

Ambassador Robert Lighthizer, US Trade Representative (USTR), talked tough at a pre-meeting press conference in Washington, DC, just before round one in late August. He told his North American counterparts that despite the treaty's benefits to agriculture, NAFTA has "fundamentally failed many, many Americans," costing this country 700,000 jobs because of shifting trade movements over nearly 25 years.

"We cannot ignore the huge trade deficits, the lost manufacturing jobs, the businesses that have closed or moved because of incentives – intended or not – in the current agreement," Lighthizer said. The United States, he noted, "is not interested in a mere tweaking of a few provisions and a couple of outdated chapters."

For Canada, Minister of Foreign Affairs Chrystia Freeland rejected the US notion that "trade balance" translates to a successful treaty.

"Canada doesn't view trade surpluses or deficits as a primary measure of whether a trading relationship works," she stated, referring to Trump's priority on reducing the \$72 billion US trade deficit with Canada and Mexico. Freeland pointed out that when services trade is factored in, the United States actually enjoys an \$8 billion surplus. The three nations, she said, should focus on maintaining a "powerful shared interest" in a strong NAFTA going forward. Freeland also reminded her counterparts that Canada's purchases from the United States are more than China, Japan, and the United Kingdom combined, adding, "Strong economic fundamentals are a

compelling argument for bolstering what works and improving what can be made better."

Seeking a "more prosperous North America," Ildefonso Guajardo, Mexico's economic secretary, said, "Mexico comes to the talks to play a constructive and productive role...without risking what we have achieved as a region." Guajardo said there is room for "modernization" of the treaty, but changes must benefit all three nations.

"Mexico is committed to obtaining a win, win, win for all three countries," he stated. Guajardo led a team to Washington, DC, just before the second set of talks in Mexico City in early September.

After the Mexico City round, "progress was made," said US, Canadian, and Mexican negotiators in a joint statement. Interestingly, just after the Mexico City round, Lighthizer floated an idea to be talked about at the Ottawa meeting to create a "sunset" provision that would automatically end NAFTA after five years unless all three countries formally act to renew it. Word is that when USTR shared the idea within the administration, USDA and the US Department of State strongly opposed the notion. Both departments said any type of "automatic termination" language included in the treaty "substantially increases its likelihood" the escape clause may be used.

When Trump tweets about terminating NAFTA, Mexico is quick to respond that it does not negotiate through social media, but Mexico's trade minister has said his country will not

Continued on page 29

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Hurricanes, Flooding, and EPA Regulations

Editor's note – Ethan Ware is a partner with the law firm of Williams Mullen. He manages the firm's Columbia, South Carolina, office and represents businesses and industries in environmental and health and safety legal matters.

It seems to happen every year. A natural disaster disrupts fall football season and interstates are full of evacuees gobbling up hotel rooms and squatting in the nearest safety zones. In those times, no one ever thinks of the plant environmental manager trying to decide what to do and how to comply with arcane environmental cleanup and reporting requirements in the event of a spill or explosion. Well, the Environmental Protection Agency (EPA) is coming to the rescue. Sort of.

On May 31, 2017, EPA issued guidance entitled *As Hurricane Season Begins: A Reminder to Minimize Process Shutdown Related Releases and to Report Releases in a Timely Manner*. The document provides direction to environmental health and safety professionals on compliance with environmental cleanup and release reporting requirements during a hurricane or flooding event. In summary, EPA will not excuse failure to report a release or spill due to an act of God, but a facility may be relieved of some or all of its cleanup responsibility if the release or spill is unpreventable.

A Warning

EPA's hurricane guidance first cautions industry to not avoid environmental requirements during a natural disaster: "[A] hurricane is predictable and as a result, lends itself to early preparations for minimizing its effect on a facility." EPA specifically points out the Clean Air Act requires a "general duty to prevent accidental releases of certain [flammable and toxic substances] and...extremely hazardous substances and to minimize the consequences of accidental releases which do occur" for any air emission source (40 *Code of Federal Regulations* [CFR] Section 68.130).

Covered facilities are required under EPA's interpretation of the Clean Air Act to assess hazards caused by flooding and high winds before they happen, then take steps to prevent accidental releases and minimize their consequences. In other words, liability under the act may follow if air pollution control technology is damaged by extreme weather causing an air release but the damages were reasonably preventable. This is quite a burden.

Release Reporting Requirements

Facilities are not relieved of the obligation to report the spill or discharge of industrial chemicals that may occur during a storm event. Section 103 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), as amended (42 *United States Code* [USC] Section 9603), requires the person in charge of any facility to "immediately notify" the National Response Center of any release of a hazardous substance if the release is to the environment and exceeds

the chemical's reportable quantity within a 24-hour period (40 CFR Section 302.4). EPA guidance interprets "immediately" as filing a report within 15 minutes of knowledge the release is sufficient to warrant reporting under the statute.

The facility must also warn local authorities if the event causes the release to leave the property boundaries. The Emergency Planning and Community Right-to-Know Act, Section 304, provides in relevant part for immediate notification to the state Emergency Response Commission and Local Emergency Planning Committee when the reportable quantity for any CERCLA hazardous substance or an extremely hazardous substance is exceeded and the released substance may affect areas offsite.

The Clean Water Act (CWA), 42 USC Section 1351, governs the spill or release of oil to waters of the United States during a natural disaster. Immediate notification is required to the National Response Center under the CWA where an oil sheen appears on waters of the United States or when a facility's spill prevention, control, and countermeasures plan requires reporting (40 CFR Sections 110 to 112).

All of these reporting requirements are entrenched into federal law. There is no "act of God" defense for any of the reporting requirements so hurricanes and flooding do not relieve a facility from monitoring and reporting a qualifying release during these most difficult times.

Cleanup Obligations: Measured Relief

On the other hand, the CWA and CERCLA recognize a defense for cleanup liability if a natural disaster causes contamination, although the defense may be difficult to prove. Nonetheless, facilities should not be afraid to claim relief from cleanup liability if the defense applies.

Federal law mandates a responsible party must clean up any spill or release to the environment and liability for cleanup is regardless of fault. Section 311(f)(1) of the CWA states a party may be required to clean up a release of oil or petroleum products to waters of the United States, while CERCLA Section 107(a) holds a potentially responsible party liable for a spill or release of hazardous substances to the environment.

Both statutes excuse a party from the cleanup if the release is the result of an "act of God." Proving act of God under either statute is not easy to do even when natural disasters cause the liability. The facility seeking relief must show: (1) the act of God was unanticipated, (2) the act of God qualifies as a grave natural disaster, (3) the sole cause of the release is the act of God, and (4) the release resulting from the act of God could not have been prevented by exercise of due care or foresight. Flooding and hurricanes likely satisfy criteria 2 and 3; they are grave natural disasters and spills or releases may result. The other elements are not so easily established.

Some courts now hold hurricanes and the like as not "unanticipated" as required by criterion 1. The National Weather Service routinely warns and updates communities

of these impending natural disasters providing time, in most cases, to mitigate the release. As a result, arguments such as disasters were not anticipated may be nearly impossible to win. In *Liberian Poplar Transports Inc. v. United States* (1992), a federal court found a weather warning from the National Weather Service sufficient to void the act of God defense for an unanticipated oil release during a hurricane where records showed the company monitored progress of the storm prior to its impact but did little to secure oil containers.

For a company to argue its release could not have been prevented under criterion 4, more is required to be shown than just that the facility was not negligent in its preparation for the storm:

To relieve a defendant of its responsibility [under the act of God defense], it is incumbent on him to prove that due diligence and proper skill were used to avoid the damage and that it was unavoidable.¹

It is now almost indisputable: If a company has warning and opportunity to prevent a release during weather events, there is no defense to the cleanup under the CWA and CERCLA.

Recommended Strategy

There is nothing a company can do to stop a hurricane or flooding, nor can the company prevent damages to a manufacturing plant during such events. However, if the natural disaster is truly unanticipated and the release of oil or chemicals during it is unpreventable, then there may be a defense to liability for cleanup costs associated with the release.

To minimize your plant's risk of liability, a company may elect to take the following steps:

- Develop a list of all systems at the plant vulnerable to a natural disaster.
- Review manufacture specifications and emergency response protocols and take all reasonable measures available to prevent a release from these systems during a weather event.
- In the event of a pending natural disaster, document all measures taken to prevent a release at each system, then rely on the documentation to mitigate liability for any release that may occur. **R**

Reference:

1. Fasoyiro, Laurencia. 2009 "Invoking the Act of God Defense." *Environmental and Energy Law and Policy Journal* 4 (1): 19.

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Biological Hazards

Identification and control

By Ansen Pond, PhD
Director of Quality Assurance, Pilgrim's

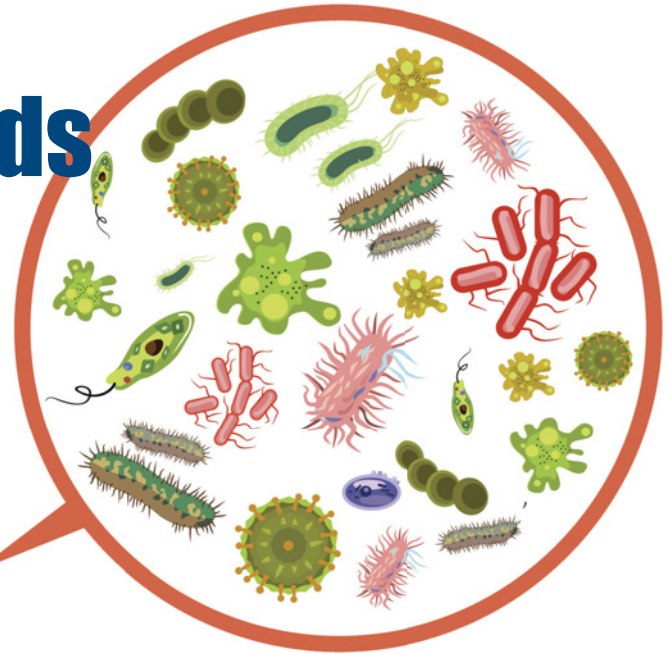
For more than 100 years, the rendering process has been utilized to convert animal by-products into valuable animal food ingredients. Each day, the rendering industry processes millions of pounds of raw materials that contain high levels of biological hazards, which are biological substances that pose a threat to the health of a living organism. Examples of a few biological hazards include bacteria, viruses, molds, fungi, and prions.

The rendering process destroys most biological hazards, reducing the risk of spreading animal disease. The destruction of these hazards, such as bacteria and viruses, is accredited to the extremely high cooking temperatures – more than 230 degrees Fahrenheit (F) – used by the industry to destroy biological hazards, evaporate moisture, and separate liquid fat from the solid materials. Although many people think the high temperatures are targeted to destroy biological hazards, the reality is that fat is more valuable than protein and obtaining high yields of fat is directly related to the high temperature of the cooking process. The higher the temperature of the material, the easier it is to press the fat out. Although destroying biological hazards is the highest priority, it could be done at a much lower temperature. Due to these extremely high temperatures, the history of utilizing rendered products as valuable nutrients in animal diets has been recognized as safe.

For many years the rendering industry had little need to conduct research on biological hazards because there were no significant industry-wide problems associated with rendered products. However, over the last 20 years this type of research has become increasingly important.

On December 23, 1993, the first case of bovine spongiform encephalopathy was identified in the United States. This led the Food and Drug Administration (FDA) to implement laws that restricted the use of certain ruminant proteins due to a prion that is now widely considered a biological hazard. During that time, the rendering industry was heavily engaged in research to defend the safe use of meat and bone meal. Renderers also initiated one of the most progressive movements in the history of animal food by implementing food safety programs and hazard analysis and critical control point-like principles in the *Rendering Code of Practice*.

A few years later, *Salmonella* re-took center stage as FDA focused resources to prevent the spread of *Salmonella* in animal food. Research indicated that certain serotypes of *Salmonella* were hazardous to the health of specific animal species so FDA released guidance documents in 2013 that essentially made eight serotypes adulterants in livestock food and all serotypes of *Salmonella* adulterants in pet food. Due to this, the rendering industry initiated multiple research projects that have led to a greater understanding of *Salmonella* in rendered products.



Additionally, animal agriculture has faced outbreaks of porcine epidemic diarrhea virus (PEDV) and highly pathogenic avian influenza (HPAI). Although the spread of PEDV and HPAI were not directly linked to rendered ingredients, the industry conducted research to verify that the rendering process was sufficient in destroying these viruses. Most recently, FDA's Food Safety Modernization Act (FSMA) has increased concern regarding biological hazards because it requires that most animal food processing facilities conduct a comprehensive hazard analysis of all chemical, physical, and biological hazards for ingredients and processes used in the manufacturing of animal food. This movement has led to additional industry research to prove the safety of rendered ingredients.

The rendering industry has invested more resources over the past 10 years to better understand biological hazards than any other animal food organization. In addition, the National Renderers Association Animal Protein Producers Industry (APPI) Committee has had an industry testing program in place for over 30 years that now has an impressive microbiological data set on rendered meals. This data has been used to better understand problems and advance improvements in processing facilities. These achievements are due to a history of forward thinkers who understood that ignorance was not an excuse and good science leads to problem solving and innovation.

It was very important to the rendering industry and APPI to validate the cooking temperatures utilized in rendering. With over 100 years of successful manufacturing, there was no doubt the temperatures were sufficient but scientific proof was needed due to FSMA requiring validations such as preventive controls. FSMA requires most facilities that process, pack, or hold animal food to conduct a hazard analysis and implement preventive controls to control hazards. In most cases, rendering facilities will identify pathogens such as *Salmonella* as hazards in their raw material. This will require these facilities to implement a preventive control to sufficiently control the hazard. These facilities will likely use the cooking process as the preventive control. FSMA also requires that the preventive control be validated to ensure the proper parameters (time/temperature combinations) are set to control the hazard.

In 2015, three research projects were funded by the Fats and Proteins Research Foundation (FPRF) to determine what parameters were appropriate to eliminate *Salmonella* as a

hazard in various raw materials utilized in rendering. These projects took place at Texas Tech University, Texas A&M University, and Colorado State University. Texas Tech focused on validating temperatures for raw beef materials, Texas A&M examined raw poultry materials, and Colorado State concentrated on used cooking oil. This was a challenging task because most validation studies are specific to one process and it is very difficult to apply the same validation to different processes. The rendering industry utilizes diverse cooking processes, temperatures, and raw material sources so a robust validation was designed by researchers and industry members to provide a set of data that is applicable across the industry.

The idea was to create a cooking chart that references different time and temperature combinations to achieve varying levels of *Salmonella* destruction. In order to apply these standards across the industry, the researchers needed to study high-risk raw materials, which included materials that protected *Salmonella* from heat. Fat and moisture content in the raw materials are the most influential factors in destroying *Salmonella* with heat. Fat acts as an insulator and protects bacteria from heat while high moisture content improves the destruction of bacteria. Due to these factors, the researchers targeted high fat and low moisture raw materials to conduct the research experiments. Additionally, with over 2,600 serotypes of *Salmonella*, the researchers utilized the most heat-resistant strain known to ensure the data would be sufficient for all *Salmonella* serotypes.

The studies were successful and determined that the time and temperature combinations to eliminate a very heat-resistant *Salmonella* from a high-risk raw material are much lower and faster than normal processing parameters. A normal industry cooking time and temperature combination is between 20 and 30 minutes at 260 degrees F. These data revealed there is an instantaneous seven to nine log reduction at lower temperatures. Overall, the rendering cooking process is very effective and now the industry has the data to prove it. If you are interested in receiving a copy of this research, please contact FPRF.

Although the cooking temperatures are sufficient for killing *Salmonella* in raw material, the APPI data indicates low levels of *Salmonella* contamination in finished meals that is similar to many other feed ingredients. This is believed to be due to the recontamination of *Salmonella* post-cooking. Many rendering facilities were not originally designed to keep products free of bacteria after cooking, but measures can be taken to reduce the risk of recontamination. All bacteria need some amount of moisture to live and grow, so the most important thing is to keep moisture out of the post-cooking areas. Several ways to help reduce the risk of recontamination are listed below:

- When water is used to lubricate the press, be sure the water is appropriate for its intended use. FSMA specifies that water may be used but it may not increase the contamination level of the food or food contact surfaces. Many facilities are testing press water for generic *E. coli* and Enterobacteriaceae (EBAC) to verify safety.
- If augers and drags are located outside and their seals on the lids are not effective, rain water may get into

the process and allow bacteria to grow. Be sure to check seals and verify control.

- Silos and storage bins outside of the facility should be inspected regularly to ensure they are sealed and free of leaks.
- Transitions between augers and drags are a typical place for meal to build up. These areas could be a source of microbial contamination, especially if water is introduced. A cleaning frequency should be implemented.
- Bulk trailers should be dry prior to loading and the tarp cover should be sufficient to reduce the introduction of moisture. Additionally, the previous load contents should be appropriate.

Keep in mind FSMA stipulates that products containing a hazard requiring a preventive control must be controlled at the facility or downstream (i.e., pet food customer). If meals have the probability to be recontaminated with *Salmonella* and the product will be used in pet food, the hazard should be controlled by the rendering plant or downstream. This is because all serotypes of *Salmonella* are considered hazards requiring a preventive control in pet food so any recontamination of *Salmonella* is a concern.

FSMA states that if a processor is relying on someone downstream (i.e., customer) to control a hazard, the documentation accompanying the load must include a statement such as “not processed to control (the identified hazard).” Additionally, starting in September 2018, documentation that the customer accepts responsibility for the hazard is also required. This should not be an issue as pet food companies typically use the extruding process as their preventive control to control pathogens of concern.

As stated previously, there are only eight serotypes of *Salmonella* that FDA has identified as hazards in livestock food. The rendering industry has collected data proving that the probability of these eight serotypes of *Salmonella* is very low in rendered meals. Therefore, the meals used in livestock food should not need an additional preventive control.

Fats produced from rendered products do not have an extensive history with *Salmonella*. The ability for bacteria to survive and grow in high fat products was not considered likely until a *Salmonella* outbreak in 2009 when over 700 people in the United States became ill due to contaminated peanut butter. Until this point, products with high fat content were not considered high risk.

High fat products now pose some of the most difficult challenges because it has been found that bacteria such as *Salmonella* can survive. Additionally, due to the high fat content the bacteria become heat resistant because fat insulates them during the heating process. This is an area that is being heavily explored by the scientific community and is one that may pose a risk to rendered fat if used in pet food as a palatant on kibble. Applying palatants to kibble often occurs after the extruding process, which serves as a preventive control to destroy pathogens of concern. This is why fat recontaminated with *Salmonella* may be a concern for pet food companies. There are several areas where the recontamination of *Salmonella* in fat may be possible. Following are several ways to help reduce the risk of recontamination:

Continued on page 12

Biological hazards *Continued from page 11*

- When water is used to clean the centrifuge, be sure that the water is appropriate for its intended use. FSMA specifies that water may be used but it may not increase the contamination level of the food or food contact surfaces. Many facilities are testing water for generic *E. coli* and EBAC to verify safety.
- Fat holding tanks at the rendering plant are vented. If not properly vented, air from the environment could contaminate the product.
- Fat is often filtered prior to loading tankers. Be sure not to contaminate the filters while replacing them and store the clean filters in appropriate locations where contamination is not possible.
- Loading hoses should be stored off the ground and in dedicated locations so they do not become contaminated by the environment.
- Bulk tankers should be dry prior to loading. Additionally, the previous load contents should be appropriate.

As discussed above, product that has the potential to become contaminated by a hazard must be controlled by a preventive control. Rendered products such as fat used in livestock food should not need an additional preventive control because data proves the probability of the eight *Salmonella* serotypes of concern is very low. However, the recontamination of *Salmonella* poses an issue for fat used in pet food because all *Salmonella* serotypes are considered adulterants and fat is applied to kibble after the pet food company's preventive

control. This means the recontamination of *Salmonella* must be controlled by the renderer or the product must be labeled "not processed to control the recontamination of *Salmonella*" (or something similar) and controlled downstream at the pet food facility with an additional preventive control.

Many, but not all, pet food facilities have implemented preventive controls such as organic acid treatments to control the recontamination of *Salmonella* at their facilities. Some pet food companies are relying on the rendering facility to supply a pathogen-free product. This is a challenging task that FDA takes very seriously. If a renderer decides to take on this legal liability, FDA will likely require the use of sanitation preventive controls and environmental monitoring for *Salmonella* at the rendering facility to ensure product does not become recontaminated after the cooking process. FDA also requires the product stay free of pathogens during the transportation process, an unrealistic expectation due to the nature of how most bulk materials are handled and transported, which exposes them to the environment. Due to this, the majority of renderers, if not all, will choose to rely on the customer to control any potential recontamination.

There is no doubt the rendering process sufficiently destroys biological hazards in raw materials but the potential for recontamination does exist. Although the probability of recontamination is low, when dealing with a standard that requires pet food product to be *Salmonella* free, it is difficult to accept full responsibility. Regardless of one's opinion, it is important to have a competent food safety team to analyze the process, ingredients, and limitations when it comes to identifying biological hazards. **R**



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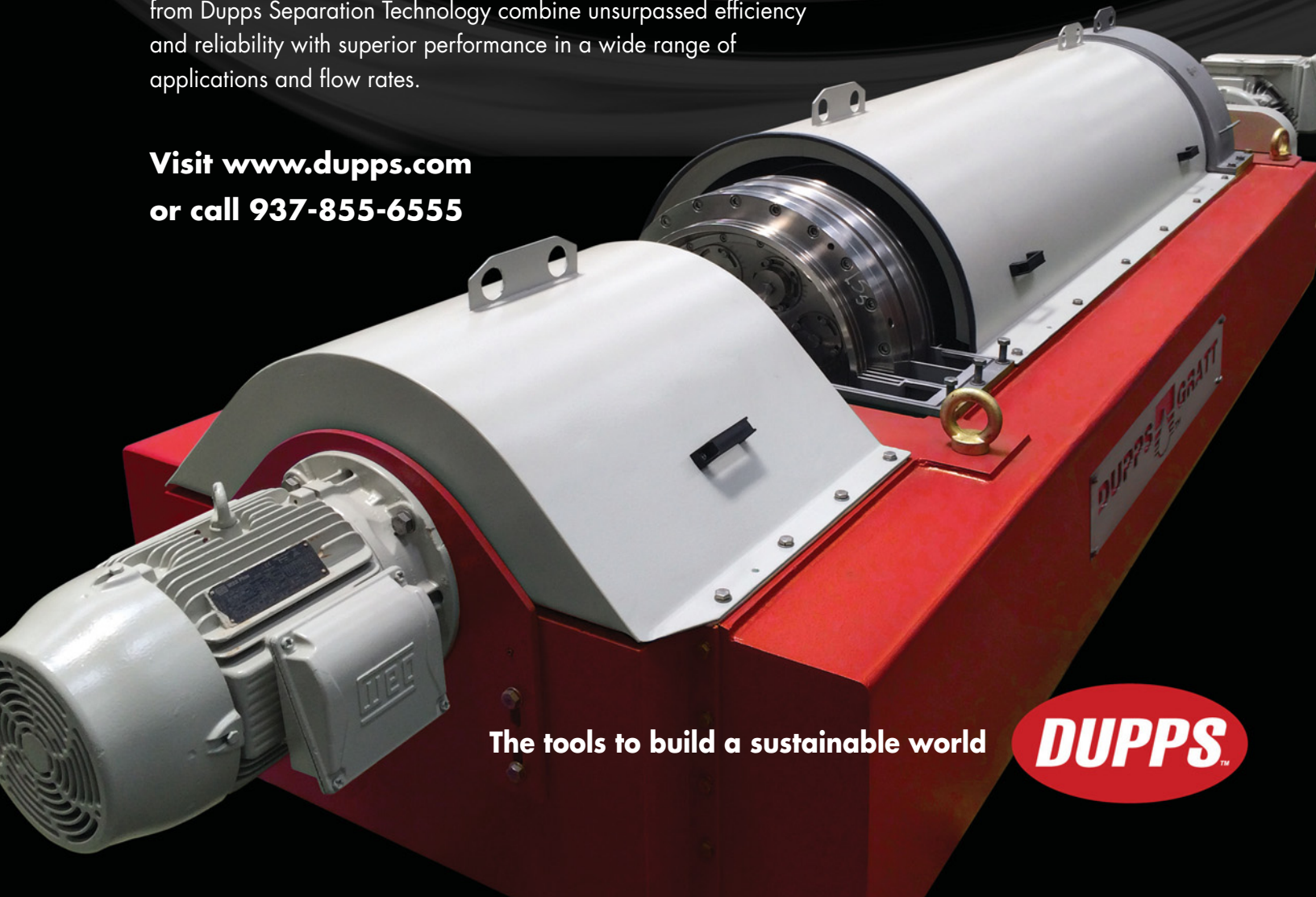
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Industry Comes Together for Convention Success

Education is imperative to the advancement and survival of any industry and company. For 84 years, the National Renderers Association (NRA) annual convention has provided a forum for renderers to educate themselves and find solutions to the challenges facing the global industry. The gathering has also provided renderers an opportunity to meet with industry suppliers to learn about and discuss the latest technologies and services available.

NRA's conference originally scheduled for San Juan, Puerto Rico, October 23-27, was being relocated at press time due to destruction caused by Hurricane Maria in mid-September. However, highlights will still include reinventing the industry, agricultural and food trends driving the protein and rendering

markets, and charting the future through demographic change.

Committees will examine business matters while the Fats and Proteins Research Foundation hosts a seminar focusing on discoveries benefiting the rendering industry.

Each year, the NRA convention and its attendees benefit from the many dedicated companies that sponsor and/or exhibit at a reception held one evening during the event. Those who committed to further educating and supporting the industry at this year's convention were invited to provide a brief summary of the company and its products and/or services. Following is an alphabetical guide to this year's NRA convention sponsors and exhibitors who responded to the invitation by press time.

AC Corporation

(336) 273-4472

www.accorporation.com

AC Corporation has been providing the rendering industry with quality equipment with a focus on air pollution control for over 45 years. Every project is designed to meet the specific needs of the facility, whether it is a single piece of equipment or a turn-key installation. AC Corporation's staff of engineers, project managers, and experienced craftsmen can handle any rendering project, from the smallest ductwork jobs to complete plant design and installation.



Alfa Laval

(866) 253-2528

www.alfalaval.us

Alfa Laval is a leading provider of process solutions for edible and inedible protein by-product processing. Their advancements in heat transfer, evaporation, separation, and fluid handling continue to define the industry standard for specialty and traditional by-product processing methods, including the reduction of dissolved air flotation skimmings and converting by-products into biofuel. They also provide exceptional, local service whenever and wherever needed – from Alfa Laval service centers or technicians, to authorized service reps/distributors.



Alloy Hardfacing & Engineering Co. Inc.

(800) 328-8408

www.alloyhardfacing.com

This year Alloy Hardfacing launched ALLOY 65, a company-wide look back at its 65-year history beginning as a welding shop in Bloomington, Minnesota, in 1952. Alloy took time out of its production schedule to celebrate with an employee luncheon, reviewed hundreds of documents and photographs, and gathered stories for preservation. As the company plans for the future, they are hopeful this retrospective will guide the evolution of what has always mattered most: taking care of their customers.



American Proteins Inc.

(770) 886-2250

www.americanproteins.com

American Proteins was created over 65 years ago to service a fast-growing poultry industry. Today, the company operates the largest poultry protein and lipids conversion operation in the world. American Proteins is an experienced, technologically innovative leader in the processing of poultry by-products. The company has thrived because they are committed to responsive, fast, and helpful service. Whether the customer is large or small, American Proteins responds with immediate, appropriate service.



Bolton & Menk Inc.

(515) 233-6100

gregsi@bolton-menk.com

Bolton & Menk Inc. specializes in providing public infrastructure solutions. They take care of their clients by providing quality services and the right solutions for their needs. With 17 locations throughout the upper Midwest, they are local with a team of nearly 500 employees, including a professional staff of more than 150 engineers, planners, landscape architects, and surveyors. Bolton & Menk is "real people offering real solutions."



Brown Industrial Inc.

(937) 693-3838

www.brownindustrial.com

Brown Industrial is a third-generation family-owned business. Their WaBo line is the leader in mobile aluminum, steel, and 409 stainless steel rendering equipment offering container grease, bucket, vacuum barrel, vacuum, combination, dead stock, and rendering end dump units. The company is continuously improving and growing its product line. Their newly expanded facility has allowed them to grow to meet industry needs.

Brown Industrial thanks the rendering industry for its many years of patronage and looks forward to many more.



Brown's Milling and Industrial Supply

(402) 721-7899

www.brownssupply.com

Brown's Milling and Industrial Supply believes in relationships with its customers. They offer competitive pricing and quick, reliable delivery schedules. Customers don't want excuses, they want results. The company sells Schutte hammer mills, Sweco classics, Industrial Magnetics magnets, and offers gearbox service, interchangeable parts, replacement screens, and boots and balls for the major incline shakers. Since 1986, Brown's has been a fixture in rendering because they are not afraid to get their hands dirty.



Camlin Fine Sciences

(515) 278-1559

www.camlinfs.com

Camlin Fine Sciences (CFS) has been a trusted name in the antioxidant industry for more than 25 years. They are a global leader in the traditional antioxidant market and the world's largest integrated manufacturer of BHA. CFS provides a complete shelf-life solutions portfolio for pet food, rendering, and animal nutrition. Their application lab supports customers with the quantification of actives, oxidative by-product testing, and shelf-life stability tests.

See ad on page 33.



Chem-Tech Solutions Inc.

(800) 537-7450

www.chemtechsolutions.com

Since 1975, Chem-Tech Solutions has specialized in formulating and applying effective, environmentally safe specialty products in the rendering industry. Their product line includes cleaners that are specifically designed to emulsify animal fats and oils without compromising the safety and quality of the material produced. Today, the company manages plant and fleet cleaning programs, cooker and wastewater antifoam products, odor control, and application systems used to apply these products at rendering plants throughout the United States.



Diversified Laboratories Inc.

(703) 222-8700

www.diversifiedlaboratories.com

Diversified Laboratories' proactive approach to pesticide residue screening and feed fat quality testing ensures customers sell only the safest and highest quality products available. The company is known for value, quality, and service and is proud to have served the rendering industry for over 40 years. They are ISO/International Electrotechnical Commission 17025 certified and United States Department of Agriculture accredited for pesticide and PCB residue testing.



Frontline International Inc.

(877) 776-1100

www.frontlineii.com

Frontline International designs and manufactures commercial foodservice equipment for the storage, handling, and disposal of cooking oil. The company's proprietary M³ (MMM) Data Management System, the digital component



www.rendermagazine.com

of the company's waste oil containment tanks, sends alerts when customers' waste oil tanks are nearing full status, allowing renderers unprecedented control over routes, assuring more efficiency. All equipment is manufactured in the United States and renderers have access to Frontline's private label programs, which are approved by all major chains.

Genesis III Inc.

(815) 537-7900

www.g3hammers.com

Over the past 12 years, Genesis III has redefined the hammer mill industry with GENESIS III INC. significant market innovations, including their improved weld and patented forged hammers. The company works with customers to provide the best solution for a specific application. No gimmicks and inflated promises, just products that deliver, backed by a guarantee that can be counted on.



Haarslev Inc.

(816) 799-0808

www.haarslev.com

Haarslev is a world market leader for rendering solutions and designs, manufacturing, installing, and maintaining complete systems and single equipment for processing animal by-products. The company's solutions are energy effective, reliable, and sustainable and offer the highest possible product quality and yields. With offices and manufacturing facilities around the globe, including North America, Haarslev offers more than 150 years experience providing the latest innovation and round-the-clock customer care.

See ads on pages 1 and 20/21.



HF Press+LipidTech

(330) 864-0800

www.hf-press-lipidtech.com

HF Press+LipidTech (formerly KRUPP) provides innovative technology for processing biomass material. Efficiency, sustainability, and robust German design are the core features of their products. An experienced partner, the company offers all essential components including screw presses, sterilizers, disc dryers, collecting vessels, and complete turn-key plants and design. They also offer spare parts for HF and other manufacturers.



Hychem Inc.

(800) 327-2998

www.hychem.com

Hychem Inc. has over 30 years of experience in the rendering industry with a focus on specialty chemical sales and service for water and wastewater treatment applications. Their priorities have always been and continue to be the supply of quality, made-in-the-United States coagulants and flocculants at low prices supported by technical experts with the flexibility necessary to handle the variety of projects, applications, and service requirements unique to every rendering application.



Continued on page 16

Impact Cleaning Systems

(513) 504-6036

Dale.jezwinski@gmail.com



Providing decades of experience in industrial cleaning, Impact Cleaning Systems is fully focused on providing the rendering industry with the safest, most effective cleaning chemicals and equipment. They assure value, compliance, and environmental consciousness. Partnered with DuBois Chemicals and InterClean Equipment, they have developed innovative products and methods that keep pace with changing requirements. Utilizing unique chemistries, customized plant cleaning to fully automatic truck wash systems, they solve tough cleaning problems for renderers.

Industrial Hardfacing Inc.

(800) 247-7774

sales@indushtard.com



Industrial Hardfacing is a supplier of new equipment, replacement parts and service, production process evaluations, and troubleshooting. All are examples of the partnerships created over the past 55 years of business with the rendering industry. The company's sales, service, and fleet of route trucks travel the entire United States regularly. Industrial Hardfacing greatly appreciates the industry's business.

International Feed

(952) 249-9818

www.internationalfeed.com



International Feed is a Minnesota-based trading company with focus on exports of containerized agricultural products and animal proteins to the global marketplace. The company operates its own container transloading, logistics, and distribution business. They have a broad and expanding global network of feed millers, integrators, and pet food production customers that allows them to consistently bring the best value and market access to their partners in rendering.

Kemin Industries

(877) 890-1462

www.kemin.com



For decades, Kemin has worked with the world's leading renderers, pet food manufacturers, and ingredient suppliers to develop innovative solutions that address evolving consumer needs in key product categories: antioxidants, palatants, and food safety. As a complete solutions provider, Kemin is focused on identifying, creating, and designing industry-leading products that meet safety, stability, palatability, ingredient, and formulation needs.

See ad on page 2.

Kusters Water

(800) 264-7005

www.kusterswater.com



Kusters Water is known for innovative wastewater treatment products, including ProTector screening equipment, clarification, and thickening systems; Zi-Biox biological systems; and the revolutionary Terminodour odor control technology. As a member of NRA, the company is poised to service the wastewater sector of the rendering industry. Corporate offices, spare parts, service, and manufacturing under International Organization for Standardization standards are located in Spartanburg, South Carolina. Regional offices are located throughout the United States.

See ad on page 19.

National Beef Packing Company LLC

(800) 449-2333

www.nationalbeef.com



National Beef Packing Company, based in Kansas City, Missouri, is America's premier beef company. They have relationships with the country's ranchers and farmers giving them access to the very best cattle. The company processes and markets a comprehensive line of fresh beef and consumer-ready products as well as beef by-products across six production facilities, supplying customers across the United States and worldwide. National Beef employs approximately 8,000 individuals and achieved 2016 annual sales of \$7.2 billion.

Onken Inc.

(309) 562-7271

www.onkens.net



Onken continues to innovate how renderers do business. From 1983 when Don Onken first conceived the bulk container system to the company's most recent locking-screen security lid, they carry on toward that goal. They also offer a line of robotically welded automotive oil tanks and enclosed grease tanks. Onken continues to improve how renderers efficiently collect product while still safeguarding their investment. Check out the company's revamped website for the latest innovations.

See ad on page 3.

Rosedowns

(800) 635-1431

www.desmetballestra.com



Rosedowns is a global leader in the design and manufacture of screw presses and supply components for all leading press models achieving high yields, less wear, and low power consumption. Their service center in Kansas City, Missouri, offers a collection/delivery/repair service to all rendering customers in North America. Established in 1777, Rosedowns has vast knowledge and experience in the industry and offers the end user various options to achieve the best results.

Continued on page 18

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Experience

In 1972, we were the first company in the country to devote our entire operation to horizontal centrifuge repair. Since then, we have performed over 10,000 successful centrifuge repairs.

Knowledge

At Jenkins, our 20 dedicated employees' sole focus is horizontal centrifuge repair. With an average of over 20 years' experience each, they have the hands-on knowledge to repair your machine quickly and correctly.

Dependability

As a family business moving into its fourth generation as centrifuge repair experts, the Jenkins name is one you can count on. No one knows your equipment better than us.



Sanimax

(888) SANIMAX
www.sanimax.com



Sanimax provides quality environmental services to customers in the agri-food industry in the United States, Canada, and Brazil. The company reclaims animal and meat by-products, used cooking oils, and organic materials that would otherwise end up in a landfill. They renew and transform them into useful products and then return them to the marketplace as high-demand goods like tallow, protein, and leather.

Reclaim, renew, return; it is what Sanimax does proudly every day and has been doing for many generations.

Separators Inc.

(800) 233-9022
www.sepinc.com



With more than 30 years of experience, Separators is North America's leading independent centrifuge remanufacturer and service provider specializing in Alfa Laval, Tetra Pak, and Westfalia centrifuge equipment. In addition, Separators offers a full array of startup, maintenance, and repair services and stocks over 4,000 parts with 24-hours-a-day, 7-days-a-week availability. Key capabilities include field service/maintenance, shop repairs/balancing, equipment rental, automation, replacement parts, consulting/training, equipment sales, remanufacturing, and more.

See ad on page 31.

Solenis LLC

(866) 337-1533
www.solenis.com



Solenis is a leading producer of specialty chemicals and one of three water treatment companies with a truly global footprint. The company's product portfolio includes a broad array of process aids, water treatment chemistries, functional additives, and state-of-the-art monitoring and control systems. These chemical and equipment technologies are used by Solenis customers to improve their operational efficiencies, enhance their product attributes, protect their plant assets, and minimize their environmental impact.

Sturtevant

(781) 829-6501
www.sturtevantinc.com



Sturtevant has been manufacturing air classifiers for over 100 years in many global markets. For the past decade the company has focused efforts in the rendered animal protein market. The Whirlwind air classifier produces superior pet food-grade and aquaculture-grade ingredients with lower ash content and higher protein content. Sturtevant air classifiers successfully process poultry, duck, turkey, fish, lamb, bovine, and porcine meals in global countries including Canada, Australia, Brazil, Mexico, Thailand, and more.

The Dupps Company

(937) 855-6555
www.dupps.com



The Dupps Company designs, builds, and markets a comprehensive line of systems and machinery for the rendering industry. They offer proven durability and performance in cookers, dryers, screw presses, size reduction machinery, new Dupps-Gratt centrifuges, and material handling systems as well as complete rendering plant installations. The company also provides a large and experienced staff of full-time field service technicians based in Germantown, Ohio, and in three new service locations in Ankeny, Iowa; Atlanta, Georgia; and Querétaro, Mexico.

See ads on page 13 and inside back cover.

Trans Ocean Bulk Logistics Inc.

(281) 535 7003
www.transoceanbulk.com



Trans Ocean offers full service, door-to-door flexitank logistics solutions. With total control over equipment, global network, and processes, they provide the most reliable and effective containerized bulk liquid solutions. Their in-house engineered flexitanks are calibrated to meet the specific requirements of rendered fats and oils. Trans Ocean's global technical team is available to support every link of the supply chain and their global network of logistics experts ensures customers' product arrives in optimum condition.

Travis Body & Trailer Inc.

(800) 535-4372
www.travistrailers.com



Travis Body & Trailer has been an NRA member/sponsor since 2003. Since 1989, Travis has manufactured over 14,000 trailers, including many to the rendering industry. They make aluminum rendering trailers, tote dumpers, end dumps, bottom dumps, and transfer trailers. Note that the tote dumper is used to haul organic waste.

Travis built its first rendering trailers in the 1980s, is proud to be a supplier to more than a dozen NRA members, and thanks the industry for its support.

See ad on page 7.

Universal Maintenance Inc.

(706) 297-0087
www.universalmaintenanceinc.com



Universal Maintenance is a family-owned corporation located in Georgia. The company is a general contractor focused on the rendering industry and performs several services including maintenance, consultation, new construction, and equipment fabrication. In 2012, the company developed a dissolved air flotation (DAF) skimmings dewatering system followed by a processor in 2017 that eliminates the need for hexane and deletes fines in the normal process of DAF skimmings.

Valley Proteins Inc.
(540) 877-2590
www.valleyproteins.com



Headquartered in Winchester, Virginia, Valley Proteins is one of the largest non-captive recyclers of animal and poultry by-products and waste cooking oils in North America. The business was founded in 1949 by Clyde A. Smith and is currently owned and operated by his two grandsons. The company operates in the mid-Atlantic, southeast, and southwest regions of the United States and exports fats and proteins worldwide. It is also one of the nation's largest processors of poultry by-products and is the market-leading servicer for the turkey industry.

VRM Labs
(515) 975-3557
www.vrmlab.com



VRM Labs was formed in 2013 to further develop a natural feed antioxidant for rendered products and pet food that is currently in the Food and Drug Administration approval process as work continues on two other products. One involves an antioxidant for frozen meat products for foodservice. The other is a natural flocculant for wastewater recovery manufactured as a by-product of the antioxidant production and is a natural alternative to currently available products on the market.

WWS Inc.
(888) 645-6328
www.wwstrading.com



WWS is a leading commodity trading firm specializing in fats, oils, and proteins. They take the hassle out of buying and selling with their dedication to service, honesty, and reliability so renderers can focus on the parts of their business that matter most.

For a complete list of the sponsors and exhibitors for this year's NRA convention, visit <http://convention.nationalrenderers.org>. The NRA thanks all the sponsors and exhibitors who so generously contributed to the success of this year's convention. Their continual support of the industry is much appreciated.

For the latest news on the relocation of the National Renderers Association 84th Annual Convention originally scheduled in hurricane-stricken San Juan, Puerto Rico, October 23-27, please visit <http://convention.nationalrenderers.org>

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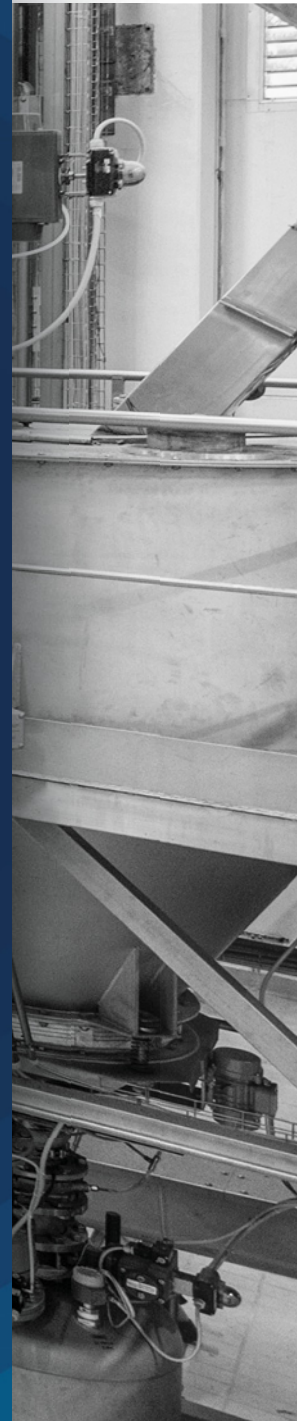
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Haarslev offers you true business partnership. With our technologies, knowhow and industry expertise we help you find solutions that fit into every step of your process. Together, we master your process.

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With over 100 years of experience around the globe, Haarslev designs, manufactures, installs and maintains state-of-the-art systems and equipment for the processing of fish, animal by-products, by-products from food and beverage production, biofuels and industrial and domestic waste.



NRA at Work: 2017 Year in Review

Rendering challenges continued this year and the National Renderers Association (NRA) stepped up to meet them. It has been an eventful and demanding 2017 for the United States (US) and Canadian rendering industries and the association.

A new US president and Congress in Washington, DC, brought a welcome break in onerous regulation. However, together they are still trying to enact the Republican agenda of repealing and replacing the Affordable Care Act, also known as "Obamacare," reduce taxes, address immigration, and fund major infrastructure repair. Looming major foreign policy and military challenges, notably nuclear threats from North Korea, an uneasy relationship with Russia, and international terrorism have by necessity taken much attention.

Meanwhile, there is now an open door and a listening ear at federal agencies. To promote the best interests of the rendering industry, NRA worked closely this year with the US Department of Agriculture (USDA), Food and Drug Administration (FDA), Office of the US Trade Representative (USTR), and other federal regulatory offices.

NRA's 2020 Strategic Plan continued to drive association programs this year. Too often a lot of work goes into creating strategic plans and then they sit unused on the shelf. Not at NRA. In its second year, the plan emphasizes continued development of the strength and effectiveness of the organization to meet the industry's needs. It focuses on promoting rendering's sustainability brand, and growing and defending markets for rendered products. The strategic plan also stresses a strong NRA membership base and achieving workable government decisions affecting the industry's freedom to operate.

NRA's leaders who wrote the strategic plan had a clear vision: "To deliver sustainable rendering solutions to our global community." NRA's mission is "To advocate for a sustainable food chain, public health, and the environment through the production and marketing of rendered products and services." To accomplish this mission, the association:

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

NRA is truly a member-driven and proactive group working hard to protect and promote the industry's interests. Under the able leadership of Chairman Tim Guzek of Sanimax, many industry leaders dedicated their time and talents this year to NRA's Board of Directors and its 11 working committees.

Over 75 individuals are on these working committees, meeting at least twice a year and conferring in between when important issues demand attention. These committees recommend policies and programs to the NRA Board of Directors.

At NRA's annual convention in October, new leadership takes the helm. Guzek has served the association exceptionally well over the past two years as NRA chairman. His enthusiasm, wisdom, and management skills have been an asset in moving the association forward. We thank him for his service. Guzek will become the immediate past chairman and continue to serve on the NRA Executive Committee.

NRA's incoming chairman is Ridley Bestwick of West Coast Reduction Ltd. in Vancouver, Canada. A certified public accountant by training, Bestwick serves as the company's chief financial officer and has held numerous leadership roles at NRA, including as first vice-chairman, treasurer, and chairman of the Audit and Budget Committee. Doyle Leefers of National Beef in Kansas City, Missouri, will move up as NRA's first vice-chairman and a new second vice-chairman will be selected at the convention upon the recommendation of the Nominating Committee.

NRA's financial foundation is strong. Importantly, membership dues sustain the association's work to improve the industry by supporting its various programs and staff. Together, volunteer industry leaders and NRA staff produce results and membership dues make that possible. NRA also receives approximately \$1.7 million a year in USDA grants to increase foreign market access for rendered products and promote export sales.

NRA serves its members through five major programs: scientific services, international market development, legislative advocacy, communications and information, and meetings. Synergy between NRA and the Fats and Protein Research Foundation (FPRF), the rendering industry's research organization, ensures that knowledge gained through important research is used to develop workable solutions for the industry in regulations, legislation, and sustainability.

Food Safety, Science, and Regulation

This year, NRA's scientific services program again offered training to prepare members for implementation of the Food Safety Modernization Act (FSMA). Ninety more people were certified as preventive controls qualified individuals using an FDA-recognized curriculum that NRA helped write. The association's work with FDA on joint goals for animal food safety has ensured the best possible position for the industry going into several years of implementing the new regulations.

NRA's Animal Protein Producers Industry Committee revised the *Rendering Code of Practice* to be consistent with FSMA so certification prepares members for future FDA inspections. The program is offered jointly with the American Feed Industry Association's internationally-recognized Safe Feed/Safe Food program. NRA staff also assisted member companies in preparation for FSMA compliance by providing education and guidance.

This year, NRA educated the pet food industry about the sustainability and safety of rendered products. Staff spoke

at the Petfood Forum in Kansas City, Missouri, about the importance and benefits of rendered products for pet food. Rendered products contribute to improving the sustainability footprint of pet food, which is a driving market force now for consumers.

NRA had additional success at the American Association of Feed Control Officials annual meeting this summer (see "Keeping an Eye on AAFCO Activities" on page 34). In addition, NRA and the USDA Animal and Plant Health Inspection Service conducted a workshop to identify obstacles to using rendering in a foreign animal disease outbreak response and ways to overcome them. This is one step in an overall effort to get the public and government to think of rendering when considering the sustainability of agriculture.

Synergies with FPRF Research

Research is the lifeblood of many industries and drives competitiveness and innovation. While the purpose of FPRF is to fund research to enhance current uses for rendered animal products and develop new ones, the rendering industry benefits from FPRF and NRA coordination.

This was the first full year that FSMA's current good manufacturing practices have been required under regulation. FDA requires hazard analyses and preventive controls to be in place but has delayed inspections for this part of FSMA until it finalizes guidance on what it expects to see. FPRF research proving the effectiveness of rendering cookers to eliminate microbiological hazards has been the foundation of the industry's defense.

NRA is working hard to strengthen relationships with the pet food industry, an important customer category. One promising result is a willingness to work together to solve joint problems in policy, procedures, and research. Early this year, FPRF formed a pet food alliance with Colorado State University for a new coordinated focus on rendering and pet food research with additional stakeholders. It is hoped this beginning will lead to strong research proposals and attract new funding to strengthen relationships with one of rendering's main consumers. Additional FSMA-related concerns from pet food manufacturers about the possibility of

recontamination of fat products have led to new partnerships in research with the Pet Food Institute and two joint FPRF research projects.

FPRF-funded research is conducted at universities across the country and at the Animal Co-Products Research and Education Center (ACREC) at Clemson University. ACREC continues to give FPRF the ability to focus research and provide sustainable funding in areas of inquiry important to renderers while developing a cadre of researchers familiar with

rendering. This endeavor has produced useful research results in food safety, product quality, new uses, and new technologies, all important to marketing rendered products competitively worldwide.

To learn more about FPRF, please contact Jessica Meisinger at jmeisinger@nationalrenderers.com, David Meeker at dmeeker@nationalrenderers.com, or visit www.fprf.org

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Protecting Export Markets, Expanding Trade

Exports are important to profitability since almost 20 percent of US rendered products are sold overseas. This foreign demand supports US prices for the entire industry.

Over the years, NRA's international program has coordinated with USDA to open new markets for rendered products but behind-the-scenes efforts to keep markets open are time consuming. NRA successfully resolved a serious problem that started in 2015 when the US poultry industry was hit with high pathogenic avian influenza (HPAI). Most markets, except China, remained open for rendered poultry products due to the time and temperature requirements that were added to the *Terrestrial Animal Health Code* chapter on avian influenza of the World Organization for Animal Health, or OIE. Many years earlier, NRA worked with USDA to add those time and temperature requirements to the code as a preemptive measure to save exports of rendered poultry and feather meals in case of an HPAI outbreak.

NRA worked behind the scenes with USDA while Peng Li, director of NRA's Asia region office, did the same with China's feed safety office and the local Chinese industry during recent negotiations to re-open that market after the 2015 HPAI outbreak in the United States. This intense, quiet work, along with the OIE time and temperature requirement, was essential in gaining quick re-opening of China's important poultry and feather meal market. To date, the United States is the only country that has had HPAI that can ship poultry products to China.

NRA also organized an audit by China's Administration of Quality Supervision, Inspection, and Quarantine to assist US non-ruminant facilities in maintaining exports to China. This audit took more than a year to organize and was finalized late last fall. The audit was a legal requirement for China to accept imports and was essential in keeping the market open. It is predicted that exports of poultry meal to China in 2017 will be a record 170,000 metric tons, up 23 percent from last year. This is one example of how NRA's international program benefits the entire North American rendering industry.

NRA continues to keep rendered products top of mind for US trade officials regarding other foreign markets as well. Staff serves as trade advisors on official federal advisory committees at the invitation of the secretary of agriculture and USTR. This author represents the rendering industry on the overall Agricultural Policy Advisory Committee while Kent Swisher, vice president of NRA International Programs, serves on the Agriculture Advisory Committee for Trade in Animals and Animal Products.

When US President Donald Trump's administration decided to renegotiate the North American Free Trade Agreement (NAFTA) this year, NRA started advocating for three goals in the new agreement: (1) "do no harm" to current exports, (2) gain market access for ruminant meat and bone meal into Mexico, and (3) finalize the US small ruminant rule to allow United States access to mixed animal fat and used cooking oil from Canada. NRA met with US NAFTA negotiators who are now receptive to our position. NRA also became a member of the new North American Market Working Group coalition of agricultural producers, processors, and traders

to promote open trade between the United States, Canada, and Mexico. NRA joined coalition members to advocate for its NAFTA priorities in meetings on Capitol Hill and with US trade negotiators and foreign embassy officials.

Advocating for Rendering

"If you're not at the table, you're on the menu," says Dave Kaluzny of Kaluzny Bros. who chairs NRA's Legislative Action Committee. That is why the association has an active political program advocating for the interests of the rendering industry to Congress and the Trump administration. In 2017, NRA's political lobbyist, Steve Kopperud of SLK Strategies, continued to work with NRA staff to press the best case for renderers in Washington, DC.

Early this year, NRA's Legislative Action Committee identified the top legislative issues for 2017: rendering sustainability, increased biodiesel production, strong funding for USDA grant programs supporting NRA's international market development program, NAFTA negotiations, and food waste legislation in the farm bill.

NRA continued to expand its presence on Capitol Hill in 2017 through personal meetings with congressional members and their advisors. The group also joined coalition meetings with other agricultural lobbyists on a variety of issues and met with administration officials to advocate on important rendering topics.

NRA's Annual Washington Fly-in in June brought renderers from across the country to meet with their representatives and senators about top legislative issues. They held approximately 200 meetings on Capitol Hill, an impressive number during their short visit. Renderers also heard from government and business leaders about the outlook for US exports, the agriculture economy (including livestock and poultry), FSMA implementation, and then-new USDA Secretary Sonny Perdue's agenda.

Since rendering produces 30 percent of the feedstock used to make US biodiesel and renewable diesel, government policies affecting the production of these fuels are important. Early this year, the Environmental Protection Agency (EPA) proposed its first-ever cut to the advanced biofuel Renewable Fuel Standard (RFS) obligated volumes and did not increase the RFS for biomass-based diesel, both steps in the wrong direction. NRA Biofuels Chairman Doug Smith of Baker Commodities testified at EPA's public hearing this summer on the importance of increasing the RFS in 2018 and 2019. NRA also submitted regulatory comments to EPA strongly urging a higher RFS for biodiesel, renewable diesel, and advanced biofuels. The association coordinated closely with the National Biodiesel Board (NBB) to present a united position to EPA.

Looking ahead, Capitol Hill appears ready to tackle tax reform but it is too soon to know if biodiesel tax credits will be included. The situation is fluid and currently tax writers are considering a streamlined approach to reduce tax levels and categories. Together with NBB, NRA is urging support for these biodiesel tax credits in Congress.

Branding the Rendering Industry – Communications

This year, NRA's communications program built an outreach branding strategy and identified projects to promote rendering sustainability across a variety of marketing platforms.

Materials for membership recruitment were prepared, “frequently asked questions” were updated on the NRA website, and a teaching module on rendering was provided to academic meat scientists at agriculture colleges and universities.

NRA staff fielded many questions from reporters and was able to successfully refocus potentially damaging media articles to prevent negative results for the industry. Time spent with journalists educates them about the industry and helps to make NRA a go-to source of information for the next story.

NRA’s new monthly newsletter, the *NRA Update*, kept members in close touch with happenings and news on rendering issues and association activities. Staff also continued to contribute articles to and collaborate with *Render* magazine, the industry’s independent bi-monthly international publication.

An important communications priority for the coming year at NRA is to provide tools to members so they can communicate effectively about the industry to their communities and local decision makers.

NRA Meetings – An Important Membership Benefit

With so much work to do, so many meetings already, and so much traveling time, who needs yet another meeting? In this busy world, it is easy to feel this way. In contrast, NRA members say the association’s meetings are a major benefit of belonging to the group. They see their peers, catch up on the latest industry news, and develop important personal industry connections. At NRA meetings, members work together to solve common industry problems with the government and learn about new technology solutions. They also come for training to learn how to improve feed safety and quality, and how to comply with government regulations such as those required under FSMA.

NRA hosts several meetings a year with the fall annual convention the most widely attended by renderers from the United States, Canada, and elsewhere around the world. The convention provides up-to-date information on livestock and poultry markets, the international rendering outlook, and fresh speakers that encourage members

to think “outside the box” to adapt to change and new trends.

Looking Ahead

Next year promises to be another fast-paced one with changing markets, a mid-term US election, more regulatory reform, and geopolitics affecting the world rendering trade. Being part of NRA gives renderers important information for business planning and managing risk. If you are in the rendering industry or do business with renderers, I encourage you to join NRA. You’ll be glad you did. R

For relocation info on the National Renderers Association 84th Annual Convention originally scheduled in hurricane-stricken San Juan, Puerto Rico, October 23-27, visit <http://convention.nationalrenderers.org>.

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RFS Volumes Should be Higher, says Industry

There has been tremendous response from a variety of industry stakeholders, including the National Renderers Association (NRA), to the recent United States (US) Environmental Protection Agency (EPA) proposed rule announcing Renewable Fuel Standard (RFS) 2018-2019 renewable volume obligations (RVOs). Specifically, EPA proposed no increase to the biomass-based diesel category in 2019, currently slated for 2.1 billion gallons in 2018, which would essentially stagnate growth in the biodiesel and renewable diesel industries. In addition, EPA is proposing a cut to the 2018 advanced biofuel category, which biodiesel is also eligible for, from the current 4.28 to 4.24 billion gallons.

In comments to EPA administrator Scott Pruitt, NRA urged a higher RVO for 2018 advanced biofuels of at least 4.75 billion gallons, and 2019 biomass-based diesel RVOs of at least 2.5 billion gallons.

“The rendering industry is ready to supply increased volumes of feedstocks for biodiesel production if the EPA increases its RFS volumes in 2018 and 2019,” said Doug Smith of Baker Commodities Inc. in testimony at the agency’s public hearing in early August in Washington, DC.

In response to EPA’s concern that there may be insufficient biomass-based diesel feedstock, NRA pointed out that US renderers supply 30 percent of the feedstock used to produce domestic biodiesel and renewable diesel, and can provide an increasing volume of feedstock to support additional production. The biodiesel industry currently utilizes 30 percent of the billions of gallons of rendered animal fats and used cooking oil produced each year in the United States.

It was also made clear in NRA’s comments that a stronger RFS supports America-first, home-grown businesses and creates good American jobs while providing significant environmental benefits. Rendered feedstocks for biomass-based diesel production reduce approximately one ton of carbon emissions for every 100 gallons of fuel consumed and also significantly reduce almost all other criteria air pollutants compared to petroleum diesel.

Additionally, a strong RFS helps cities and towns avoid billions of dollars in repair and replacement costs for their water systems due to fats, oils, and grease clogs, NRA noted. A higher RFS provides an important economic incentive for renderers to collect used cooking oil so less goes down the drain, reducing damage to municipal sewer systems and fewer sanitary sewer overflows that threaten public health.

Higher RFS volumes beyond EPA’s proposal will generate further benefits, Smith added.

“A stronger RFS will grow jobs, clean our air by reducing emissions, and promote domestic energy production,” he testified. About 3,200 new jobs are created for every 100 million additional gallons of biodiesel production.

“For consumers, substitution of biodiesel and biodiesel blends is the easiest way to achieve immediate reductions in diesel emissions,” Smith stated. “EPA has greatly

underestimated the potential of the biodiesel industry to increase production given current and projected capacity.”

Anti-dumping Tariffs Imposed on Argentina and Indonesia

In late August, the US Department of Commerce (DOC) issued affirmative preliminary determinations in countervailing duty investigations, finding that exporters of biodiesel from Argentina and Indonesia received subsidies of roughly 50 to 64 percent and 41 to 68 percent, respectively, in violation of international trade rules. DOC also determined that critical circumstances exist in both investigations, allowing for collection of duties for a retroactive period of 90 days prior to publication of the preliminary determination in the *Federal Register* on June 5, 2017.

“The United States values its relationships with Argentina and Indonesia, but even friendly nations must play by the rules,” stated US Secretary of Commerce Wilbur Ross. “The subsidization of goods by foreign governments is something that the Trump administration takes very seriously, and we will continue to evaluate and verify the accuracy of this preliminary determination.”

The petitioner in the case is the National Biodiesel Fair Trade Coalition, an ad hoc association composed of the National Biodiesel Board (NBB) and 15 domestic biodiesel producers.

“The Commerce Department has recognized what this industry has known all along – that foreign biodiesel producers have benefited from massive subsidies that have severely injured US biodiesel producers,” NBB Chief Operating Officer Doug Whitehead said in a statement. “We’re grateful that the Commerce Department has taken preliminary steps that will allow our industry to compete on a level playing field.”

According to NBB, biodiesel imports from Argentina and Indonesia increased a combined 464 percent from 2014 to 2016, taking 18.3 percent of the market share from US manufacturers. Argentinian imports alone jumped 144 percent following the filing of the petitions in March 2017. In 2016, imports of biodiesel from Argentina and Indonesia were valued at an estimated \$1.2 billion and \$268 million, respectively.

These determinations by DOC have had the expected result of effectively halting imports from Argentina and Indonesia. Government representatives from affected countries are attempting to negotiate a solution and reviewing any legal options. In September, Argentina’s Energy Ministry raised export taxes on biodiesel to 0.13 percent from 0 percent while similar duties levied by the European Union in 2013 were lifted (see next column).

Countervailing duty laws provide US businesses and workers with an internationally accepted mechanism to seek relief from the harmful effects of unfair subsidization of

imports into the United States. Unless the case is postponed, DOC will announce its final countervailing duty determinations on November 7.

EU Reduces Argentinian Biodiesel Anti-dumping Duties

According to news reports, a European Union committee has voted to cut the anti-dumping duty rates on biodiesel imports from Argentina to between 4.5 and 8.1 percent beginning September 28, basically reopening the biodiesel market from Argentina to Europe. Anti-dumping duties from 22 to 25.7 percent were put in place on biodiesel from Argentina and Indonesia in November 2013 following complaints to the European Commission from European biodiesel producers. Prior to this, Argentina was the largest exporter to the European market.

Some market sources downplayed the impact the decision would have on the biodiesel market in Europe.

“Greenhouse gases won’t be high enough for this to be a huge trade-flow – it will be smaller than 2013 flows [prior to anti-dumping duties] but the market will still take some imports,” said Platts, as soybean methyl ester typically has lower greenhouse gas savings than its European counterparts. Almost all biodiesel in Argentina is produced from soybean oil.

The decision is expected to draw some criticism from European producers as Argentinian biodiesel has the potential to cut margins for domestically produced European product. The decision came just days after the United States sharply increased tariffs on imported Argentine biodiesel and following

an October 2016 ruling by the World Trade Organization that European duties on biodiesel imports were too high.

Minnesota Biodiesel Blends to Double Next Summer

Minnesota Governor Mark Dayton’s administration announced in early August that it will raise biodiesel standards to a 20 percent blend (B20) by next summer, up from the current 10 percent blend. The decision was made following endorsement from the commissioners of the state’s agriculture, pollution, and commerce departments.

Minnesota has long been a leader in biodiesel standards, dating back to 2005 when the state mandated that all diesel fuel contain at least two percent biodiesel. The biodiesel industry in Minnesota currently contributes roughly \$1.7 billion to the state’s economy. Three biodiesel production facilities – located in Albert Lea, Brewster, and Isanti – have a total output of about 74 million gallons of biodiesel each year.

Although the new standard will undoubtedly be popular with the state’s soybean farmers, it is likely to encounter resistance from diesel producers and the trucking industry due to concerns that there is not enough infrastructure in place to support the switch to B20. The increased blend will be sold from May to October while fueling stations will sell a 5 percent blend the rest of the year due to the extreme cold of Minnesota winters.

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Keeping Rendering Viable in the New Future

A video entitled *Steve Jobs: The Lost Interview* was recently made public on YouTube. The interview is very enlightening but near the end an interesting word is used to illustrate a concept of the relationship between the products Apple makes and its customers. Jobs referred to this as a “taste.” What is the taste a person perceives when they use Apple’s platforms of communication? How is that converted into an experience customers value so much they will keep using it, even if it is more expensive than other products?

There are presently two issues of interest in the global rendering industry. The first is identifying key points that build a “taste” of the industry when interacting with other organizations in the marketplace. The second issue is to understand how the global rendering industry will be part of the fourth industrial revolution entitled “Industry 4.0.”

Starting with the first matter, key points are needed to communicate the industry’s story to the proper markets in order to gain a place on the world stage where rendering is no longer invisible. It is essential to convey that rendering is a highly “green” industry, the process is essential for leaving a cleaner world to the next generation, and that rendered products have exceptional nutritional value for livestock, fish, and pets.

Globally, the rendering industry is conducting relationships with employees, slaughterhouses, government authorities, customers, and the general public. Each of these groups has specific requirements that build a commitment for both parties. Yet inside those relationships, a “taste” is being delivered, an experience derived by working with the rendering industry. Even if renderers are delivering the experience, they are not communicating it as a concept that generates value for the listener.

The World Renderers Organization (WRO) aims to identify the key points that can confirm the taste that can be found in every relationship with renderers around the world. WRO will run an exercise to identify these points and then build a communication strategy that can be used globally. Renderers worldwide are invited to join this effort by visiting www.worldrenderers.net and suggesting any key points that should be part of this strategy.

Another WRO interest is Industry 4.0 and how it relates to rendering. Many industries are already preparing to be part of this new way to work. There have been three industrial revolutions prior to this new one. The first took place at the beginning of the nineteenth century and was based on the use of steam as a source of power to move machinery. The second industrial revolution took place when electricity was used as a source of power to move machinery that was produced on a mass scale. The third industrial revolution was marked by the appearance of robots and automation.

This fourth industrial revolution is characterized by a range of new technologies that are fusing the physical, digital, and biological worlds, impacting all disciplines, economies, and

industries, and even challenging ideas about what it means to be human.

Artificial intelligence is becoming normal. Computers are making decisions based upon an incredible amount of data collected from processes and then assessing if these decisions produce desired results or not. At this point, it is clear that some industries, such as automobile manufacturing, are linking computers with their suppliers. These computers are then conveying the needs to be covered at the right time with the right parts.

The rendering industry should build a platform of communication with its customers and suppliers who are looking to reduce costs and facilitate those relationships. How fast will this new future arrive? Who will be ready to fulfill a new customer’s request to ensure verifiable traceability throughout the feed chain? What is necessary to begin analyzing to prepare for a new way to coordinate with customers and suppliers? How much will the “Internet of things” impact the rendering industry or is it already being impacted and we have not noticed?

I highly recommend reading the book *The Fourth Industrial Revolution* by Klaus Schwab. Written among the pages is a whole new concept of managing industries to enable them to remain viable in this new future. Renderers will have to rethink operations and imagine how to participate in new markets within this new ecosystem. Are you in? **R**

US Pork to Argentina for First Time in 25 Years

The United States (US) and Argentina have agreed to terms that will allow US pork to enter the Argentine market for the first time since 1992. The agreement follows an August meeting between US Vice President Mike Pence and Argentina President Mauricio Macri during Pence’s visit to Buenos Aires. President Donald Trump first raised the issue with Macri during their bilateral meeting at the White House in late April. Secretary of Agriculture Sonny Perdue, Secretary of Commerce Wilbur Ross, and US Trade Representative Robert Lighthizer were also fully engaged in completing the agreement.

The United States is the world’s top pork exporter and this agreement opens up a potential \$10-million-per-year market for America’s pork producers. Argentina has blocked imports of US pork since 1992 citing animal health concerns. Under the terms of this new agreement, all fresh, chilled, and frozen pork and pork products from US animals will be eligible for export to Argentina.

Argentine food safety officials will visit the United States to conduct on-site verification of the country’s meat inspection system, after which US pork exports will resume pending resolution of any outstanding technical issues. **R**

New York Expands Biodiesel Blend in Heating Oil

New York Governor Andrew Cuomo has signed legislation requiring Nassau, Suffolk, and Westchester counties to follow New York City's lead in blending at least 5 percent biodiesel into all home heating oil sold beginning July 1, 2018. These three counties surround the city and represent the greater New York City Metropolitan Area.

In 2012, New York City, the largest municipal consumer of heating oil in the United States, instituted a citywide two percent biodiesel blend requirement that is set to increase to five percent on October 1, 2017. Now the entire New York City metropolitan area, representing approximately 70 percent of the state's heating oil market, will have a 5 percent biodiesel blending requirement as of the middle of next year.

First Commercial US Biodiesel Plant Completes Expansion

Ag Processing Inc. (AGP) recently completed a major expansion at its Sergeant Bluff, Iowa, biodiesel production facility. Announced almost two years ago, the project doubles the nation's first commercial-scale biodiesel plant, built in 1996, from 30 million gallons to 60 million gallons per year.

The expansion was coupled with construction of AGP's new on-site soybean oil refinery that supplies feedstock to the plant. The facility now features integrated soybean processing, soybean oil refining, and large-scale biodiesel production.

AGP owns nine soybean processing facilities across the Midwest – with its tenth currently under construction in Aberdeen, South Dakota – and three biodiesel production facilities with installed capacity totaling 150 million gallons per year. **R**

Washington Continued from page 7

stay at the negotiating table if the White House takes steps to terminate NAFTA. US industry is keenly aware Mexican officials continue to seek alternative suppliers, particularly out of South America, for a number of ag commodities now coming from the United States should NAFTA talks break down.

Canadian officials headed to China in September in part as an effort to explore ways to diversify that nation's overseas customer base, but also to talk TPP implementation. A trade deal with China, given the ongoing nervousness about the future of NAFTA, is one way Canada can show it is not captive to the US market, said a Canadian source. However, a cozy trade deal with China may not sit well with Canadian voters, Lighthizer added.

Trump will visit Beijing, China, in November to follow up on an invitation from Chinese President Xi Jinping when he visited the United States in April. Secretary of Commerce Wilbur Ross, Trump's lead on trade, is expected to be part of Trump's trip to Asia to attend the Asia Pacific Economic Cooperation meeting in Hanoi, Vietnam. Ross was also expected to be in Beijing in late September.

NAFTA veterans say the trade experts purposely loaded the early sessions with relatively easy issues, leaving the tough issues for last. These tougher issues include labor conditions and wages; rules of origin on components, particularly in auto manufacturing; new sanitary/phytosanitary standards; a new chapter on the "digital economy"; dispute resolution mechanisms, as well as investor-state dispute settlement; currency manipulation; biotechnology approvals; a ban on geographic indicators on dairy and meat labels; and active reduction of the US trade deficit.

If a NAFTA rewrite was not enough, and in keeping true to his campaign promise to review all US bilateral trade deals, Trump made noises in mid-September about terminating KORUS before the second round of talks is held. Reportedly, the first set of talks in August went so badly Trump publicly restated his threat to terminate the treaty, offering to let Korea know six months in advance if the United States was going to pull out.

However, Perdue, Cohn, Secretary of State Rex Tillerson, and national security advisor H.R. McMaster strongly counseled the president on multiple economic, domestic, and foreign policy reasons to repair, not terminate, KORUS. Lighthizer said he was confident improvements in KORUS are forthcoming. He did not talk cancellation but, like NAFTA, criticized the deal for not helping enough US workers and contributing to a widening trade deficit with Korea. Several congressional lawmakers from both sides of the aisle sent word to the White House telling Trump that the administration should work on South Korea to improve compliance with treaty obligations. However, to even consider pulling out of the bilateral trade deal is a bad idea.

Senator Orrin Hatch (R-UT), chair of the Finance Committee, and ranking member Senator Ron Wyden (D-OR) joined Representative Kevin Brady (R-TX), chair of the Ways and Means Committee, and his ranking member, Representative Richard Neal (D-MA), in releasing a joint statement calling South Korea a "significant economic partner, our seventh largest export market, and a vital customer for US manufacturers, service providers, farmers, and ranchers." Senator Chuck Grassley (R-IA) said a US withdrawal from KORUS would be "catastrophic." Senator Joni Ernst (R-IA) stated the South Korean market is important for her state's beef, corn, and pork exports, adding "terminating KORUS would leave our farmers at a competitive disadvantage."

Korean Ambassador Ahn Ho-Young said it is too early to write the obituary for KORUS. There has been one round of talks and no date has been set for a second, he noted, adding the two nations have not agreed yet on how extensive a KORUS rewrite might be. Some contend the treaty can be "tweaked," while others are calling for a NAFTA-like full renegotiation.

"Let's go step by step, rather than just jumping the gun," Ho-Young commented.

Observers willing to predict say both NAFTA and KORUS will survive, though in what form is difficult to pin down. That leaves only 12 other multilateral and bilateral trade deals to review and possibly rewrite. **R**

Graduate Internship Supports ACREC Technologies

Recognizing that early review of the commercialization potential of research supported by the Clemson University Animal Co-Products Research and Education Center (ACREC) could improve the probability of commercial adoption, the Clemson University Research Foundation (CURF) proposed a graduate internship program last year to provide technical and business development support to researchers in the early stages of their research projects. Managed by Vincie Albritton and A. Chris Gesswein of CURF, the objective of the program is to conduct initial market analysis, customer identification, and competitive patent landscape review for new technologies proposed or in development through ACREC. Using a technology evaluation form that CURF initiates on all invention disclosures, the graduate interns gather relevant market data, potential customer data, and potential intellectual property hurdles to provide a reasonable early stage assessment on whether a commercial opportunity can be realized. This program is allowing clear decision stages for ACREC-created technologies, from proposal to final report.

Since its inception in July 2016, CURF has assigned two interns to review ACREC projects and proposals. Currently, one intern – Walker Maffit – is employed for academic year 2017-2018. Maffit is completing his masters of science degree in plant and environmental sciences with an emphasis on technology commercialization in the life sciences. Albritton, CURF deputy director, and Gesswein, CURF director of licensing for technology transfer, are leading the efforts.

The program design is based upon the foundation's invention disclosure evaluation. However, it is implemented much earlier in the research process so that the faculty researcher can improve or restructure his or her proposal to enhance the funding probability of a research proposal, encourage continuing support of ongoing research activity, or exert right of first refusal to licensing of technology.

In addition, the information provided could shape the ongoing research to make the anticipated technology (intellectual property) more marketable. It also allows CURF to participate in the early stages of the research mechanism and will help in the foundation's decision process in patent protection, marketing of intellectual property, and eventual licensing opportunities. This program is not only assisting ACREC efforts but is also giving interns the chance to learn about market and business opportunities and procedures for evaluating technologies for commercialization. This program will train scientists and/or engineers in commercialization strategies.

To date, CURF has received 15 invention disclosures that were supported through ACREC funding with the first having been submitted in 2008. Two of the inventions have received follow-up investment from CURF totaling \$105,000 via the maturation grant program. One grant concluded in a license of the technology. Research is continuing under the other grant with a clear commercialization path outlined.



Graduate student intern Walker Maffit evaluates ACREC technologies for commercialization.

The evaluation of new technologies submitted as disclosures to CURF is a highly iterative process that is focused along paths of analysis, patentability, and commercial potential. A three-step process is used to generate the information required to make an informed decision on whether or not to make the investment to file a patent for a subject technology. In the first step, a triage assessment is conducted to identify if there are any fatal flaws that may impact the ability to file a patent. In this step, the literature is searched to identify and review any prior patents, patent applications, or prior agreements that may impact ownership or the path to commercialization.

An initial patentability analysis is conducted and statutory bar dates are evaluated in case any prior public disclosure has been made via publication or presentation that would trigger a one-year grace period in which a patent would need to be filed. In academic research, often the technology will be classified as "premature," meaning that the technology has not yet been reduced to practice. In these cases, further proof of concept and development is necessary before a proper assessment of the patentability and commercial potential can be conducted.

Once the first step has been completed, those invention disclosures that warrant further evaluation move into the next stage where a detailed commercial assessment is conducted. Using a technology evaluation tool that has been developed by the CURF staff, the evaluation continues through commercial potential, ease of commercialization, and technical maturity. The market opportunity, size, and target market are reviewed. Market trends including potential growth rates, needs and factors driving trends, value chain analysis, and degree of innovation are examined. Once the evaluation is complete, the CURF technology commercialization officer will determine if the technology warrants further examination through internal and external review panels that provide go/no-go guidance.

In addition to reviewing pre-proposals, the interns are engaged in ongoing technology and market evaluations on ACREC inventions to assist in moving technologies to market. The goal of this program is to provide continuous feedback to the researcher and ACREC membership on the commercial viability of the research projects throughout the process. The program is also designed to better aid

CURF at such time that an invention is selected for patent protection and commercial marketing, thereby increasing the probability of commercial adoption through licensing or start-up.

This is a new program for both CURF and ACREC, but the researchers have been receptive to the students' involvement and information they have provided in the early stages of their research projects.

Online Training for Sanitary Transportation

The Food and Drug Administration (FDA) is providing a free online food safety training module for carriers engaged in the transportation of food by rail or motor vehicle in the United States. This training will help carriers meet the requirements of FDA's Sanitary Transportation of Human and Animal Food rule.

Rail and motor vehicle carriers covered by the rule are required to provide food safety training to their personnel engaged in transportation operations. This requirement applies when the carrier and shipper have agreed in a written contract that the carrier is responsible, in whole or in part, for the sanitary conditions during transportation. Such carriers are required to establish and maintain records documenting the training of operations personnel. Carriers may:

- offer this training module to their operations personnel as a means of satisfying the minimum requirements;
- use this module to complement or enhance training they currently offer;
- train their personnel using their own training programs; or
- provide training obtained from a third-party vendor or other provider.

FDA's course is designed to provide basic food safety training to transportation operations personnel. It does not describe specific operating procedures and practices but is intended to complement industry best practices.

After completing this module, carrier personnel will be better able to:

- recognize their responsibilities as specified in the sanitary transportation rule;
- identify potential food safety problems that may occur during food transportation; and
- describe common ways to prevent food safety problems.

Information on the training is at www.fda.gov/Food/GuidanceRegulation/FSMA/ucm576097.htm.

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After the Disaster: Recovery and Employee Safety

Editor's note – Mark A. Lies II is an attorney in the Environmental, Safety, and Toxic Tort Group in the Chicago, Illinois, office of Seyfarth Shaw LLP. He is a partner who focuses his practice in the areas of product liability, occupational safety and health, workplace violence, construction litigation, and related employment litigation.

Adam R. Young is an associate attorney in the Environmental, Safety, and Toxic Tort Group of Seyfarth Shaw practicing in the areas of occupational safety and health, employment law, and associated commercial litigation. Legal topics provide general information, not specific legal advice. Individual circumstances may limit or modify this information.

The devastation from Hurricanes Harvey, Irma, and Maria that recently pounded Texas, Florida, and Puerto Rico is indicative of how merciless and unpredictable Mother Nature can be. Climate scientists have warned higher sea levels and water temperatures in coming years are predicted to lead to more hurricanes and coastal flooding in the future. For employers who are obligated to keep their employees safe during working hours, disaster preparedness is critical.

This article outlines employers' obligations to protect employees before, during, and after an emergency and offers recommendations to employers in the following areas: (1) preparing for an emergency, (2) taking action during an emergency, and (3) cleaning up and resuming business after an emergency.

Preparing for an Emergency

The Occupational Safety and Health Administration's (OSHA's) 29 *Code of Federal Regulations* (CFR) 1910.38 requires all workplaces with more than 10 employees to develop a written Emergency Action Plan (EAP), when required by an OSHA standard, to identify and coordinate necessary employer and employee actions during an emergency. At a minimum, the EAP must include the following elements:

- means of reporting emergencies (i.e., fires, floods, etc.);
- evacuation procedures and assigned exit routes;
- procedures to account for all employees following an evacuation;
- procedures to be followed by employees who must remain behind to attend to critical plant operations before evacuating;
- rescue and/or medical duties for employees who are assigned and trained to perform them; and
- names or job titles of people who can be contacted for more information about the plan.

In addition to these required elements, it is recommended that employers also consider including the following in the EAP:

- the location of the nearest hospital or emergency medical center;

- the type of alarm system used to notify employees of an emergency;
- procedures for protecting information including storing or maintaining critical documents and records;
- the location and permissible uses of protective equipment such as portable defibrillators, first aid kits, dust masks, fire extinguishers, etc.; and
- the location of televisions or radios for further information during a disaster.

Ensuring the development of an effective EAP also requires the employer to train employees to understand their roles and responsibilities under the plan. When conducting this training, the employer must address literacy, language, and cultural barriers to ensure that the training is effective. Employers also must document the training.

OSHA has posted links and recommendations on its website to help employers prepare for hurricanes at www.osha.gov/dts/weather/hurricane/preparedness.html. The website includes tips on how to create evacuation plans and assemble emergency supply kits. The Environmental Protection Agency also has provided tips related to hurricane preparedness on its website at www.epa.gov/natural-disasters/hurricanes#recover.

Responding to an Emergency

Communication during an emergency is critical to maintain organization and prevent panic and injuries. For example, not all emergencies require an evacuation of the workplace. In some cases, such as flooding, storms, or the release of biological or chemical agents, staying indoors is safer for employees.

The first question most people ask during an emergency is "should I stay or should I go?" Employers can guide employees to the appropriate course of action by having an alarm system that emits a different signal for "evacuate" emergencies than for "stay put" emergencies. Alternatively, the alarm system could be programmed to give specific verbal instructions following the initial alert. Employers must consider the needs of disabled employees (e.g., those who are hearing or visually impaired) in selecting any alarm system.

Employers should have an effective means of communicating with employees about the following during an emergency:

- whether to evacuate or stay put;
- how and where to get information about the emergency itself;
- what areas of the building to avoid;
- how and when it is safe to return to the work area; and
- how and when it is acceptable to contact family members and loved ones.

Picking up the Pieces

Once the proverbial dust settles after an emergency, hazards to employees can still remain. For example, downed power lines in a flooded parking lot can injure or kill employees leaving the building after the storm passes. Hazards are even greater for employees who are tasked with cleaning up after an emergency. Employees who are actually performing clean-up work after a flood, storm, earthquake, or other disaster may be exposed to one or more of the following hazards:

- hazardous materials such as asbestos, mold, lead, or chemicals;
- downed power lines and trees;
- heat illness;
- confined spaces;
- blood borne diseases or other contagions;
- mosquito borne diseases such as Zika virus; and
- structural destabilization.

OSHA's website provides a Hazard Exposure and Risk Assessment Matrix for hurricane response and recovery work outlining the most commonly performed duties during hurricane response and recovery work and the hazards employees could face at www.osha.gov/dts/weather/hurricane/response.html.

OSHA has developed specific standards to address many of these hazards. For example, its Hazardous Waste Operations and Emergency Response standard, 29 CFR 1910.120, applies to employees who are performing cleanups of hazardous waste or other hazardous materials. OSHA's asbestos and lead standards require employers to evaluate the level or exposure to employees, provide appropriate protective equipment, and, in some cases, conduct regular monitoring of air quality in the work area.

In addition to these specific standards, other more general requirements will come into play. For example, OSHA's welding and cutting lockout/tagout, confined space entry, and fall protection programs may be a factor even if no OSHA standard specifically addresses the type of clean-up activity taking place. Finally, as always,

OSHA's General Duty Clause requires employers to provide a workplace free from recognized hazards. Accordingly, even if no OSHA standard applies to a particular activity or hazard, employers may still face citation liability if the hazard is reasonably likely to cause serious injury or death and there is a feasible means of abatement to correct the hazard. Before allowing employees to commence any kind of clean-up work, the employer must conduct a job hazard analysis to identify and address potential hazards.

Multi-employer Worksite Doctrine

It is important to note that even employers who hire outside contractors to clean up after a disaster must recognize their obligations to worker safety. OSHA's multi-employer worksite doctrine allows the agency to issue citations not only to the employer whose employees are actually performing the clean-up work, but also to other employers who control the means and methods of work of the employees.

Continued on page 36



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Keeping an Eye on AAFCO Activities

By David Meeker, PhD, MBA
Senior Vice President, Scientific Services
National Renderers Association



The Association of American Feed Control Officials (AAFCO) is a group of state and federal agency volunteers charged by law to regulate the sale and distribution of animal feeds. AAFCO meets twice each year and works toward consistent regulation across states and maintains an official listing of approved feed ingredients. The Food and Drug Administration (FDA) is heavily involved while industry groups such as the National Renderers Association (NRA) attend to advise and observe.

At AAFCO's 2017 annual meeting held in Bellevue, Washington, this past summer, there were several items of interest to renderers:

- FDA Center for Veterinary Medicine (CVM) Director Dr. Steve Solomon announced that compliance inspections for the hazard analysis and risk-based preventive controls portion of the Food Safety Modernization Act previously slated to begin in September 2017 will instead begin in September 2018 for large firms (over 500 employees). Large plants still need to be in compliance now but will not be inspected on that point for another year. The one-year extension does not apply to smaller firms that have a September 2018 compliance date. FDA staff is working on guidance documents that will explain what is required for compliance in areas where the regulation was not clear. The extension was granted so the guidance will be available before compliance inspections begin. More information is available at www.fda.gov/Food/GuidanceRegulation/FSMA/ucm570439.htm.
- CVM's deputy director of the Division of Animal Feeds, Dr. Dave Edwards, stated that FDA's review of all definitions in the AAFCO *Official Publication* to determine those not good enough to be "standards" has been suspended. The rendering industry will occasionally need to review and revise definitions when problems arise such as with feeding fat a few years ago, but this announcement gives relief to the concern that a large number of rendered product

definitions would be placed in limbo. Definitions in the AAFCO *Official Publication* will continue to be the legal basis for animal feed ingredients.

- AAFCO's Ingredient Definitions Committee voted to move the following definitions from "tentative" to "official" as negotiated by NRA and allies in 2015: poultry by-product meal, poultry by-products, poultry, and poultry meal. NRA was able to avoid major detrimental revisions and possible market disruptions with these minor revisions, though activist groups continue to complain about what goes into pet food no matter how safe and nutritious. These definitions became official without additional discussion in committee. The next steps are for the AAFCO Board of Directors to do the same at which time the membership will vote, most likely next January. NRA is always ready for these challenges.
- The AAFCO membership accepted the recommendation of the board and voted official the definitions for "yellow grease, feed grade" and "used cooking oil, feed grade" negotiated last year by NRA and allies. These largely replace the old "fat product, feed grade" that was recently removed from AAFCO's *Official Publication*.
- An AAFCO task force charged with simplifying pet food labels failed to advance a proposal for a new definition for poultry protein (a higher protein, higher quality form of by-product meal). NRA met with the Pet Food Institute and American Feed Industry Association as well as some pet food and rendering companies attending the meeting about continuing work on this and other new pet-food-friendly definitions for common rendered products. The allied group will submit new definitions to AAFCO in the future
- AAFCO is looking to hire a full-time executive director, which should help the all-volunteer organization work more efficiently and consistently. **R**

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October 11-12, Chicago, IL • www.fatsandoils.org

US Animal Health Association 121st Annual Meeting

October 12-18, San Diego, CA • www.usaha.org

2017 Feed and Pet Food Joint Conference

October 23-25, Louisville, KY • www.ngfa.org

National Renderers Association 84th Annual Convention

October 23-27, location to be determined due to hurricane damage in San Juan, Puerto Rico • <http://convention.nationalrenderers.org>

January 2018

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

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Law Continued from page 33

Accordingly, employers may be liable for the safety precautions provided to employees who are brought onto their worksites following a natural disaster.

Recommendations

It is imperative that employers develop and implement organized and clearly communicated procedures for responding to a disaster. A well-planned and executed emergency response program will help prevent panic, thereby minimizing employee injuries and damage to property. It is recommended that employers consider the following:

- Develop an EAP that covers a wide variety of potential emergencies and gives employees clear guidance on what to do in each scenario.
- Be cognizant of hazards employees may face even after the immediate danger has passed.
- Train employees on evacuation plans and other emergency response procedures.
- Conduct a job hazard analysis and review applicable OSHA standards before assigning any employees to perform clean-up work.
- Evaluate the safety record of any independent contractor hired to perform clean-up work, including investigating the contractor's workers' compensation history, its OSHA logs, and its history of citations from OSHA. **R**

For further information, please contact Mark A. Lies II at mlies@seyfarth.com, or Adam R. Young at ayoung@seyfarth.com.

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Our location has changed to the Bacara Resort & Spa in Santa Barbara.

While our venue has changed, the quality of our Annual Convention has not.

All of us at the National Renderers Association are saddened that we are unable to hold our meeting in San Juan. Our hearts go out to the people of Puerto Rico and the devastation they have experienced. Unfortunately, it will take them time to rebuild their infrastructure. For this reason, we have decided to relocate our meeting to the beautiful Bacara Resort & Spa in Santa Barbara, California.

The dates for the convention — *October 23 through October 27* — will not change. If you have already reserved a hotel room in San Juan, you will have a hotel room in Santa Barbara. Details on how to confirm your hotel reservation will be available soon.

We are working diligently to make this transition as easy and seamless as possible for all of our attendees. Updated information will be available soon through e-cards and online at www.convention.nationalrenderers.org. For additional information, please contact Marty Covert, NRA Convention Coordinator at 703. 754. 8740 or co@martycovert.com.



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Darling to Build New Facility in Central Texas, Suffers Fire in the Netherlands

After months of negotiations involving the City of Grapeland, Texas, and the Grapeland Economic Development Corporation, Darling Ingredients Inc. announced its plan to build a poultry conversion facility in Grapeland. The plant will support a regional poultry processing operation currently under development with the finished products to include fats and proteins for pet food and renewable fuel, according to Melissa Gaither, vice president of Investor Relations and Global Communications at Darling.



The company is purchasing land that totals about 225 acres. Construction will begin later this year and the plant is expected to be operational in early 2019.

"This is going to be a real benefit for the community," said Grapeland Mayor Balis Dailey. "The first benefit is we are annexing them into the city which will help increase our tax base. The city will be in control of all the issues regarding permitting – in line with the state – as opposed to being outside the city limits in the county where there are no restrictions." The new facility is expected to bring at least 50 jobs to the area once it is up and running.

In mid-September, a "fire incident" caused a temporary work stoppage at Darling Ingredients' Rendac production plant in Son, the Netherlands. Part of the production process at the facility was expected to be non-operational for about two to three weeks with substantially all tonnage diverted to other company-owned assets. There were no injuries and the fire was contained to only the Rendac operation at the Son location. In the long term, Darling expects to largely recover its losses from property and business interruption insurance. However, the company expects a negative impact to its third quarter 2017 earnings of up to \$4.5 million.

Dupps Receives Healthiest Employer Award

The *Dayton Business Journal* has recognized The Dupps Company with its Healthiest Employers Award for 2017 – the sixth consecutive year Dupps has achieved the honor. The awards program acknowledges employers that proactively shape the health of their employees. The companies taking part have made a commitment to impact the health of their workplace and, in turn, their bottom line. The *Dayton Business Journal* reviewed nominations and selected 16 of the most outstanding health and wellness programs created and implemented by local companies for this prestigious award.

"With a continuous emphasis on wellness, many of our employees have made a change to healthier living," said Jim Vose, human resources director at Dupps. "The greatest satisfaction I receive is when I hear testimonials from people on how their lifestyle changes to healthier living have positively impacted them and their families." Among the company's wellness initiatives is "Commit 2B Fit," a comprehensive program of healthy activities, on-site health screenings, in-house doctor's care, wellness counseling, and financial incentives for maintaining a healthy lifestyle.

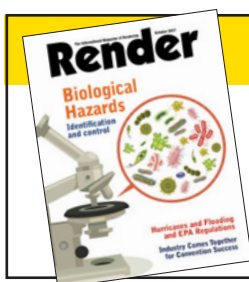
Clean Water Awards given to Tyson and Keystone

The U.S. Poultry and Egg Association presented the 2017 Clean Water Award to Tyson Foods River Valley Animal Foods in Scranton, Arkansas, and Keystone Foods in Gadsden, Alabama. The award is given annually to poultry facilities that excel in their efforts at wastewater treatment and water reuse.

Tyson Foods River Valley Animal Foods, the winner in the full treatment category, produces 2,000 tons of animal feeds from rendered poultry protein and fat per day at their facility in Scranton. The company treats approximately 750,000 gallons of wastewater daily, of which 220,000 gallons of treated wastewater is reused on site for numerous purposes including cleaning trailers and tankers after raw product has been removed.

Keystone Foods' further processing facility in Gadsden was chosen as the winner in the pretreatment category. In the last few years, the plant has been able to reduce water consumption by more than 200,000 gallons per day due to changes made in refining operating procedures and engineering controls. This included the installation of a central vacuum system to transfer by-products and switching to a steam pasteurization process to sanitize the chillers and freezers.

American Proteins in Cumming, Georgia, and Wayne Farms in Pendergrass, Georgia, received honorable mentions in the full treatment category. Pilgrim's Gunterville, Alabama, facility received honorable mention in the pre-treatment category.



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Idaho Packing and Rendering Plant Up and Running

CS Beef Packers began operations at a new 370,000-square-foot plant in Kuna, Idaho, earlier this summer. The newest meat packing facility in the country was created through a joint venture between two family-owned businesses: Caviness Beef Packers and the J.R. Simplot Company.

Located about 20 miles south of Boise, the facility will harvest cull cows and bulls from dairy farms and cattle ranches throughout the intermountain west. There are an estimated 600,000 dairy cows and more than 600,000 beef cows in the region. When operating at full capacity, expected in early 2018, CS Beef Packers will process 1,700 head per day and employ 700 individuals. Only United States Department of Agriculture-inspected beef will be processed at the facility.

The plant also includes hide and rendering processing, using new Dupps cookers and prebreakers, Duske blood drying equipment, and top-of-the-line odor control technology. The new facility is modeled after Caviness Beef's rendering plant in Hereford, Texas, built about eight years ago, said Terry Caviness, chief operating officer at Caviness Beef.

The rendering plant will process 700,000 pounds of by-products per day at full capacity. Finished products will include meat and bone meal, bleachable fancy tallow, and blood meal destined for diverse markets.

Flottweg Breaks Ground on Expansion

Flottweg, a leading manufacturer of centrifuges, belt presses, and separators for solid-liquid separation, is building a 1,700-square-foot laboratory and testing area expansion in Independence, Kentucky. Once construction is complete, the addition will include an expanded laboratory, upgraded testing equipment, and a high-speed balancing bunker.

The laboratory expansion will include the latest instrumentation for testing separation feasibility on customer samples. Upon completion of these feasibility tests in the new laboratory, Flottweg will continue to offer on-site trials to demonstrate lab results, allowing customers to verify that machines will perform as promised.

Flottweg is also adding a new high-speed balance bunker next to its existing balancing facilities to allow for separate machine part testing at maximum operating speeds. Decanter bowls and scrolls can be balanced up to 5,000 revolutions per minute (rpm) and separator bowls up to 10,000 rpm.

VRM Labs Granted Funds for Wastewater Recovery Product

VRM Labs has received a \$600,000 two-year grant from the United States Department of Agriculture's Small Business Administration's Innovative Research Program to study and commercialize their new flocculant for wastewater recovery.

Work on the commercialization of the flocculant product is in phase II and will be done in cooperation with several National Renderers Association members, of which some have already assisted VRM Labs by offering their facilities, wastewater recovery systems, and labs. Over the next two years, work will be done on the product, process, and scale-up of manufacturing. The company received a small grant last year for the phase I project to determine the feasibility of the product.

VRM Labs was formed in 2013 when two scientists from Clemson University teamed up with a longtime industry specialist to attempt to bring their research products to market. Drs. Alexey Vertegel and Vladimir Reukov, two biomedical engineers on the faculty at Clemson, were funded by the Fats and Protein Research Foundation through the Animal Co-Products Research and Education Center at Clemson. Their mission was to develop a natural but effective antioxidant for use in rendered products and pet food. They were successful in their research and development efforts that involved the use of animal blood, a by-product of the harvest process.

When the scientists decided to begin the market development process, they enlisted Dr. David Meisinger, who has had extensive experience with startups, and formed VRM Labs. The feed antioxidant is working its way through the approval process at the Food and Drug Administration and is undergoing more fine-tuning in the research and development department. **R**

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Publication of Statement of Ownership for a Requester Publication is required and will be printed in the October 2017 issue of this publication.

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