

THE STATE OF THE INDUSTRY 2022 REBOOTING THE SUPPLY CHAIN

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Cultured meat holds some upside for meat processors, including removing many of the safety risks.

PACK EXPO 2022 PREVIEW

Marking the event's return to Chicago, Pack Expo will offer a look at the latest products and other innovations.

SUPPLIER'S PERSPECTIVE

Waste management services provider RTS details how to set sustainability goals in meat production.

STATE OF THE INDUSTRY TOPICS

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E n t **Brian Miller**

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- 2. Smokey Bones releases fall seasonal menu
- 3. SONIC releases limited-time Chophouse Cheeseburger
- 4. Baja Fresh debuts permanent plant-based menu items
- 5. Impossible Foods debuts plant-based frozen meals



MOST-POPULAR FEATURES:

- 1. Bacon Report 2022: All Sizzle, no fizzle
- 2. Inflation takes a big bite out of the meat dollar in August
- 3. Wright brand celebrates 100th anniversary in Vernon, TX
- 4. Meeting challenges with optimism
- 5. 2022 Independent Processor of the Year: Burger Specialty Foods



MOST-RECENT PODCAST EPISODES:

- 1. Episode 144: Neogen Food Safety's Luke Thevenet discusses the state of food safety
- 2. Episode 143: Rockwell Automation's augmented reality technology
- 3. Episode 142: Superior Farms' CEO Rick Stott discusses the **Sheep Discovery Center**
- 4. Episode 141: CEO Ido Savir of SuperMeat plans a 2023 opening for a U.S. cultured poultry production facility
- 5. Episode 140: Talking consumer trends with 210 Analytics' Anne-Marie Roerink, Part 2





2022

2022 finds the State of the Industry to be strong overall, but the lingering supply chain hangover post-pandemic coupled with rising costs for production and retail price inflation are tempering optimism. After enjoying two years of strong dollar sales growth, inflation took a big bite out of consumers' meat spending in August. The average price per pound in the meat department across all cuts and kinds (both fixed and random weight) weighed in at \$4.65 in August, up 9 cents from July and up 7.6% compared with the previous year, according to IRI data. Meat had belowaverage inflation compared to the overall food and beverage category. For the past few months, meat inflation has trended milder than the 52-week average, suggesting price increases may be moderating. Inflation in processed meat remained in the double digits, at 12.9% in August. Check out our complete State of the Industry 2022 Report for an inclusive and comprehensive look at how different sectors of the meat, poultry and seafood industries are addressing challenges and opportunities in the current marketplace.

Also, in Independent Processor, don't miss this issue's feature on Nicholas Meat LLC's Sustainable Resource Facility project, an ambitious upgrade that will substantially reduce the beef processor's water use and carbon footprint.



FRED WILKINSON



STILL WARY FROM SUPPLY CHAIN DISRUPTIONS AND ECONOMIC UNCERTAINTY, CONSUMERS INCREASINGLY EMBRACE NEW PRODUCTS AND SALES CHANNELS.

BY DAN EMERY

our food supply. Amazon, for example, moved way up the list of grocers to No. 2 and has been able to hold market share post Covid. During COVID-19, a large part of our society was operating from home as remote workers. In the food industry we did not have that option because certain things must be done in person. This makes staffing and supply chain replenishment more difficult. The working consumer however is still being pushed back into the office, and that affects consumption patterns. Only 17% of workers say they prefer to work in an office versus work at home. All the latest trends point to many companies going to a hybrid environment, where part of the time they're in an office and part of the time they are operating from home. Changes in consumption patterns will continue due to hybrid work and an aging demographic's demand for different

The net effect of COVID-19 has put many of the trends that were developing into hyperdrive, making them permanent ways of life in

products/services. Convenience was already surging, but changing working habits and eating habits have accelerated that trend. The snack category is now red hot, with cheese/meat snacks being particularly popular. People who spend a high percentage of time at home working change their eating habits dramatically. Not running out for lunch affects the restaurant industry. Traditional meal cycles are changing to multiple snack cycles, up to 20% of U.S. workers, still work from home, which keeps 62.5% of the food dollar based on retail at-home sales, while 37.5% is based on away-from-home sales. We're in a mild recession, all the technical facts indicate. This recession will not be traditional in nature. This is a full employment

economy with record-high inflation. We're at a midpoint with the baby boomer demographic retiring from the workforce. This will continue to shrink available workers and knowledge available, putting increased pressure on wages and the job market. In spite of

consumers being squeezed by rising costs from all sectors, able-bodied workers will have a job. U.S. Bureau of Labor Statistics

reports. 1.1 million women left the labor force, accounting for 63% of all jobs lost. In recent earnings reports, Walmart indicated that wealthy Americans were now shopping in greater numbers at Walmart and that's the reason they're earnings were not worse. I suggest they set up charging stations. Higher inflation, and low unemployment will continue to put upward pressure on labor costs. Consumers are trading down to opening price point items and private labels to reduce cost. Because retailer shelves are not fully stocked, consumers have been forced to take what's available, which will create a permanent change in consumption habits and adoption of new/different products.

WE'RE AT A MIDPOINT WITH THE BABY BOOMER DEMOGRAPHIC RETIRING FROM THE WORKFORCE. THIS WILL CONTINUE TO SHRINK AVAILABLE WORKERS AND KNOWLEDGE AVAILABLE, PUTTING INCREASED PRESSURE ON WAGES AND THE JOB MARKET.

GEOPOLITICS

The war in Ukraine is grinding to a stalemate of attrition with no end in sight. Ukraine's grain exports are down 52.6% year on year at 3.6 million tons in the 2022/23 season so far. Winter is coming, and energy prices and availability will take a dramatic hit as we grind into the cold months in many parts of the world.

Recently, the Russians made a deal with the Turks to allow foodstuffs to exit from Ukrainian ports. Much of last year's crop is still

sitting in Ukrainian bins, and upwards of 17,000 shiploads need to travel out just to remove stored product to allow this year's harvest to be placed there. The crop acres planted in the Ukraine was actually larger than expected, but it's still unknown what will get harvested, where it will get stored and how it will get shipped. All these will have a major effect on the price of wheat, corn and many other commodities that are prevalent in this region. Spot rates

are still more than twice what they were two years ago when exports from Asia began to surge after the latest COVID-19 lockdowns were lifted. **ENERGY ECONOMY AND RECESSION**

The Federal Reserve continues to raise interest rates in hope that it will slow inflation. Unfortunately, inflationary models are different than they have been historically. Energy prices have been impacted by the declaration of war against the U.S. energy sector by the Biden Administration, followed by the gut punch of the Russian invasion of Ukraine. The canceling of the Keystone pipeline at the beginning of the Biden Administration signaled a hostile energy business environment.

Our shale oil energy sector is very dependent on constant investment. Oil companies are reluctant to risk billions of dollars when the current administration has signaled to them that they will not cooperate. Energy is a key component of recent inflation. Prices have begun to go lower, adjusting to a dramatic reduction in consumption due

to recessionary conditions across the world. Natural gas, one of the bright spots of the energy sector for many years, requires pipelines for transportation, and without cooperation from the current administration much of it has to be burned off because it's impractical to transport safely by truck or rail. This wasteful practice is made necessary by the lack of available pipelines.



Boosted by the pandemic, buying groceries online is here to stay. The pandemic gave omnichannel retail a turbo boost, but it has plateaued, as more shoppers buy their food and drink in the store. Consumer research has implications for brands and grocers,

ONLINE GROCERY SHOPPING

they fear a shortage, they will immediately resort to pantry loading.

truckers, impacting the ability to find enough truck drivers and to keep trucks on the road.

prompting them to invest more in promotions, processes and technologies that boost in-store performance. The number of retail customers using buy-online-pickup-in-store (BOPIS, now 68% of online sales) is up from 55% last year. The trend is expected to continue through 2022. In-store shopping remains the dominant channel for buying consumer goods and is

expected to grow in 2023. For online consumers, 82% start with past purchase as a baseline when placing an online order. Grocery is a highly experiential business, making physical footprints important tools to educate consumers on products, reinforce brand positioning and support e-commerce sales. Options rule the retail experience. Low margins and high costs plague the online grocery market, but there are ways to boost revenue if grocery retailers collaborate with CPG manufacturers. Consumers are shopping online in multiple ways. Fresh and frozen foods have gained traction, and healthy and sustainable foods are growing in popularity. Consumers will pay more for online groceries — to a point. Shoppers want BOPIS and curbside options. Online shopping experiences inform grocery preferences.

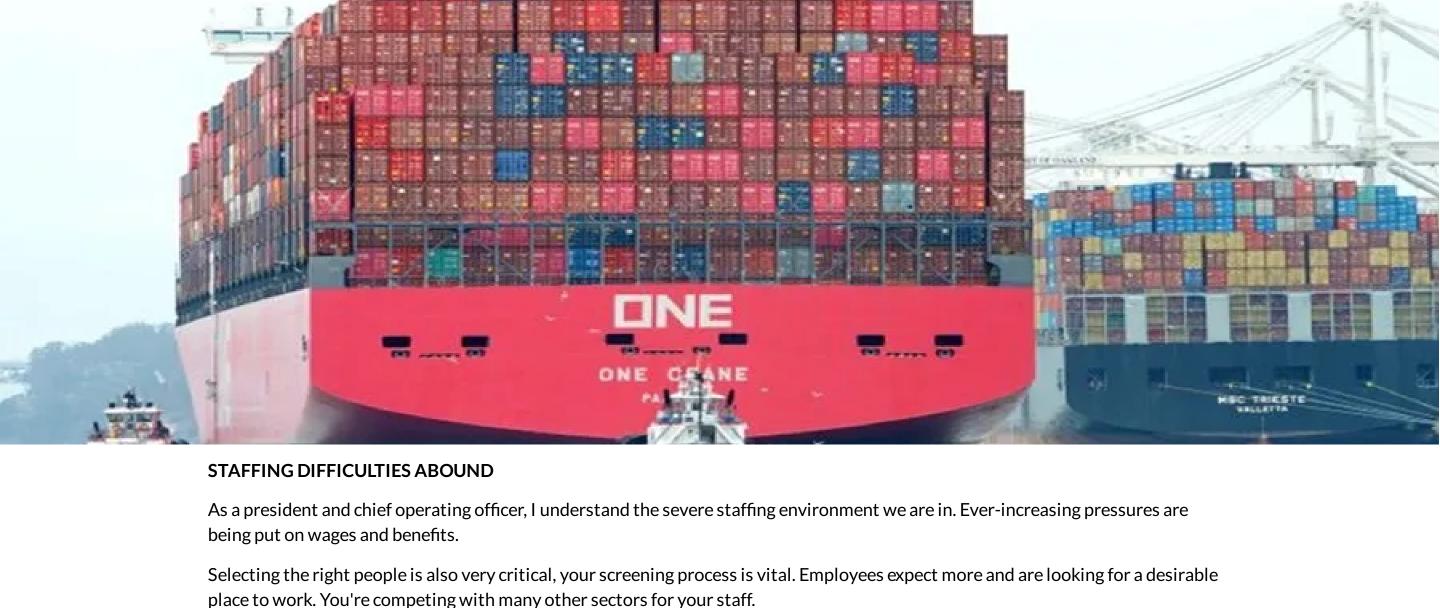
SUPPLY CHAIN PAINS The market continues to struggle to regain its balance. U.S. consumers are accustomed to having what they want, when they want. If

Companies who were purchasing components, equipment or packaging from China/offshore were disrupted by Shanghai shutting down for 60 days, snarling ports in Long Beach, Calif., and elsewhere with hundreds of thousands of containers.

There's a shortage of trucks and truck drivers. Not having a product to ship is where it all begins. Federal regulations are limiting our

Unfortunately, supply-chain issues also wreaked havoc on the foodservice industry in 2022. Import shippers are facing an escalating number of blank and sliding sailings on trans-Pacific trades in December, consultant and carrier data shows, with U.S. West Coast services particularly hard hit. That comes as carriers are also skipping ports in both Asia and the U.S. in an effort to recover sailing

schedules



As a drug testing executive, I am constantly talking to presidents and COO's about not testing for THC in safety-sensitive industries, it's a difficult decision to make. Accidents and safety-related issues are accelerating with those who do not test.

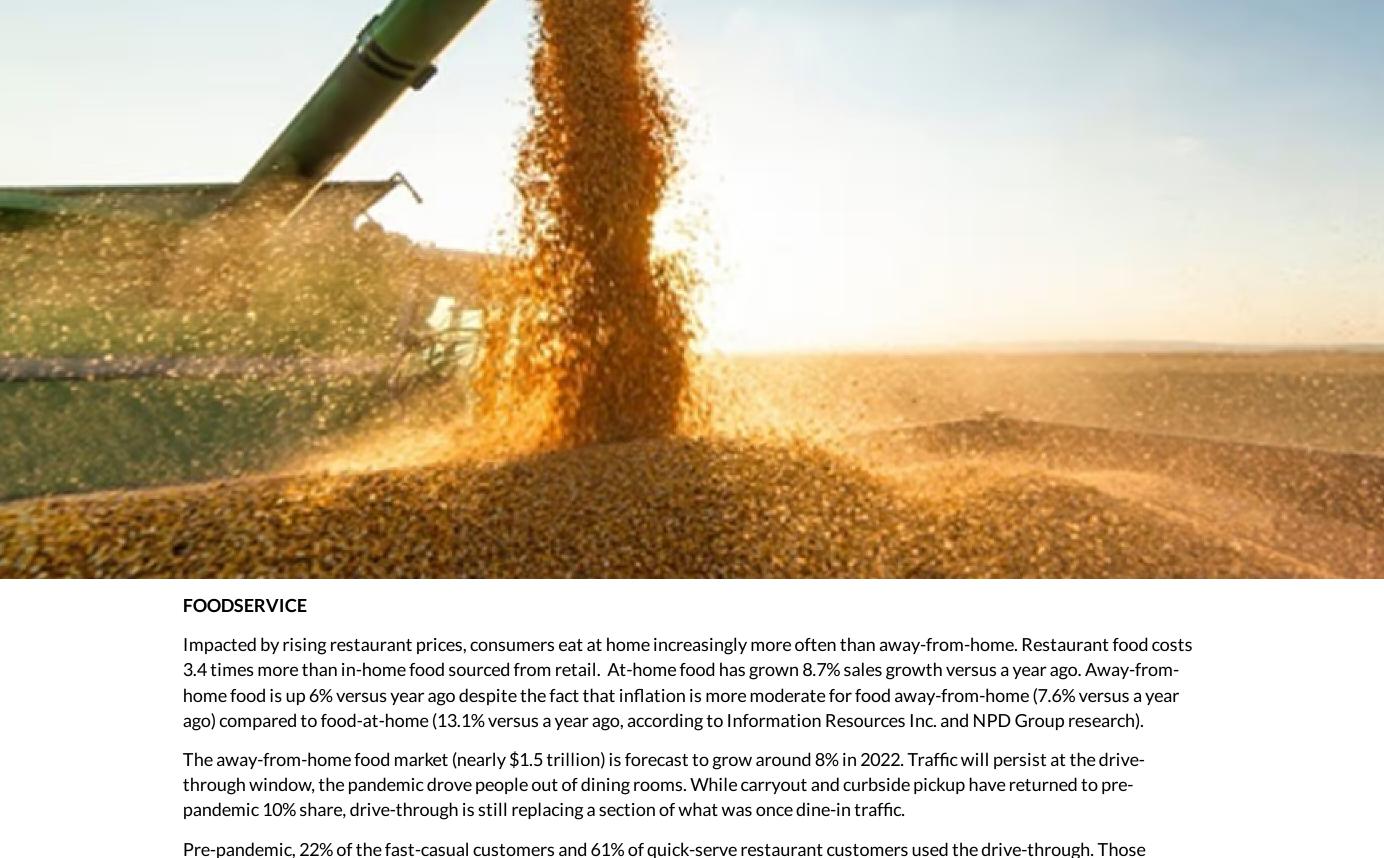
We are tracking events as state laws are changing daily. Droves of employees are leaving the restaurant industry. As brands struggle to keep up — even experimenting with role replacement through automation like self-service kiosks — employees

are making their job decisions based on pay, benefits and the sentiment of fulfilling work. When asked why employees are planning to part ways from their current restaurant jobs, 22% indicated it was because of pay and benefits. **PLANT-BASED PROTEINS**

The category continues to grow. Many companies now offer plant-based proteins. Taste, texture and mouthfeel are critical for

success. Plant-based protein market is valued at \$12.9 billion in 2021, and it is expected to reach nearly \$22 billion by 2030, with a

CAGR of 6.20% during a forecast period of 2022-30. Consumers continue to alternate their eating habits, with the number of vegans, flexitarians and vegetarians accelerating. Many younger consumers switch between dietary habits, creating confusing demand surges and reductions.



NEW PRODUCT EXPLORATION

percentages have increased to 31% of fast casual and 71% of QSR customers post-pandemic. Digital technology is driving customer engagement. Now that QR-scanning is native in most smartphone apps, adoption of this easy-use smart technology within the restaurant sector has grown. With a strong desire in the industry to expand digital presence, 23% now place orders digitally, and 19% make a digital payment

Innovation has been stuck in neutral the last two and a half years. It's been frustrating because great ideas are backed up on the drawing board because we cannot execute the things that we already produce and supply in sufficient quantities. As Covid continues to affect travel, interest in authentic ethnic flavors has intensified. Consumers are trying to find ways to

able to easily travel abroad to taste the dishes. Online searches for "Filipino recipes authentic" have increased 35% over the previous year, "Norwegian recipes traditional" searches 120% and "South African recipes traditional" searches 150%. If you're a food brand, help people replace the modern meal with global

experience tastes from other countries outside their homes and gravitating toward foods from foreign lands to deal with not being

cuisine. Inspire them to turn a basic chicken dinner into a South African or Filipino delicacy with specific spices and ingredients. **SUMMARY**

The state of the food supply is volatile. You have a war between the Russians and the Ukrainians. Both geographies contain significant inputs necessary for fertilizer and food supplies. The global and U.S. supply chains are very fragile. Different strains of Covid continue to circle the globe, causing additional shutdowns and disruptions. Current vaccines are leaky, and outbreaks will

continue much like the Spanish flu (1918) still requires a flu shot every year. The Chinese do not have a dependable vaccine and are too proud to use ours.

Retailers are and foodservice operators consolidating and will continue to do so. Online grocery will continue to grow as consumers get more comfortable. Online pickup at stores will continue to grow versus home delivery. Consumers will demand diverse products that meet their changing geopolitical dietary and economic needs.

Populations have migrated to the Sunbelt, smaller cities and lower taxes as globalization gives way to regionalization.

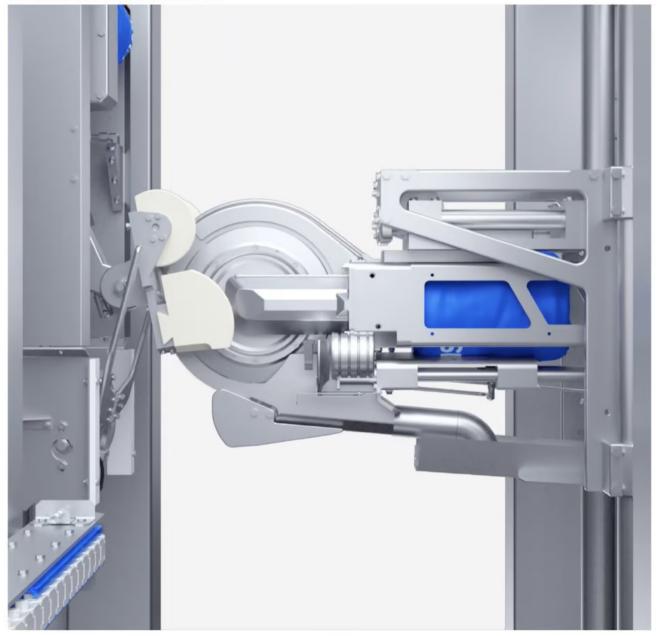
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BEEF DEMAND REMAINS STRONG



CONSUMER PERCEPTIONS OF BEEF REMAIN POSITIVE DESPITE OVERALL DECLINING CONSUMER SENTIMENT.

BY HAILEY THAYN NATIONAL CATTLEMEN'S BEEF ASSOCIATION

During a year when consumers have been reeling from record-setting inflation levels and supply chain issues, demand for beef has remained strong, and online grocery beef purchases continue to grow. Beef quality and consumers' perceptions of beef remain positive this year in the face of overall declining consumer sentiment.

BEEF PRICES AND DEMAND

Prices for virtually every good has seen price increases during the first half of 2022. Between July 2021 and July 2022, prices for All Items (as defined by the Consumer Price Index) rose by 8.5%, while prices for all food items rose by 10.9%, and energy prices rose by 32.9%². However, within the food category, beef and veal prices increased by 3.4%, whereas egg and poultry prices have increased by 38% and 16.6%, respectively². In fact, beef and veal prices have seen the lowest level of price percent increase out of the major protein categories (boof poultry aggs park and coafood) between July 2021 July 2022 Poof prices have seen downward pressi ditions and a lack of

rain within the m Save water and time While these increased price levels are likely to have strained household rood budgets, willingliess to pay for beef remains strong. As Figure 1 shows, willingness to pay for steak has topped the average price per pound between April – June 2022¹. Willingness to pay for steak hasn't exceeded the average price per pound since April – June 2021, indicating that consumers still find value in

purchasing beef, despite uncertainties within the broader economy. FIGURE 1. HISTORICAL CONSUMER WILLINGNESS TO PAY AT RETAIL FOR BEEF STEAK¹

Willingness to Pay vs. Avg. Price

Willingness to pay eclipsed the average price per pound of steak,

indicating that demand remains strong for beef steak products →WTP - Steak —Price per Pound - Steak



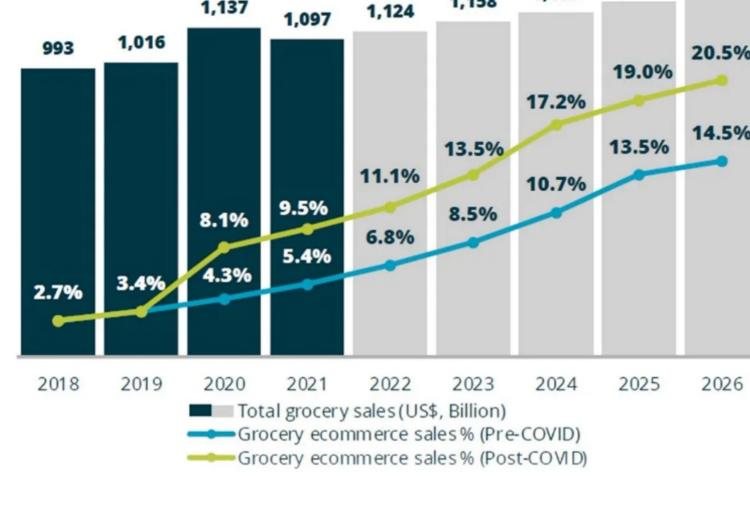
BB6/7/7A: "What would be an everyday price per pound you would be willing to pay for steak where you typically purchase groceries? Slide the blue line to the price per pound you would be willing to

E-Commerce CAGR

FIGURE 2. E-COMMERCE COMPOUND ANNUAL GROWTH RATE FOR GROCERY SALES³

E-commerce continues to be a popular grocery shopping method, and

is projected to increase by 17.7 percentage points from 2018 - 2026 1,285 1,225 1,187 1,158 1,137



shopping space, Figure 2 shows that the compound annual growth rate has been projected to continually increase and account for

E-COMMERCE

20% of total grocery sales by 2026³. Online retail sales for the first quarter of 2022 totaled \$231.4 billion, which is 14.3% of the total quarterly retail sales, an increase of 7% from the first quarter of 2021, and a 2.4% increase from the fourth quarter of 2021⁴. Consumers are increasingly choosing home delivery as their preferred mode of shopping when compared to click-collect in September of 2020. Fast forward to December 2021, and 63% of surveyed consumers preferred home delivery, while 37% preferred click and collect methods⁵. Beef is a big part of the success in this area, with 44% of consumers including beef in their online carts, and 25% of these consumers included beef within the last month⁶. This is up 7% since the July 2021^6 study. Not only are consumers ordering beef more often, but they are also happy with the experience they are getting. In fact, 91% of beef roast purchasers claimed to be satisfied with the

An area that continues to see tremendous opportunity and growth in the marketplace is e-commerce. Throughout the grocery

beef they ordered online⁶. Similarly, 93% of beef steak purchasers claimed to be satisfied with the beef they purchased online and 94% of ground beef purchasers claimed to be satisfied with the beef they purchased online⁶. **RETAIL AND FOODSERVICE** As inflationary pressures continue to affect household budgets, there were concerns that beef might suffer at retail and foodservice as consumers may shift preferences. However, 2022 beef retail sales have exceeded \$20.1 billion for 2022 (38 weeks

ending 8/13/2022), and currently account for 54% of total retail fresh meat sales⁷. This figure is also a 4.6% increase in beef sales during the same period in 2021 and is currently on par with the same period in 2020⁷. While retail sales (\$) may be up year over

year, pounds of beef sold are currently 5.7% down compared 2021 and 12.1% down compared to 2020⁷. The foodservice sector shares a similar story, as the NPD Group reports that physical and online restaurant traffic has declined by 2% in the second quarter of 2022⁸. Consumers have also claimed that budgetary concerns are one of the most important considerations when deciding whether to dine at a restaurant or to dine at home, second only to taste 1. Additionally, consumer spending within restaurants saw a decrease of 2%, possibly because of increased prices, a phenomenon also observed within the retail beef market⁸.

FIGURE 3. SATISFACTION LEVELS OF VARIOUS PROTEINS¹ Product, Slope, Rectangle, Organism, Plot, Font

and flavor 10. These factors all contribute to an enjoyable eating experience, which is paramount to maintaining a strong consumer base.

continued success of beef.

BEEF QUALITY AND SATISFACTION

As of July 2022, more than 80% of beef graded

of Prime or Choice⁹. According to the USDA

obtains the highest available USDA quality grades

grading standards, choice and prime graded beef

contain abundant marbling, tenderness, juiciness,

As figure 3 shows, when consumers are asked to

rank various proteins by satisfaction levels, beef has consistently been ranked as a top protein choice. Additionally, beef has consistently been a top ranked protein source for versatility, protein density, taste, and overall nutritional content¹. These facts, combined with the strong willingness to pay discussed above, show that beef remains a high priority in the minds of consumers, and that satisfaction will continue to play a pivotal role in the

FIGURE 4. MARKET SHARE OF ANIMAL PROTEINS VS. MEAT ALTERNATIVES¹ Font

Kitchen appliance, Product, Food, Recipe

meat alternatives, 86% also purchased ground meat 11.

CONSUMERS' PERCEPTIONS

MEAT SUBSTITUTES As of August 13, 2022, fresh meat alternatives represented less than 1% of both the entire fresh protein retail market (0.34%) and the fresh beef retail market specifically (.54%)⁷. For comparison, beef currently occupies .54% of the fresh protein market, and occupied almost 56% of the fresh protein market during the same timeframe in 2021⁷. Market share for alternative proteins has

also been declining for the past two years, declining over 20% from 2021 to 2022 and declining almost 8% from 2020 to 2021^{7} .

Most consumers who choose to eat meat alternatives do not cut out other protein sources from their diets¹. According to NCBA's

much as the average consumer 1 . Additionally, the current share of consumers entirely avoiding ground meat and only purchasing

Consumer Beef Tracker, people who consume meat alternatives on a weekly-or-more basis also consume beef and other proteins as

meat alternatives was estimated at around 3% between November 2018 – November 2020¹¹. Out of all households that purchased

Tracking consumer perceptions in 2022 points to a bright story and great opportunity for beef. NCBA's Consumer Beef Tracker data, funded by the Beef Checkoff, allows for ongoing tracking of consumer perceptions. According to the most recent data, over two thirds of consumers maintain positive perceptions of beef overall 1 . Additionally, a majority of consumers perceive beef as a healthy choice and as a lean source of protein¹. When asked about the credibility of certain sources of information, over half of respondents considered farmers and ranchers to be credible when it comes to production practices ¹. Consumers have also consistently ranked beef to be a high-quality versatile protein 1. When compared to other protein sources, beef is considered to be

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Hailey Thayn is manager of public relations and content for the National Cattlemen's Beef Association.

great tasting, good for many types of social occasions, nutritious and raised humanely¹.

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REGULATORS MUST ENSURE PLANT-BASED 'CHICKEN' PRODUCTS DON'T CONFUSE CONSUMERS.

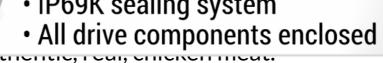
Imagine you're shopping for vegetables and see a package labeled "chicken-based cauliflower." You would probably do a double-take, because the concept is confusing. An oxymoron, even. The term "plant-based chicken" is no different — no more accurate and just as confusing.

Recent survey results also prove this idea. Earlier this year, the National Chicken Council (NCC) commissioned a national survey to gauge consumer understanding of plant-based "chicken" product labeling. Survey participants included individuals who eat meat and animal products, along with flexitarians, vegetarians and vegans

This survey was c flooded with plar on their labels — ...



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We believe consumers should enjoy a balance of chicken and plants — not one or the other. We respect the fact that consumers have more product choices than ever. All the same, plant-based alternatives should be accurately labeled in a way that clearly explains what they are and how they were made.

M American Shoppers Agree:

Clearer Labeling is Needed for Plant-Based 'Chicken' Products



Survey findings show the majority of consumers prefer real chicken for its taste, affordability and cooking versatility—even among individuals who eat the plant-based variety.





Regardless of dietary preferences, American consumers overwhelmingly agree there's a need for clearer product labeling and separate shopping sections for plant-based products. The NCC feels confident making such claims because of the following survey results:

- 1. **Four in five Americans** (81% of chicken consumers, along with 86% of vegetarians and vegans), want plant-based options to clearly be labeled.
- 2. **At least three in five Americans** (62% of chicken consumers along with 80% of vegetarians and vegans) feel real chicken and plant-based "chicken" should have their own distinct grocery sections at the store to help eliminate product confusion.
- 3. **One in five Americans** (21%) have reported that they accidentally purchased the plant-based product, believing it to be real chicken.
 - 1. Consumers who have experienced such confusion point to plant-based packaging and labeling as imitating those of authentic chicken products too closely.
- 4. **69% of Americans** agree the term "meat" should only refer to products made from animals.

5. Only 14% of Americans think that "chicken" is the appropriate name for plant-based "chicken."

More than just misleading marketing, labeling plant-based alternative proteins as 'chicken' harms Americans economically. Nielsen data demonstrates that, on average, plant-based meat is more than four times as expensive as chicken per pound. Consumers who accidentally purchase plant-based 'chicken' products instead of actual chicken unnecessarily pay more.

And that's not all.

Deceptive labeling not only damages the poultry industry that directly and indirectly employs 1.6 million Americans — it poses nutritional consequences to millions more. This is because plant-based proteins marked as "chicken" are overtly positioned to be interchangeable with real chicken meat, yet many of these products on the market lack the same nutrients and are subjected to very different types of processing, exposing consumers to unexpected allergens. That's why the Food and Drug Administration should require plant-alternative products positioned as "chicken" to be labeled "imitation" as well.

So what can be done to address these concerns? These survey findings prompted NCC to submit comments to the leadership of the FDA and the U.S. Department of Agriculture's Food Safety and Inspection Service. We're urging these agencies to issue clear guidance defining plant-based product naming conventions and to prioritize enforcement for misleading product marketing.

France is leading the way on clear product labeling between animal-based proteins and meat alternatives. To help prevent consumer confusion, France recently announced plans to ban language such as "steak" and "sausage" on plant-based protein food, according to an official decree. The decree claims, "It will not be possible to use sector-specific terminology traditionally associated with meat and fish to designate products that do not belong to the animal world and which, in essence, are not comparable." In Europe, terms such as "milk," "butter" and "cheese" are already banned on products not of animal origin.

The U.S. should follow suit.

Rectangle, Font, Line		

After all, let's face it: a plant-based protein product is no more "chicken" than grilled chicken breast is a piece of "cauliflower." Moreover, honest marketing is simply a longstanding advertising principle, and there's a labeling law that a qualifier cannot contradict a claim. It is critical for the FDA to ensure this principle is respected in plant-based meat alternative labeling.

All food marketing should play by the same rules so consumers can make clear, informed purchasing decisions. When consumers pick up a package that says "chicken," they deserve to be confident that the product contains real chicken meat. Chicken has been America's No. 1 protein for decades because of its versatility, affordability and health benefits — and clear product labeling can help ensure consumers are not wasting their time, money or health on fake alternatives.

Mike Brown is president of the National Chicken Council.

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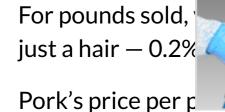
POUNDS SOLD DECLINE, WHILE THE PRICE PER POUND IS UP.

BY FRED WILKINSON **CHIEF EDITOR**

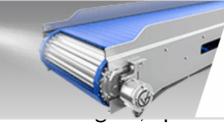
Pork sales at retail approached \$7.3 billion in August, with 298,761,191 pounds sold, according to IRI retail sales data.

Following a similar trend line to other products in the meat case, pork saw dollar sales rise as pounds sold contracted slightly.

On the sales side, pork saw increases of 5.2% vs. year-ago sales, 4.4% compared with two years ago and 20.8% compared with sales of three years ago.



according to IRI data.



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21% from years ago,

U.S. pork exports reached 208,095 metric tons in July, down 6% from a year ago and valued at \$625 million (down 5%)., according to the U.S. Meat Export Federation. Through July, exports were 17% below last year at just under 1.5 million metric tons and valued at \$4.24 billion (down 15%).

Pork exports were below last year's levels, according to USMEF, but posted strong performance in Colombia and the Caribbean while remaining above the prior year for Mexico, the leading export destination for U.S. pork products.

Current Dollar Sales	Dollar Sales vs. YA	Dollar Sales vs. 2 YA	Dollar Sales vs. 3 YA	Lbs. Sold	Lbs vs. YA	Lbs vs. 2 YA	Lbs vs. 3 YA	Price per Lb.
\$7.3 Billion	5.2%	4.4%	20.8%	298,761,191	-4.1%	-8.2%	.2%	\$3.20



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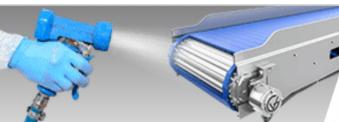


NATIONAL TURKEY FEDERATION SEEKS OPPORTUNITIES FOR INDUSTRY TO COLLABORATE ON FOOD SAFETY.

BY BETH BREEDINGNATIONAL TURKEY FEDERATION

The U.S. turkey industry's experiences of the past year — or even the past 24 months — could perhaps best be described as a roller coaster ride that just won't end. Each time you round the corner, there's an unexpected new twist or turn: a global pandemic, lingering supply chain disruptions, soaring feed costs and the latest issue affecting turkey production — a widespread outbreak of highly pathogenic avian influenza (HPAI). The industry is ready to get off this ride!

While supply cha the rest of the foo response. Follow identified in early



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ances — much like ocused on HPAI turkey flock was ss represents 2.9%

of annual U.S. turkey production. Despite fewer losses to date than the turkey industry experienced in 2015, these losses are significant and have been felt throughout the supply chain. The latest U.S. Department of Agriculture reports forecast turkey production and exports down for 2022. However, it is important to note that the industry anticipates there will be plenty of turkey products available for the holiday season,

Enhanced biosecurity measures and implementing lessons learned from the 2015 outbreak have been instrumental in controlling the spread of the virus as much as possible. However, the 2015 outbreak ended in the early summer with the arrival of hot, dry weather. Unfortunately, recent cases and the virus load present in the wild bird population indicate we are experiencing a different situation than has been encountered before. It is clear that we must identify ways to continue reducing the impact of the virus on the turkey industry. Earlier this year, NTF formed an HPAI Task Force to review virus response and identify areas for improvement. The group of industry leaders are also looking at international conversations around the use of vaccines to eliminate an outbreak, enhancing biosecurity and expanding indemnity coverage for growers.

Given HPAI's impact on the turkey industry, it is critically important that there is robust federal support for HPAI response and research and science to help better understand the virus. As Congress begins consideration of the 2023 Farm Bill, NTF's top priority will focus on the National Animal Disease Preparedness and Response Program and opportunities for enhancing animal disease prevention, detection and response. NTF has also voiced support for an expanded wild bird surveillance program across all major flyways, which serves as an early warning indicator of HPAI in the environment.

While HPAI has been a major focal point, the turkey industry also has made positive advances in several priority areas. As USDA moves forward with its comprehensive effort to reduce *Salmonella* illnesses associated with poultry products, NTF members have remained engaged in this area and continue to seek opportunities for industry to partner on innovative solutions to further improve the safety of our food. Research on treatments for turkey health challenges, such as blackhead disease, has also been a source of encouraging news.

On the marketing front, NTF recently launched the "Tailgate with Turkey" campaign to highlight turkey's versatility on the grill from the stadium lot to the backyard. For this exciting new campaign, the turkey industry is teaming up with the Kansas City Chiefs Radio Network and former Chiefs player Mitchell Schwartz to reach tailgate fans along with a series of big prize giveaways featured on tailgatewithturkey.com.

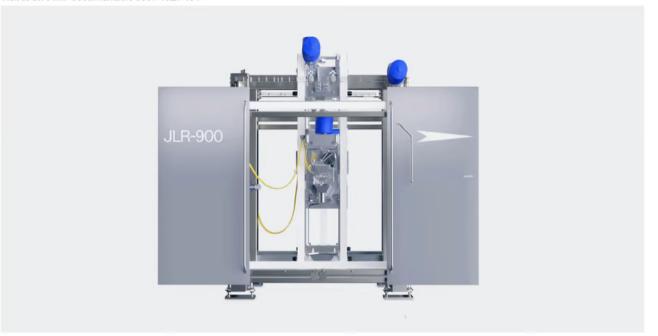
It's difficult to predict how the rest of 2022 will play out at this point or the magnitude of the HPAI outbreak. However, it is reasonable to assume that recovery from HPAI will take some time, just as we saw in 2015.

Throughout the year, the turkey industry has shown its resilience. The leadership and innovative thinking of turkey producers across the country has been instrumental in mitigating the effects of HPAI. Even as uncertainty remains and the roller coaster keeps twisting, they've continued to meet the demand for protein by delivering safe, nutritious products to consumers. That speaks volumes to the state of this industry and is a testament to the strength of the turkey industry moving forward.

Beth Breeding is vice president of communications and marketing at the National Turkey Federation.

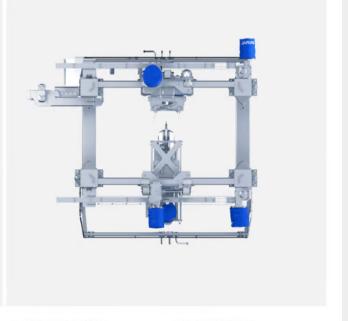
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DOLLAR SALES POST GAINS, WHILE POUNDS SOLD DECLINE.

BY FRED WILKINSON **CHIEF EDITOR**

Lamb sales at retail surpassed the half-billion dollar mark in August, weighing in at \$545,038,148, according to IRI retail sales data.

That represents a 4.6% increase from a year ago, 20.9% compared with two years ago and 38.3% compared with two years ago, IRI data suggest.

The category is mirroring the larger trend in meat case sales, with dollar sales up while volume is down.





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pounds sold are up

In May, the Sheep Discovery Center opened, bringing together producers from six states to create a sustainable agriculture center to focus on sharpening best practices in the lamb industry.

Current Dollar Sales	Dollar Sales vs. YA	Dollar Sales vs. 2 YA	Dollar Sales vs. 3 YA	Lbs. Sold	Lbs vs. YA	Lbs vs. 2 YA	Lbs vs. 3 YA	Price per Lb.
\$545,038,148	4.6%	20.9%	38.3%	52,744,741	-4.2%	4.4%	14.8%	\$9.40







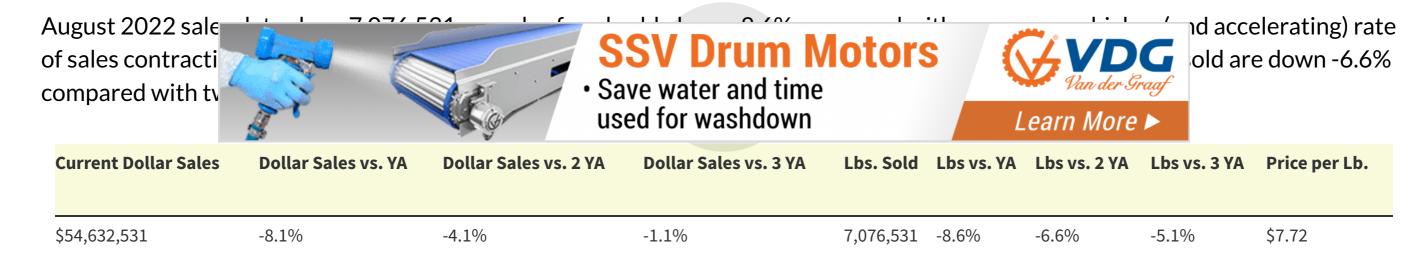
WHILE THE MEAT CASE OVERALL HAS ENJOYED STRONG GROWTH DURING THE PAST THREE YEARS, VEAL HAS MISSED THE PARTY.

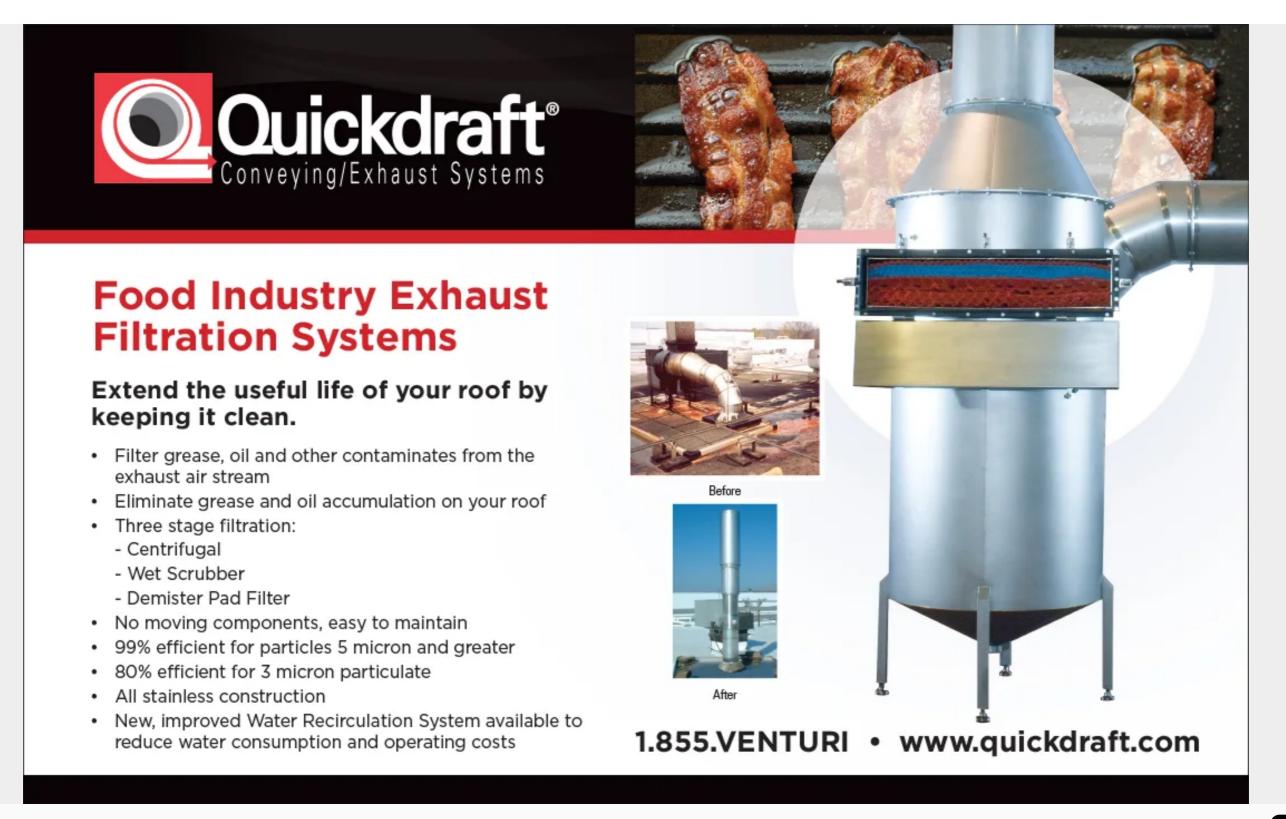
BY FRED WILKINSON **CHIEF EDITOR**

Veal sales during the past three years have failed to capitalize on the overall strong dollar sales growth that products have enjoyed across the meat department.

Veal sales were \$54,632,531 in August, according to IRI retail sales data. That represents a -8.1% decrease from a year ago, -4.2% compared with two years ago and -1.1% compared with three years ago, IRI data finds.

Veal's price per pound in August was \$7.72, up a mere 0.6% from a year ago, up 2.7% from two years ago and up a modest 4% from pre-pandemic prices of three years ago.







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GET STARTED



FORTY PERCENT OF SEAFOOD CONSUMERS SAY THEY ARE BUYING NEW OR DIFFERENT SEAFOOD PRODUCTS, INCLUDING GRAB-AND-GO MEAL SOLUTIONS.

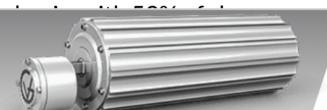
BY MEGAN RIDER

ALASKA SEAFOOD MARKETING INSTITUTE

The steady increase in seafood sales over the past two years has been well documented, with more consumers opting to cook seafood at home at the start of the pandemic and that trend continuing for taste, health and sustainability reasons throughout 2021 and 2022. According to Food Marketing Institute, the global seafood market is expected to hit \$110 billion, with the U.S. market accounting for more than 25% of that market share. As seafood consumption continues to climb into 2023, the biggest trend we'll see is particularity on which types, with consumers branching beyond "comfort species," and putting more focus on inspiration, sustainability and origin, specifically choosing wild more often.

According to FMI's 2022 Power of Seafood Report, half of consumers say they've been cooking more meals with seafood

throughout the p once a month) se including grab-ar



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 80,000 hours of service life before maintenance



(once a week or pes of seafood,

before maintenance

This growth was initiated early in 2020, when many foodservice formats shifted and consumers who ate seafood at restaurants opted to purchase and prepare it at home. Research from Alaska Seafood Marketing Institute and Datassential in 2021 revealed that 26% of consumers purchased seafood for the first timeduring the pandemic. An increased focus on personal health drove many to recognize the benefits of seafood as a high-quality protein and source of omega-3s and other immune-boosting nutrients like vitamin D. Correspondingly, in 2021, sales from the seafood department at retail saw an increase of nearly 30% — much stronger than meat, produce, deli and bakery. Now, 73% of seafood consumers are more comfortable cooking it than they have been in the past.



What does this mean for processors, retailers and foodservice operators?

- Inspiration: Although consumers are more comfortable cooking seafood now than ever, they are still looking for ways to keep things exciting (and easy) in the kitchen. Eighty percent of shoppers want to learn more about how to cook, prepare and flavor seafood. Both in-store and digitally, anything that can help home cooks easily prepare more seafood and inspire them in the kitchen will be beneficial. Providing educational materials can help processors and retailers capitalize on consumers' willingness to branch out to new species, like wild Alaska rockfish, sablefish, halibut or scallops in addition to tried-and-true favorites like salmon and cod. At AlaskaSeafood.org, our vast recipe library integrates seamlessly with retailers, linking ideas directly to purchase the highest quality wild Alaska seafood, along with other ingredients.
- **Sustainability:** Consumers are also choosing seafood because they consider it an environmentally healthy protein, with half of seafood shoppers saying sustainability claims/certifications have an impact on their purchasing decisions (FMI). Transparency from sea to table will be ever more important, so that seafood consumers at the point of purchase (whether that's at grocery or foodservice) can be informed about the story behind their seafood. Clearly labeling the source and including any certifications, such as Responsible Fisheries Management (RFM), can help shoppers feel confident in their purchasing decisions.
- Origin: Wild seafood is low in contaminants and, if sourced from regions like Alaska, protected from overfishing, as all seafood from Alaska follows credible standards for sustainability and supply chain traceability. More consumers than ever are making the wild choice, with 82% of consumers choosing seafood because it's wild-caught (ASMI/Datassential). Knowing the origin also maintains trust and confidence in seafood quality across the fresh, frozen and canned/pouched segments; for example, 82% of consumers believe that stores that display the Alaska Seafood logo sell high quality seafood (ASMI/Datassential).

While COVID-19 presented its challenges across the seafood industry, it also revealed opportunities for the seafood industry to improve supply chains, sustainability practices, traceability and quality assurance. If the industry — everyone from fishermen to processors, retailers to restaurants — wants to succeed in satisfying the growing number of seafood-savvy consumers, they're going to have to.

Megan Rider is domestic marketing director for the Alaska Seafood Marketing Institute.



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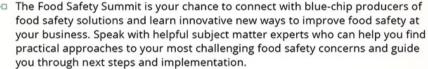


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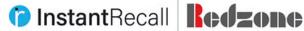
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THE INDUSTRY NEEDS TO ADOPT A COMMONSENSE APPROACH TO CONTROLLING IT BEFORE FSIS FEELS COMPELLED TO ENACT NEW REGULATIONS.

SPONSORED BY FOODSAFE

BY DREW LORENZ WERFOODSAFETY

The U.S. Deoartment of Agruculture's Food Safety and Inspection Service has made it clear that they are going after Salmonella.

I pulled the CDC outbreak investigation reports and compared them to the USDA FSIS recalls. Some interesting statistics. From 2017-20, there were seven multi-state foodborne outbreaks associated with meat or poultry for Salmonella. In contrast, during the same period there were 10 recalls of meat and poultry products due to Salmonella contamination.

Meat and poultry for all products, & especially when y

same period. In total ally invalid, used for washdown In almost all cases, Learn More ▶ safe handling instructions were not followed and there was cross-contamination or other factors.

It was interesting to note that there were no foodborne outbreaks or recalls for Salmonella in 2020.

During the five-year period (2017-20) you had a .000019% chance of dying from Salmonella.

So, what do all these number mean?

We have a very safe food supply!

A lot of what FSIS is talking about regarding Salmonella is not going to work for small poultry harvesters and may ultimately put them out of business. The small processors typically don't own the poultry that they harvest and don't have the ability to control the incoming load on the birds. While many small farms are part of the National Poultry Improvement Program, many are not. It would be beneficial if FSIS and the folks over at USDA's Animal and Plant Health Inspection Service who are involved in NPIP would get together to develop a streamlined standard that FSIS would accept concerning Salmonella. That way the owners who are part of NPIP could have their birds harvested without an undue burden that FSIS appears to be leaning towards.

For our larger producers that are vertically integrated, it's not as easy as snapping their fingers and Salmonella goes away. They have put a lot of time and effort into controlling Salmonella. It makes good financial sense. However, no one has come up with the proverbial silver bullet. While many point to Sweden as an example, even they have outbreaks.

As to Salmonella being declared an adulterant in breaded chicken products, most of our smaller clients that made those products just stopped, so it's no longer available to their customers. Several of our larger customers are turning them into fully cooked products.

PEOPLE POWER

I have written and spoken about the issues our industry faces in getting qualified food safety personnel. It hasn't changed. Almost every facility we work with is short staffed across all their teams, not just food safety. Thankfully there have been some creative ways created to assist in the food safety mission when needed to include increased automation for temperature checks, line speeds, etc.

There are also more training programs popping up to assist getting employees trained. Many of them are online, so travel isn't required. Having said that, there is a high demand for onsite training around food safety, food defense and humane handling. We encourage all our associations to provide this type of training during their annual conferences and conventions.

APPENDIX A & B

The new versions of Appendix A & B go live Dec. 14, 2022.

We strongly recommend you review your food safety plans as well as your cooking operations to make sure you follow the new versions. Some of the changes that we are seeing being made include:

- tracking come up time
- modifying smokehouse schedules
- and remote sensing of RH during cook jobs.

Traditional (but modern) smokehouses don't have any issues, however if you are using impingement ovens or old gravity fed houses you need to take a critical look at your operation, you may need to make changes.

HIGHLY PATHOGENIC AVIAN INFLUENZA

Its here again. APHIS has even closed the border with Canada to wild waterfowl harvested by hunters stating, "Hunter-harvested unprocessed wild game bird meat/carcasses, originating from or transiting Canada, will not be permitted to enter the United States regardless of the Canadian province from which the bird was harvested." They haven't proposed any rules on the wild birds that fly across the border on their own, as in the 4 billion birds that migrate from Canada to the U.S. annually. The birds have us outnumbered!

Reviewing your biosecurity systems is crucial if you own your own birds. If you don't, pass the information on to your customers. No one wants their flock depopulated!

SANITARY DRESSING OF CATTLE AND SWINE

We are seeing a focus on sanitary dressing procedures in several FSIS districts with the number of NRs and even NOIE's founded on observations made by FSIS. This is in the absence of zero-tolerance failures or even any E.coli/STEC positives. If this happens to you, we suggest you appeal these actions.

GRANTS TO EXPAND THE INDUSTRY

We have all heard about all the proposed federal grants, Small Business Administration-backed loans, and state grants to increase productivity, diversity and efficiency of the industry. They sound great! Unfortunately, many of our small clients couldn't meet the deadlines to get everything in or missed required documents resulting in not getting access to the financial assistance our politicians are bragging about. I do expect more announcements as we get closer to the election this year. However, the agencies responsible for running these grants/loan programs are extremely short staffed and take much longer than they should to act.

than eight hours.

CRYSTAL BALL There is going to be a lot more innovation in the sensor arena. I am aware of BAPI testing new remote sensing devices that will be used for food safety that will reduce reliance on a human being. There are several other companies doing the same thing in other arenas, to include development of rapid-confirmed tests for E.coli/STEC that will give you the confirmed positive or negative in less

Expect FSIS to become aggressive concerning Salmonella. As an industry, we need to adopt a commonsense approach to controlling it before FSIS feels compelled to make new rules.

potential revenue stream for them. We must push back collectively and individually!

The litigators who are pushing to make Salmonella an adulterant in all products are going to continue their push. It is a huge

Finally, we need to tell our story. As an industry, we produce some of the highest quality, safest products in the world!

Drew Lorenz is chief executive officer of We R Food Safety.

SOURCES

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BUFFET CONSUMERS

BY HALLIE FORCINIO

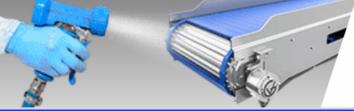


Consumers approach the purchase of meat, poultry or seafood products with many concerns – freshness, shelf life, inflation-impacted prices, food waste, plastic waste, consumption of non-renewable resources, recyclability, product traceability and the need for convenient meal prep in their often-hectic days.

Packaging plays a role in addressing all of these considerations. Brand owners are making packaging choices that extend freshness and convenience, and reduce their carbon footprint. As a result, many consumer packaged goods companies have made specific commitments and set deadlines to achieve Net Zero status where greenhouse gas emissions equal the removal of carbon from the atmosphere. Related goals involve conserving energy; replacing plastic, especially virgin plastic; transitioning to 100% recyclable, compostable or biodegradable packaging; increasing recycled content; working to increase recycling rates; and moving toward a Circular Economy.

To achieve these goals, there's strong interest in replacing nonrecyclable multi-material substrates with mono-material films. One commercial example, a recyclable, foldable package for Abraham brand sliced ham from Bell Germany, won a WorldStar in the 2022 edition of the competition sponsored by the World Packaging Organisation. The mono-material barrier film pack is certified as 93% recyclable by Germany's Institute cyclos-HTP. It also represents a 37% source reduction since the bottom forming web is downgauged.

Renewable fiber-based packaging is another focus of research and development resources. Although the renewable fiber typically is sourced from wood, sugarcane also may play a role. In some cases, these fiber-based structures can be qualified as compostable and are dual-ovenable to accommodate either microwave or conventional oven heating.



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ALTHOUGH THERE'S A LOT OF TALK ABOUT ELIMINATING PLASTIC PACKAGING, SOMETIMES, PLASTIC IS THE BEST CHOICE. IN THOSE SITUATIONS, BIO-BASED OR BIODEGRADABLE RESINS CAN SOMETIMES SERVE AS AN ALTERNATIVE TO CONVENTIONAL HYDROCARBON-BASED RESINS.

Barrier properties are supplied by films or coatings that are either bio-based or easily separated for recycling and don't impede the repulpability of the paper or paperboard. The resulting structures also can provide grease resistance and provide a replacement for paper and paperboard treated with per- and polyfluoroalkyl substances (PFAS), chemicals that tend to be biopersistant and are being phased out for use in food-contact applications due to safety concerns. (1)

Sustainability was the goal behind replacing a three-component package (tray, overwrap, label) with a pouch for Tyson Instant Pot Meal Kits. The winner of a Gold Award for Expanding the Use of Flexible Packaging in the 2022 Flexible Packaging Achievement Awards competition, sponsored by the Flexible Packaging Association, the pouch represents an 80% reduction in carbon footprint and a 75% reduction in weight. It also eliminates chloride-based materials and simplifies the supply chain.

New Seasons Market, a regional grocery retailer based in Portland, Ore., has reduced plastic use by 91% by shifting to paper-based modified-atmosphere packaging (MAP) for its private-label Partner brand fresh pasta. The packaging innovation earned an AmeriStar award in the Food (Refrigerated) category in the competition sponsored by the Institute of Packaging Professionals. Positive impacts include the elimination of more than 120,000 clamshells from the waste stream annually. The new package also extends product shelf life from 12 to 20 days and reduces food waste. "Packaging is a complex environmental problem, and we actively work to balance the tradeoffs required to ensure food preservation, while limiting unnecessary excess and waste," said Athena Petty, senior sustainability manager at New Seasons Market. The fiber-based MAP trays are made from FSC-certified fibers and are fully recyclable once the food-safe liner is removed. To help make the sustainable packaging a reality, New Seasons Market invested in equipment for two of its local suppliers:

Another package that extends shelf life and prevents food waste is used by Australia's Junee Prime Lamb. This design, another WorldStar winner, places a tough patch where bone and packaging film meet to protect it from abrasion and puncture. Maintaining package integrity provides a 90-day refrigerated shelf life for the meat.

Although there's a lot of talk about eliminating plastic packaging, sometimes, plastic is the best choice. In those situations, bio-based or biodegradable resins can sometimes serve as an alternative to conventional hydrocarbon-based resins. Yet another option, offered by a growing number of suppliers, is food-grade plastic packaging that contains up to 100 percent post-consumer-recycled content.

Sustainability improvements don't always require a change of materials. Sometimes, a simple alteration of dimensions delivers a major impact. Westaway Sausages in the U.K. discovered this when it evaluated how retailers displayed its chilled sausages and changed to a double-height facing. The improved cube allows 48 more packages to be displayed. The re-dimensioning of the outer case cut corrugated consumption by 26 percent. With more product per pallet, it also saved transportation and storage costs and reduced refrigeration requirements, one of the most significant expenses for retailers. (2)

CONSUMERS STILL WANT CONVENIENCE

Convenience remains a strong trend. In addition to functionality, consumers also want to know more about the product and its package. This means adding information like QR codes, which can deliver details about product origination and processing directly to the consumer with a scan by a smartphone.

Labeling also is helping consumers figure out what packaging is recyclable and what isn't. To ensure recyclable packaging is indeed recycled, the Sustainable Packaging Coalition established the How2Recyle program to standardize recycling labeling, divert recyclables from landfills and educate consumers. The label defines proper disposal for the product's packaging components and also provides information about local recycling programs. Companies that wish to add the label to their packaging simply join the program. Annual fees are based on gross revenue and provide access to an unlimited number of labels regardless of packaging format or volume. The How2Recyle Member Platform also can analyze the overall recyclability of a company's product portfolio as well as track and measure packaging recyclability. (3)

Consumers also want functional convenience. A resealable pouch for John Soules Rotisserie Seasoned Chicken Breast with Rib Meat delivers functionality along with product differentiation. The winner of a Silver award for Technical Innovation in the Flexible Packaging Achievement Awards competition, the pouch features a laser score with a controlled depth, which combines easy opening with package integrity. An audible "pop" indicates the score is broken and provides tamper evidence.

Another pouch, recognized with a Silver award for Technical Innovation in the Flexible Packaging Achievement Awards competition, focuses more on shelf appeal for meat snack products like jerky. Clear anti-grease film prevents grease droplets and smears on the package surface so products look leaner, healthier and tastier. The potential for larger windows maximizes product visibility and appeal.

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PRODUCERS CONTINUE TO ACHIEVE PROGRESS IN THEIR SUSTAINABILITY GOALS.

BY EMILY SOLISANIMAL AGRICULTURE ALLIANCE

Sustainability. It's a topic everyone is talking about — from media outlets to policymakers to concerned grocery store customers. When it comes to agriculture, people want to know that the foods they're purchasing and consuming are raised in a sustainable manner. However, it begs the question: what is "sustainability?"

The tricky thing value while parancing social responsibility.

SSV Drum Motors

• Save water and time used for washdown



Agriculture

ns to meet their

arming and ranching

Each pillar of sustainability — environmental stewardship, economic viability and social responsibility — needs to be considered in decisions, as well as other tradeoffs and potential consequences. One of the largest "solutions" we've seen presented in sustainability conversations is the claim that reducing (or even eliminating) meat, milk, poultry and eggs will save the planet. This is often touted as an overly simple "solution" by extremist organizations whose sole mission is to put an end to animal agriculture. However, experts agree that this will have minimal impact on the environment and greenhouse gas emissions but will have devastating effects on human nutrition, which depends on these foods as a nutrient-dense source of protein, vitamins and minerals.

We've also seen calls for the removal of animal proteins (and animal agriculture) in the political sphere as policymakers and world leaders consider what they believe a "sustainable food system" should look like. The state of our current food system was thrown into the global spotlight in 2021 when the United Nations held its inaugural Food Systems Summit, aimed at addressing issues like hunger, health, and climate. This trend continued into 2022 when the U.S. announced that it would be holding the first White House Conference on Hunger, Nutrition and Health in more than 50 years. The goal of the event is to "end hunger and increase healthy eating and physical activity by 2030" to reduce diet-related diseases. The same anti-animal agriculture players that we saw engaged in the Food Systems Summit are now turning their attention to this conference to continue calls to take meat, milk, poultry and eggs off store shelves and tables.



The fact of the matter (and what extremist groups don't want you to know) is that animal agriculture plays a vital role in a sustainable food system, and thanks to the work of farmers, ranchers, processors and everyone involved along the food supply chain, it only continues to become more sustainable over time. Environmental improvements include:

- From 1944 to 2007, U.S. dairy farmers decreased their overall carbon footprint by 63%. Their commitment to continuous improvement in the area of environmental stewardship helped them to reduce their carbon footprint an additional 19% from 2007 to 2017.
- Between 1961 and 2018, the U.S. beef community, through continued sustainability efforts and improved resource use, has reduced emissions per pound of beef produced by more than 40% while also producing more than 66% more beef per animal.
- From 1960 to 2015, pig farmers in the U.S. used 75.9% less land, 25.1% less water, 7% less energy, and have a 7.7% lower carbon footprint.
- The resources used to produce one dozen eggs have been cut considerably with 26% less feed, 32% less water, and a 71% lower carbon footprint since 1960.

On top of progress already made, the U.S. animal agriculture community remains committed to continuing the work. Several sectors of animal agriculture have publicly committed to reaching new goals:

- The U.S. dairy community is working to becoming greenhouse gas neutral or better by 2050.
- The U.S. beef community committed to becoming carbon neutral by 2040.
- By 2030, the U.S. pork community has pledged to reduce greenhouse emissions 40% from a 2015 baseline.

There's no doubt in my mind that the topic of sustainability will continue to dominate headlines, policy meetings, and friendly conversations beyond 2022. I also have no doubts that the U.S. animal agriculture community will continue to achieve progress in its sustainability-focused goals. For more on U.S. animal agriculture's commitment to sustainability efforts, view the Alliance's Sustainability Impact Report.

Emily Solis is manager, communications and content, for Animal Agriculture Alliance.

PROPER STUNNING

REDUCES HUMANE HANDLING ENFORCEMENT ACTIONS



EMPHASIS SHOULD FOCUS ON TRAINING PERSONNEL AND IMPROVING RESTRAINT.

BY KURT VOGEL

Over the past year, the same old humane handling issues stayed as the key contributors to U.S. Department of Agriculture Food Safety Inspection Service Humane Handling Enforcement Actions. The good news is that fewer humane handling enforcement action letters were posted to the USDA FSIS website in 2021 (62) than the previous three years: 2018 - 109, 2019 - 85, and 2020 - 99.

STUNNING IS STILL THE FOCAL POINT

Mechanical stunning — which includes captive bolt and gunshot — continues to be the primary root cause outlined in USDA FSIS Humane Handling Fortuna and Action and A

The majority of stunning-related enforcement action letters (70.6% - 36/51) did not include a clear indication of the reason for the stunning failure from the FSIS. It is important that reasons are included in the enforcement action letters to facilitate the collective learning and growth of the industry. Of course, an enforcement action is never a welcomed event, but there is substantial value in the lessons that can be learned from each event when sufficient detail is provided.

Out of the 15 stunning-related enforcement actions that included clear reasons, 11 were due to improper stun placement, two were due to restraint, and two were due to equipment failures.

CATTLE AND HOGS CONTRIBUTE THE MOST, BUT THE POPULATION IS LARGE

Cattle and pigs accounted for 48.4% (30/62) and 40.3% (25/62) of total enforcement actions. The remaining enforcement actions (7/62) included sheep and goats. Last year, total cattle slaughter included 33.1 million head and total hog slaughter was nearly 128 million head. Cattle and hogs made up the vast majority of slaughtered livestock, so their prominence in the number of humane handling enforcement actions follows the basis of population size.

CONTINUE TO FIND THE LESSONS

When it comes to humane handling, the core challenges remain the same — stunning is the primary point where humane handling enforcement actions originate. In that space, captive bolt and gunshot are the primary stunning methods that are associated with enforcement actions and placement appears to be the primary cause of the stunning failures. The good news is that continued focus on training personnel and improving restraint should help us continue to grow and improve.

Kurt Vogel, Ph.D., is an associate professor in the Animal and Food Science Department at the University of Wisconsin-River Falls. He is also president of Vogel Livestock Solutions, a food animal welfare consulting company.



MAY IMPACT MEAT INDUSTRY

AN EXECUTIVE ORDER TARGETS ADVANCING BIOTECHNOLOGY AND BIOMANUFACTURING TO ADDRESS CLIMATE CHANGE, FOOD SECURITY, AGRICULTURE AND SUPPLY CHAIN RESILIENCE.

BY SHAWN K. STEVENS FOOD INDUSTRY COUNSEL LLC

The White House recently issued an executive order that may have significant implications for the future of the meat industry. The long and rather dull title "Executive Order on Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy," belies the fascinating subject matter, and portends extraordinary biotechnological advances that are on the brink of becoming reality.

In general, the order details the administration's policy goal of facilitating a whole-of-government approach to advance biotechnology and biomanufacturing towards innovative solutions in, among other things, climate change, food security, agriculture and supply chain resilience.

Humanity is in the process of developing genetic engineering technologies and techniques that are likely — within the next decade to fundamentally transform society. We will likely soon be able to program cellular circuitry much in the way we currently do with software, and to also advance production scaling so products can reach markets faster.

To achieve the order's objectives, the Administration's objectives include:

- Fostering a biological data ecosystem that advances biotechnology and biomanufacturing innovation, while adhering to principles of security, privacy and responsible conduct of research.
- Improving and expanding domestic biomanufacturing production capacity and processes, while also increasing piloting and prototyping efforts in biotechnology and biomanufacturing to accelerate the translation of basic research results into practice.
- Boosting sustainable biomass production and create climate-smart incentives for American agricultural producers.

HUMANITY IS IN THE PROCESS OF DEVELOPING GENETIC ENGINEERING TECHNOLOGIES AND TECHNIQUES THAT ARE LIKELY — WITHIN THE NEXT DECADE — TO FUNDAMENTALLY TRANSFORM SOCIETY.

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While the notion of "lab meat" remains distasteful to many, that will likely change to the extent such products are able to meet or surpass the benchmarks by which we judge animal-derived products, such as safety, taste, texture, nutrition and cost.

Assuming, for the sake of argument, that industry is able to develop the means of synthesizing meat products that are, from a consumer standpoint, effectively indistinguishable from animal products, it could be a win for everyone, especially industry.

Consider as well, for example, the food safety implications. Removing the animal from the equation would remove many of the safety risks. It would, for instance, be much easier to control pathogens. This would, in turn, result in profound cost reductions. With fewer hazards, there would be a concomitant reduction in the need for regulation, insurance and litigation.

Additionally, it would likely reduce the costs of transportation. Unquestionably, the volume of synthetic protein a truck could carry would exceed the amount of usable protein a truckload of cattle would contain.

Likewise, the costs, materials, and space required to produce synthetic protein would likely be far less than those necessary to raise cattle.

The chief concerns with animal agriculture, legitimate or otherwise, typically fall within the following categories: ecological, environmental and ethical. To the extent we can produce these products synthetically, those concerns would be either substantially or entirely abated. Here too, it is a good outcome for industry and consumers alike.

So, again, while still speculative, it is entirely possible that near term advances in biotechnology will allow for the creation of a cheaper, healthier, safer, more sustainable product that is less-intensively regulated and not subject to the ethical concerns of animal-derived products.



BOTH HAVE A PLACE

USING WORKERS RATHER THAN MACHINERY PROVES A BETTER SOLUTION FOR SOME PRECISE TRIMMING AND DEBONING TASKS.

BY FRED WILKINSONCHIEF EDITOR

Finding and retaining workers is an ongoing challenge for many meat and poultry processing businesses, and the tight labor market has led many to adopt — or at least consider adopting — automation.

"Substituting automation for 'warm bodies' seems to be one of, if not the main, options for processors these days for the small hiring pool," AAMP Outreach Specialist Nelson Gaydos said. "Trimming and deboning is vital to generating the meat that will become value-added products, but it is a very labor-intensive job — a job that can be difficult to keep filled."

Casey Lynn Gallimore, director of regulatory policy at the North American Meat Institute, said that while automating trimming and deboning is often thought of as a replacement for line workers by taking over an entire function, automation is more likely to be tailored to assist in certain aspects of the process. One benefit of the targeted application of automation in trimming and deboning is reducing the number of repetitive-motion tasks workers must do.

"Certain trimming and deboning motions can be burdensome on workers," Gallimore said. "Companies rotate employees, use specific training, provide stretching exercises and other practices to reduce the burden for these jobs. Automation is another option that can take over the more burdensome aspect of a process, while still allowing for the flexibility and experience provided by workers."

Though it can come with significant upfront capital costs, automating trimming and deboning can help processors increase production and ease the burden of hiring new workers for this task and free up current employees to work on other parts of production, Gaydos said.

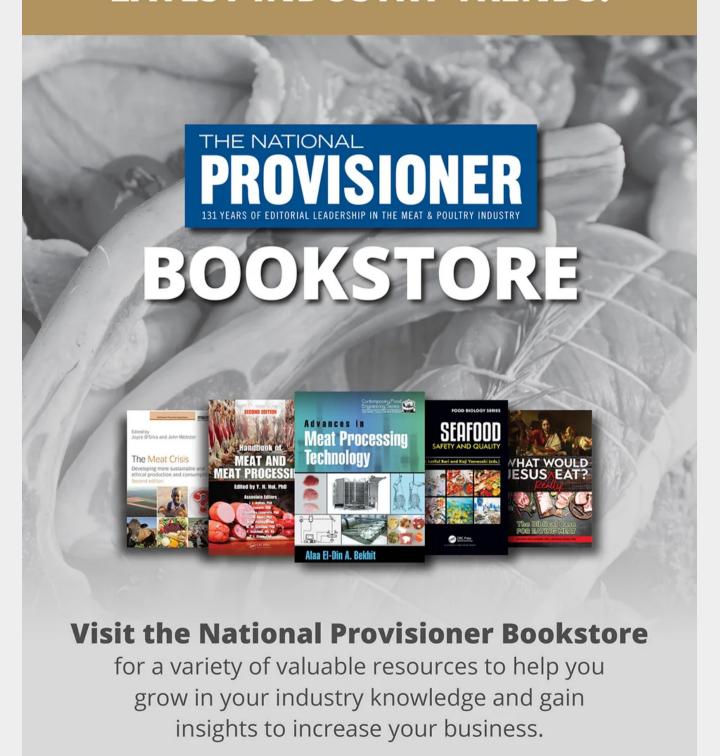
Vision systems have changed the game for robotics and automation in meat and poultry processing, Gallimore said.

"Unlike car manufacturing, for example, where every part is the exact same size, we are working with animal carcasses that are highly variable," she said. "Automation was a slow start in our industry because early solutions could not adapt to the different sizes and conformations of carcasses and parts. Vision systems have allowed for automation solutions that can 'see' the carcass or part and adapt. As these mature and further refine, solutions are likely more able to handle the nuances of trimming and deboning. "

Given the variability in sizing for carcasses and parts, sometimes the benefits of hand-trimming are a better solution than adopting an automated process.

"Experienced employees are often more precise than automated solutions for certain detail-oriented tasks, like trimming and deboning," Gallimore said. "Another thing to consider is that automation will never replace the need for labor entirely, but it can change the number and type of labor needed. Automation equipment, like all equipment, requires maintenance from skilled workers."

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THE EVENT'S VARIOUS FORUMS AND EXHIBITS OFFER PROTEIN INDUSTRY COMPANIES ACCESS TO PRODUCT AND PROCESSING INNOVATIONS.

BY FRED WILKINSON CHIEF EDITOR

Pack Expo 2022 will mark the event's return to Chicago after four years, and the Oct. 23-26 convention and exposition promises packaging and processing professionals plenty to take in while they reconnect with colleagues and friends and form new relationships.

"There is an estimated total of 40,000 attendees expected for Pack Expo International 2022," said Jorge Izquierdo, vice president of market development for PMMI, which stages the Pack Expo event.

On the exhibitor side, Izquierdo said that through August there were more than 2,100 exhibitors registered for the show across four exhibition halls and more than 1.2 million net square feet of exhibit space at McCormick Place.

"Protein industry companies can maximize their experience by connecting with managers, designers, engineers and other professionals in attendance to learn and gain now paragraphics and solutions that will be featured in over 40 plus vertical marl Innovation Stage

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THE PROCESSING ZONE — Returning to Pack Expo International 2022 with the widest variety of food and beverage processing equipment, the Processing Zone helps attendees discover solutions to increase efficiency, achieve total system integration and ensure food safety. The Processing Innovation stage will focus on the latest food and beverage breakthroughs.

PACK TO THE FUTURE — An interactive exhibit new for Pack Expo 2022, PACK to the Future celebrates the role of packaging and processing through history and the impact it is poised to have on our future. The event includes a PACK to the Future stage featuring sessions on groundbreaking industry advancements.

PACK MATCH AT PACK EXPO INTERNATIONAL — This includes a complimentary consultation, providing attendees personalized, one-on-one guidance to locate targeted solutions. This new feature is making its Pack Expo International debut.

INDUSTRY MEETS — Association partner thought leaders will present the latest industry trends on the Industry Speaks stage throughout the show. Experts in the Pack Expo Partner Program will cover industry topics and trends such as sustainability, supply chain solutions and more.

SUNDAY, OCT. 23

- 9 a.m. to 5 p.m. CST Show floor open
- 9 a.m. to 5:30 p.m. CST Emerging Brands Summit
- Noon to 3:30 p.m. CST Innovation Stage presentations
- 2-3:30 p.m. CST Processing Innovation Stage presentations

• 1:30-4:15 p.m. — The Forum – An Industry Knowledge Exchange

- 12:30-4 p.m. CST Industry Speaks sessions
- 12:30-4 p.m. CST PACK to the Future Sessions

MONDAY, OCT. 24

- 9 a.m. to 5 p.m. CST Show floor open
- 9:30 a.m. to 4 p.m. CST PACK to the Future sessions
- 10 a.m. to 3:30 p.m. CST Innovation Stage presentations
- 10 a.m. to 3:30 p.m. CST Processing Innovation Stage presentations
- 10 a.m. to 4 p.m. CST RPA Learning Center sessions
- 10:30 a.m. to 4 p.m. CST Industry Speaks sessions
- 10:30 a.m. to 4:15 p.m. CST Industry Speaks sessions
- 10:30 a.m. to 4 p.m. CST Industry Speaks sessions
- 10:30 a.m. to 4:15 p.m. CST The Forum–An Industry Knowledge Exchange
- 3:30-4:30 p.m. CST Packaging Hall of Fame Ceremony
- 4:30-5:30 p.m. CST PACK gives BACK reception
- 5:30-7 p.m. CST PACK gives BACK entertainment
- 7:3010:30 p.m. CST Young professionals networking reception

TUESDAY, OCT. 25

- 7:30- 9: a.m. CST Packaging & Processing Women's Leadership Network Breakfast
- 9 a.m. to 5 p.m. CST Show floor open
- 9:30 a.m. to 4 p.m. CST PACK to the Future sessions
- 10 a.m. to 3:30 p.m. CST Innovation Stage presentations
- 10 a.m. to 3:30 p.m. CST Processing Innovation Stage presentations
- 10 a.m. to 4 p.m. CST RPA Learning Center sessions
- 10:30 a.m. to 4:15 p.m. CST The Forum–An Industry Knowledge Exchange
- 10:30 a.m. to 4:15 p.m. CST Industry Speaks sessions

WEDNESDAY, OCT. 26

- 9 a.m. to 3 p.m. CST Show floor open
- 9:30 a.m. to 1 p.m. CST PACK to the Future sessions
- 10 a.m. to 12:30 p.m. CST Innovation Stage presentations
- 10 a.m. to 2 p.m. CST Amazing Packaging Race
- 10:30 a.m. to 12:15 p.m. CST The Forum–An Industry Knowledge Exchange

Go to https://www.packexpointernational.com/ for the latest updates to Pack Expo 2022's scheduled events and exhibits.



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October 23-26, 2022 Chicago, Illinois USA BOOTH LU-7149









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SUSTAINABLE MEAT PRODUCTION REQUIRES COOPERATION BETWEEN FARMERS, PROCESSORS AND RETAILERS.

BY NICOLLE PORTILLA RTS

Food waste and food insecurity are on the rise in the U.S., and the cost of meat is rising for consumers. Environmental concerns are also at the top of meat producers' minds. That's why it's so important to come up with a list of sustainability goals when it comes to meat production. While a great amount of food waste in the U.S. actually comes from homes and restaurants, about 18% of total food waste comes from the farms and food processors.

Additionally, food waste causes numerous environmental problems, including filling up landfills that go on to produce 11% of the world's greenhouse gases. Understanding where food waste comes from, how much food is produced and never consumed and how food waste can be reduced can help mitigate environmental concerns, including food insecurity.

WHAT IS SUSTAINABLE MEAT?

With all of the food that's thrown out at various points in the system from farm to consumer, it's even more important that farms are smart in their approaches to raising cows and other animals. One of the key components of having a sustainable plan for producing meat is to ensure that farms are raising livestock in ways that conserve water and re-nourish the land.

One of the most important parts of raising cows is to incorporate holistic grazing, which means that cows graze on one pasture and then move to the next so that each part of the grazing area has the opportunity to rebound naturally. Some other important parts of sustainably raising cows are having water recycling programs and using organic farming practices.

OTHER GOALS FOR SUSTAINABILITY IN FARMING PRACTICES FOR MEAT PRODUCTION

While other types of meat production, such as the raising of chickens for meat consumption, are also important in terms of setting goals that will be better for the environment and the entire supply chain, cattle is one of the main focuses when making goals for greater sustainability because they require more resources to raise. They tend to require more resources because they're larger animals but also because they take more time to mature to an age and size where they can be harvested and processed.

In contrast, chickens can be raised in a carbon-neutral way because they're an efficient way to convert feed to meat or eggs since they take less time and resources to raise. They can also be used for fertilizing the soil.

Some of the other practices that farmers need to implement to raise their cattle in more sustainable ways include using more organic farming practices, limiting pesticides and grass-feeding livestock instead of grain-feeding them.

ALONG WITH HAVING FARMS THAT ARE RAISING COWS AND OTHER LIVESTOCK USING WISE PRACTICES, IT'S ALSO IMPORTANT THAT MANUFACTURERS THAT PROCESS THE MEAT ARE INVOLVED IN CREATING PROCESSES THAT DECREASE WASTE.

MANUFACTURERS' ROLES IN SUSTAINABLE MEAT PRODUCTION

Along with having farms that are raising cows and other livestock using wise practices, it's also important that manufacturers that process the meat are involved in creating processes that decrease waste.

For instance, companies like JBS USA have made goals for the sourcing of their meat. JBS has goals set out for 2030 to 2040, and some of these goals include reducing water use by 15%, investing in emission reduction for the company's facilities, eliminating illegal deforestation in the Brazilian cattle supply chain, and investing in research and development projects that help support regenerative farming practices.

WORK WITH RETAILERS ON MEAT OPTIONS

Having retailers on board with making efforts to increase sustainability with meat production is also of paramount importance, and getting the large retailers is one of the best ways to do it. Without brick-and-mortar retailers, such as Walmart, distribution of meat products becomes more difficult and expensive, especially when considering shipping and packaging costs.

Major retailers and restaurants can help shape the way that manufacturers make their sustainability goals when manufacturers work with retailers to provide more and better quality meat offerings to the consumer.

Beyond Walmart, McDonald's is another major food company that has shown an interest in reducing its role in greenhouse gas emissions within the next several years.

EDUCATING THE PUBLIC

One of the main hurdles to having less food waste and therefore providing a more sustainable food system is helping the public make good decisions when choosing when to keep and when to throw out food. Because of labels that are confusing to the public, many cans of food are thrown out even when they're still safe to eat because the public doesn't understand what the labels mean.

Labels that say "best by" mean something different from labels that say "use by," but if the public doesn't understand that distinction it's more likely that they'll throw out raw meat that could be frozen until they were ready to use it.

Consumers are also more likely to throw out canned meat even if it's still consumable because they don't understand the labels. That's why part of the meat production process needs to involve the packaging and labeling of foods. It should also be aimed at ensuring that labels are clear to read and that consumers understand how to treat different labels.

In reality, many foods that are still viable for consumption but are no longer at their peak freshness can be donated to food pantries to help people who are in need of assistance, and both consumers and retailers can be involved in this process if they understand what to look for.

When coming up with a sustainability plan for meat production and consumption, it's important that all levels of meat production, manufacturing, sale and consumption are taken into consideration to make the greatest positive impact on the environment and on people who are food insecure.

Coming up with a plan for the near future and for the next several decades out will take a lot of cooperation between farmers, manufacturers, and retailers so that we all can achieve the best possible outcomes for the environment and for consumers of meat.

Nicolle Portilla is social media manager at RTS and contributes to the RTS blog, which serves to educate clients and industry players about RTS' waste management technology and sustainability services.

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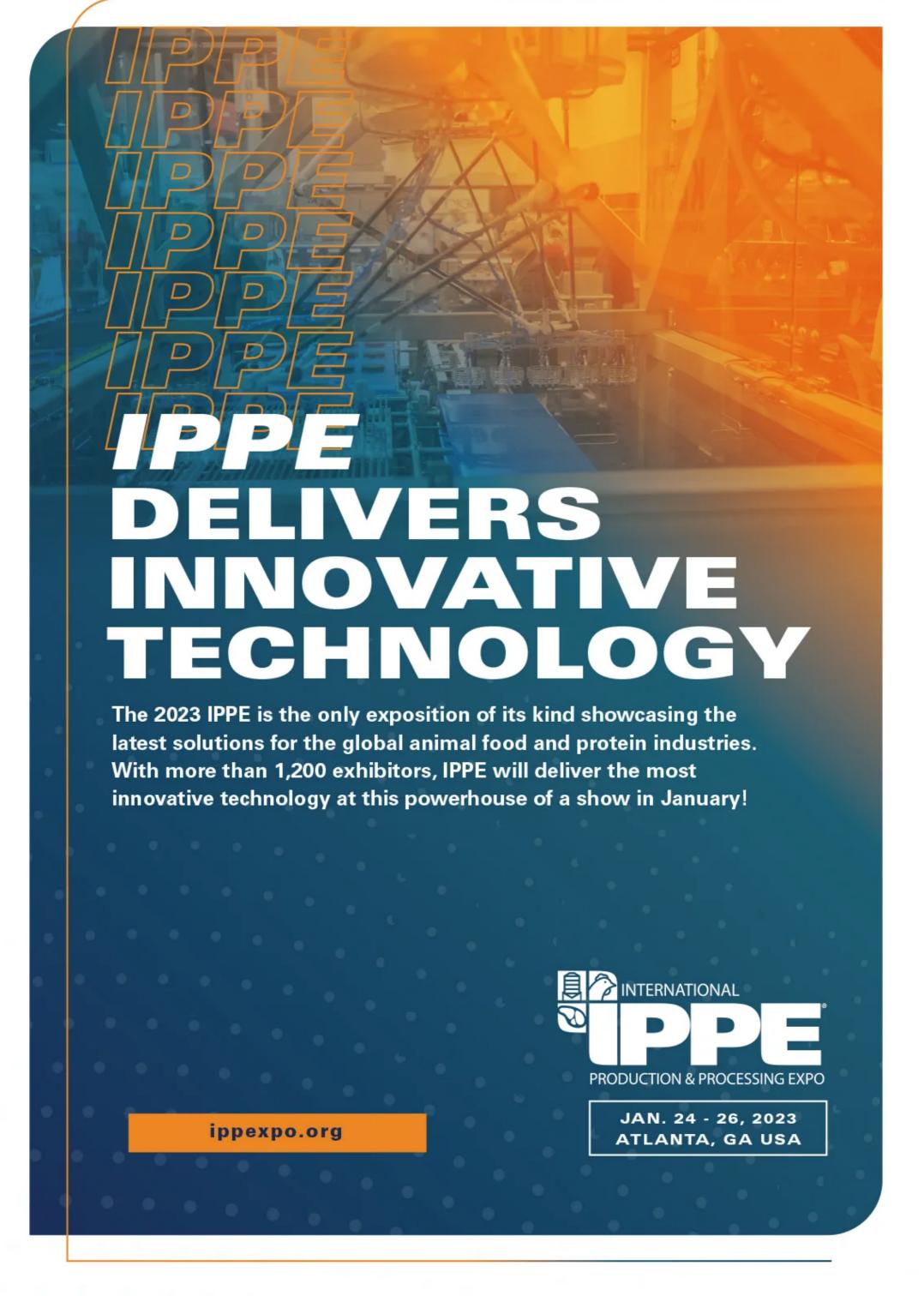


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AT NICHOLAS MEAT

THE PENNSYLVANIA-BASED BEEF PROCESSOR'S SUSTAINABLE RESOURCE FACILITY PROJECT PROMISES TO REDUCE WATER USE AND CARBON EMISSIONS.

BY FRED WILKINSON CHIEF EDITOR

LOGANTON, Pa. – Building off its history of growth in Pennsylvania's Sugar Valley, Nicholas Meat LLC is building its Sustainable Resource Facility (SRF), which will dramatically reduce water use for the company's beef processing operations while generating renewable energ

SRF construction plant, which bega

SRF), which will dramatically reduce of the second second

SSV Drum Motors

• IP69K sealing system

• All drive components enclosed



Chief Executive Officer Gene Nicholas credits the vision for the ambitious sustainability project to his son, Nicholas Meat Vice President and Chief Operating Officer Doug Nicholas.

"All the new things are his ideas," Gene Nicholas said. "What's going on now, that's his dream."

THE NICHOLAS MEAT STORY

Born on a dairy farm down the road from the Nicholas Meat plant, Gene Nicholas started his first business in 1971 at age 15, buying and selling cattle. Nicholas Meat's processing facility has been in operation since 1987, he said. After years of adding on to that original 4,200-square-foot plant, fire destroyed the facility in 2005. Nicholas Meat operated in a rented facility for three years before opting to rebuild on its original site. Construction began in 2008, and the plant reopened in September 2010, processing 80 head per day, Doug Nicholas said.

Today, Nicholas Meat's processing operation is between 130,000 to 150,000 square feet, with around 400 workers including management. The company slaughters 800 head of cattle five days per week, selling boxed or bulk beef (almost exclusively boneless) to customers for further processing.

"We make some bone-in product, but that's by request," Doug Nicholas said, naming back ribs and hind shanks as two examples.

"Our primary customers are further processors that don't have access to a harvest floor," Gene Nicholas said.



Nicholas Meat's processing and cattle holding infrastructure is adjacent to the Sustainable Resource Facility site. A tunnel and pipelines under a road will connect the processing operation to the SRF.

SUSTAINABLE RESOURCE FACILITY

Nicholas Meat's first steps toward what would become the SRF project began in the early 2000's, Gene Nicholas said, when the company conducted a feasibility study on incorporating a methane digester into the plant.

"It was a way to move toward renewable energy," he said. Nicholas Meat was ready to proceed with the project, but the 2005 fire occurred and put the effort on hold. About four or five years after the rebuilt plant was up and running, the company started revisiting the idea of adding a methane digester. That effort expanded to include further sustainability considerations that would lead to plans for Nicholas Meat's Sustainable Resource Facility.

High among the goals for the SRF was water conservation.

"We don't have a municipal water supply. Our water comes from an underground aquifer," Doug Nicholas said. "We have to pull from the aquifer, and we have to make sure we grow in a responsible way and ensure there is an adequate water supply."

To address that, the SRF will include a wastewater treatment facility to remove contaminants from the water, enabling its reuse, Director of Sustainability Brian Miller said. The company has set a goal of reusing 90% of water the plant uses

Slaughtering beef is always a high water-use endeavor, Nicholas Meat General Manager Elliott Keller said. "In the industry, low

water usage is 500 gallons per head," he said, adding that out of need due to its water access situation Nicholas Meat uses less than 300 gallons per head.

"We're probably one of the lowest – if not the lowest – that I know of in the beef industry when comes to water usage per animal

processed," Keller said.



SRF DETAILS

pipeline running beneath the road. Using the pipeline to transfer waste and treated water to and from the plant will require fewer

Built on the side of a hill across a two-lane road from Nicholas Meat's processing plant, the SRF will connect to the plant via a

trucks, resulting in less traffic, less fuel consumed and fewer carbon emissions. The SRF will house a reception building and a pair of large anaerobic digesters, Miller said. The digesters use bacteria that convert organic matter into biogas, a mixture of primarily methane, carbon dioxide and hydrogen sulphide. The anaerobic digestion process contains odorous emissions and substantially reduces greenhouse gases. The process captures biogas, which is cleaned and has the moisture removed from it. While natural gas pipelines do not currently serve the area, biogas from the SRF could be refined into methane to feed into a pipeline. With minimal processing, biogas is suitable for use as a heating source for boilers, Miller said. Producing biogas on site also will reduce Nicholas Meat's dependence on fossil fuels (the company currently trucks in propane).

Water will undergo filtration in a membrane bioreactor and the effluent from this process will be well below thresholds for discharge limits (although Nicholas Meats does not have a water discharge permit). "It will actually be cleaner than rainwater", Doug Nicholas said.. "Water from the membrane bioreactor will be processed further in an advanced reverse osmosis system that

will produce potable grade water and used for direct product contact within the meat processing plant," Miller said.

The process also creates digestate, which is a kind of slurry waste byproduct, Miller said. The SRF will remove water from the digestate to be filtered through its wastewater treatment process, while the remaining solid material can be applied as a nutrient-

costs for the project are up more 70%, and the project's final price tag is expected to be double initial estimates.

"Pre-COVID, it was an 18- to 24-month project. Post-COVID, it's become a 36- to 48-month project," Doug Nicholas said.

The SRF has a planned launch date of December 2024, Miller said. Due to pandemic-related labor and supply chain challenges,

Nicholas Meat is working with the Belgium-based facility design firm of Global Water & Energy and the construction firm Quandel Construction Group Inc. out of Harrisburg, Pa., on the SRF, Doug Nicholas said.

Nicholas Meat's SRF project coincides with improvements to the company's cattle holding area, which started in the spring. Their current overnight pen density is 160, and their production pen density is 180.

"The new pens are going to hold around 1,000," Doug Nicholas said.

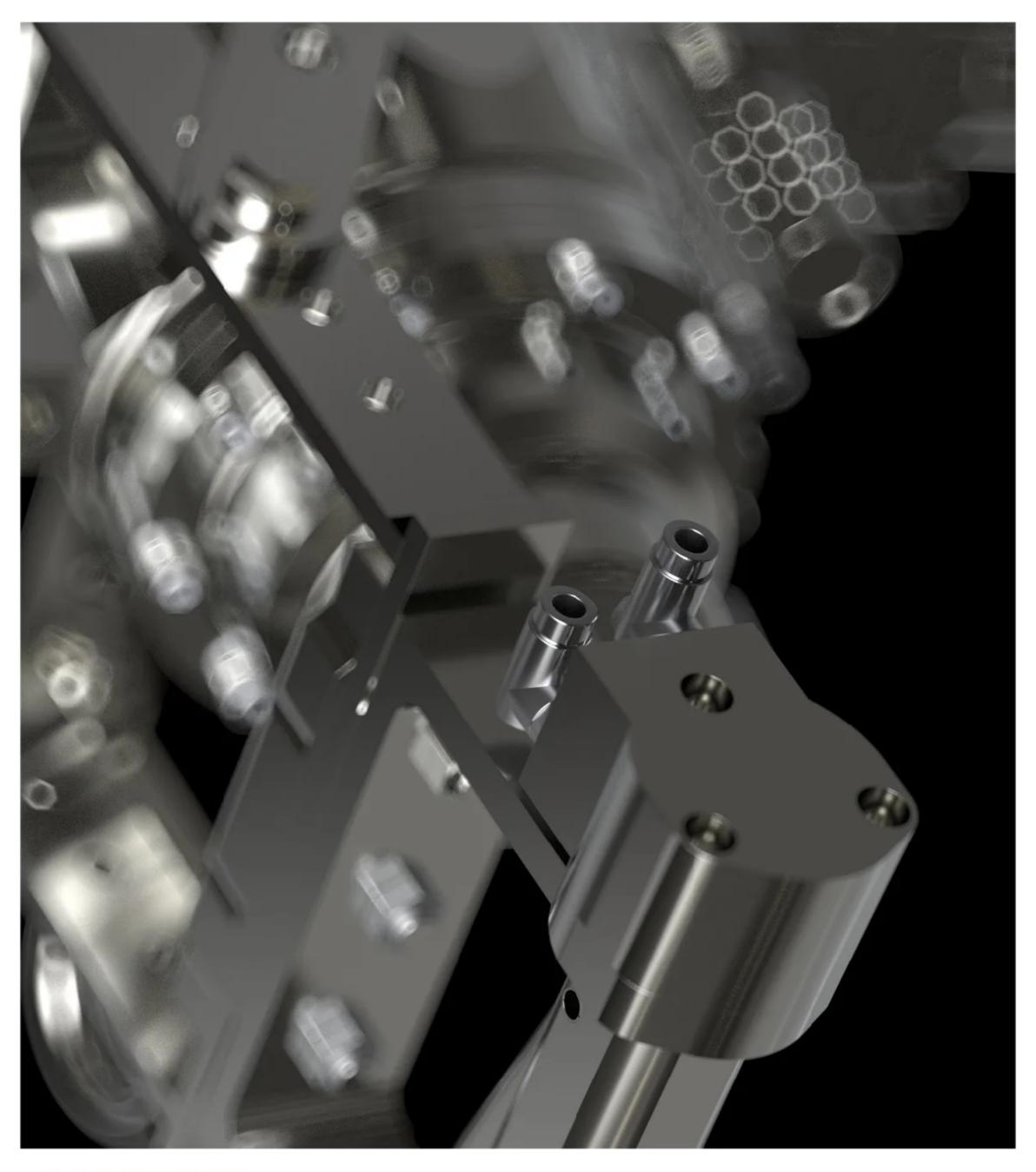
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DREW DEMAKES

HIGH PRESSURE PROCESSING IMPROVES FOOD SAFETY, FRESHNESS, AND PRODUCT QUALITY AND TASTE.

Years ago, technology innovation was a challenge for the meat industry. There were limited options to create

Fast forward to to only for food safety but also to maintain freshness, nutrients, quality and taste without

that producers can expand sales regionally and nationally.

For Old Neighborhood Foods, HPP has been a game changer, enabling the company to develop new products and expand its sales from its headquarters in Massachusetts to national locations.

preservatives. HPP, a non-thermal pasteurization method, also provides extended shelf life so

Since its beginnings, Old Neighborhood Foods has always been focused on providing natural products without preservatives. In 1914, my great grandmother, a Greek immigrant, made a Greek sausage called locanico for the community in Lynn, Mass., a town just outside of Boston. She soon began selling to Boston families, and Old Neighborhood Foods was born.

When my father returned from the Vietnam War, he expanded the company and its product offerings. We were committed to keeping our foods all-natural, with no artificial ingredients antibiotics, or preservatives. But shelf life was stifling our growth.

We learned about HPP and started out by using a toller, a third-party service provider. But we realized that if we wanted to grow, we needed to make the financial investment in our own equipment. We purchased our first Hiperbaric 420 machine in 2014 and installed it in 2015.

Purchasing a machine was a big commitment, as we needed to build a facility to house the unit and make a significant capital investment. Having our own equipment, however, allowed us to save on transportation and logistics costs. We offset some expenses by providing HPP for other companies, but today we mostly use the process for our own products.



Whether owning an HPP machine or tolling, the benefits of HPP open the potential for limitless growth.

HPP has allowed us to increase shelf life for our pre-sliced organic deli meat from 49 days to 120 days, a 60% increase. We can now build inventories and ship deli meats all over country, to foodservice and retailers including Kroger and Aldi. HPP technology has enabled us to grow from a regional to a national manufacturer, and our business has expanded by approximately 25%.

HPP has also enabled our company to start a marinated meat line. Competition in this space is high, but HPP allowed us to enter the market with extended shelf-life products. Today, it's one of our fastest-growing categories. All raw meats typically have a seven- to 10-day shelf life, but with HPP, our raw marinated chicken products now have a 42-day shelf life, and our raw marinated steak products have a 56-day shelf life.

HPP also brings automation and digital benefits to our company. The HPP machines help streamline operations, reducing waste and line labor. We can access data captured through the HPP process to help increase efficiencies throughout our production process. Data collection and understanding different yields is critical to ensuring our operations run smoothly and continuously improve.

We recently purchased a second HPP machine from Hiperbaric, and we love their 24/7 customer support.

Today, we have more than 500 employees and our products include deli meats, marinated meats, organic hot dogs, chicken sausage, sliced corn beef, and pastrami. We continue to grow our product lines, including shaved meats and skewers.

HPP is still a big part of our business's success. With new advances on the horizon, we look forward to additional improvements this technology will bring.

Andrew Demakes is director of operations for Old Neighborhood Foods, a fourth-generation, family-owned producer of meat products.



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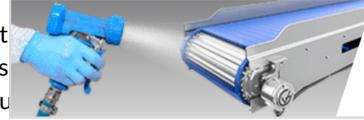
COMMENTARY → SMA



INVESTING IN THE FUTURE THE SMA WAY

INTERNSHIPS, EMPLOYING STUDENT WORKERS FOR CONVENTIONS, AND AWARDING SCHOLARSHIPS TO UNDERGRADUATE AND GRADUATE STUDENTS HELPS CULTIVATE THE MEAT INDUSTRY'S NEXT GENERATION.

Many times, we t account, purchas important, at Sou



and graduate students during SMA's Annual Convention each summer.

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— investing in the upcoming generation of meat and poultry industry leaders. A few ways that SMA

— provides for the future of the industry includes hiring a summer intern, employing student workers

— ASSOCIATION

The SMA Foundation was formed in 1987 using donations from SMA members interested in assisting students pursuing meat industry careers. The SMA Foundation is comprised of a select group of SMA members, including:

during the convention, and awarding numerous SMA Foundation scholarships to undergraduate

- Jason Beyer of ABF Packing
- Pat Nicholson of Farm to Market Foods
- Troie Burch of Double B Foods
- Jim Ondrusek of Pederson's Natural Farms
- Glen Kusak of Yoakum Packing
- Don Rea of The Meat Board
- and Rick Kimbrell of StartKleen Legacy.

SMA Foundation scholarship fundraising is comprised of various events held throughout the year, including:

- the Bob Ondrusek Memorial Golf Tournament
- SMA Foundation live and silent auction
- SMA Suppliers' Showcase
- annual dove hunt
- various rafflesand through the generosity of SMA members.

Since 2012, the SMA Foundation has awarded \$1,134,500 in scholarships. At SMA's 66th Annual Convention this past July, the SMA Foundation was fortunate to award \$117,000 in scholarships to 38 undergraduate and graduate students from various universities across the United States.

With the start of SMA Foundation's scholarship program nearly 40 years ago, many of those recipients are still in the industry today. A few of the recipients are now employed by SMA member companies. Some have even served on the SMA Board of Directors, including Michelle Wiggins with Eddy Foods, Tyler Kusak with Yoakum Packing, and Denise Hawks with ABF Packing. SMA's very own Dr. Joe Harris, CEO and president, was also a SMA Foundation scholarship recipient.

Other past scholarship recipients are now serving various roles in industry, ranging from:

- **food safety and quality control** Jonathan Savell, senior director of FSQA at Standard Meat Co.
- 1000 Safety and quality control Jonathan Saven, se
- sales Mark Frenzel, territory manager at A.C. Legg
 product development Amanda Smith, manager of product development at H-E-B
- academia Dr. Loni Luckerk, associate professor of animal science at West Texas A&M University
- advocacy Dr. Leslie Frenzel, director of youth programs at American Meat Science Association.

SMA's internship program has grown in popularity. The summer-long internship program encompasses event planning, marketing, and superb organizational and communication skills. The key takeaway from the internship is the networking environment. Many of SMA's interns go on to receive additional internships and potential job offers from companies in the industry.

Here is what previous SMA interns and scholarship winners had to say about the influence SMA has had on their careers:

"My involvement with the Southwest Meat Association as an intern and scholarship recipient allowed me to explore areas of the meat industry and learn more about how important it is to support packers and processors. As a current law student, I look forward to a career advocating for the meat industry, just like the Southwest Meat Association does for its members," said Brittany Shipp, law student at Texas A&M University School of Law.

Jenna Hunt with National Beef Co. said, "My internship with SMA influenced my career by exposing me to all the opportunities within our industry. I was able to meet countless industry leaders, attend research and educational presentations from academic leaders and work directly with large businesses in the industry. Being an SMA intern and scholarship recipient provided me the experience, connections, and knowledge that I needed in order to flourish and start my career in the meat industry."

Meghan Clancy, research and development specialist at Standard Meat Co. said, "SMA scholarship support allowed me to successfully pursue undergraduate and graduate studies in the meat industry. Through SMA summer internships and conferences, I gained real-world experience, met one on one with industry leaders and developed a broad professional network. Today, I work in a career I love, side by side with many of the people I met through those programs. I truly could not have done it without the financial and networking support of SMA."

Investments and interest rates may change, but SMA's loyalty to the upcoming generations of meat and poultry industry leaders will never waver.



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