MARCH 2021

THE NATIONAL
PROVISIONER
131 YEARS OF EDITORIAL LEADERSHIP IN THE MEAT & POULTRY INDUSTRY

2022 Burger Report

HAMBURGERS ARE A GO-TO FAVORITE
DURING UNPREDICTABLE TIMES

ALSO IN THE ISSUE
WEST LIBERTY FOODS
BBQ TRENDS
SODIUM REDUCTION

A bnp media PUBLICATION

CONTENTS

MARCH 2022
VOLUME 236 / ISSUE 3

COVER STORY

FEATURED CONTENT

DEPARTMENTS

TECH TOPICS

NEW FROM NATIONAL PROVISIONER VIDEOS

Market Wagon is a service that helps local farmers and small businesses distribute their products to consumers. The web-based service helps consumers find everything from meat and prepared foods to vegetables and baked goods. We talk with CEO/founder Nick Carter about his background and his vision for the company and its growing audience.

THE FOOD SAFETY CULTURE CHALLENGE

BY SHAWN K. STEVENS
FOOD INDUSTRY COUNSEL LLC

In early 2011, Congress passed the Food Safety Modernization Act ("FSMA"). The new legislation, which was signed into law quickly, was designed to improve the overall safety of FDA-regulated products. FSMA accomplished this by mirroring many of the FSIS HACCP requirements applicable to the meat industry, such as requiring a written food safety plan, a hazard analysis, and preventive controls.

FDA's efforts to improve the overall safety of food did not stop with the passage of FSMA. More recently, the agency announced new initiatives to improve safety further. As part of what FDA calls the "New Era of Smarter Food Safety," the agency will begin focusing on, among other things, the development and promotion of food safety culture within food facilities. According to FDA, food safety can be enhanced at the industry level by working to influence the core "beliefs, attitudes, and… behaviors of people" working in a food company. If a company has a good food safety culture, the theory goes, the company will make decisions that increase, as opposed to decrease, the safety of their products.

So, will USDA follow suit and issue agency guidance, rules or regulations designed to promote food safety culture within the meat industry? Given the visibility and attention FDA is attaching to the importance of food safety culture in FDA-regulated facilities, it is almost certain that FSIS and its leadership also will be asking whether, and to what extent, the concept of food safety culture should be used as a tool by the agency in federal establishments. That, of course, will cause industry to ask, if such requirements were to be issued, what would they look like?

BECAUSE ASSESSING FOOD SAFETY CULTURE IS INHERENTLY SUBJECTIVE, IT WOULD BE DIFFICULT TO QUANTIFY AND THEN CHARACTERIZE THE NATURE AND LEVEL OF FOOD SAFETY CULTURE IN A FAIR AND UNIFORM MANNER.

One of the key challenges when attempting to assess the existence and nature of the food safety culture in a facility is how to objectively do so. Reasonable minds might disagree about whether a food safety culture exists in an establishment, and, if one does exist, whether it is good, average, or bad. Because assessing food safety culture is inherently subjective, it would be difficult to quantify and then characterize the nature and level of food safety culture in a fair and uniform manner.

Imagine, for instance, if a FSIS inspector issued your company a string of Non-Compliance Reports (NRs) for failing to have an "adequate" food safety culture. We have seen FDA inspectors make such statements in their own inspectional documents, so it is not impossible to imagine FSIS someday following suit. In turn, the appeal of any such NRs would create additional challenges as culture is difficult to assess and quantify – especially if it is being done by someone from afar without actually being in the facility.

So, what does the future hold? Time will certainly tell. But, in the meantime, it may be prudent to start thinking about your own food safety culture, and how it might be judged by FSIS in your own facility.

PUTTING EXTREME BACK INTO COMFORT FOODS

HAMBURGERS ARE A GO-TO FAVORITE DURING UNPREDICTABLE TIMES.

BY MEGAN PELLEGRINI
CONTRIBUTING WRITER

It's hard to imagine a product that has weathered COVID-19 restrictions better than hamburgers. America's classic patty was already portable, comforting and innovative. Now, new and bolder exotic flavors are bringing excitement to the burger category.

While burgers remain a core part of restaurant menus (46.9%), they have slightly declined over the past year on menus (-3%), although all menus shrank over the past year. "So, this is actually considered holding steady as compared to items in general," says Claire Conaghan, associate director at Datassential, in Chicago. "Demand remains strong, as does innovation. We track new items and limited-time offers introduced by the top 150+ major chains; just in the past year, there were 169 new, returning and limited-time-offer burgers."

Although many operators streamlined menus at more extensive rates, burgers' relatively flat change shows it hasn't been affected as greatly during the pandemic as other categories. "The flat menu mentions also reflect the flat burger consumption change throughout 2020 into 2021, with 79% of consumers indicating in both Q1 2020 and Q1 2021 that they eat burgers at least once a month," says Katie Belflower, associate editor at Technomic, a Winsight Company in Chicago, according to the Technomic 2021 Burger Consumer Trend Report.

Hamburgers are a go-to favorite during unpredictable times. "Burgers' place as a familiar favorite among consumers certainly helps, but also, burgers were already poised for off-premise consumption, given many burger concepts already had drive-through or other takeout operations already in place, which potentially saved the category from more extensive menu cuts than others," says Belflower, citing Technomic's burger report.

Burgers that call out specific cuts, such as this Schweid & Sons' chuck, brisket and short rib blend, are growing in popularity.

WHERE'S THE BEEF

Imitation meat and plant-based burgers continue to increase on menus. "Nearly a quarter of consumers (24%) would consider ordering a veggie/garden/plant-based burger patty, and 23% of consumers strongly agree they are eating more plant-based burgers than they were two years ago," says Belflower, according to Technomic's burger report.

Imitation meat burgers have increased 6.9% on menus in the past year, she says. "Lentil burgers are also growing in the plant-based burger category, with lentils increasing 23.5% in burgers in the past year," says Belflower, citing Technomic Ignite Menu data (Q4 2020-Q4 2021). "Plant-based beef has also increased 14.1% on burgers over the past year."

One of the fastest-moving trends is burgers based on alternative patties. "The hyper-processed products like *Impossible* and *Beyond* have gotten all of the press recently, but I think it's very interesting to see operators like Culver's create their own meat-free alternative based on whole ingredients," says Maeve Webster, president of Menu Matters, in Arlington, Vt. "It speaks to consumers' desire for greater transparency in foods, and Culver's can stand behind that because they know exactly what's in it."

Expect more of this activity as operators look to create plant-based burgers that aren't trying to mimic meat but rather create unique and compelling dining experiences, Webster says.

"Younger consumers are definitely looking to cut back on animal protein and to eat more plant-based products, but I think their demand for greater transparency, more sustainable options and their interest in unique experiences will drive more operators to experiment with their own versions and unique, new varieties that tick more boxes for them and for their patrons," says Webster.

PUTTING EXTREME BACK IN COMFORT FOODS

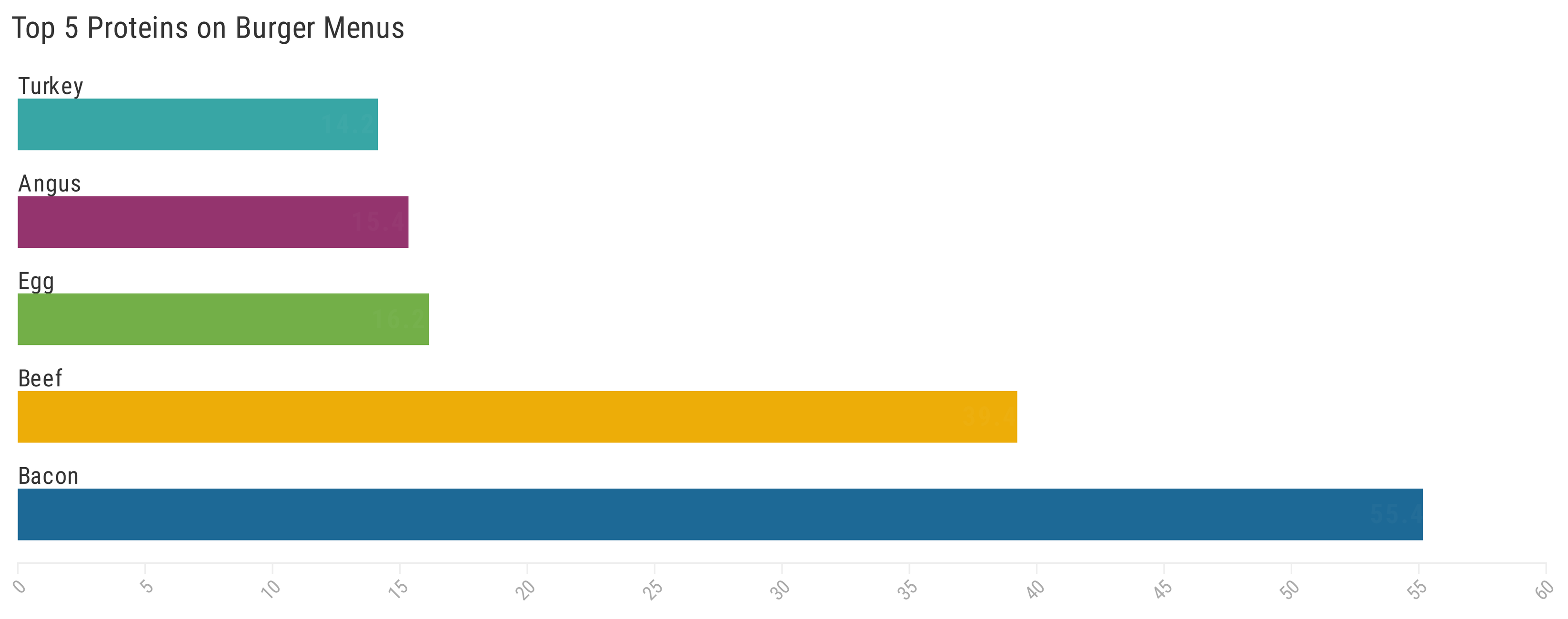
Burgers are so popular and ubiquitous that constant innovation is inevitable. "Operators want to make sure their burger options stand out and keep the category fresh for consumers who have, essentially, seen it all," says Webster. Today, more operators embrace premium ingredients from protein to cheese, she notes.

Over the course of the pandemic, consumers have also seen a lot of extreme comfort foods, and burgers fall into that category. "This is taking many forms, including burgers featuring multiple patties (sometimes up to three or four) and melts such as mushroom melts or bacon melts spotlighting melted cheese on burgers," says Belflower, referring to Technomic menu data. "Two of the fastest-growing flavors on burgers in the past year are chile peppers (+8.7%) and Thai flavors (+8.0%), showing an inclination toward bolder, more exotic flavors on burgers."

Brunch and breakfast burgers continue to grow. "New to trends this year, we saw increases in the idea of French dip burgers and serving with a side of au jus or open face topped with au jus up 106% over the past year and now found on 1 percent of burger menus," says Conaghan. "We continue to see growth of extreme toppings such as peanut butter and mac and cheese — both savory jams (tomato, bacon, etc.) and flavored bacons (jalapeno, for example)."

According to Conaghan, "the concept of specifying the meats used in house custom grind blends is growing," as well. "In fact, 5% of burger menus now have at least one burger that calls out a blend, up 13% over the past year."

The most common blends are brisket, short rib and chuck, says Conaghan. "It also continues to be a trend to top burgers with even more protein such as pulled pork, brisket, even braised short ribs," she says.



The top growing proteins on burger menus by four-year penetration growth (% of menus offering) are candied bacon, wagyu, roast beef, prime rib and brisket, says Claire Conaghan, associate director at Chicago-based Datassential. Source: Datassential

DRIVING RETAIL SALES

Innovation in the meat case is also driving retail sales. Most retailers are still seeing growth of 5% to 8% in the fresh burger segment, says Anne-Marie Roerink, principal at 210 Analytics, LLC, in San Antonio.

"Overall, 2020 set such high records in all of meat, all of beef, all of ground beef, including patties, that further growth seemed unlikely for 2021," Roerink says. "But when you dig deeper into the numbers, there are some areas that did manage to continue to grow, and value-added was one of those."

From one week to another, Americans still had to cook more meals at home in 2021. After the initial excitement for scratch cooking, people are once again challenged for time and inspiration. "Many seek shortcuts for planning, shopping, cooking and cleanup, and that's where value-added meat comes in, including pre-formed patties in the meat case," Roerink says.

Besides providing convenience, those who create burgers have been experimenting with a wide variety of interesting flavor profiles and ingredient inclusions. "People also like to shake up the menu and either feel that the butcher has the better expertise to create a premium burger than they can or don't feel like buying all the ingredients," Roerink says. "Blends allow retailers to bring in hip flavor trends. For instance, mushrooms are on just about every hot food trend list this year, and playing into that may drive an unplanned purchase."

Blended burgers, such as with mushrooms and ground meat or a wider variety of blended vegetables, allow consumers to experiment with an ingredient they perceive as healthy.

"Meat still wins as the majority ingredient, typically around 70 percent, but by adding things like mushrooms, kale, carrots, etc., the vegetables give the burger a health halo boost," says Roerink. "Additionally, many taste tests show that people actually prefer the taste and texture of some blended items, so there are added advantages there as well."

Consumers are also seeing more blended protein items, particularly beef and pork. "We're seeing more chicken, turkey and other smaller proteins get in on the game, and all these bring the variety that people are looking for," Roerink says.

COMPETING WITH PLANT-BASED ALTERNATIVES

In addition, production claims are making inroads in the pre-formed burger segments, including grass-fed, organic, no-antibiotics-ever, etc. "With claims being important to the Millennial generation who are big burger fans, this is another area for future growth," Roerink says.

In the retail case, plant-based alternatives, regardless of format, decelerated throughout much of the year mainly due to distribution. "Whereas in 2020, the category gained a lot because of more stores adding plant-based alternatives to the case or adding more items, the assortment was much more flat in 2021," says Roerink.

Patty substitutes are the third-largest segment in plant-based meat alternatives, behind sausage substitutes and grinds, notes Roerink. They have a small, dedicated base but haven't overtaken beef burgers in popularity.

Culver's Harvest Veggie Burger features "fire-roasted chickpeas, mushrooms, peppers, corn and real Wisconsin cheese."

THE PAST AND FUTURE OF
WEST LIBERTY FOODS

WEST LIBERTY FOODS PRESIDENT BRANDON ACHEN TALKS WITH ANDY HANACEK ABOUT THE COMPANY'S PANDEMIC EXPERIENCES AND ITS UPCOMING PLANS.

BY ANDY HANACEK
EDITOR-IN-CHIEF

This winter, Andy Hanacek, editor-in-chief of The National Provisioner, visited with West Liberty Foods president Brandon Achen, to catch up and discuss how the company fared through the COVID-19 pandemic, his first steps as president of the company and where West Liberty Foods was headed in the post-pandemic world. What follows is a portion of their conversation.

***Hanacek:** Talk about the overall ride that has been coming in as the president, and then having to deal with the cataclysmic changes brought on by the COVID-19 pandemic.*

Achen: It's been a ride, that's for sure. About three months prior to the pandemic, we had an all-leadership meeting, and we started forming and developing our strategy for growth. We had been a company that held things pretty close to the vest. To grow, we knew we had to get more exposure. So, we invested heavily at that time on our sales and marketing departments, research and development. That's when we started working on the new logo and a new tagline of 'Signature Proteins,' because we're a company that's not just turkey. We wanted to be viewed as a solutions provider to a wide audience.

Then the pandemic hit, the country just stopped. Yes, retail did see kind of a boom, but foodservice, which is a significant part of our business, just fell off. So, we lost a substantial amount of volume. But it was kind of that V-shape where the sales dropped off, and then they picked back up much faster than we anticipated. So, in May, June, July, things really started to ramp up, and we could not produce enough pounds.

***Hanacek:** Did the pandemic help West Liberty Foods expand its customer base and diversify its customer portfolio?*

Achen: It did. I say that it kicked up the dust in the industry. There are these deep relationships in the industry, and, well, a lot of those deep relationships were broken during this pandemic, which creates opportunities for companies like ours.

***Hanacek:** Do you feel like that period where those opportunities are available is kind of ending, or still going?*

Achen: Oh, it's still hot. As long as the labor crisis, persists, it will be there. Many companies can't produce enough product. The labor situation that we're in right now, this acute labor shortage, will come to a head at some point.

***Hanacek:** Coming out of the pandemic, where does West Liberty sit now? Can you go back to that pre-pandemic meeting and just resume traveling down that path?*

Achen: Yes, we can, though the pandemic has stalled it and made it so we can't just go full-bore and start working on our strategies. However, one change we're making that we have learned during the pandemic is, we are really going to focus on our core strengths as a company.

For example, Crystal Lake Farms was a business we worked to get into. It was a great idea, a great concept, but what we learned through those ventures is, we didn't want to do something as kind of a sidecar business. We want to be laser-focused on what we do well, which is processing, producing, packaging and portioning ready-to-eat proteins. That's what we do; we're good at it, we know how to do it and we have the staff to support it.

My focus is very clear with the team, is that we know what we do well, and we've been really successful doing that. When we get outside of that realm, we tend to lose focus on the things that we should be doing. So, we're going to grow, but we're going to grow in areas that we know we're going to be successful.

***Hanacek:** I think one of the interesting things about covering West Liberty Foods over the years has been some of the truly cutting-edge and trailblazing moves the company has made, being unafraid to be the first to bring some technology or operational strategy to a plant and operation of this size. What does this "focus on the core" mean for that type of innovation at West Liberty? Does that mentality and approach work with this different type of focus on growth?*

Achen: The reason the core business has been successful is because we've done those innovative things. If we're just doing the same thing that everybody else does, we're battling on price, and that's a tough business to run. To be in a business like ours, you need good quality, good service, but you have to also have something that you can market, that your customers can market for their brand. Our landfill-free achievement has done nothing but get better with age. Now, we're focusing on net carbon neutral, and we're also doing some extremely innovative things with robotics.

***Hanacek:** That said, you do have what I might call "traditional" innovation in the works, starting with your facility here in West Liberty, Iowa? What is your plan for this operation, that you can share?*

Achen: In the next five years, we fully intend to build a new primary processing facility here in West Liberty. This has been a wonderful facility, with wonderful people, but we aren't going to renovate this facility. Instead, we're going to take all those wonderful folks and build a new facility here in West Liberty, adding automation, controlled-atmosphere stunning and the latest technology. Then, we're going to go to the next step and add even more to make the facility the best it can be.

BARBECUE GOES OFF THE BEATEN PATH

WITH SHOPPERS SEEKING NEWER BARBECUE FLAVOR AND CUTS, RETAILERS SHOULD PROVIDE THE NECESSARY PRODUCTS, RECIPES, IN-STORE EXPERTISE, PRICE POINTS AND INFORMATION TO MAXIMIZE ACTIVITY.

BY RICHARD MITCHELL
CONTRIBUTING WRITER

The barbecue sector is becoming an increasingly energetic meat and poultry merchandising area.

While ribs, chicken and pork have traditionally been the most popular meats for barbecuing — with most cuts seasoned with salt and pepper then finished with a thick, sweetish Kansas City-style barbecue sauce — consumers are embracing new recipes and cuts, says Steven Raichlen, author of the *Barbecue Bible* series of cookbooks and host of the "Project Fire" and "Project Smoke" programs on the Public Broadcasting System (PBS).

American barbecue, for instance, is being "gloriously influenced" by other fire-cooking cultures such as Thai, Korean, African, Argentinean and Mediterranean, he says. It is resulting in the greater use, for instance, of peri-peri, a spicy Portuguese hot sauce that is often slathered on chicken wings, and gochugaru, a ground spice mixture from Korea, Raichlen says, adding that "anything with heat or rich umami flavors are trending now."

Well-marbled cuts work best for barbecuing, he says. This includes collagen-rich pork shoulder, baby backs, spare ribs, pork belly and country-style ribs. Among the beef cuts that respond well to barbecuing are beef clod (shoulder), back ribs, short ribs, briskets, prime ribs and sirloin cap, Raichlen says. He notes that whole chickens, wings, thighs and chicken quarters "are also good candidates."

OFFER A VARIETY OF OPTIONS

Retailers can generate greater activity from barbecue-focused shoppers by offering high-quality cuts along with fully cooked and "better for you" and "better for the animal" options, such as all-natural meats that were developed without the use of antibiotics and are from humanely raised animals, says Sarah Findle, director of marketing and communications for Golden, Colo.-based Coleman Natural Foods. Coleman merchandises fully cooked Coleman Natural Budweiser BBQ Pulled Pork.

In addition, cross merchandising barbecue meats with other meal components can spur further interest in selections, She says, for instance, store operators should consider displaying beer near the barbecue section.

It also is important for meat department staffers to have the training necessary to effectively answer shoppers' barbecue questions, Raichlen says. "Recipe handouts at the point of sale can inspire customers too," he states. Offering barbecue samples smoked on the premises is also helpful.

Grouping "barbecue-worthy" meats together in a special section of the meat counter, meanwhile, can make it easier to educate shoppers on product options, Raichlen says. "Offering fresh, never frozen meat is always a plus and enables community butcher shops and meat counters to compete with the online sources that encroach on their businesses," he says.

Retailers can attract further attention to barbecue selections by hosting barbecue classes during the prime grilling months, he says, noting that a session on "budget barbecue" in response to rising meat prices may be popular.

Tim Shelburn, a Springfield, Mo.-based barbecue pitmaster and brand ambassador for Sheboygan Falls, Wis.-based sausage company Johnsonville, says rising meat prices are keeping many consumers from purchasing such preferred options as brisket and ribs. "I will often go to a store and only see a brisket flat and not buy it, because I want the entire packer," he says. "The flat muscle by itself is almost always double the price per pound of the whole thing. I also rarely buy short ribs because they are always cut into small squares. People who are doing barbecue want the short rib plate or at least the full rib."

Image of Coleman natural is Courtesy of Coleman Natural Foods

GO ONLINE FOR THE ANSWERS

Retailers can better understand shoppers' barbecue attitudes through online research that includes gathering information from social media influencers and recipe creators, says pitmaster Brent Little, a Memphis-based Johnsonville brand ambassador winner of the supplier's recent Titanium Tongsman grilling competition. He notes, for instance, that many barbecue enthusiasts are showing more interest in picanha, a cut of meat normally available at Brazilian steakhouses and may also be known as rump or sirloin cap. "Just look at the amount of content featuring these hashtags on Instagram," Little says.

He says that while samples still are an effective way to introduce consumers to barbecue options, shoppers "now look to social media for recipe ideas. Once people try the recipe, they will soon add it to their standard of grilling and barbecuing."

Merchandisers also can educate shoppers on barbecuing by offering instructional materials with the meats, Shelburn says. Information may include explanations about each cut or provide such details as how to remove the membrane on the back of ribs.

FATTY ACID COMPOSITION OF MEAT ANIMALS AS FLAVOR PRECURSORS

BY THU T. N. DINH[1], K. VIRELLIA TO[2], AND M. WES SCHILLING[2]

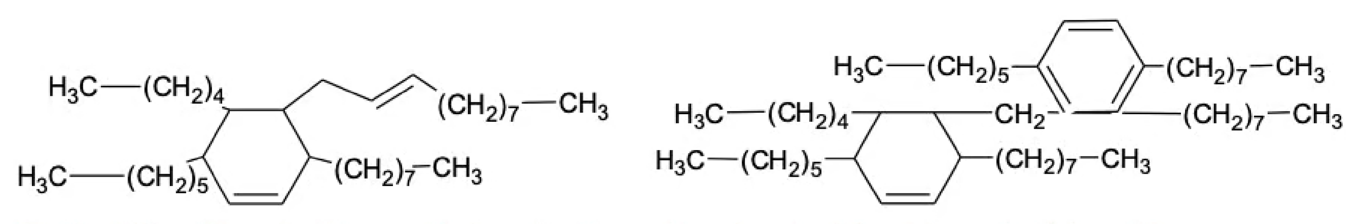
[1]DEPARTMENT OF ANIMAL AND DAIRY SCIENCE, MISSISSIPPI STATE UNIVERSITY
[2]DEPARTMENT OF FOOD SCIENCE, NUTRITION, AND HEALTH PROMOTION, MISSISSIPPI STATE UNIVERSITY

THERMAL OXIDATION OF FATTY ACIDS

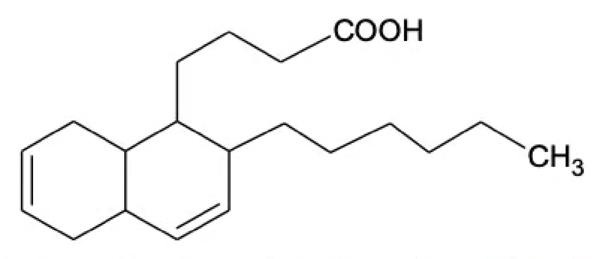
Fat in meat animals consists mostly of triglycerides, acquired from dietary sources and fatty acid de novo synthesis (Bravo-Lamas et al., 2018). Lipid-derived flavor compounds include aldehydes (alkanals), ketones, carboxylic acids (alkanoics), alcohols (alkanols), lactones, and alkylfurans (Mottram, 1998). These compounds result from the oxidation of fatty acids in various chain reactions of free radicals. These reactions, if occurring during storage, lead to an undesirable aromatic profile and the end of shelf-life (Amaral et al., 2018). However, during cooking, similar reactions under thermal oxidation produce desirable and often characteristic cooked flavor profiles (Nawar, 1984; Song et al., 2011). During thermal oxidation, unsaturated fatty acids are oxidized more quickly (Song et al., 2011) and polymerized to produce more oxygenated dimers and polymers (Nawar, 1984; Mottram, 1998). In addition, short-chain aldehydes, ketones, and alcohols are further oxidized to organic acids and esters (Song et al., 2011), and lipid peroxides are polymerized to produce cyclic carboxylic acids and their lactones (cyclic carboxylic esters).

Saturated fatty acids (SFA) are more stable than unsaturated ones; however, during cooking at 150°C or above — such as on the surface of grilled steaks — SFA are oxidized in a more complex pattern, yielding long-chain alkanes, alkanals, ketones, and lactones (Nawar, 1984). This shift in volatile composition with less short-chain and unsaturated aldehydes and alcohols yields more desirable aromas, less volatility, and higher thresholds. Although thermal oxidation of lipids occurs at as low as 60°C, the desirable composition of lipid-derived volatiles is produced at temperatures from 100°C to 300°C (Wasserman, 1972) due to the rapid oxidation of unsaturated fatty acids and other oxidation products. Lipid oxidation products also interact with Maillard reaction products, which are formed when proteins begin to unfold at an internal temperature of 35°C and coagulate from 55°C to 80°C (Wasserman, 1972). When the meat surface is roasted at 190°C and fatty acids are thermally oxidized and polymerized, milder Maillard reactions occur at an internal temperature of 60°C to 80°C (Wasserman, 1972), in which lipid-derived aldehydes are active participants, yielding some of the most characteristic volatiles of cooked meat aroma.

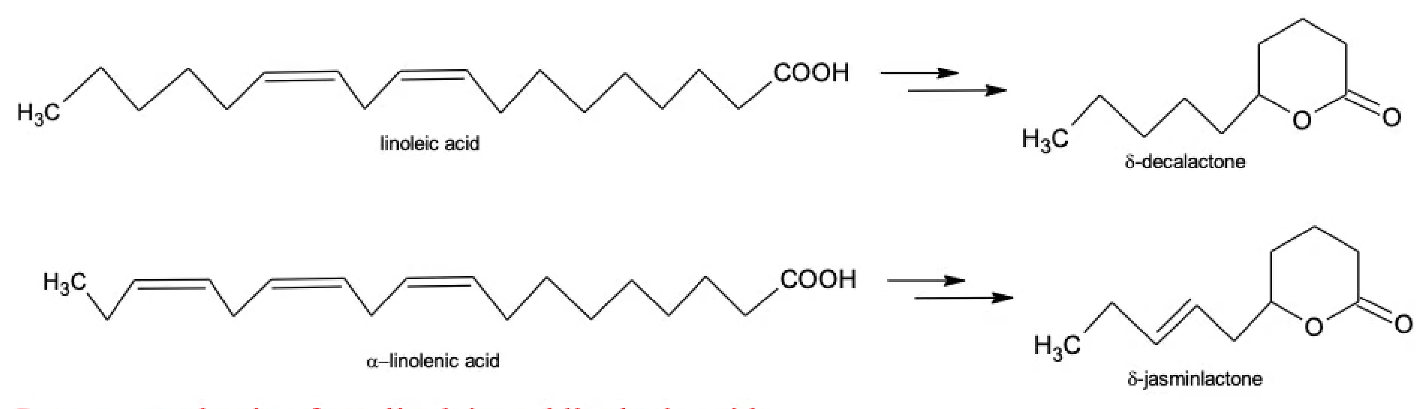
Figure 1: Thermal oxidation of fatty acids



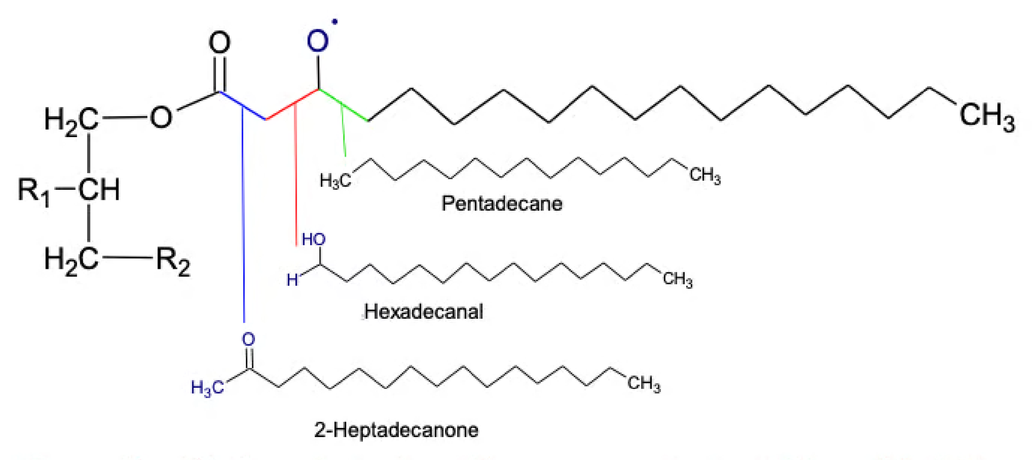
Diels-Alder dimerization and trimerization of conjugated linoleic and oleic acids



Intramolecular cyclization of arachidonic acid



Lactone production from linoleic and linolenic acids



Thermal oxidation of stearic acid – oxygen attack at C4 or C5 yields γ- or δ-lactones

INTERACTIONS BETWEEN LIPID- AND WATER-SOLUBLE FLAVOR PRECURSORS

It has traditionally been accepted that lipids are the source of characteristic flavors in meat (Hornstein and Crowe, 1960), through the formation of saturated and unsaturated aldehydes with 6 to 10 carbons. However, lipid volatile compounds have greater thresholds than volatiles derived from water-soluble compounds such as those participating in Maillard reactions (Mottram, 1998). Moreover, the interactions between lipid-derived compounds and Maillard compounds are more important for the development of meat flavor than originally thought. Legako et al. (2016) reported that USDA Standard steaks produced more n-aldehydes than USDA Prime and Low-Choice steaks.

Although the percentage of polyunsaturated fatty acids (PUFA) in leaner meat is greater than that in fattier meat because of less total lipid content, Legako et al. (2015) reported that the PUFA content in USDA Standard steaks was still less than that in USDA Prime and Low-Choice steaks. Therefore, the development of lipid flavor compounds must also be influenced by the lean portion of meat, especially the water-soluble components. Lipid oxidation products that participate in Maillard reactions are most likely aldehydes that compete with carbonyls from reducing sugars for amino compounds (Zamora and Hidalgo, 2011). This competition produces characteristic and desirable flavor compounds in cooked meat (Zamora and Hidalgo, 2011; Kosowska et al., 2017).

Gardner and Legako (2018) found that dimethyl- and trimethyl pyrazine concentrations in the headspace of ground beef were greater at higher temperatures. Their data indicated that such an increase was more prevalent in USDA Prime beef than in USDA Choice and Standard. USDA Prime beef has more fat, and these pyrazines are products of lipid–Maillard interactions. These findings imply that fatty acid oxidation products are not simply flavor compounds; they are also precursors for complex interactions with Maillard products to form a more characteristic and desirable cooked meat flavor. Such interactions do not occur in autoxidation during the storage of meats.

OFF-FLAVOR COMPOUNDS FROM LIPID OXIDATION

During refrigerated storage at 1°C to 7°C, lipid oxidation occurs slowly with minimal interactions with other compounds such as Maillard products and yields various off-odor compounds that are detrimental to meat quality. The heat used in cooking accelerates lipid oxidation but also produces a desirable profile of lipid carbonyls and carboxylic acids for cooked meat flavor and facilitates the hydrolysis of fatty acids from triglycerides or phospholipids. This hydrolysis allows fatty acids to be more reactive and produce carbonyls more quickly (Wasserman, 1972). At lower storage temperatures, autoxidation of meat produces short-chain aldehydes and alcohols that have offensive odors (Ismail et al., 2008). Although aldehydes from the Maillard reactions such as 2,3-butanedione (Hunt et al., 2016) are desirable, major aldehydes from the autoxidation of meat lipids such as hexanal are undesirable.

Another phenomenon called “warmed-over,” coined first by Younathan and Watts (1959), describes the rancidity onset of cooked meat after a refrigeration period. The warmed-over flavor is caused by the continuous oxidation of lipids after cooking. Angelo et al. (1987) reported that warmed-over flavor was characterized by hexanal and 2,3-octanedione, both of which are products of lipid oxidation. Studies in beef and pork have consistently identified these two compounds as warmed-over flavor markers. However, other lipid thermal oxidation products such as cyclic compounds are also oxidized and decomposed to offensive aromas during cooked meat storage.

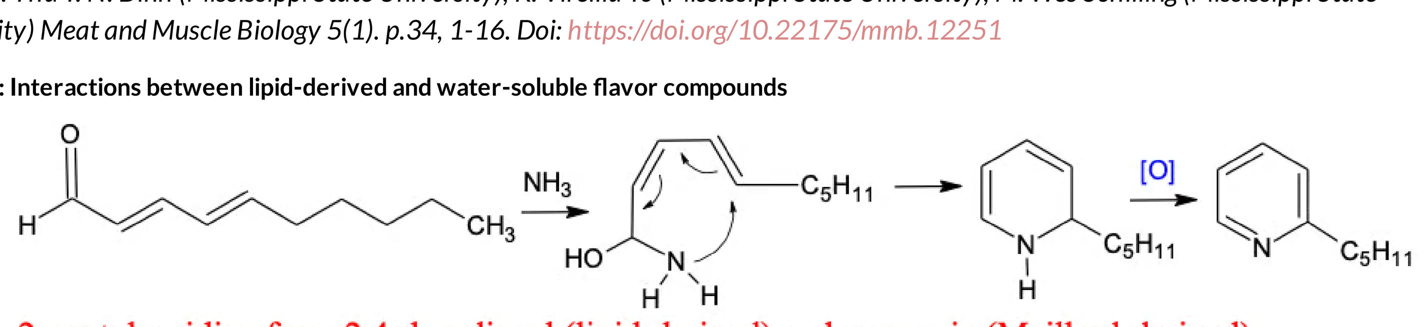
CONCLUSIONS

Volatile compounds from autoxidation of unsaturated fatty acids causes off-odors, whereas the lipid-derived volatile profile is more desirable under thermal oxidation and in the reactions with flavor compounds such as Maillard reaction products. Recent research has suggested that the development of lipid flavor compounds is influenced by the lean portion of meat. Therefore, the interactions between lipid-derived compounds, water-soluble compounds, and Maillard compounds are likely more important than originally thought and warrant further research.

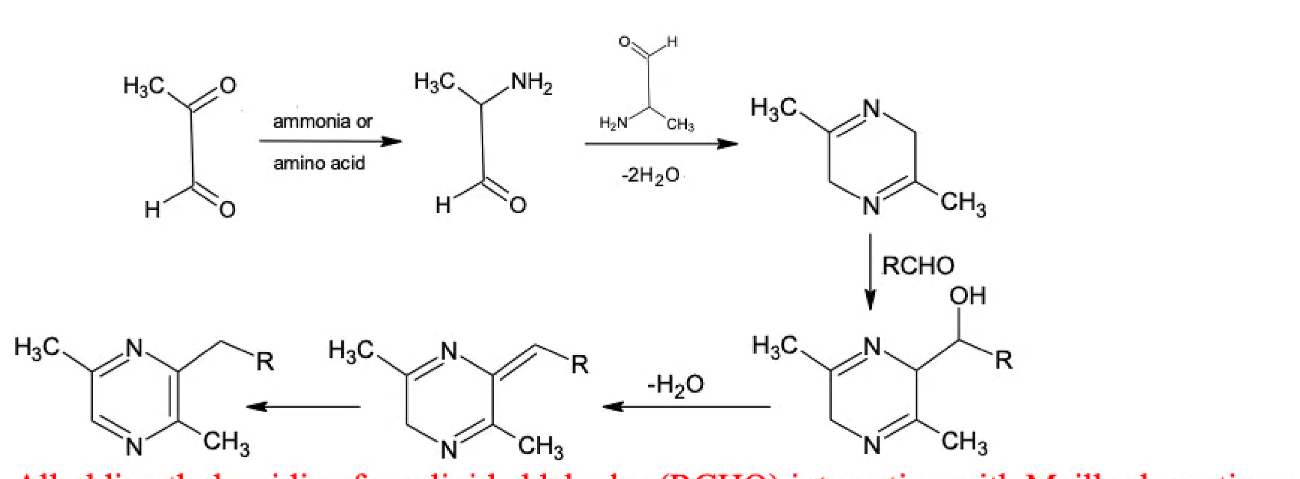
For more information please see the authors' work published in Meat and Muscle Biology: Fatty Acid Composition of Meat Animals as Flavor Precursors

Authors: Thu T. N. Dinh (Mississippi State University), K. Virellia To (Mississippi State University), M. Wes Schilling (Mississippi State University) Meat and Muscle Biology 5(1). p.34, 1-16. Doi: https://doi.org/10.22175/mmb.12251

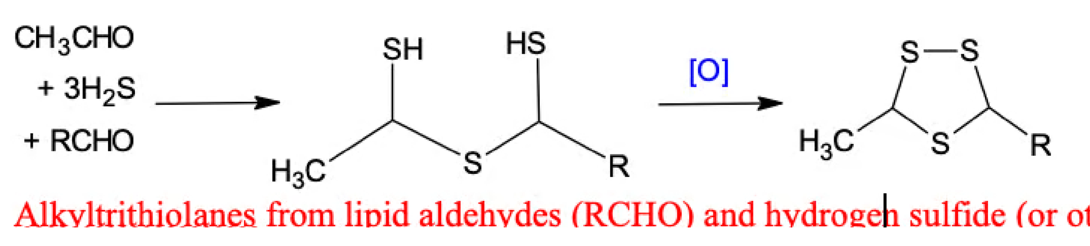
Figure 2: Interactions between lipid-derived and water-soluble flavor compounds



2-pentylpyridine from 2,4-decadienal (lipid-derived) and ammonia (Maillard-derived)



Alkyldimethylpyridine from lipid aldehydes (RCHO) interacting with Maillard reactions.



Alkyltrithiolanes from lipid aldehydes (RCHO) and hydrogen sulfide (or other sulfide bonds)

LITERATURE CITED

Amaral, A. B., M. V. D. Silva, and S. C. D. S. Lannes. 2018. Lipid oxidation in meat: Mechanisms and protective factors–a review. Food Sci. Tech.-Brazil. 38:1–15. https://doi.org/10.1590/fst.32518.

Angelo, A. S., J. R. Vercellotti, M. G. Legendre, C. H. VinnelT, J. W. Kuan, C. James Jr., and H. P. Dupuy. 1987. Chemical and instrumental analyses of warmed-over flavor in beef. J. Food Sci. 52:1163–1168. https://doi.org/10.1111/j.1365-2621.1987.tb14034.x.

Bravo-Lamas, L., L. J. Barron, L. Farmer, and N. Aldai. 2018. Fatty acid composition of intramuscular fat and odour-active compounds of lamb commercialized in northern

Gardner, K., and J. F. Legako. 2018. Volatile flavor compounds vary by beef product type and degree of doneness. J. Anim. Sci. 96:4238–4250. https://doi.org/10.1093/jas/sky287.

Hornstein, I., and P. F. Crowe. 1960. Meat flavor chemistry, flavor studies on beef and pork. J. Agr. Food Chem. 8:494–498. https://doi.org/10.1021/jf60112a022.

Hunt, M. R., J. F. Legako, T. T. N. Dinh, A. J. Garmyn, T. G. O’Quinn, C. H. Corbin, R. J. Rathmann, J. C. Brooks, and M. F. Miller. 2016. Assessment of volatile compounds, neutral and polar lipid fatty acids of four beef muscles from USDA Choice and Select graded carcasses and their relationships with consumer palatability scores and intramuscular fat content. Meat Sci. 116:91–101. https://doi.org/10.1016/j.meatsci.2016.02.010.

Ismail, H. A., E. J. Lee, K. Y. Ko, and D. U. Ahn. 2008. Effects of aging time and natural antioxidants on the color, lipid oxidation and volatiles of irradiated ground beef. Meat Sci. 80:582–591. https://doi.org/10.1016/j.meatsci.2008.02.007.

Kosowska, M., M. A. Majcher, and T. Fortuna. 2017. Volatile compounds in meat and meat products. Food Sci. Tech.-Brazil. 37:1–7. https://doi.org/10.1590/1678-457X.08416.

Legako, J. F., T. T. N. Dinh, M. F. Miller, K. Adhikari, and J. C. Brooks. 2016. Consumer palatability scores, sensory descriptive attributes, and volatile compounds of grilled beef steaks from three USDA Quality Grades. Meat Sci. 112:77–85. https://doi.org/10.1016/j.meatsci.2015.10.018.

Legako, J. F., T. T. N. Dinh, M. F. Miller, and J. C. Brooks. 2015. Effects of USDA beef quality grade and cooking on fatty acid composition of neutral and polar lipid fractions. Meat Sci. 100:246–255. https://doi.org/10.1016/j.meatsci.2014.10.013.

Mottram, D. S. 1998. Flavour formation in meat and meat products: A review. Food

Nawar, W. W. 1984. Chemical changes in lipids produced by thermal processing. J. Chem. Educ. 61:299. https://doi.org/10.1021/ed061p299.

Song, S., X. Zhang, K. Hayat, P. Liu, C. Jia, S. Xia, Z. Xiao, H. Tian, and Y. Niu. 2011. Formation of the beef flavour precursors and their correlation with chemical parameters during the controlled thermal oxidation of tallow. Food Chem. 124:203–209. https://doi.org/10.1016/j.foodchem.2010.06.010.

Wasserman, A. E. 1972. Thermally produced flavor components in the aroma of meat and poultry. J. Agr. Food Chem. 20:737–741. https://doi.org/10.1111/j.1365-2621.1970.tb12177.x.

Younathan, M. T., and B. M. Watts. 1959. Relationship of meat pigments to lipid oxidation. J. Food Sci. 6:728–734. https://doi.org/10.1111/j.1365-2621.1959.tb17326.x.

Zamora, R., and F. J. Hidalgo. 2011. The Maillard reaction and lipid oxidation. Lipid Technology. 23:59–62. https://doi.org/10.1002/lite.201100094.

WATERS OF THE UNITED STATES 3.0

By Paul Bredwell

On Feb. 7, the deadline to submit comments on a new definition of "Waters of the United States" (WOTUS) passed and the Environmental Protection Agency (EPA) will soon be finalized. This definition sets the boundaries of the authority that EPA and the Army Corps of Engineers (ACOE) have over waterways, waterbodies and drainage features it regulates under the Clean Water Act. This definition is the third to be finalized during the last three administrations that have occupied the White House. A fourth definition is expected from the current administration if it stands by a proclamation to "build on the regulatory foundation" of its first rule — what I have decided to refer to as WOTUS 3.0.

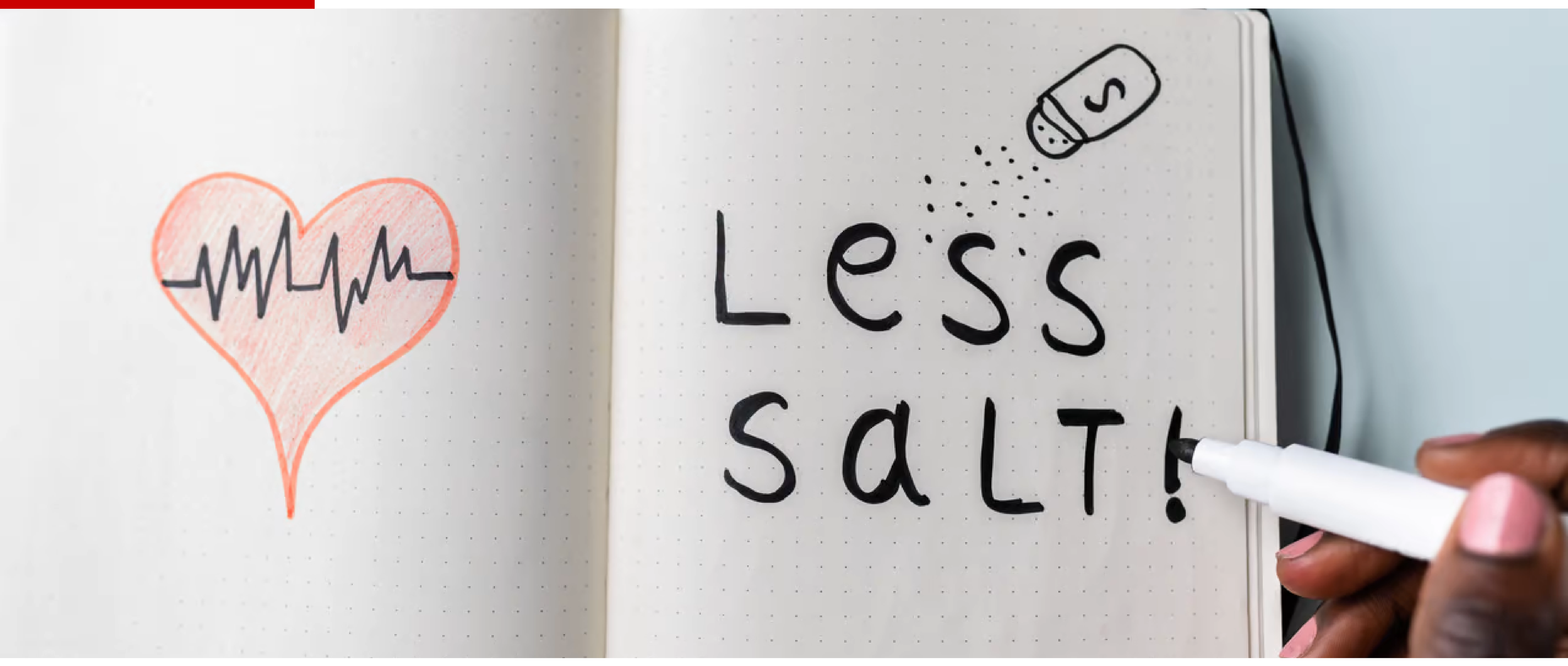
For those unfamiliar with the general details of WOTUS 3.0, it returns to rely heavily on "significant nexus," a concept crafted by former Supreme Court Justice Anthony Kennedy that attempted to provide better guidelines for determining the jurisdictional status of wetlands with no surface connection to an "in fact" WOTUS. It has become increasingly clear that EPA sees the concept as a mechanism to expand its jurisdictional reach to every water and drainage feature on the horizon, no matter how small or discernable, first in 2014 with the Clean Water Rule and now with WOTUS 3.0.

From the beginning, establishing a "significant nexus" has generated considerable criticism for the vagueness and uncertainty it brought to the jurisdictional determination process. Rather than address this criticism, the proposed Rule will expand the amplitude of the "significant nexus" concept by the introduction of new vague and subjective terms like "in the region," "similarly situated" and "significantly affect." This, in order to expand the scope of jurisdictional determination through the concept of "significant nexus" even more.

It is highly likely the current administration will move to advance its jurisdictional authority yet further following this first round of rulemaking. It appears it will double down on "significant nexus" using climate change as the lynch pin. This is foreshadowed by the current proposed rule's considerable discussion surrounding climate change and its effect on the variability and evolution of water and drainage features driven by climate variability. Imagine how uncertain the jurisdictional determination process will be if variations in temperatures and weather patterns, processes that often take years and even decades to analyze and see the results of, become a part of the "significant nexus" equation.

Once again, the rights of property owners are at great risk. If the current administration's threat to advance its jurisdictional reach more is kept, it will have to go through the rulemaking process which requires the agencies to again provide the regulated public with an opportunity to comment. When that time comes, we, the regulated public, must participate.

Paul Bredwell is Executive Vice President, Regulatory Programs at U.S. Poultry & Egg Association. Contact him at pbredwell@uspoultry.org



HOW TO SOLVE THE LOW-SALT MERCHANDISING RIDDLE

LOWER-SALT MEAT AND POULTRY PRODUCTS MAY ATTRACT THE EXPANDING BASE OF OLDER AND WELLNESS-FOCUSED SHOPPERS, BUT RETAILERS MAY HAVE A TOUGH TIME MARKETING THEM.

BY RICHARD MITCHELL
CONTRIBUTING WRITER

Spotlighting sodium, or the lack of it, in meat and poultry is an increasingly important and often challenging endeavor for retailers and processors.

Because excessive salt consumption increases the risk of high blood pressure, heart disease and stroke, merchandisers are offering more proteins containing lower amounts of sodium as they seek to attract the large band of health-conscious shoppers. Yet, with salt content still not top of mind for many people, operators must consider the benefits of devoting limited store and product space to sodium-related issues.

In fact, April 2021 consumer research by 210 Analytics LLC, a San Antonio-based market research and marketing strategies firm, found that sodium data is the sixth-most desired on-pack nutrient information for meat and poultry, trailing protein, total fat, sugar, calories and cholesterol.

Yet, growing shopper interest in having callouts of product attributes on meat and poultry makes spotlighting sodium more desirable, says Anne-Marie Roerink, 210 Analytics principal. "The importance of low or lower sodium callouts tend to rise with age," she says. "People with heart issues are often following low-sodium diets, and there is an opportunity to bring them flavorful items with lower levels of sodium."

While fresh, unprocessed meat and poultry typically has low sodium levels, processors often add salt to the proteins to enhance taste and help prevent microbial growth, reports the Washington, D.C.-based North American Meat Institute (NAMI). Adding salt also better enables processors to extract salt-soluble meat proteins for emulsion stability; to enhance water-holding ability; to decrease the loss of moisture during cooking and storage of whole-muscle cuts such as chops, roasts and hams; and to help bind proteins in processed meats and function as a binding agent between meat and fat emulsions, NAMI states.

> BECAUSE MANY CONSUMERS STILL MAY PERCEIVE LOW-SODIUM MEAT AND POULTRY AS BEING BLAND OR POOR TASTING, MERCHANDISERS SHOULD PRIMARILY SPOTLIGHT THE ADVANTAGES OF SUCH SELECTIONS

BE CREATIVE IN EDUCATING THE CONSUMER

Versions of lower-sodium products such as lunch meats, processed and value-added selections and ham, attract shoppers who are sensitive to sodium content and might have previously "automatically written off" such items, Roerink says.

But with meat and poultry packages and supermarket meat departments frequently lacking the real estate to sufficiently spotlight lower-salt products, it can be difficult for merchandisers to properly emphasize the selections, she says.

"Store signage is usually reserved for calling out promotions, brands or production claims such as grass-fed or organic, so it is easier for the lower-sodium message to go unnoticed to consumers," Roerink says, adding that attaching low-salt messaging to packages can make it more difficult for shoppers to view the meat.

It often is more effective to highlight lower-salt products on the retailers' and brands' websites, which makes it easier for consumers to decipher while helping to reduce the clutter of in-store marketing vehicles such as shelf tags and promotional signs.

Merchandisers can further educate consumers about the availability and benefits of low- or lower-sodium meats by hooking into established heart health campaigns, such as February's American Heart Month, or teaming with spice and flavor specialists to publicize the availability of low-salt products with favorable taste profiles, Roerink says.

ACCENTUATE THE POSITIVE PRODUCT ELEMENTS

Because many consumers still may perceive low-sodium meat and poultry as being bland or poor tasting, merchandisers should primarily spotlight the advantages of such selections, says Suzy Badaracco, president of Culinary Tides Inc., an Oakland Park, Fla.-based food industry forecasting think tank.

"Promote the benefit that the product offers instead of what it is missing as that would be seen as a negative, especially when it involves salt," she says, adding that emphasizing heart health or incorporating such messaging as "all the natural goodness with nothing else added" could be especially attractive to lower-sodium shoppers.

LEGAL ISSUES WITH APPAREL

BY ELIZABETH FUHRMAN
CONTRIBUTING WRITER

The fundamental law that applies to apparel for meat and poultry plant workers is the Fair Labor Standards Act (FLSA), and it addresses a couple of different issues. First is donning and doffing. The other is in one of FLSA's provisions that essentially says that the union, the company and employer can agree that time spent in preparation for activities can be excluded from compensable time. In other words, preliminary and postliminary time by agreement can be not compensable.

It was that provision that started this idea of clothing, such as what is clothing and what is clothes changing, etc., explains Richard Alaniz, labor and employment lawyer and founder of Alaniz Law & Associates, in Houston. Over the years, the questions became more focused on what is donning and doffing and what are clothes for the purposes of someone donning and doffing? The issue, when talked about more specifically, has been widely scattered in circuit courts. For example, "Does clothing technically involve protective equipment?" has been litigated.

It was not until 2014 that the Supreme Court weighed in and gave what it considers to be a definition of donning and doffing. The definition of donning is tied to what is integral and indispensable for purposes of performing the duties or the principal activities of what the employee is hired to do. In other words, if the donning and doffing is absolutely necessary for an employee to perform the principal activities for which they are hired, then donning and doffing is compensable, Alaniz explains.

While it has been a complex issue, from the legal side it comes from FLSA in both context whether parties can agree that it is not compensable or whether it is donning and doffing for purposes of compensation, irrespective or where no agreement exists, which is normally the case with processing plants and unions.

"They don't have those kinds of provisions," Alaniz explains. "They are more common in other types of settings."

NORMALLY PROCESSING PLANTS THAT ARE UNIONIZED DO NOT WANT TO DEAL WITH THE PROVISIONS BECAUSE THE TIME SPENT DONNING AND DOFFING CAN VARY DRAMATICALLY DEPENDING ON THE APPAREL AND EQUIPMENT INVOLVED TO BE WORN AND THE TYPE OF OPERATION, SUCH AS A BEEF VS. PORK VS. POULTRY PROCESSING PLANT

While it is rare to see provisions in processing plants, it is still a part of the law. Normally processing plants that are unionized do not want to deal with the provisions because the time spent donning and doffing can vary dramatically depending on the apparel and equipment involved to be worn and the type of operation, such as a beef vs. pork vs. poultry processing plant. For example, a poultry processing operation might be less intensive in terms of protective equipment than a beef processing employee working on the slaughter line. Most processing plants follow the procedure that they will have employees punch in before donning all the equipment, and they will have them punch out after they have doffed it at the end of the shift to avoid any of the disputes that have arisen over the years about necessity.

Additionally, employers might add time, such as five or six minutes to a lunch period to accommodate employees taking off and putting back on their equipment. The lunch period is probably one area with donning and doffing that potential legal issues may still arise, especially in states, such as California and Pennsylvania, that have strict wage hour laws, Alaniz says. With processing plants' increasingly diverse workforce, potential issues also may arise accommodating religious attire, but Alaniz believes the meat and poultry industry is equipped to be adaptable to employees' religious garments.

As far as the pandemic, in terms of processing plants, no legal issues under any of the Centers for Disease Control and Prevention (CDC) or the Occupational Health and Safety Guidelines' rules for employers adopting them of their own volition have arisen.


New !
Jarvis Stunner Testers
Models AST 107-113
Fast and Accurate
Stun Testing
Equipment!
Data logs accurate model USSS
Stunner testing, including: firing speed,
expected velocity, and test pressure.
JARVIS
JARVIS
USSS Stunning
System Tester
Control Panel and Tester
We Offer
Free Service
and Training
Detachable Nose Guides!
1058292 Nose Guide
USSS-21
1058293 Nose Guide
USSS-1
1058298 Nose Guide
USSS-3
1058295 Nose Guide
USSS-2A
1058296 Nose Guide
USSS-1/2
1058299 Nose Guide
USSS-22A
for 60mm
1058297 Nose Guide
USSS-22A
for 54mm
JARVIS®
World Leader in Meat Processing Equipment
View these tools on our website
Jarvis Products Corporation
33 Anderson Road, Middletown, CT 06457
Tel: (860) 347-7271
Fax: (860) 347-9905
E-mail: sales@jarvisproducts.com
Website: www.jarvisproducts.com

PROCESSORS EMBRACE AUTOMATION

WEIGH, PRICE LABELERS EXPAND FUNCTIONS

BY HALLIE FORCINIO
CONTRIBUTING WRITER

Weigh, price, labelers continue to shift from semiautomatic to automatic machines as sales of case-ready products and deli products grow and processors address personnel shortages.

Automating the weigh, price, labeling process offers many benefits beyond reducing labor requirements. Automated equipment reduces product giveaway, increases efficiency, applies labels more precisely and consistently, cuts downtime, accelerates changeover, enhances hygienics due to less operator handling of the product, and digitizes the process so information for traceability and process analysis can be captured.

Case-ready products are a driving force in the automation of weigh, price, label systems. The case-ready market is so strong that Tyson Foods has built a plant in Eagle Mountain City, Utah, which opened in 2021. In addition, Tyson plans to invest $55 million to reopen a plant in Columbia, S.C., and revamp it to produce retail-ready, portioned packages of fresh beef and pork, as well as ground beef, for grocery and club stores in the eastern U.S.

"…this new [South Carolina] facility will help us meet growing demand from our retail customers with high-quality, pre-cut, pre-packaged fresh beef and pork," says Nate Hodne, senior vice president and general manager of the Portioned Protein Innovations team for Tyson Fresh Meats, the beef and pork subsidiary of Tyson Foods. The plant is expected to employ 330 people. Tyson also operates case-ready beef and pork packaging lines in plants in Iowa, Tennessee and Texas.

> "AUTOMATED EQUIPMENT REDUCES PRODUCT GIVEAWAY, INCREASES EFFICIENCY, APPLIES LABELS MORE PRECISELY AND CONSISTENTLY, CUTS DOWNTIME, ACCELERATES CHANGEOVER, ENHANCES HYGIENICS DUE TO LESS OPERATOR HANDLING OF THE PRODUCT, AND DIGITIZES THE PROCESS SO INFORMATION FOR TRACEABILITY AND PROCESS ANALYSIS CAN BE CAPTURED.

Increasingly flexible weigh, price, label machines are designed to handle different size products with minimal adjustment. Label sizes can vary too. Label widths generally measure about 5 or 7 inches with a print area of roughly 4 or 6.5 inches, respectively. Label lengths can vary considerably from less than 1 inch to more than a foot.

Systems may operate as standalone units or integrate with line-, plant- and enterprise-level systems so orders can be shipped the same day they are received. This networkability also can help generate a serialized record to enable product traceability throughout the supply chain.

The fastest weigh, price, label systems handle more than 150 packs per minute, and some machines can accommodate linerless labelstock to eliminate liner waste and score points for sustainability. National Type Evaluation Program (NTEP)-approved machines simplify label design. The NTEP certification, issued by the National Conference on Weights and Measures, confirms the device(s) meet the requirements of Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices, NIST Handbook 44.

Weight, price, label systems typically offer a small footprint to fit in tight spaces, a choice of scale capacities and operating modes (catch weight, fixed weight, average weight or multi-rank weighing). The equipment may accommodate multiple labeling heads and thermal or thermal-transfer printers. Processors often may choose good, better or best print resolution. Labels typically are applied to the top and bottom of each package. Potential label application processes include air-jet, piston, rotary or belt. Print speeds can reach up to 16 inches per second (ips) but more typically fall in the range of 8 to 11 ips. Vision systems and sensors may be integrated to confirm label presence, position and print quality, scan and verify readability of barcodes, provide optical character recognition and capture code data.

Other common weigh, print, label equipment attributes include modular design; stainless steel construction; onboard label design software; large, intuitive touchscreen operator interface; quick belt changeover; and automatic printer repositioning.

Options depend on the machine builder but commonly consist of features such as remote diagnostics, integrated metal detection, radio frequency identification tagging, ability to withstand washdown conditions, plug-and-play components to expedite maintenance and reject mechanisms to ensure no faulty product ships.

PMMI

THE RISE OF PLANT-BASED PRODUCTS

The plant-based food market grew almost twice as fast as the total U.S. retail food market in 2020. Sales of plant-based meat, dairy, and eggs increased by 27%, bringing the total plant-based market value to $7 billion, according to data from the Plant-Based Foods Association (PBFA) and The Good Food Institute (GFI).

The largest plant-based category remains milk, but even as the most developed and consumer accepted plant-based food, plant-based milk grew 20% in dollar sales, up from 5% in 2019. This growth is twice as fast as traditional cow's milk, and 39% of U.S. households now purchase plant-based milk.

While plant-based meat is the second-largest plant-based category, its growth was first among plant-based products, with sales growing 45%. The most significant increase came in refrigerated plant-based meats as sales grew 75% in 2020, with products increasingly shelved adjacent to conventional meat. This placement in the meat section in similar package styles helped propel growth in the segment, with refrigerated plant-based meat sales increasing more than twice as fast as frozen plant-based meat sales. More consumers are identifying plant-based meats as a legitimate alternative to meats.

COVID-19 gave retail sales of plant-based foods an extra boost at a time when interest in the sector was already surging, driven by a focus among consumers on personal health, sustainability, food safety, and animal welfare. According to a report from Mintel, these factors will continue to propel consumption; it notes that 35% of U.S. consumers agree with the statement, "The Covid-19/coronavirus pandemic proves that humans need to eat fewer animals."

Initially, packaging's most prominent role for plant-based foods was protection and information. Plant-based options touted as alternatives to meat and dairy typically found their way into packaging structures similar to conventional options. From a marketing perspective, this allowed the products to blend in more with regular options as consumers need to find new options. The labeling and indications on packages made consumers aware of the differences and touted the positive claims of plant-based products. The PDFA's certified plant-based seal program is the first plant-based food certification, for example, and this label instills confidence in consumers.

> WHILE THE EXPANDING MARKET FOR PLANT-BASED PRODUCTS IS NUDGING THE FOOD INDUSTRY TO USE MORE BIODEGRADABLE MATERIALS SUCH AS PLA, THE MORE SIGNIFICANT SHIFT TOWARDS THE MATERIAL LIES IN ITS LESSER CARBON FOOTPRINT.

Now that plant-based brands have obtained a foothold commercially, better packaging solutions can avoid confusion about product ingredients and environmental benefits while offering a more user-friendly experience. This is particularly true as it pertains to sustainable packaging. Millennials and younger consumers turn to plant-based products to invoke a more sustainable planet. Transitioning to plant-based meat and dairy has environmental benefits, and the natural next step is to include packaging that also reduces the carbon footprint. Some plant-based products are beginning to transition to packages made of monolayer films or in sustainable materials containing polylactic acid. The compostable and recyclable material is growing in use as an environmental-friendly alternative to fossil fuel plastics like polyethylene, polystyrene and polypropylene. Derived from several different renewable plant-based materials like sugar cane or cornstarch and with characteristics like petrochemical-derived plastics, PLA is resilient, rigid and UV-light resistant.

While the expanding market for plant-based products is nudging the food industry to use more biodegradable materials such as PLA, the more significant shift towards the material lies in its lesser carbon footprint. The demand for PLA projects to reach $1.7 billion by 2026, with developments underway for large-scale application in rigid containers for yogurt, juice, water and many other food products in the future. Further, with demand increasing from the flexible packaging sector, original equipment manufacturers (OEMs) of packaging machinery are incorporating the films into new machines and developing retrofits for machinery already in place.

No other East Coast event will offer such a wide range of state-of-the-art packaging and processing solutions as PACK EXPO East (March 21-23, 2022; Pennsylvania Convention Center). With 400 exhibitors, PACK EXPO East provides a convenient and rewarding opportunity for consumer packaged goods (CPG) and life sciences professionals to explore packaging and processing technology, connect with suppliers and find the solutions needed to compete in a changing marketplace conveniently located just a drive or train-trip away for most of the East Coast. To register or learn more, visit packexpoeast.com.

THE IMPORTANCE OF RECLOSABILITY IN MEAT PACKAGING

BY GIANNI HOLZEM, FRESH-LOCK COMMERCIAL SALES DIRECTOR, REYNOLDS CONSUMER PRODUCTS

Per Information Resources Inc. report data, 31% of all meat shoppers have ordered meat online in 2021, up from 19% the year prior. The data also found that this resulted in a 90% increase in meat e-commerce, which now equals 10% of all meat purchases. With this increase in meat sales, especially in online ordering, meat products need to have superior packaging to withstand distribution, stand out on in-store and online shelves, and provide a positive consumer experience.

Meat brands and packagers can benefit from effective flexible packaging solutions to keep up with this rising consumer demand for meat products.

PAIN POINTS IN MEAT PACKAGING

As packagers and producers know, an efficient packaging operation allows the product to run faster on lines. A wide operating window helps enable the closures to seal well with films and structures to help prevent leaking or loss of atmosphere. With all meat products, the right film material and compatible closure, along with an efficient operation, help maintain the quality of the product.

According to the USDA, it is safe to freeze meat within its original packaging. Despite this fact, many consumers still decide to repackage their meat products. When using secondary packaging, the consumer seeks to maintain quality, prevent freezer burn, or access the product over multiple occasions. Reclosable flexible packaging can eliminate the need for secondary packaging with a quality closure to help keep the product in its best condition while helping combat food waste.

76% of consumers say features like reclosability are important for packaging satisfaction, and they feel the packaging should be made of materials that prevent the product from leaking or breaking. Consumers should have the same experience with your product with every use, even after multiple opening and closings.

While specific flexible packaging materials and closures offer many benefits on the operational side, the consumer experience is often what will ultimately drive increased revenue.

RECLOSABLE FLEXIBLE PACKAGING FOR THE MEAT INDUSTRY

Used in combination with proper refrigeration or freezing, reclosable flexible packaging can provide a strong moisture and oxygen barrier that can help extend the shelf life of meat products. Once the meat package is opened, when the closure is resealed properly, the moisture barrier can be renewed while the product is consumed over multiple serving occasions.

In addition to finding packaging that is suitable to your meat product's specific requirements, it must also provide a positive experience for the consumer. With frozen, deli, and processed meats, each need to be packaged correctly to maximize their flavors and prevent moisture loss. Luckily, improved technologies in reclosable flexible packaging have offered ways to help maintain the quality of meat products longer—creating more confidence in consumers and more options for packagers and producers.

Packaging your variety of meat products with innovative flexible packaging and closures will help leave a lasting impression to all consumers, while reinforcing product quality and benefits.

Gianni Holzem is the Fresh-Lock commercial sales director at Reynolds Consumer Products. Fresh-Lock products are designed and produced by Presto Products, a business of Reynolds Consumer Products.

AD INDEX

CLASSIFIED ADS

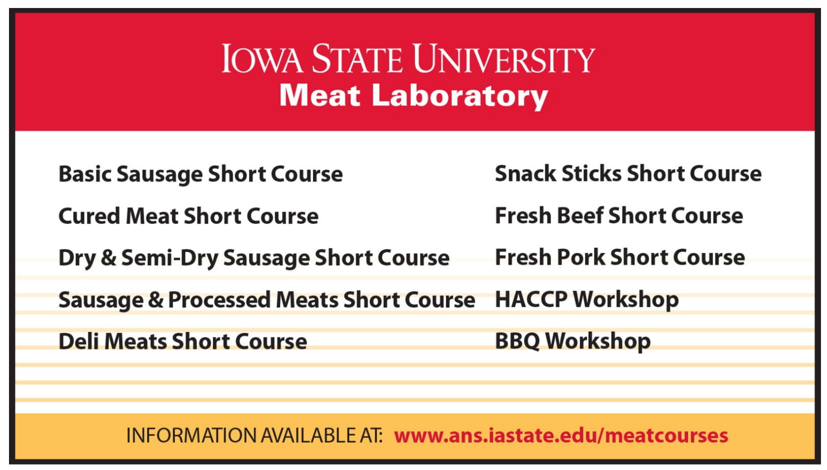
CLICK BOXES BELOW TO LEARN MORE

EQUIPMENT FOR SALE

MEAT PROCESSING EQUIPMENT FOR SALE

FOOD SAFETY

EDUCATION AND TRAINING



EQUIPMENT FOR SALE

ARE YOU SENDING YOUR CUSTOMERS CONTENT THEY VALUE?

We Create Great Content to Drive Your Marketing

Your brand has a personality and a story to tell.
Our agency guides your content marketing efforts by creating a unique plan that tells your story.

bnp ENGAGE

Our Services

- Interactive Digital Marketing
- Co-branded eBooks
- Content Creation
- Custom Publishing & Advertising

Visit www.BNPEngage.com for more information.

SOURCEBOOK PREMIUM SPONSORSHIPS

Below are premium listings from our Sourcebook. For the complete list of companies and products, go to:

eagle
QUALITY. ASSURED.

HAWKINS
Food Ingredients Group

hovus
...inventive packaging solutions

ISI
INGREDIENTS SOLUTIONS, INC.
SPECIALTY HYDROCOLLOIDS

PUBLISHING/EDITORIAL STAFF

EDITORIAL

Chris Luke | Group Publisher
lukec@bnpmedia.com | (908) 917-4171

Andy Hanacek | Editor-in-Chief
hanaceka@bnpmedia.com | (847) 405-4011

Sam Gazdziak | Managing Editor
gazdziaks@bnpmedia.com | (770) 330-8184

Elizabeth Parker | Website Managing Editor
parkere@bnpmedia.com | (248) 786-1643

Cory Emery | Art Director emeryc@bnpmedia.com

Jennifer Allen | Advertising/Production Manager
allenj@bnpmedia.com | (248) 833-7347

CORPORATE

Darrell Dal Pozzo | Chief Experience Officer

Rita M. Foumia | Human Resources & Information Technology Director

Vincent M. Miconi | Production Director

Lisa L. Paulus | Finance Director

Michael T. Powell | Creative Director

Beth A. Surowiec | Clear Seas Research Director

Scott Wolters | Chief Event Officer

SALES

Chris Ward | Account Manager
AL, CT, DE, FL, GA, KS, MD, ME, NC, NJ,
NY, PA, RI, SC, VA, VT, Puerto Rico
cbwmedia.llc@bnpmedia.com | (678) 361-7815

Wayne Wiggins | Account Manager
AK, AZ, AR, CA, CO, HI, ID, IL, IN, IA, KS, MI,
MN, MO, MT, NE, NV, NM, ND, OH, OK, OR, SD,
UT, WA, WI, WY
wwiggins@wigginscompany.com | (415) 377-6130

Laurel Metz | Account Manager | MA, NH, Ontario
metzl@bnpmedia.com | (248) 833-7300

Pam Mazurk | Account Manager
International outside of Mexico and Latin America
mazurkp@bnpmedia.com
001-847-247-0018 (O) | 001-847-226-6729 (M)

Becky Mcclelland | Classified Sales
mcclellandb@bnpmedia.com | (248) 833-7385

EVENT & WEB MARKETING

Nikki Smith | Online Development Director

Erin Mygal | Directory Development Director

THE NATIONAL PROVISIONER (ISSN: Digital 1938-3835) is published 12 times annually, monthly, by BNP Media II, L.L.C., 2401 W. Big Beaver Rd., Suite 700, Troy, MI 48084-3333. Telephone: (248) 362-3700, Fax: (248) 362-0317.

Change of address: Send old address label along with new address to THE NATIONAL PROVISIONER, P.O. Box 2145, Skokie, IL 60076. Email: nationalprovisioner@omeda.com For subscription information or service, please contact Customer Service at: Phone: (800) 952-6643 Fax: (847) 763-9538.

EDITORIAL BOARD

CONTACT US

PH: (248) 362-3700 | MAIL: 2401 W. BIG BEAVER RD, TROY MI 48084