

JANUARY 2021

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THE CHICKEN CRAZE CONTINUES

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NEW FROM NATIONAL PROVISIONER VIDEOS

Andy Hanacek, Editor-in-Chief of *The National Provisioner*, talks with chicken farmer Steven Brake, owner of S&N Enterprises LLC. Brake discussed the future of agriculture and how technology can help bridge the gap between the agriculture industry and consumers.





2011 RECALLS: YEAR IN REVIEW

BY SHAWN K. STEVENS
FOOD INDUSTRY COUNSEL LLC

Once again, the meat industry deserves to be congratulated for another great year! With fewer than 50 recalls at the time of this writing, 2021 will go down in history as one of the safest years for the meat industry in the last two decades.

That is quite an accomplishment considering there were 125 and 124 recalls of U.S. Department of Agriculture (USDA)-regulated products in 2018 and 2019, respectively. While in 2021 we witnessed the lowest number of recalls in the last 20 years with only 33, the last time the meat industry had a year with less than 50 recalls was 2007. Being able to maintain back-to-back years with record-low recall numbers in an amazing accomplishment.

So, where were the successes in 2021? Pathogen control was a major victory for the industry. While there were more than 50 recalls for pathogens in 2018, there were only 12 in 2021. Five recalls were announced for *Listeria monocytogenes*, four for *Salmonella*, two for *E. coli* O157:H7, and one for *Bacillus Cereus*.

Recalls for foreign materials were also way down. In 2021, there were only nine recalls for the presence of foreign materials. Six involved plastic and the remaining three involved glass, rubber and an unwanted (and unexpected) bone. Here too, the industry managed to pull off another record year.

“AS WE LOOK BACK AT THE STATISTICS AND ACCOMPLISHMENTS IN 2021, WE CAN TRULY SAY WITH PRIDE AND CONFIDENCE THAT THE U.S. MEAT INDUSTRY IS PRODUCING AND SUPPLYING PRODUCTS THAT ARE SAFER THAN EVER BEFORE.”

The meat industry also achieved rarely seen success with respect to allergen control. In 2021, there were only slightly more than 10 recalls for undeclared allergens. Milk was the leading undeclared allergen culprit, with soy and fish taking second and third place, respectively. One of the fish recalls involved a chef salad; the other involved undeclared anchovies finding their way into a beef jerky product.

As we begin 2022, you should all commend yourselves for a great year and your notable accomplishments. As we look back at the statistics and accomplishments in 2021, we can truly say with pride and confidence that the U.S. meat industry is producing and supplying products that are safer than ever before. Work to keep up the great work this year, and please know that we are all thankful for all you do.

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THE CHICKEN CRAZE CONTINUES

2022
poultry
report

ATTRACTIVE PRICING, A PROMINENT HEALTH HALO AND THE POPULARITY OF CHICKEN SANDWICHES PUT POULTRY ON SOLID FOOTING.

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BY RICHARD MITCHELL

In a food sector characterized by higher prices and changing consumer eating habits, poultry is demonstrating strong resilience.

Such factors as a reputation for being a healthier and lower-cost protein option enables poultry, especially chicken, to maintain its popularity while presenting merchandisers with newer growth opportunities, analysts say.

Chicken sales fell just 2.7% versus the year-earlier period for the 12 weeks ending Oct. 31. Meanwhile, beef saw an 8.8% drop for beef; pork, a 5.9% decline; and a 4.6% decrease for meat overall, according to Information Resources Inc. (IRI), a Chicago-based market research firm. Turkey volume sales were up 13.7% during the period.

"Poultry is positioned better than many of the other proteins," says Jim Wisner, president of Wisner Marketing, a Gurnee, Ill.-based retail consultancy. "Price increases have been quite less, so the price spread between poultry and other meats has increased significantly."

While the U.S. Department of Agriculture's (USDA's) Economic Research Service (ERS) forecasts that pork prices will increase between 7% and 8% in 2021 and beef and veal prices will increase from 7.5% to 8.5%, poultry prices will only increase between 4% and 5%.

"Poultry on a relative basis is even a better value than before the pandemic," Wisner says. "Beef costs, for instance, have gone through the roof." That is important, as significantly higher meat prices makes it more likely that more consumers will switch from beef and pork to plant-based proteins while still purchasing poultry, he says.



Photo courtesy of Zaxby's

"Poultry faces much less risk than other proteins as plant-based becomes more economically viable," Wisner says. "Poultry prices have not increased all that much relative to the rate of inflation."

The average advertised price for value packs of boneless/skinless chicken breast at supermarkets was \$2.33 during the period of November 26 to December 2, up from \$1.96 a year earlier, the USDA states in its National Retail Report — Chicken. Figures are from a survey of 29,200 major retail supermarkets.

Prices also were up for value packs of thighs (\$1.23 versus \$1.04 a year earlier); drumsticks (\$1.14 from \$0.94); and boneless/skinless thighs (\$2.36 versus \$1.70). In addition, whole wings rose to \$3.57 from \$2.90, and the average price for bagged fryers was \$1.45, up from \$1.04.

A pause in poultry promotions

In addition to price attractiveness, poultry also is benefitting from a stronger health and wellness halo, particularly as consumers become more health-conscious because of the COVID-19 pandemic, he says.

Marketers can better succeed by emphasizing "chicken's carefully developed health halo with an economical choice message," says Anne-Marie Roerink, principal at 210 Analytics, a San Antonio-based market research and marketing strategies firm and preparer of The Power of Meat 2021 report. "Poultry is one of the lower areas in terms of year-on-year inflation," she says. "Chicken always was more cost effective than beef, and that difference is substantially bigger now."

While it was a down year for the meat and poultry sector ...

Product	Dollar Sales	% Change	Volume Sales	% Change
Meat department	\$81,515,962,277	1.0%	20,547,322,339	-4.2%
Beef	\$30,008,903,300	1.3%	5,317,450,706	-4.5%
Chicken	\$13,393,134,224	0.7%	5,246,935,540	-4.4%
Pork	\$7,062,458,568	-1.1%	2,356,311,800	-6.6%
Turkey	\$2,685,787,989	-0.4%	1,230,975,998	-1.5%
Lamb	\$529,929,960	13.3%	60,590,440	6.3%
Meat alternatives	\$484,315,166	7.1%	59,632,422	5.1%
All other fresh meat	\$167,143,707	-5.4%	28,999,187	-10.9%
Fowl/exotic	\$124,379,688	3.7%	16,495,432	2.6%
Veal	\$58,665,803	1.0%	7,633,271	-0.3%
Stuffed vegetables	\$57,893,337	22.2%	13,595,101	0.6%
Meat Complements	\$7,613,980	-15.5%	2,879,615	-29.2%

Source: Information Resources Inc. (IRI). Figures are for the 52 weeks ending Oct. 31, 2021. Volume and percent change is versus the year-earlier period.

Yet, the prospect of empty shelves because of possible supply chain issues are contributing to a decrease in chicken features in weekly circulars, she says. "Retailers know that out of stocks, especially on promotional items, are one of the biggest drivers of trip dissatisfaction," Roerink says. "Many retailers may opt to run fewer promotions rather than quickly running out of stock."

Just 44.2% of supermarkets advertised chicken between November 26 and December 2, down from 67.7% a year earlier, the USDA notes. In addition, only 6.6% of outlets ran a no-price promotion such as buy one/get one free versus 17.8% a year earlier.

The so-called chicken sandwich wars at the major quick service restaurant chains, meanwhile, is adding further allure to poultry while creating strong merchandising opportunities for supermarkets, analysts say.

Chicken sandwiches stay in the spotlight

"Fast-casual restaurants have had an amazing run with chicken sandwiches over the past four years while creating a huge category," says Chris DuBois, IRI senior vice president of the protein practice. "The world has good chicken sandwiches available, but consumers visiting supermarkets only see a lot of overwrapped trays with chicken breast."

With many more people still working at home because of the pandemic and seeking quick meal solutions, grocers will benefit by offering chicken sandwiches that are already breaded or marinated and just require heating, he says.

"Every big restaurant chain, and even local chains, have fabulous chicken sandwiches," DuBois says. "If supermarkets can crack that code and provide chicken sandwiches that are like those at quick-service outlets, they will have a huge seller."



Photo courtesy of Popeyes Louisiana Kitchen

The popularity of chicken sandwiches at fast-food outlets, meanwhile, will be ongoing, Wisner says, with operators continuing to add more options. McDonald's Corp., for instance, already offers five varieties of chicken sandwiches, along with chicken nuggets.

"Chicken on restaurant menus is increasing at light speed," Wisner says. "It is maintaining a highly competitive position at foodservice for share of stomach."

Along the with popularity of chicken breast, supermarkets are having an "enormous run" with chicken wings and chicken thighs, with dollar sales up about 11% and 18%, respectively, versus a year earlier, DuBois says. "You can't grow enough chickens to take all the wings needed to satisfy Americans," he says.

The stronger interest in chicken thighs also illustrates the greater demand for dark meat, he says: "The American chicken industry was built on skinless, boneless chicken breasts, but in the last five years there has been a big switch and enthusiasm towards dark meat. People are welcoming different flavors and cuts."

Attractive prices also help make poultry a more popular stock-up item, Wisner says, noting further growth opportunities exist in the prepared foods sector.

"Retailers should look at what they can do to add value to chicken, particularly because shoppers have a heightened interest in increasing and enhancing the variety of what they are eating," he says. Yet, with chicken having a lower ring than beef and generating less profit per pound, "the question is how can we increase the value and price to the consumer at a rate much lower than the cost of offering it?" Wisner asks.

Recent activity reveals greater protein loyalty by poultry purchasers

Product	Dollar Sales	% Change	Volume Sales	% Change
Meat department	\$19,019,065,486	6.2%	4,410,705,571	-4.6%
Beef	\$7,071,867,224	6.5%	1,166,296,987	-8.8%
Chicken	\$3,223,757,015	6.8%	1,298,595,005	-2.7%
Pork	\$1,699,091,936	9.1%	532,125,924	-5.9%
Turkey	\$507,293,599	9.7%	160,557,444	13.7%
Lamb	\$111,625,713	9.6%	11,963,255	-0.3%
Meat alternatives	\$107,416,218	-3.3%	13,162,285	-3.9%
All other fresh meat	\$35,881,358	-2.3%	5,578,952	-17.0%
Fowl/exotic	\$26,481,554	6.2%	3,038,760	3.4%
Veal	\$12,756,205	-6.6%	1,662,981	-6.7%
Stuffed vegetables	\$14,834,235	22.5%	3,259,029	-1.3%
Meat compliments	\$1,600,128	-23.4%	649,345	-30.5%

Source: Information Resources Inc. (IRI). Figures are for the 52 weeks ending Oct. 31, 2021. Volume and percent change is versus the year-earlier period.

A host of additional sales triggers

There is strong potential for packaged prepared protein items, including frozen selections, which enable shoppers to stock up without having to worry about consuming the products by a certain date, Wisner says. "It takes away some of the risk found in dealing with fresh products," he says.

The fast growth of supermarket electronic commerce is creating further ways to boost poultry sales, DuBois says, which includes offering recipes and preparation ideas on social media and merchandising more product varieties online. "There is great flexibility to suggest new cuts, particularly if specific types of chicken are in short supply," he says.

Meal kits are another attractive method for introducing different varieties and flavors to consumers. "It gives shoppers a chance to try new products and to have all the ingredients in place without feeling like they have to prepare the meal on their own," DuBois says. "It becomes an easy way to offer new recipes while building loyalty to the store."

Chicken occupies a solid sales and marketing position, and with such attributes as being versatile, kid-friendly and seen by many consumers as a healthier and more economical meat and protein option, poultry will remain popular, Roerink says. "People are buying for more meals in one swoop, and it helps to purchase items that can be used in a variety of ways and cooking methods," she adds. "Chicken definitely fits that bill."



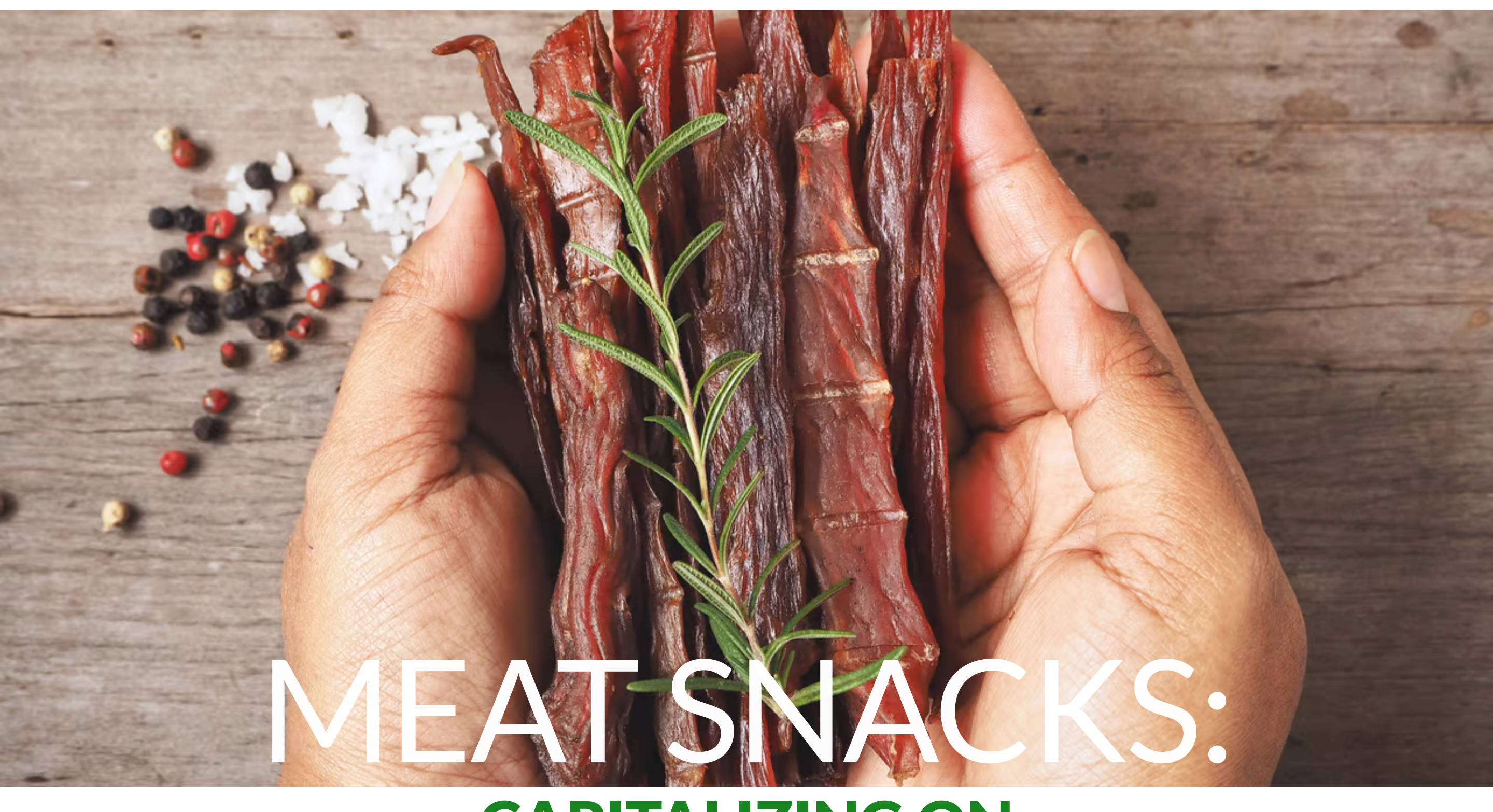
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MEAT SNACKS:

CAPITALIZING ON STAY-AT-HOME SNACKERS

TODAY'S MEAT SNACKS ARE FOR CONSUMERS WHO WANT HIGH-PROTEIN, LOW-CARB OPTIONS.

BY MEGAN PELLEGRINI
CONTRIBUTING WRITER

People love protein, and meat snacks certainly have an abundance of it. Today's meat snacks are not just for meat lovers but consumers who want another high-protein, low-carb option.

"Meat snacks are ideally positioned for the keto, paleo and other high-protein, low-carb lifestyles that are dominating the diet scene," says Anne-Marie Roerink, principal and founder, 210 Analytics, based in San Antonio. "Protein has been a popular ingredient for more than five years and appears to have staying power. Whether protein-enhanced snacks or snacks that inherently have a high protein content such as meat snacks, growth has been far above average."

Meat snacks such as beef jerky, meat sticks and beef bars have more than held their own during the pandemic. "Now a \$4.5 billion market, meat snacks grew 21.8% over the 52 weeks ending November 28, 2021, according to data insights firm IRI," says Roerink. "Compared to the pre-pandemic normal of 2019, this is up 33 percent."

At the same time, units and volume grew as well. "In fact, volume grew 15.8 percent over the 52-week period, signaling strong demand as consumer mobility is growing," says Roerink, noting that there is still a substantial gap between dollar growth and volume growth, which signals inflation and fewer promotions.

What has made meat snacks so popular during COVID-19? "It's hard to know exactly, but they are convenient, portable, and appeal to consumers who are snacking more and not dining out as much," says Mark Vieth, president, Wenzel's Farm, in Marshfield, Wis.

Meat snacks have a good following and tell a great story because they highlight, once again, that meat has protein, which seems obvious but is still worth pointing out. It's easy for consumers to see them in stores, and they fit into their diets well, says Terry Houser, Ph.D., associate professor at Iowa State University, Ames, Iowa.

"It's an exciting time for the category," Houser says. "People like the product and the margins are good. I tell small meat processors they should make these products."

Large and small brands alike are showing double-digit sales, along with some up-and-comers with triple-digit increases with innovative new products that mirror trends in the fresh meat department, says Roerink.

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HOW THE JERKY IS MADE

Beef jerky may not have many ingredients, but it carries a high price. The reason? How it's made.

"Beef jerky is made from lean cuts of whole-muscle beef, which is why it's expensive," says Jeff Sindelar, Ph.D., professor and extension meat specialist at the University of Wisconsin, in Madison. "It's sliced, then either marinated or dry cured, laid out on racks or hung up, and then goes through a thermal cooking and drying process to lose moisture — but just low enough so it doesn't support pathogen growth."

Sometimes, the whole-muscle beef is injected first, so there is uniformity of ingredients before the meat is sliced, he says. The standard formula is to use salt, a sweetener such as dextrose or sucrose, spices and smoke. "Beyond that, the sky is the limit to create a unique flavor profile," Sindelar says.

The other way to create beef jerky is by using restructured or ground and formed beef. "The ground beef used for beef jerky could have up to 10% fat, instead of the 5% fat or less in whole-muscle beef, because the grinding and mixing process adds juiciness," Sindelar says.

Most jerkies are made from whole-muscle beef. "But some folks are making ground in reformulated beef," says Terry Houser, Ph.D., an associate professor at Iowa State University, in Ames. "Most meat sticks and bars are from ground beef."

It's easier to portion control and add inclusions to meat bars made from ground beef, Houser says. "Meat bars made from whole-muscle meat are less uniform, more labor intensive and created by hand so have lower volume," says Houser.

More options exist today to acidify meat snacks. The traditional method is to add a starter culture to gradually reduce the pH level or add an unbuffered vinegar to the meat batter.

"Now we can add encapsulated acid technology to the meat batter to cause the pH to drop, with no fermentation," Houser says. "It's similar to fermentation but occurs in less time."

Meat snacks tend to be high in sodium, but it's hard to reduce salt without affecting taste.

"Saltiness is a key feature of jerky," Sindelar says. "If you take out too much salt, it changes the product but it's feasible to do."

These new products can feature dried meat snacks made with claims-based meat. "In addition to organic and antibiotic-free meat, grass-fed beef in particular is a popular innovation in dried meat snacks," Roerink says. "Consumers see grass-fed beef as healthier for them and better for the animal, and it has been an area of aggressive growth for the meat department for years."

Strong flavors have been around for a while, and "as palates change, sweet and spicy continues to be popular," Vieth says.

"Now, literally the sky's the limit on what flavors are being added," Houser adds. "Millennials like a lot of variety, high quality, new flavors, and that is pushing sales, no doubt."

Dried meat snacks are also moving beyond beef and pork to include bison, turkey and chicken, Roerink says. "Additionally, single-serve bacon snacks are entering the marketplace," she says.

Is there any interest in plant-based meat alternatives? Some snacks are using ingredients such as mushrooms to create protein snacks that are similar to dried-meat snacks in look and positioning, Roerink says. "Blended items that combine animal protein with other items such as mushrooms create meat snacks that the consumer may view as a better-for alternatives," she says.

That being said, plant-based or blended snacks may not appeal to the typical meat-snack consumer or vice versa. "There are some plant-based alternatives, but nothing that is flying off the shelf," Houser says. "Someone who would buy a meat alternative is not going to want a product that is half meat."

While beef is the No. 1 ingredient in conventional and traditional channels, beef and pork make up most traditional mixed products. "Poultry doesn't do as well with conventional jerky products, but turkey is increasing in the natural channel this year," Vieth says. "Turkey is a leaner meat, which appeals to people who are already health conscious."

MEAT SNACKS BY THE NUMBERS

Salt plus protein is a winning formula. Meat snacks appeal to all consumers who want a satisfying treat. Here's more information on who is buying them:

- **36% of U.S. consumers** have purchased meat snacks for themselves or for their household in the last three months
- **19% have purchased** pork rind snacks for themselves or their household in the last three months
- **60% of U.S. consumers** purchase salty snacks to treat themselves
- **30% consider new flavors** of salty snacks important when choosing the snack

Source: *Mintel's Salty Snacks — U.S. — April 2021 report*

Sugar-free items are another area of innovation for dried meat snacks, addressing the needs of keto, paleo and other low-carb diets, Roerink says.

Meat snacks will continue to grow in popularity, as there is still room for new varieties, formats and flavors, Vieth says. "People see meat snacks as a healthier option than traditional snacks, demand for protein is growing and consumers are still looking for more variety," he says. "I think packaging in the next five to 10 years will focus more on sustainability."

In addition, look for retailers to get in the meat snack market. "In 2022, I expect to see more big retailers with their own label in meat snacks," says Vieth. "Some of the bigger chains are seeking out — if they don't already have one — private-label opportunities in meat snacks."

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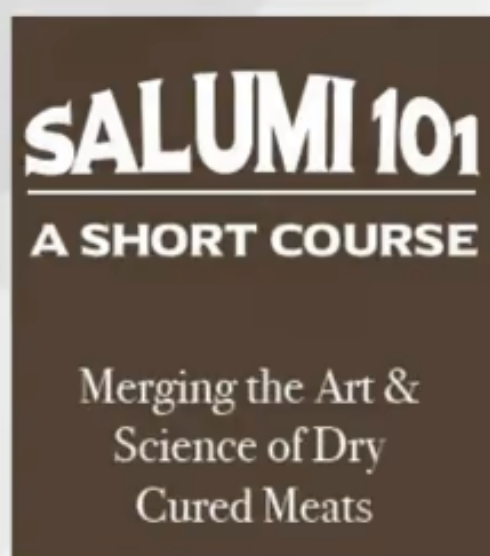


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Registration for SALUMI 101 is now open, and only 30 spots are available, so register today! SALUMI 101 will be held February 22-24, 2022, at the University of Wisconsin-Madison in Madison, Wisconsin.

SALUMI 101 is sponsored by the American Meat Science Association (AMSA), University of Wisconsin-Madison, North Carolina State University, California State University-Fresno, and Pennsylvania State University.

SALUMI 101 is a unique three-day, hands-on educational opportunity for all attendees, "Salumi 101 is great for trained chefs and serious cured meat processors alike. The equal time between hands-on training and the in-depth classroom curriculum was fantastic. I thoroughly enjoyed all the teachers and staff," stated the past attendee.

Anyone passionate about learning more about the art and science of crafting high-quality artisan meat products will benefit from attending SALUMI 101. Participants will have the chance to interact with industry and university professionals specializing in this meat science area. The class will learn about the production of safe and high-quality artisan-style meat products and be involved with the crafting of various artisan products.

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AMSA is an organization recognized for its unmatched competence and commitment to attracting and developing meat industry leaders and providing science-based meat research and information. For more information or questions regarding SALUMI 101, please visit: www.meatscience.org/salumi101 or contact Deidrea Mabry at 1-800-517-AMSA ext. 12, or dmabry@meatscience.org.



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SLAUGHTER EQUIPMENT

IMPROVES IN ERGONOMICS AND FOOD SAFETY

BY ELIZABETH FUHRMAN
CONTRIBUTING WRITER

Many of the issues that processors have with equipment on the slaughter floor have been around for a while now. And they tend to focus on tool ergonomics and the ability to sanitize and then maintain that equipment while operating in some very harsh working conditions, says Kurt Vogel, associate professor of animal science at the University of Wisconsin – River Falls.

From small to even large plants, stunning also can be an issue when it comes to humane handling, based on data from Humane Handling Enforcement on the U.S. Department of Agriculture’s website. These humane-handling enforcement violations are published with the details of the company’s actions.

“Generally, 80 to 85 percent of them are stunning failures,” says Terry Houser, associate professor and Smithfield Foods chair in meat science extension at Iowa State University, in Ames. For example, some processors use multiple attempts to stun, which is against the Humane Slaughter Act.

SLAUGHTER EQUIPMENT ADVANCEMENTS

The good news is the industry continues to see advances on the quality of clean-in-place equipment. For example, the industry now has splitting band saws that have blade cleaners and sterilizers on board, Vogel explains. “Our newer equipment is being designed with such a focus on hygiene,” he adds.

From an ergonomics standpoint, slaughter equipment manufacturers have placed more focus on trying to isolate vibration, not unlike other types of tools that are used in other industries. “We’re starting to see that application in a lot of our tools that are on the slaughter floors, too,” Vogel says.

Another solution that’s been around for a while is the ability to adjust the interface with the worker. For example, changing the position of specific handle angles where the trigger might be located to activate the tool. “These are all things that help to tailor the equipment to the specific operator,” Vogel says.

FROM AN ERGONOMICS STANDPOINT, SLAUGHTER EQUIPMENT MANUFACTURERS HAVE PLACED MORE FOCUS ON TRYING TO ISOLATE VIBRATION, NOT UNLIKE OTHER TYPES OF TOOLS THAT ARE USED IN OTHER INDUSTRIES.

These advancements in tools are helping to improve efficiency of operations in multiple ways. For example, if the equipment is a better fit for workers, that allows for a greater level of efficiency in how they operate the equipment while also reducing fatigue. The ability to clean equipment on the fly also helps, Vogel says.

More important than improving productivity is the fact that the newer equipment also improves food safety.

“It’s hot and it’s cold and it’s wet,” Vogel explains. “We’re using equipment that operates on electricity and hydraulics, and none of that mixes together, but I think that’s a place where we’ve just seen nothing but continuous improvement using higher-quality seals and assemblies that are more resistant to water. Equipment that’s easier to maintain.”

“We’re going to continue to see advances in leaps and bounds with how easy the equipment is to clean in place,” he says.

While more prevalent in the poultry industry, the meat industry also is seeing more automation being used.

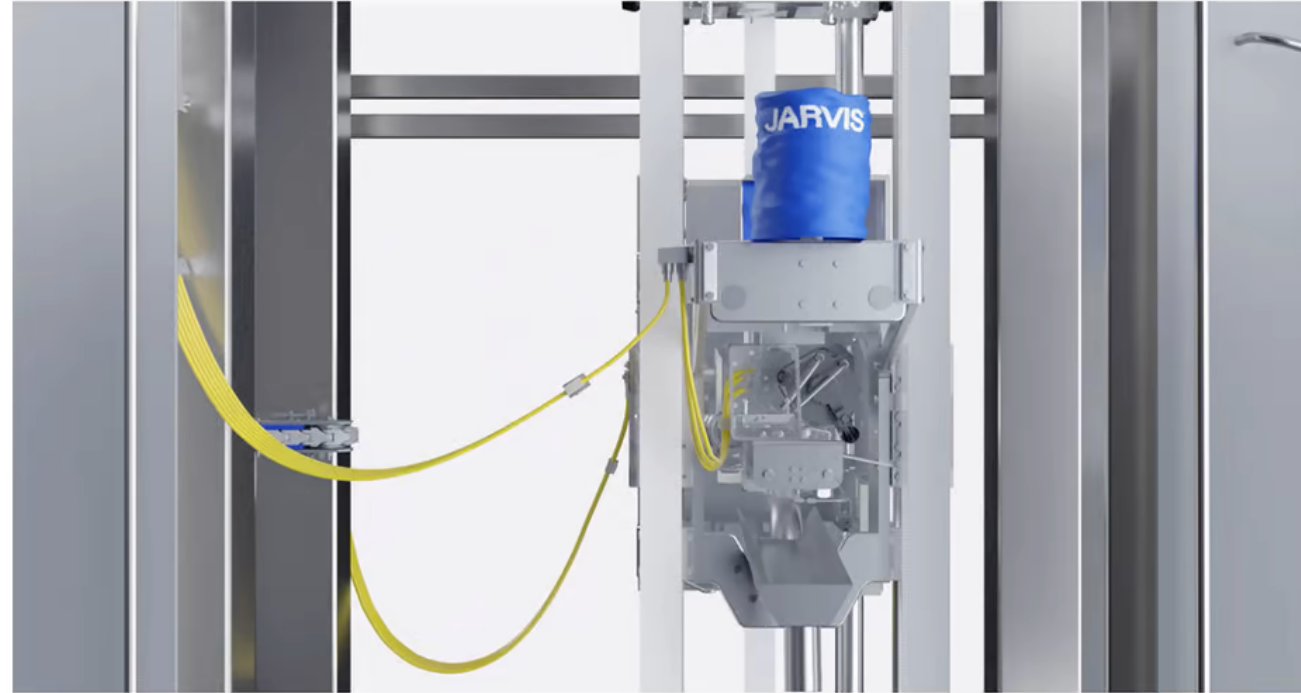
“The final piece that I think is one of the ones that’s extremely exciting to watch is how we’re going to see more automation come into play here,” Vogel says. “I think we’ll start to see less and less handwork and more and more need for people that understand how to appropriately program and then tune equipment.”

Houser adds the industry needs more equipment manufacturers designing knocking boxes for small processors that are turnkey with overall better design. It would be better if more equipment was readily available for stunning pigs as well.

“Part of this issue, too, is that livestock have gotten a lot bigger over the last 30 or 40 years,” Houser explains. “These animals keep getting bigger and bigger, and many of these facilities were designed in the ’50s and ’60s. We’re using facilities that were designed for much smaller cattle and pigs, and we’re trying to get by with it. I hope we see some technology, certainly in the restraining department. We need to do better with that.”

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USING SCIENCE FOR BETTER GRINDING AND STUFFING

BY ELIZABETH FUHRMAN
CONTRIBUTING WRITER

Many of the challenges that processors face with grinding and stuffing is that raw materials vary widely. Those variations can have a big impact on grinding. Processors also have to be aware of how their grinding systems can handle foreign materials, such as bone and cartilage. For stuffing, challenges remain with achieving uniformity, and aligning the right equipment and correctly sized equipment versatility, says Jeff Sindelar, professor and extension meat specialist in the Department of Animal and Dairy Science at the University of Wisconsin, in Madison.

To combat these challenges, processors are trying to manage the raw materials and understand how the different raw materials create challenges in uniformity and consistency in grinding. They then try to identify these raw materials so they either are ground differently or are used in certain applications for specific products, Sindelar explains.

For example, understanding the raw material variability and challenges and then aligning that with the correct processes and equipment means processors need to make adjustments, such as with temperature. Based on the limitations of raw materials, processors also need to assess whether it can be ground on certain grinding equipment, whether it be the size of the plate, the speed of the grinding, or the configuration of the grinder itself. It's the grinding equipment that best manages and handles the raw material variation in terms of quality and composition, Sindelar says.

"Grinding equipment and technology is about understanding the raw materials and applying meat science, food science, food safety and engineering concepts to improve either equipment design or equipment capability and definitely the outcome of the process, whether it be grinding faster, grinding more efficiently, grinding to achieve a higher overall product quality or functionality," he says.

For grinding, temperature rise during grinding also continues to be a concern, using traditional auger systems, in which the auger moves at the same speed as the blades. Another long-existing challenge with grinding is the need for bone removal systems, which increases the down-graded product or waste that results from the grinding process, says Lynn Knipe, associate professor in the Department of Animal Science at Ohio State University, in Columbus.

"The development of in-line grinder/stuffer units allow for controlling the blade and pump speeds independently, which reduces the friction on the meat, and as a result, the temperature rise to the meat," he says.

AS PROCESSORS MOVE TOWARD USING MORE AUTOMATED PROCESSING EQUIPMENT TO ASSIST WITH LABOR ISSUES, THE DEMAND FOR LABOR SWITCHES TO MORE TECHNICALLY TRAINED PEOPLE TO OPERATE AND MAINTAIN THIS NEW EQUIPMENT.

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Additionally, new technology is available to reduce the loss of soft tissue, which has historically been lost during the bone-separation process. "The discarded product from this new technology is truly waste material, being primarily bone and hard cartilage," Knipe says.

A more current concern is with preventing oil leaks from gear boxes onto the product. This isn't a new problem, but the emphasis to solve the problem has increased in recent years.

"Some equipment suppliers have separated their gear boxes from hoppers to eliminate the possibility of oil dripping from the gear boxes onto meat," Knipe says. "Others have moved toward using electric motors to replace hydraulic systems typically used in meat processing equipment."

As processors move toward using more automated processing equipment to assist with labor issues, the demand for labor switches to more technically trained people to operate and maintain this new equipment.

"This issue requires more highly trained employees both in the processing plants and in the equipment suppliers' technical service divisions," Knipe says.

As equipment becomes more automated and technologically advanced, maintaining the software also will be important to the grinding process, he adds. Knipe also expects equipment manufacturers to continue to modify their equipment in the future, to further resolve processing challenges.

CONSUMPTION OF FRESH MEAT RISES

OVERWRAP AND MAP PACKAGING MEET DEMAND.

BY HALLIE FORCINIO
CONTRIBUTING WRITER

The demand for meat packaging is expected to show strong growth for the next decade, largely due to rising meat consumption in emerging economies.

A report from Future Market Insights predicts meat packaging sales will grow at a 4.7 percent compound annual growth rate (CAGR) from an estimated \$6.9 billion in 2021. Fresh meat products account for 44.3 percent of this market. With the popularity of fresh meat products, overwrap and modified atmosphere packaging (MAP) remain favorite packaging formats. In fact, growth in MAP, which changes the composition of the internal atmosphere of a package, is expected to exceed the overall industry growth rate and expand at a compound annual growth rate (CAGR) of 5.4 percent through 2031, partly due to an expanding role in smart packaging for seafood. MAP offers benefits for producers of meat, poultry and seafood products, retailers and consumers. It can extend shelf life, reduce shrink and food waste, improve product color and eliminate leaking packages.

Sustainability is another driving force in the meat packaging market with an ever-growing number of downgauged, bio-sourced, recycled-content and/or recyclable options for MAP and overwrap. Increasingly, this more sustainable packaging is available with certification from third-party auditors, which verify the environmental claims. Some of the newest materials are made from feedstock derived entirely from plastic waste, creating a recyclable barrier film for MAP that advances the circular economy and reduces food waste by maximizing shelf life.

Several MAP suppliers offer more recyclable replacements for the commonly used, hydrocarbon-based expanded polystyrene (EPS) trays. Possibilities include polyethylene terephthalate (PET) in bow- and break-resistant designs that seal in a way that prevents leakers. Clear PET provides a high level of product visibility, while tinted options enhance brand identity and shelf impact.

Lightweight EPS, expanded polypropylene, multilayer polypropylene with recycled content, plant-based plastic-like corn-based foam and paperboard trays also are being offered as alternatives that can help meet sustainability goals. The paperboard trays can be printed on both sides. A plastic inner layer separates easily for recycling while providing moisture protection, barrier and sealing properties. These “greener” trays frequently can run on existing equipment with little or no modification.

Meanwhile, at least one supplier of EPS trays is working to improve the environmental profile of the material itself by collaborating in efforts to boost recycling.

Tray designs also offer custom configurations to drain liquid away from the product or hold an absorbent pad. Specialized shapes can present products in a cavity that matches the product shape. Multiple cavities in a patty tray, for example, can present stacks of burgers in a way that makes it easy to prepare some tonight and some tomorrow.

LIGHTWEIGHT EPS, EXPANDED POLYPROPYLENE, MULTILAYER POLYPROPYLENE WITH RECYCLED CONTENT, PLANT-BASED PLASTIC-LIKE CORN-BASED FOAM AND PAPERBOARD TRAYS ALSO ARE BEING OFFERED AS ALTERNATIVES THAT CAN HELP MEET SUSTAINABILITY GOALS.

Like trays, film developments are focused on sustainability with mono-material structures generating interest. Convenience also plays a role with a choice of sealing options: permanent, peelable or reclosable. Printing in up to 10 colors provides high-end graphics, builds brand identity and discourages counterfeiting. Appearance and performance are addressed with films that offer clarity and gloss as well as fog and puncture resistance.

On the equipment side, machines are more flexible, faster and easier to operate and clean. Available in models from entry-level to high-volume production, systems typically run a wide range of tray sizes. Downtime is minimized with features such as servo technology, quick-change tooling, hygienic design and clean-in-place systems. Sustainability is supported by film-saving features.

Quality control equipment also is advancing. Leak-testing systems not only can find micro-leaks but work fast enough for 100% seal integrity confirmation, eliminating the need for destructive, time-consuming dye testing and ensuring that every package shipped is leak-free.

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2022 IPPE

Reconnecting you with the entire animal food, meat and poultry industries

The International Production & Processing Expo (IPPE) continues to evolve and grow to meet the needs of its attendees and exhibitors. IPPE is excited to build on the success of the 2020 IPPE in-person event and the 2021 IPPE Marketplace. For 2022, IPPE is looking forward to being with you IN-PERSON and reconnecting you with the entire animal food, meat and poultry industries from Jan. 25-27 at the Georgia World Congress Center in Atlanta. IPPE will welcome a global audience of animal food, meat and poultry industries, and you will not want to miss it!

The 2022 IPPE will provide the latest technology, research, processes and products that the global animal food and protein industries have to offer. As the ONLY annual exposition highlighting the best of all three industries, the 2022 IPPE will offer timely and important information and an efficient way for producers and processors to find solutions needed to continue operations, especially during a pandemic.

IPPE is aware of the challenges hosting an event this size can bring during a pandemic and is taking every measure to provide for a safe and successful 2022 show experience. The health and safety of everyone who attends IPPE continues to remain a top priority. IPPE is monitoring the changing conditions and will follow state guidelines regarding the coronavirus (COVID-19). Regular updates will be provided to all stakeholders as the situation warrants. IPPE staff is also coordinating with facility partners at the Georgia World Congress Center (GWCC), hotels in the Expo's official block, vendors, transportation and service providers and will continue to adjust the onsite operations as new guidance comes out and conditions inevitably change.

IPPE is committed to minimizing risk and will be working together with you, exhibitors, partners and vendors to follow precautions governing safe business conduct. We are in this together, and IPPE staff will be on the show floors, in the exhibit halls and in conference classrooms working alongside you. The following are some safety initiatives that will be incorporated for the 2022 IPPE. Please note that the safety initiatives may change as public health authorities make new recommendations on protocols.

- Encourage the vaccination of attendees
- Encourage masks for unvaccinated attendees
- Disinfection and cleaning of all public spaces, restrooms and high-touch building areas
- Frequent disinfection of GWCC common areas and meeting rooms
- Deployment of new food safety protocols for food and beverage services
- Hand sanitizer stations made available throughout the facility and event floor
- Encourage social distancing measures where appropriate

Daily educational programs will be led by industry experts focused on addressing the latest insights, industry issues and best practices. Education content will be offered Monday, Jan. 24, 2022, through Friday, Jan. 28. Kicking off Expo week, the educational program schedule will include the International Poultry Scientific Forum, Latin American Poultry Summit, and the ever-popular Pet Food Conference.

The 2022 IPPE will also include new educational programs, and IPPE encourages participation in these great learning sessions. Don't miss these great programs that will provide solutions for your company!

IPPE would like to provide a special thank you to the following sponsors who make it possible for members of our organizations to attend for free. The Members to Atlanta (M2A) program ensures access for the entire industry to take advantage of IPPE. This exclusive, online program is available for member firms of the American Feed Industry Association, North American Meat Institute and U.S. Poultry & Egg Association engaged in the production of poultry, egg, meat and animal food products. M2A is supported through the sponsorship of these elite exhibiting companies: Aviagen, BarnTools, Ceva Animal Health, Cobb-Vantress, Elanco Animal Health, Georgia Poultry Equipment Co., Heat and Control, Huvepharma, Jamesway Incubator Co., Kemin Industries, Soybean Meal Information Center, Van der Graaf and Zoetis. IPPE sincerely appreciates these firms for their continued support of the M2A program!

IPPE attendee activities include the TECHTalks, Innovation Station / New Product Showcase, the Meat Industry Hall of Fame Program, and the Welcome Reception to be held at the Georgia World Congress Center. Attendees can also connect with future industry leaders through the College Student Career Program and the IPPE Young Leaders Under 30 Program.

IPPE is a collaboration of three partner organizations representing the animal food and protein industries. The event is sponsored by the American Feed Industry Association (AFIA), North American Meat Institute (NAMI) and U.S. Poultry & Egg Association (USPOULTRY).

ABOUT THE 2022 IPPE

Jan. 25 - 27, 2022

Georgia World Congress Center

Atlanta, GA

www.ippexpo.org

IPPE HIGHLIGHTS

- 3 halls with 1,080+ interactive exhibits
- 120+ hours of education sessions
- 25,000+ industry leaders
- 11.5+ acres of exhibits showcasing innovative technology, equipment and services
- Ranked #21 in the Top Trade Shows in the U.S.



TUESDAY, JAN. 25

TECHTalks

10:30 am. – 4:30 p.m., B8579, C10611

IPPE is offering short educational presentations by exhibitors regarding operations and technical issues critical to all aspects of the animal food, meat and poultry industries.

Welcome Reception

4:30 – 5:00 p.m., IPPE show floor

New for 2022, the IPPE Welcome Reception will be held on the trade show floor Tuesday afternoon. Take time to network and catch up with your colleagues!

Innovation Station / New Product Showcase

10:00 a.m. – 5:00 p.m., B/C Hall

The Innovation Station / New Product Showcase will provide attendees with an outstanding opportunity to see the newest products or innovations offered by exhibitors.

WEDNESDAY, JAN. 26

TECHTalks

9:30 am. – 4:30 p.m., B8579, C10611

IPPE is offering short educational presentations by exhibitors regarding operations and technical issues critical to all aspects of the animal food, meat and poultry industries.

Innovation Station / New Product Showcase

9:00 a.m. – 5:00 p.m., B/C Hall

The Innovation Station / New Product Showcase will provide attendees with an outstanding opportunity to see the newest products or innovations offered by exhibitors.

THURSDAY, JAN. 27

TECHTalks

10:30 am. – 4:30 p.m., B8579, C10611

IPPE is offering short educational presentations by exhibitors regarding operations and technical issues critical to all aspects of the animal food, meat and poultry industries.

Innovation Station / New Product Showcase

9:00 a.m. – 3:00 p.m., B/C Hall

The Innovation Station / New Product Showcase will provide attendees with an outstanding opportunity to see the newest products or innovations offered by exhibitors.

PAID PROGRAMS:

INTERNATIONAL POULTRY SCIENTIFIC FORUM

Monday, Jan. 24, 8:00 am – 5:00 pm
Tuesday, Jan. 25, 8:00 am – 12:00 pm
Registration Fee: \$80 early bird, \$140 after Jan. 7, 2022

Sponsored by the Southern Poultry Science Society, the Southern Conference on Avian Diseases and U.S. Poultry & Egg Association, the forum presents information on industry topics such as environmental management, nutrition, physiology, pathology, processing and products and avian diseases. Students with a valid student ID may register complimentary onsite. Price includes admission to the IPPE show floor.

LATIN AMERICAN POULTRY SUMMIT

Monday, Jan. 24, 8:30 am – 7:00 pm
Registration Fee: \$250 early bird; \$350 after Jan. 7, 2022

Sponsored by USPOULTRY and the Latin American Poultry Association, the Latin American Poultry Summit will focus on leading technical topics covering live production and processing issues of greatest priority to Latin American poultry and egg producers and processors. The program will be offered completely in Spanish. The content will focus on a variety of areas for broilers and layers. The Summit will bring together key researchers from universities and leaders from genetic companies, suppliers, integrators and commercial companies to learn, discuss and network. A lunch and reception will be offered, along with special recognition for international students from Latin America.

CUMBRE AVÍCOLA LATINOAMERICANA

Auspiciado por USPOULTRY y la Asociación Latinoamericana de Avicultura (ALA), el programa de un día se enfoca en temas técnicos cubriendo mejoramientos en las áreas de producción de aves y procesamiento de mayor relevancia para productores de pollo y huevos de la región latinoamericana. Habrá interpretación en español. Almuerzo y recepción están incluidos en el programa. Adicionalmente se brindará reconocimiento a estudiantes invitados de Latinoamérica.

PET FOOD CONFERENCE

Tuesday, Jan. 25, 7:30 am – 4:00 pm
Registration Fee: \$105 early bird/\$150 onsite

AFIA's Pet Food Conference covers a variety of topics from regulatory to technical aspects of production to product claims, marketing and nutrition. The conference attracts more than 300 attendees from pet food manufacturing to ingredient suppliers covering all ingredient categories, offering an excellent opportunity to network with a diverse audience. Program registration includes breakfast and lunch.

FEED STRATEGY CONFERENCE: POULTRY TRENDS, FEEDING & HEALTH

Tuesday, Jan. 25, 8:00 am – 12:00 pm
Registration fee: \$150 early bird/\$200 after Jan. 7, 2022

The Feed Strategy Conference delves into the economic and nutrition issues influencing 2022 poultry and feed production. From the examination of global protein trends to strategies for successful antibiotic-free production, poultry and feed industry stakeholders will attend this forum to glean leading-edge insights on the critical issues impacting their poultry operation's productivity and profitability.

BUSINESS CONTINUITY IN TIMES OF DISRUPTION: LESSONS LEARNED IN THE FEED INDUSTRY

Wednesday, Jan. 26, 10:00 a.m. – 12:00 p.m.
Registration fee: \$55 / \$75 after Jan. 7, 2022

AFIA's nutrition committee is hosting a program in 2022 focused on challenges and opportunities to the industry in the face of disruptions such as global pandemic or foreign animal diseases.

INTERNATIONAL RENDERING SYMPOSIUM

Thursday, Jan. 27, 12:00 – 5:00 pm
Friday, Jan. 28, 8:00 am – 12:00 pm
Registration Fee: \$250

Rendering is an integral and often invisible aspect of animal agriculture's economic and environmental sustainability. Sponsored by the North American Renderers Association and USPOULTRY, this program will discuss rendering's contributions, impact, and the future of the industry.

FREE PROGRAMS:

ANIMAL AGRICULTURE SUSTAINABILITY SUMMIT

Tuesday, Jan. 25, 9:00 am – 12:00 pm
Registration Fee: FREE (included with trade show admission)

An ever-increasing population coupled with a changing agricultural workforce has compelled the animal agriculture industry to make sustainability its top priority. Each animal agriculture sector has initiated an industry driven program to define sustainability and measure its commitment to become more sustainable. Representatives of the meat, poultry and animal feed industries will share details on the development of industry programs or tools to advance their aspirations of producing more protein in a sustainable fashion.

FEED PRODUCTION EDUCATION PROGRAM

Wednesday, Jan. 26, 8:00 – 10:00 am
Registration Fee: FREE (included with trade show admission)

AFIA's production compliance committee is hosting the annual Feed Production Education program again in 2022. As regulatory requirements for the feed industry continue to evolve, this training session will update participants on any recent changes from several federal agencies including DOL, DOT, EPA, FDA and OSHA.

THE FUTURE OF WORK AND WORKFORCE ISSUES

Wednesday, Jan. 26, 8:30 – 10:00 am
Registration Fee: FREE (included with trade show admission)

Workforce issues are top of mind for anyone in the food or manufacturing industry. What are the biggest pressure points in 2022, and how can the industry work to relieve them? From embracing automation to understanding regulatory changes in worker safety, this session will take a look at a variety of issues affecting the workplace today.

POULTRY MARKET INTELLIGENCE FORUM

Wednesday, Jan. 26, 9:00 am – 12:00 pm
Registration Fee: FREE (included with trade show admission)

A leading industry economist and industry experts will provide insights on how the domestic and global economies, continuously improving performance, and regulatory issues impact the poultry and egg industries. They will identify challenges facing the industry and discuss how the U.S. and international poultry industries are positioned to move forward.

ENVIRONMENTAL COMMITMENTS AND CONSIDERATIONS

Thursday, Jan. 27, 8:30 – 10:00 am
Registration Fee: FREE (included with trade show admission)

From carbon footprints to food waste to recycling, environmental improvement programs are a priority for processors and suppliers alike. Companies of all sizes and capacities are looking for ways to implement programs with tangible and measurable outcomes, and this session will explore the tenants of a successful environmental improvement program with real world examples and best practices that span industries.



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HOW COBOTS MAKE AUTOMATION ACCESSIBLE TO SMALL AND MEDIUM SIZED MANUFACTURERS

BY JOE CAMPBELL, SENIOR MANAGER OF APPLICATION DEVELOPMENT AND STRATEGIC MARKETING, UNIVERSAL ROBOTS

Manual packaging and palletizing are repetitive, unergonomic tasks and a recurring source of workplace injuries. According to the Bureau of Labor Statistics, the number one cause of occupational injuries involving days away from work was overexertion caused by excessive physical effort and repetitive motion, accounting for 31% of all lost days.

Ergonomics is only an issue if you can find workers, of course. Companies of all sizes and across all sectors, including secondary food processing, are facing challenges in finding and retaining manufacturing labor. This combination of challenges makes end-of-line tasks such as packaging and palletizing ideal candidates for automation.

At this point the automation options for small and medium sized companies (SMEs) are radically different than those of larger companies. The SME segment has historically been under-served by traditional automation due primarily to the cost, complexity, and size of traditional industrial robots.

Traditional industrial robots and palletizing systems require large capital outlays, are costly to maintain, and come with a large footprint made even larger by the need for extensive fencing and guarding systems. In addition, while traditional industrial automation excels at performing low mix/high volume (LMHV) tasks, the complexity of these systems can make them a poor fit for high mix/low volume (HMLV) operations due to the amount of downtime required to reprogram these systems.

Large companies are more likely to have the floor space required to accommodate traditional industrial robots. In addition, large companies can handle the cost of hiring robot programmers to deploy and maintain these systems, or they will have full-time robotics engineers and technicians in-house.

SMEs don't have the same resources and have traditionally watched larger competitors enjoy the benefits of automated packaging and palletizing systems -- improved consistency, enhanced throughput, and increased productivity. When traditional automation is the only game in town, big companies get bigger and SMEs struggle to survive.

MEET THE COBOTS

The emergence of collaborative robots (or 'cobots') over the past decade has completely upended this traditional paradigm, empowering SMEs to enjoy the benefits of industrial automation for the first time.

The term 'collaborative' refers to the fact that following a safety risk assessment, cobots can be deployed side-by-side with skilled human operators without the need for extensive fencing and guarding systems.

Safe deployments alongside humans are possible because cobots can be configured with multiple safety protocols, including force and speed limitations, work envelope safe zones and other safety limitations. From the end-user perspective, one of the main trade-offs to be considered when deciding between traditional robots and cobots relates to these speed and force limiting features. Traditional robots are faster and more powerful, but cobots are more affordable, easier to use and safer.

In the past decade, companies of all sizes have deployed cobots on tens of thousands of applications, from material handling, box erecting and case pack to quality inspection and palletizing.

COBOTS MAKE AUTOMATION ACCESSIBLE TO SMES

The total installed cost of a cobot system is significantly less than traditional robot counterparts which means less capital outlay and a faster return on investment. Some companies provide leasing and Robots-As-A-Service opportunities that reduce the cost of implementing automation to an absolute minimum — music to the ears of cash-strapped SMEs.

Cobots are also, as a rule, much easier to program and deploy than traditional industrial robots. Instead of having to call a team of engineers out to reprogram your packaging and palletizing system, cobots can, after straightforward training, be programmed by end users.

Instead of old-fashioned pendants running code only an engineer could understand, cobots can be programmed via attractive, easy to use pendants and simple, icon-driven programming interfaces. Some systems can even be programmed using intuitive smartphone applications.

There is, of course, variation among different cobot brands when it comes to usability. Those considering a cobot investment should look for companies that provide the type of easy-to-use programming interfaces and techniques listed above, in addition to the online training and education resources required to support quick and easy training and deployments.

Cobots also have a much smaller footprint than traditional industrial robots. Combined with their speed and force limiting safety features, this means that not only are cobots easy to move around a facility, but they can be deployed even in tightly packed packaging and palletizing stations where floor space is at an absolute premium.

Flexibility is another SME-friendly attribute of cobots. While traditional robots excel at LMHV tasks, cobots are ideally suited to HMLV operations. With cobots being so easy to transport and program, this means that cobots can easily and quickly be reassigned to new product runs and even to entirely new applications.

For more information, visit <https://www.universal-robots.com/>.



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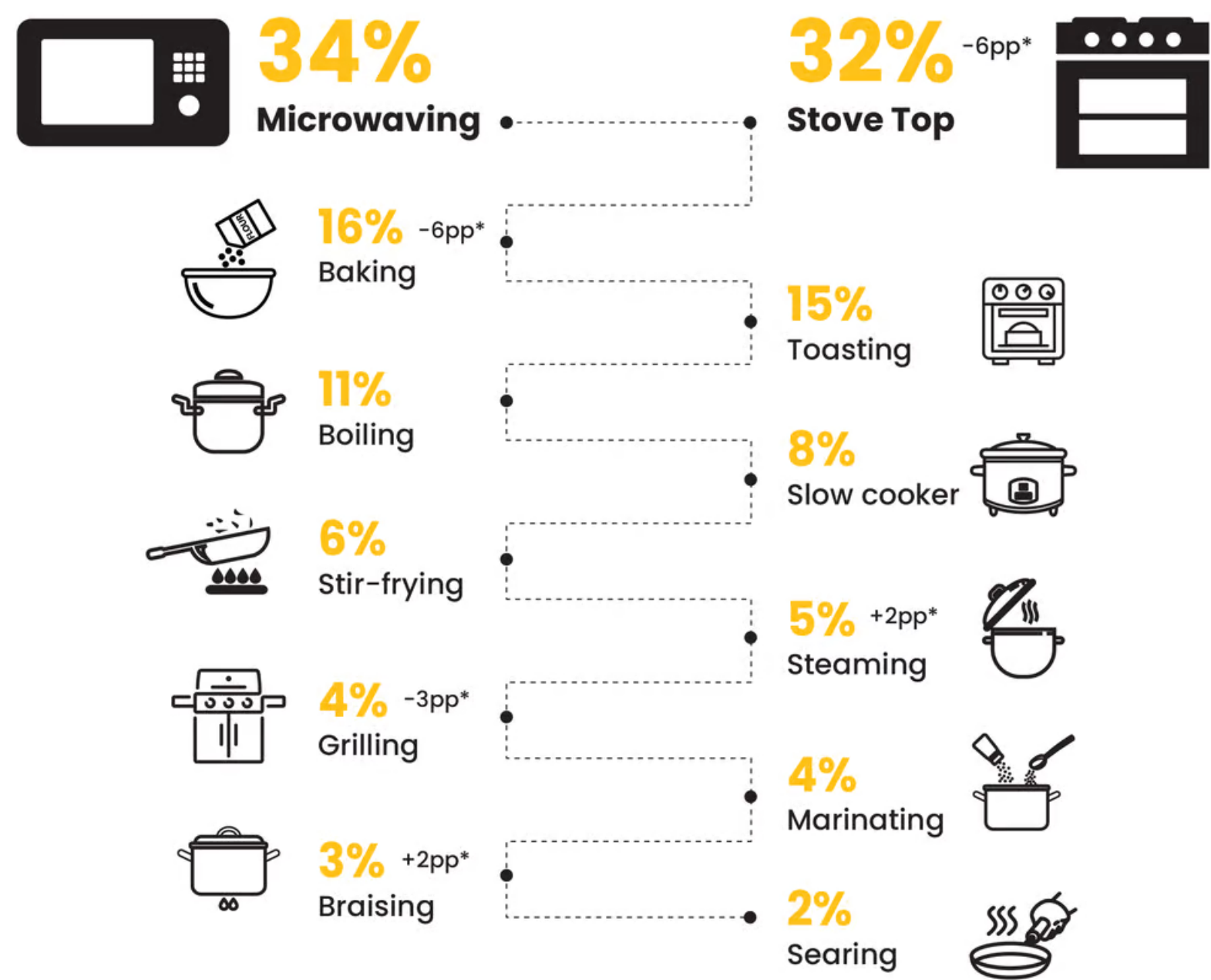
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Changing Role of Meals and Cooking in America: **Consumer as Chef**

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* percent increase/decrease, spring 2021 data trended to spring 2020 data
Source: *Redefining Normal: Spring 2021 Eating Occasions* report

High levels of cooking engagement witnessed early on in 2020 have declined as cooking fatigue set in and consumers became more comfortable sourcing from food service.

Where is cooking and meal behavior going next?

Find out in The Hartman Group’s *At the Dining Table 2021: American Meals and Cooking* syndicated study which aims to provide food manufacturers, retailers, distributors and restaurants with an in-depth view of how to best help consumers achieve the meals they desire to have. Visit our website to learn more: www.hartman-group.com

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