FOUNDATION FOCUS
April 2024

19th Annual Power of Meat Reports Strong Meat Consumption, Evolving Trends

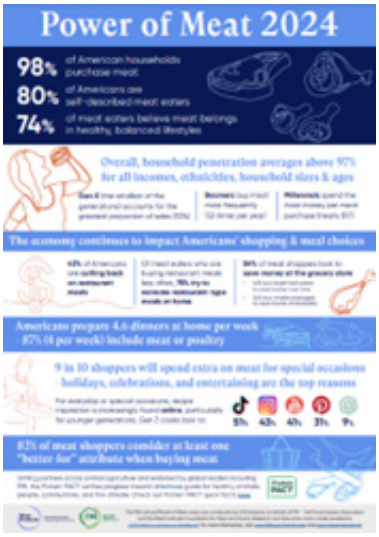
The 19th annual Power of Meat report – presented at this year's Annual Meat Conference in Nashville – shows strong meat consumption and evolving consumer trends. The number of Americans who describe themselves as meat eaters (80%) and the number of households that purchase meat (98%) remain steady from 2023, while the number seeking to decrease meat consumption has fallen by 20% since 2020. Overall household penetration averages above 97% for all incomes, ethnicities, household sizes and ages. Generation X (the smallest of the generations) accounts for the greatest proportion of sales (32%), while Boomers buy meat most frequently (53 times per year), and Millennials spend the most money per meat purchase (nearly $17).

Economic conditions continue to impact Americans' shopping and meal choices, with 43% of Americans cutting back on restaurant meals. Of meat eaters who are buying restaurant meals less often, 75% try to recreate restaurant-type meals at home. At the grocery store, 73% of Americans are making one or more changes to meat purchases to save money -- with the most common strategy being to adjust the quantity of meat purchased. Among meat purchasers changing quantities to save money, 30% buy smaller packages to save money immediately, and 42% buy larger bulk packs to save money over time. On the other hand, more than nine in 10 shoppers say they would spend extra on occasion, with holidays, special celebrations and entertaining the top reasons.

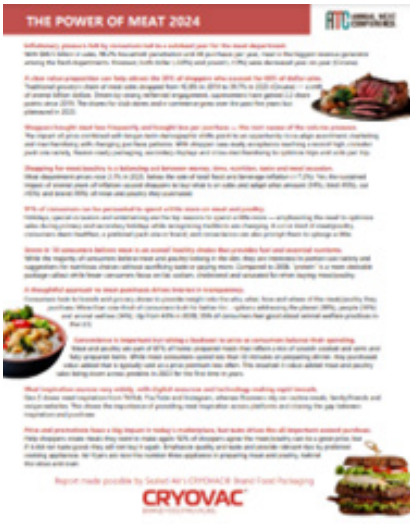
The Power of Meat study was conducted by 210 Analytics on behalf of FMI—The Food Industry Association and the Foundation for Meat and Poultry Research and Education. The analysis was made financially possible by Cryovac/Sealed Air.

Click the links below to expand & download the PoM Infographic and Top 10 Takeaways.

Power of Meat Infographic



Top 10 Findings



Meat Foundation Scholarship Applications Now Open.

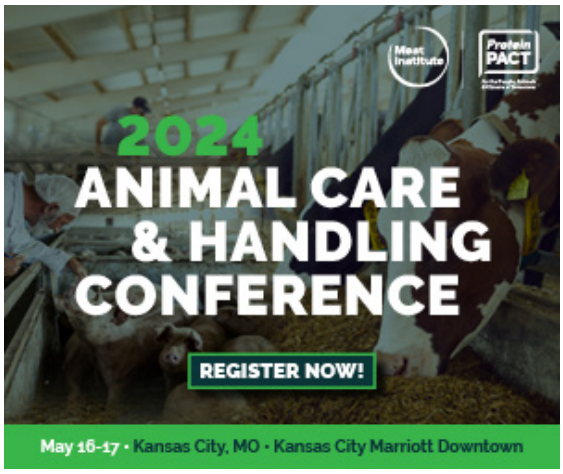
The Meat Foundation (formed from the merger of the NAMI Scholarship Foundation and the Foundation for Meat and Poultry Research and Education) is now accepting undergraduate and graduate scholarship applications for the 2024-2025 academic year! The Meat Foundation will be awarding one $10,000 Barry Carpenter Scholarship, along with several $5,000 scholarships. These scholarships are merit-based and open to all undergraduate and graduate students enrolled at an accredited university who are majoring in animal, meat, poultry, or food sciences, enrolled in a culinary arts program, or are interested in pursuing a career in the meat industry. Applications require department support, and a transcript must be uploaded at the time of application. Please review the undergraduate and graduate eligibility and rules before you begin the application form.

The Meat Foundation Scholarship application deadline is May 31, 2024.

Additional details about the Meat Foundation Scholarship can be found on our website meatscholars.org. If there are any questions or concerns, please contact Gheudé Hare at ghare@meatinstitute.org.

WHO Seeks Experts to Develop Food-Based Dietary Guidelines.

The World Health Organization (WHO) is currently seeking experts to develop guidelines on optimal intake of animal source foods and their plant food alternatives. WHO hopes the guidelines will help protect against malnutrition as well as noncommunicable diseases, including diabetes, heart disease, stroke, cancer, and foodborne illnesses. The guidelines will be developed following the WHO guideline development process, which includes the convening of a multidisciplinary group of experts from all regions of the world to serve on the guideline development group (GDG). To form this GDG, WHO is seeking candidates with advanced degrees and experience in: nutrition science, food safety risk assessment, epidemiology, evidence review methodologies, and food risk-benefit assessment methodology. Once selected, the GDG will: develop key questions, prioritize outcomes, interpret evidence, formulate recommendations, identify research gaps, and review the final guidelines. The GDG's conclusions and recommendations will be based on the evidence gathered and reviewed, as well as models developed by a risk-benefit assessment technical group (RBAG). Selected experts will be invited to contribute only in their individual capacity and will not represent their government, institution or other organizations, according to WHO. Completing this work is expected to take 2-3 years from inception to recommendations. The deadline for submissions is April 28, 2024. More information about qualifications and applications are available here.



Creating Alternative Support for Lethality and Stabilization for Heat Treated and Fully Cooked Meat and Poultry Products, University of Wisconsin, HansonTech

Nearly all meat processors in the United States utilize USDA, FSIS Appendices A and B to ensure adequate thermal lethality and stabilization is achieved for partially and fully cooked products. Through the development and release of updated versions in 2017 and 2021, and the realization that a host of potential food safety vulnerabilities exist, the widespread usefulness and in-plant practical application of these guidance documents has become a significant concern and practical challenge to implement. The primary objective of this study is to develop a scientific-based, regulatory-supported, and industry-useful thermal processing and cooling resource (e.g. cooking and cooling food safety handbook) for validating pathogen destruction and control, and regulatory compliance for partially and fully cooked meat products that can be used in conjunction with or in lieu of USDA, FSIS Appendices A & B.

Funded in part by the Beef Checkoff.

Revealing mechanisms for internal *Salmonella* colonization and persistence in porcine lymphoid and fat tissue, USDA-ARS-NADC - Food Safety and Enteric Pathogens Research Unit

Swine can become persistently infected with *Salmonella*, shedding little to no bacteria in the feces, until subjected to a stressful event, which increases fecal shedding. A clear understanding of the mechanisms of *Salmonella* persistence in porcine immune cells is needed to developing targeted intervention strategies to significantly reduce *Salmonella* carriage in swine and the risk of contamination of products and the environment. The overall hypothesis is that *Salmonella* resides in myeloid-lineage cells in porcine lymphoid tissues and fat, and subsequently modulates the cellular state to limit bacterial clearance. The objectives of this project is to identify the cell types harboring *Salmonella* in pig lymphoid and adipose tissue at various stages of colonization; characterize the cellular response; and identify mechanisms of intracellular colonization.

Funded in part by the National Pork Checkoff.

Summarizing the current knowledge and existing knowledge gaps for pre-harvest and post-harvest *Salmonella* contamination in pork, Kansas State University, Triumph Foods

Research on pre-harvest and post-harvest measures to prevent or reduce pathogen contamination have been published. However, knowledge gaps still remain, and a thorough literature review is necessary to fully understand what steps should be taken to address *Salmonella* concerns both preharvest and post-harvest in the swine. Therefore, this project will conduct a thorough search of pre-harvest and post-harvest *Salmonella* research in swine; compile the literature and prepare a written review of the existing knowledge. Knowledge gaps and research recommendations will be identified. Meat Institute members/volunteers will serve as focus group participants to ensure all current knowledge is considered.

Funded in part by the National Pork Checkoff.

Characterizing *Salmonella* Isolates from Ground Beef in the United States, Texas Tech University, Kansas State University, University of Georgia, USDA-ARS, Meat Animal Research Center, Food Safety Net Services

It is hypothesized that *Salmonella* serotypes and presence of highly pathogenic *Salmonella* (HPS) in ground beef will vary by geographic location and season depending on the facility. Samples obtained from a separate study will be analyzed to determine the *Salmonella* serotype(s) present in each positive sample and the presence of HPS associated with U.S. ground beef.

Funded in part by the Beef Industry Food Safety Council.

Understanding the impact of the farm and lairage environments on *Salmonella* contamination in market hogs, University of Wisconsin-Madison, Kansas State University, Texas Tech University, USDA-ARS

Salmonella contamination in market hog tonsils, lymph nodes, feces, and cecal contents likely occurs rapidly, and previous research suggests that the lairage period provides risk for cross contamination to occur. The study objectives are to detect and quantify *Salmonella* from market hogs on-farm, at lairage, carcass swabs, and lymph nodes. The *Salmonella* isolates will be characterized to determine their serotype and the presence of highly pathogenic *Salmonella* at the different stages of sampling. *Salmonella* concentration and serotypes in post-harvest samples will be evaluated to determine if it most closely represents *Salmonella* contamination on-farm or from lairage, and the impact of time spent in lairage.

Funded in part by the National Pork Checkoff.

Survival of African swine fever in pork and processed pork products, Canadian Food Inspection Service, Agriculture and Agri-Food Canada

African Swine Fever (ASF) is a contagious, haemorrhagic viral disease of pigs that is currently spreading westwards throughout Europe and eastwards into China, with significant economic losses along its path. While strict regulatory guidelines are in place to prevent the spread of this virus, little is known about the effectiveness of current meat processing methods in inactivating ASF. In addition, the matrix effect of individual meat products and ingredients on ASF survival is not well documented. This project aims to explore the survival of ASF in different meat products from ASF infected pigs as well as investigate the effect of different ingredients, cooking temperature, storage time and high pressure processing on ASF inactivation in different meat model systems.

Funded in part by the National Pork Checkoff under an ASF Partnership and administered by the Foundation.

A surveillance of *Salmonella* in the lymph nodes of sows and boars, Kansas State University, Texas Tech University

Salmonella contamination remains the leading food safety concern for pork products. The contribution of *Salmonella* in the lymph nodes in sows and boars is unknown. This study will determine *Salmonella* prevalence and concentration in the lymph nodes (subiliac, mesenteric, tracheobronchial, inguinal, axillary, pre-scapular) and tonsils of sows and boars at harvest. The impact of season and region on *Salmonella* prevalence and concentration in the lymph nodes of sows and boars will be evaluated. Positive samples will be serotyped.

Effect of minimally processed animal protein within the Dietary Guidelines for Americans on biomarkers for cognitive decline, South Dakota State University

Investigators will leverage an ongoing well-designed, randomized, controlled, crossover, feeding study following USDA Dietary Guidelines for Americans to establish the role of lean animal protein in cognitive health promotion. A minimally processed lean meat incorporated diet will be compared with an isocaloric lacto-ovo-vegetarian control. It is expected the addition of animal protein will enhance nutrient adequacy and reduce markers associated with cognitive decline and neurodegenerative diseases.

Enhanced Characterization of Sequence Differences Among *Salmonella* isolates within SNP Clusters Identified by the NCBI Pathogen Detection System, USDA-ARS, Meat Animal Research Center
This research intends to better understand the full picture of relatedness within critical *Salmonella* serovars of interest by performing a comparative genomic analyses on currently available data within the Pathogen Detection Isolates Browser (PDIB). An analysis pipeline will be developed to catalogue *Salmonella* SNP cluster diversity in the NCBI PDIB with the goal of producing a white paper to enhance industry use and understanding of this tool, and to enhance public health actions and general understanding of *Salmonella* genomics by identifying isolates for closed genome sequencing that are within 50 SNP differences.

Novel TaqMan assays for the specific detection and simultaneous differentiation of virulent and avirulent non-O157 Shiga toxin-producing Escherichia coli strains, Florida State University, USDA-ARS, U.S. Meat Animal Research Center
This study intends to standardize six multiplex TaqMan assays for the identification of virulent strains of E. coli O26, O111, O45, O103, O121, and O145 serogroups. Further, it will demonstrate the applicability of the standardized assays in inoculated food samples and red meat enrichments from national red meat surveillance programs through a direct comparison with the FSIS MLG 5C.01 reference method.

Developing a Quantitative *Salmonella* Baseline from Ground Beef in the United States, Texas Tech University, Kansas State University, University of Georgia, USDA-ARS, Meat Animal Research Center, Food Safety Net Services
The *Salmonella* level in ground beef across the U.S. is unknown. As a result, risk assessments and understanding the public health impact of potential *Salmonella* control programs across the industry are not always accurate. This study intends to conduct a representative *Salmonella* baseline and develop a blinded quantitative *Salmonella* baseline for the U.S. beef industry representing season and geographical waves.

2024 BOARD OF DIRECTORS

The Foundation Board of Directors are selected by the Meat Institute's Nominating Committee and elected by the membership of the Meat Institute. The Board provides strategic direction, financial leadership and acts upon recommendations from the Foundation's Research Advisory Committees/ Chief Scientist and the scholarship review committee. Terms are for three years.

Chair: **Al Almanza,** JBS Foods USA
Vice Chair: **Kirby Childs, Ph.D.,** Greater Omaha Beef Packing,
Jonathan Amidei, Swaggerty's Sausage Co.
Edwin Botero, Viz Cattle Corp. dba SUKARNE
Louis Eni, Dietz & Watson, Inc.
Brad Hamilton, Seaboard Foods
Meredith Healan, FPL Food LLC
Christopher J Jenkins, Catelli Brothers Inc.
Shane MacKenzie, Superior Farms
Steven Maxey, Certified Meat Products
Scott Rich, Wasatch Meats
Don Schanbel, Amcor
Kevin Sheehan, National Pork Board
Donald Thomas, Jack Links Beef Jerky
Suzanne Strassburger Reidy, Strassburger Meats/Suzy Sirloin Inc.

FOUNDATION FOR MEAT & POULTRY RESEARCH & EDUCATION