

Rodrigo Tarté

CONTACT INFORMATION

215C Meats Laboratory Phone: (515) 294-8415
914 Stange Rd. Fax: (515) 294-5066
Iowa State University Email: rtarte@iastate.edu
Ames, IA 50011-1001 <https://faculty.sites.iastate.edu/rtarte/>

EDUCATION

Ph.D. Food Science and Technology; Meat Science. Iowa State University, 1996
M.S. Food Technology. Iowa State University, 1990
B.S. Food Technology and Science. Iowa State University, 1987

ACADEMIC AND PROFESSIONAL EXPERIENCE

2015–Present Iowa State University, Ames, IA
Associate Professor, Dept. of Animal Science, 2022–Present
Assistant Professor, Dept. of Animal Science, 2015–2022
Director of Certificate Programs in Meat Science, 2018–Present

2012–2015 John Morrell Food Group (Smithfield Foods), Lisle, IL
Director, Research & Development

2011–2012 Creta Farms USA, Lombard, IL
Director of Research & Development

1999–2011 Kraft Foods/Oscar Mayer, Madison, WI
Sr. Associate Principal Scientist/Associate Principal Scientist/Sr. Scientist,
Research & Development

1996–1999 Rica Rondo S.A., Cali, Colombia
Director of Research & Development

1987–1995 Iowa State University, Ames, IA
Graduate Research Assistant, Dept. of Food Science & Human Nutrition,

RESEARCH FOCUS AREAS

Processed and value-added meat and meat products, with emphasis on:

- (1) Development and application of technologies to enable product innovation and increase product value.
- (2) Advancement of the scientific understanding of technological challenges related to product safety, quality, healthfulness, affordability, and consumer acceptance.
- (3) Development of practical solutions to the aforementioned technological challenges.

TEACHING RESPONSIBILITIES

Foods of Animal Origin (Animal Science 270)
Science and Technology of Value-Added Meat Products (Animal Science 460/560)

Advanced Meat Processing Principles and Technology (Animal Science 571)

PROFESSIONAL SERVICE HIGHLIGHTS

Meat Science journal (Elsevier): Editorial Board Member, 2020–present.

Phi Tau Sigma, Honor Society of Food Science and Technology: President, 2021–2022; Chair, Program Committee, 2020–21; Board of Directors, 2018–20; Chair, Membership & Qualifications Committee, 2016–17.

American Meat Science Association: Board of Directors, 2010–2012; Advisor, Student Board of Directors, 2013–15; Chair, Membership Committee, 2013–14; Chair, Scientific Information Committee, 2005–2008.

Institute of Food Technologists. Chair, Muscle Foods Division, 2007–2008.

PROFESSIONAL AFFILIATIONS

American Meat Science Association

American Society of Animal Science

Council for Agricultural Science and Technology

Institute of Food Technologists

International Association for Food Protection

Phi Tau Sigma, The Honor Society of Food Science and Technology

AWARDS AND HONORS

Early Advisor Award – College of Agriculture and Life Sciences, Iowa State University – 2021

Alumni Impact Award – Dept. of Food Science and Human Nutrition, Iowa State Univ. – 2014

Phi Tau Sigma, The Honor Society of Food Science and Technology – Inducted 2013

Meat Processing Award – American Meat Science Association – 2013

Cold Cuts Impact Award – Kraft Foods/Oscar Mayer – 2010, 2002

Li'l Oscar Award – Kraft Foods/Oscar Mayer – 2009

Outstanding Leadership Recognition – Muscle Foods Division, Inst. Food Technologists – 2008

Above and Beyond the Call of Duty Award – Kraft Foods – 2006, 2004

Innovation Excellence Award – Kraft Foods/Oscar Mayer – 2004

Sigma Xi, The Scientific Research Society – Inducted 1992

Gamma Sigma Delta, The Honor Society of Agriculture – Inducted 1989

RECENT SCHOLARLY WORKS

Refereed Journal Articles (last 5 years)

Mao Y, Ma P, Li T, Liu H, Zhao X, Liu S, Jia X, Rahaman SO, Wang X, Zhao M, Chen G, Xie H, Brozena AH, Zhou B, Luo Y, **Tarté R**, Wei C-I, Wang Q, Briber RM, Hu L. 2024. Flash heating process for efficient meat preservation. *Nat Commun.* 15:3893.

<https://doi.org/10.1038/s41467-024-47967-1>.

Bludau SE, Crowley RI, Hauge BC, **Tarté R**. 2024. Modification and simplification of Rongey's method for measurement of meat batter stability. *MethodsX* 12:102717.

<https://doi.org/10.1016/j.mex.2024.102717>.

- Nabwiire L, Shaw A, Nonnecke G, Talbert J, Muyanja C, Boylston T, **Tarté R**, Prusa K. 2023. Compliance with food safety standards by beef vendors at butcheries in Kamuli district, Uganda. *Afr J Food Sci.* 17:192–206. <https://doi.org/10.5897/AJFS2023.2272>.
- Nabwiire L, Shaw AM, Nonnecke GR, Talbert J, Chanes C, Boylston T, **Tarte R**, Prusa K. 2023. Beef handling practices among consumers in the U.S. Virgin Islands. *J Food Prot.* 86:100141. <https://doi.org/10.1016/j.jfp.2023.100141>.
- Cropp MS, **Tarté R**, Prusa KJ, Dickson JS, Shaw AM, Houser TA, Crowley RI, Reeve LM, Sebranek JG. 2023. Impact of nitrite-embedded packaging film on quality and sensory attributes of alternatively-cured and nitrite-free bologna. *Meat Sci.* 204:109289. <https://doi.org/10.1016/j.meatsci.2023.109289>.
- Cho K, **Tarté R**, Acevedo NC. 2023. Development and characterization of the freeze-thaw and oxidative stability of edible rice bran wax-gelatin biphasic gels. *LWT-Food Sci Technol.* 174:114330. <https://doi.org/10.1016/j.lwt.2022.114330>.
- Kibler ND, Acevedo NC, Cho K, Zuber-McQuillen EA, Carvajal YB, **Tarté R**. 2022. Novel biphasic gels can mimic and replace animal fat in fully-cooked coarse-ground sausage. *Meat Sci.* 194:108984. <https://doi.org/10.1016/j.meatsci.2022.108984>.
- Cruzen SM, Cetin-Karaca H, **Tarté R**, Sebranek JG, Dickson JS. 2022. Survival of *Clostridium perfringens*, *Staphylococcus aureus* and *Salmonella enterica* in alternatively cured ham during cooking and process deviations. *LWT-Food Sci Technol.* <https://doi.org/10.1016/j.lwt.2022.113347>.
- Cruzen SM, Cetin-Karaca H, **Tarté R**, Sebranek JG, Dickson JS. 2022. Survival of *Clostridium perfringens*, *Staphylococcus aureus* and *Salmonella enterica* in alternatively cured bacon during cooking and process deviations. *Meat Sci.* 184:108687. <https://doi.org/10.1016/j.meatsci.2021.108687>
- Tarté R**. 2021. Leveraging meat flavor understanding for product success. *Meat Musc Biol.* 5(3):7, 1–6. <https://doi.org/10.22175/mmb.13045>.
- Powell MJ, Prusa KJ, Sebranek JG, **Tarté R**. 2021. Effect of citrus fiber addition on quality attributes of fully-cooked deli-style turkey breast. *Meat Musc Biol.* 5(1):35, 1–8. <https://doi.org/10.22175/mmb.12283>.
- Lee YS, **Tarté R**, Acevedo NC. 2021. Synergistic effects of starch nanoparticles and chitin nanofibers on the stability of oil-in-water Pickering emulsions. *Food Chem.* <https://doi.org/10.1016/j.foodchem.2021.130301>.
- Miller DK, Yoder LE, Lonergan SM, Sebranek JG, **Tarté R**. 2021. Compositional differences among types of mechanically separated chicken and chicken breast meat, and their influence on physicochemical attributes of frankfurter-type sausages. *Meat Musc Biol.* 5(1):33, 1–10. <https://doi.org/10.22175/mmb.12294>.
- Lee YS, **Tarté R**, Acevedo, NC. 2021. Curcumin encapsulation in Pickering emulsions co-stabilized by starch nanoparticles and chitin nanofibers. *RSC Adv.* 11:16275–16284. <https://doi.org/10.1039/d1ra01622a>.

Tarté R, Paulus JS, Acevedo NC, Prusa KJ, Lee SL. 2020. High-oleic and conventional soybean oil oleogels structured with rice bran wax as alternatives to pork fat in mechanically separated chicken-based bologna sausage. *LWT-Food Sci Technol.* 131:109659. <https://doi.org/10.1016/j.lwt.2020.109659>.

Ruther BL, Dickson JS, Prusa KJ, **Tarté R**, Sebranek JG. 2020. Effects of processing method and non-meat binding ingredients on batter stability, yield and texture of frankfurters. *J Food Process Preserv.* 44:14626. <https://doi.org/10.1111/jfpp.14626>.

Cropp MS, Dickson JS, **Tarté R**, Sebranek JG. 2020. Use of nitrite-embedded packaging film for color stability of alternatively-cured, fully cooked bologna. *Meat Musc Biol.* 4(1):10379. <https://doi.org/10.22175/mmb.10379>.

Miller DK, Acevedo NA, Lonergan SM, Sebranek JG, **Tarté R**. 2020. Rheological characteristics of mechanically separated chicken and chicken breast trim myofibril solutions during thermal gelation. *Food Chem.* 307:125557. <https://doi.org/10.1016/j.foodchem.2019.125557>.

Powell MJ, Sebranek JG, Prusa KJ, **Tarté R**. 2019. Evaluation of citrus fiber as a natural replacer of sodium phosphate in alternatively-cured all-pork Bologna sausage. *Meat Sci.* 157:107883. <https://doi.org/10.1016/j.meatsci.2019.107883>.

Selected Conference Abstracts and Proceedings (last 5 years)

Chang, YS, **Tarté R**. 2024. Effects of sodium alginate on emulsion properties of Taiwanese-style emulsified meatballs (Kung-Wan). Asian-Australasian Association of Animal Production Animal Science Congress; 2024 Jul 8–12; Melbourne, Australia [poster].

Bludau SE, Crowley RI, **Tarté R**. 2023. Modification of the Rongey methodology for estimation of the stability of meat batters. Short paper No. 427. 69th International Congress of Meat Science and Technology; 2023 Aug 20–25; Padova, Italy [poster].

Bludau SE, **Tarté R**. 2023. Use of biphasic gel systems as fat sources in meat and plant-based burger patties. 76th Reciprocal Meat Conference; 2023 Jun 25–28; St. Paul, MN [poster].

Crowley RI, Sebranek JG, Prusa KJ, Kelecich, NJ, **Tarté R**. 2023. Evaluation of clean label ingredients for replacement of phosphates in enhanced fresh pork. 76th Reciprocal Meat Conference; 2023 Jun 25–28; St. Paul, MN [poster].

Crowley RI, Bludau SE, **Tarté R**. 2023. Color development in restructured ham formulated with varying concentrations of sodium nitrite or NATPRE T-10, and its stability during refrigerated storage under LED lights. Abstract No. 20. 76th Reciprocal Meat Conference; 2023 Jun 25–28; St. Paul, MN [poster].

Stowater JA, Prusa KJ, Reeve LM, **Tarté R**, Green DLC, Zuber-McQuillen EA, Johnson LG, Stalder KJ, Steadham EM, Huff-Lonergan EJ, Lonergan SM. 2022. Fresh pork loin lipid determination using CEM Oracle and Soxhlet methodology. *Meat Musc Biol.* 7(2):72. <https://doi.org/10.22175/mmb.15450>. 75th Reciprocal Meat Conference; 2022 Jun 12–15; Des Moines, IA [poster].

Cho K, **Tarté R**, Acevedo NC. 2022. Characterization of the mechanical properties, freeze-thaw stability, and oxidative stability of edible, high-lipid rice bran wax-gelatin biphasic gels. *J. Am Oil*

Chem Soc. 99(suppl. 1):61–62. <https://doi.org/10.1002/aocs.12654>. American Oil Chemists' Society Annual Meeting; 2022 May 3; Atlanta, GA [oral presentation].

Kibler ND, Acevedo NC, Cho K, Zuber EA, Carvajal YB, **Tarté R**. 2021. Total replacement of animal fat in coarse-ground pork sausages by novel biphasic gels containing high-oleic soybean oil. *Meat Musc Biol.* 6(2):14–15. <https://doi.org/10.22175/mmb.13203>. 74th Reciprocal Meat Conference; 2021 Aug 15–18; Reno, NV [poster].

Tarté R. 2021. Leveraging meat flavor understanding for product success. *Meat Musc Biol.* 5(3):7, 1–6. <https://doi.org/10.22175/mmb.13045>. 71st Reciprocal Meat Conference of the American Meat Science Association; 2021, Aug 15–18, Reno, NV [peer-reviewed invited paper].

Gregg CR, Koltés DA, **Tarté R**. 2020. Effect of freezing condition and wooden breast severity on cooked chicken quality. Abstract No. 294. Poultry Science Association Annual Meeting; 2020 Jul 20–22; online [poster].

Lee YS, **Tarté R**, Acevedo NA. 2020. Synergetic effects of ChFs/SNPs on the stability of 10% o/w Pickering emulsions. American Oil Chemists' Society Annual Meeting; 2020 Jun 29–Jul 3; online [poster].

Paulus JS, Acevedo NC, Sebranek JG, Prusa KJ, Dickson JS, **Tarté R**. 2019. Utilization of conventional and high oleic soybean oil oleogels structured with rice bran wax to replace pork fat in mechanically separated chicken-based bologna sausage. *Meat Musc Biol.* 3(2):53. <https://doi.org/10.22175/mmb2019.0053>. 72nd Reciprocal Meat Conference; 2019 Jun 23–26; Fort Collins/Loveland, CO [poster].

Books and Book Chapters

Tarté R. 2011. Meat protein ingredients. In: Philips GO, Williams PA, editors. *Handbook of food proteins*. Cambridge (UK): Woodhead Publishing. p. 56–91.

Tarté R. 2009. Meat-derived protein ingredients. In: Tarté R, editor. *Ingredients in meat products: properties, functionality, and applications*. New York (NY): Springer Science + Business Media. p. 145–171.

Tarté R, editor. 2009. *Ingredients in meat products: properties, functionality and applications*. New York (NY): Springer Science + Business Media.

Tarté R, Amundson CM. 2006. Protein interactions in muscle foods. In: Gaonkar AG, McPherson A, editors. *Ingredient interactions: effects on food quality*. 2nd ed. Boca Raton (FL): CRC Press. p. 195–283.

Invited Talks (last 5 years)

Nitrite in processed meats: applications, regulations and challenges [delivered in Spanish: Nitrito en productos cárnicos: aplicaciones, regulaciones y retos]. Expoalimentaria Carnes y Lácteos 2024, San José, Costa Rica; 2024 May 8.

Nonmeat ingredients [delivered in Spanish: Ingredientes no cárnicos]. Expoalimentaria Carnes y Lácteos 2024, San José, Costa Rica; 2024 May 7. *Fat replacement in processed meats: modern advances, new frontiers*. 76th Reciprocal Meat Conference, St. Paul, MN; 2023 Jun 28.

Meat alternatives. Council for Agricultural Science and Technology (CAST) Annual Meeting, Ames, IA; 2022 Oct 26.

Use of nonmeat ingredients to optimize quality and cost of meat products. Webinar “Science and Innovation China – Overseas Intellectual Program Road Show – (veterinary medicine session), Tai'an.” Chinese Association for Science and Technology and Shandong Agricultural University, Tai'an, China; 2021 Nov 16. [online]

Fat reduction options for meat products [delivered in Spanish: Opciones para reducción de sodio en productos cárnicos]. Webinar. U.S. Meat Export Federation; 2021 Nov 10. [online]

Oil structuring as a strategy to modify the fatty acid profile of meat products [delivered in Spanish: Estructuración de aceites como estrategia para modificar el perfil de ácidos grasos en productos cárnicos]. Virtual forum “New approaches in meat product development” (keynote talk); 2021 Oct 20. [online]. Asociación Mexicana de Ciencia y Tecnología de la Carne (AMEXITEC) [Mexican Association of Meat Science and Technology].

Replacing animal fats in meat products using high oleic soybean oil. Soy Nutrition Institute Meeting, Denver, CO; 2021 Sep 1. [online]

Leveraging meat flavor understanding for product success. 73rd Reciprocal Meat Conference, Reno, NV; 2021 Aug 16.

Natural ingredients in meat curing: history, application in meat products, and regulatory approval requirements in USA. International webinar “Compostos vegetais como alternativas para a cura natural de produtos cárneos” [“Vegetable compounds for naturally cured meat products”]. Centro de Tecnologia de Carnes, Instituto de Tecnologia de Alimentos (ITAL) [Meat Technology Center, Food Technology Institute], Campinas, Brazil; 2021 Jul 7. [online]

Sodium reduction options for meat products [delivered in Spanish: Opciones para reducción de sodio en productos cárnicos]. Webinar. U.S. Meat Export Federation; 2021 June 23. [online]

Meat alternatives: what's the beef? 100th National Block & Bridle Convention, Ames, IA; 2021 Apr 10.

Alternative proteins: present state and future outlook. National Institute for Animal Agriculture (NIAA) National Conference, Des Moines, IA; 2019, Apr 10.

Guide to functional ingredients. Education session “Functional Ingredients in Meat and Poultry Processing,” sponsored by Meat & Poultry Research & Education Foundation [NAMI]. International Production & Processing Expo (IPPE), Atlanta, GA; 2019 Feb 14.