

ABBREVIATED CURRICULUM VITAE

Keith E. Belk, Ph.D.

Professor

Department of Animal Sciences

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EDUCATION Ph.D. (Meat Science), Texas A&M University, College Station, TX. May 1992.
M.S., Meat Science, Colorado State University, Fort Collins, CO. May 1986.
B.S., Animal Science, Colorado State University, Fort Collins, CO. May 1983.

RESEARCH INTERESTS Red meat safety & quality, live animal development, international trade, quality management.

PROFESSIONAL EXPERIENCE

Associate Professor, of Animal Sciences, Colorado State University, 2001-2004.

Assistant Professor, Department of Animal Sciences, Colorado State University, 1995-2001.

International Marketing Specialist, USDA Agricultural Marketing Service, Livestock and Seed Division, 1992-95.

Research Associate, Texas A&M University, 1992.

Buyer, Fresh Meat Procurement, Corporate Meat Division, Safeway Stores, Inc., 1986-88.

Quality Control Supervisor, Corporate Meat Division, Safeway Stores, Inc., 1986.

PROFESSIONAL CONTRIBUTIONS

Refereed scientific publications (in print) = 167; scientific abstracts = 151; popular and trade articles = 34; monographs and conference proceedings = 101; animal science program reports = 73; research reports to sponsors = 171; book chapters = 7; book reviews = 1; patents = 3. Graduate Committee Chair/Co-Chair = 55 (36 M.S., 19 Ph.D.); Graduate Committee Member = 27. Grants and extramural support = \$12.4 million; addresses, guest lectures or presentations of a professional nature = 422.

AWARDS

- USDA-AMS-LS Marketing Assistance Award for Re-establishment of Export Markets for U.S. Beef; 2005.
- CSU "Celebrating Service Milestones" 10 Years of Service Award; 2005.
- U.S. Meat Export Federation Distinguished Service Award; 2004.
- American Society of Animal Science Meat Science Research Award; 2003
- CSURF (Colorado State University Research Foundation) Honored Researcher; 2000-2001.
- Named One of Seven of Meat Processing Magazines "Rising Stars for 2001."
- Western Section, American Society of Animal Science; 1999 Young Scientist Award.
- American Meat Science Association; 1998 Achievement Award.
- Awarded USDA Certificate of Merit for conducting a worldwide beef quality audit, 1995.
- Selected for inclusion in Marquis "Who's Who In Science and Engineering", 1993.
- Champion Ph.D. Graduate Research Poster, 1992 AMSA Reciprocal Meat Conference.
- Coached the high meats judging team at the 1985 International.

AFFILIATIONS

American Society of Animal Science

Institute of Food Technologists

American Meat Science Association (President Elect 2008-2009, President 2009-2010, Past-President 2010-2011)

International Association for Food Protection

Intercollegiate Meat Coaches Association

National Cattlemen's Beef Association

Colorado Livestock Association

Colorado Cattlemen's Association

Lloyd's Register Quality Assurance Certificate Number US 00126 for Lead Assessor

TEACHING

ANEQ 565 "Interpreting Animal Science Research"; Spring 1997-2012

ANEQ 567 "HACCP"; Spring 2012

AN 792D "Seminar-Meats"; Spring/Fall 2000-2012

AN 360 "Principles of Meat Science", Spring/Fall 2003-2004, Fall 2005-2011

AN 350BV "Animal & Products Judging-Meats"; Coordinator 1995-2009

MOST RECENT REFEREED PUBLICATIONS:

1. *Woerner, D. R., J. D. Tatum, T. E. Engle, K. E. Belk, and D. W. Couch. 2011. Effects of sequential implanting and ractopamine hydrochloride supplementation on carcass characteristics and *longissimus* muscle tenderness of calf-fed steers and heifers. *J. Anim. Sci.* 89:201-209.
2. *Shen, C., I. Geornaras, K. E. Belk, G. C. Smith, and J. N. Sofos. 2011. Inactivation of *Escherichia coli* O157:H7 in moisture-enhanced nonintact beef by pan-broiling or roasting with various cooking appliances set at different temperatures. *J. Food Sci.* 76(1):M64-M71.
3. *Swyers, K. L., B. A. Carlson, K. K. Nightingale, K. E. Belk, and S. L. Archibeque. 2011. Naturally colonized beef cattle populations feed combinations of yeast culture and an ionophore in finishing diets containing dried distiller's grains with solubles had similar fecal shedding of *Escherichia coli* O157:H7. *J. Food Prot.* 74:912-918.
4. *Yoon, Y., I. Geornaras, J. A. Scanga, K. E. Belk, G. C. Smith, P. A. Kendall, and J. N. Sofos. 2011. Probabilistic models for the prediction of target growth interfaces of *Listeria monocytogenes* on ham and turkey breast products. *J. Food Sci.* 76:M450-M455.
5. *Pittman, C. I., S. Pendleton, B. Bisha, C. A. O'Bryan, K. E. Belk, L. Goodridge, P. G. Crandall, and S. C. Ricke. 2011. Activity of citrus essential oils against *Escherichia coli* O157:H7 and *Salmonella* spp. and effects on beef subprimal cuts under refrigeration. *J. Food Sci.* 76:M433-M438.
6. *Adler, J. M., I. Geornaras, O. A. Byelashov, K. E. Belk, G. C. Smith, and J. N. Sofos. 2011. Survival of *Escherichia coli* O157:H7 in meat product brines containing antimicrobials. *J. Food Sci.* 76:M478-M485.
7. Chen, J. C., B. A. Carlson, J. N. Sofos, G. C. Smith, K. E. Belk, and K. K. Nightingale. 2011. High-throughput small molecule screening reveals structurally diverse compounds that inhibit the growth of *Escherichia coli* O157:H7 in vitro. *J. Food Prot.* 74:2148-2156.
8. Dourou, D., C. Simpson Beauchamp, Y. Yoon, I. Geornaras, K. E. Belk, G. C. Smith, G.-J. E. Nychas, and J. N. Sofos. 2011. Attachment and biofilm formation by *Escherichia coli* O157:H7 at different temperatures, on various food-contact surfaces encountered in beef processing. *Int. J. Food Microbiol.* 149:262-268.
9. *Gruber, S. L., J. D. Tatum, T. E. Engle, P. L. Chapman, R. M. Enns, K. E. Belk, and G. C. Smith. 2011. Effects of genetic markers and implant strategy on longissimus and gluteus muscle tenderness of calf-fed steers and heifers. *J. Anim. Sci.* 89:1401-1411.
10. *Shen, C., I. Geornaras, K. E. Belk, G. C. Smith, and J. N. Sofos. 2011. Thermal inactivation of acid, cold, heat, starvation, and desiccation stress-adapted *Escherichia coli* O157:H7 in moisture-enhanced nonintact beef. *J. Food Prot.* 74:531-538.
11. *Yoon, Y., A. Mukherjee, I. Geornaras, K. E. Belk, J. A. Scanga, G. C. Smith, and J. N. Sofos. 2011. Inactivation of *Escherichia coli* O157:H7 during cooking of non-intact beef treated with tenderization/marination and flavoring ingredients. *Food Control.* 22:1859-1864.
12. *Dixon, C. L., D. R. Woerner, R. J. Tokach, P. L. Chapman, T. E. Engle, J. D. Tatum, and K. E. Belk. 2012. Quantifying the "aging response" and nutrient composition for muscles of the beef round. *J. Anim. Sci.* 90:996-1007.
13. *Adler, J. M., I. Geornaras, K. E. Belk, G. C. Smith, and J. N. Sofos. 2012. Thermal inactivation of *Escherichia coli* O157:H7 inoculated at different depths of non-intact blade-tenderized beef steaks. *J. Food Sci.* 77:M108-114.
14. *Simpson-Beauchamp, C. D. Dourou, I. Geornaras, Y. Yoon, J. A. Scanga, K. E. Belk, G. C. Smith, G.-J. E. Nychas, and J. N. Sofos. 2012. Sanitizer Efficacy against *Escherichia coli* O157:H7 biofilms on inadequately cleaned meat-contact surface materials. *Food Prot. Trends*, 32:173-182.
15. *Pittman, C. I., I. Geornaras, D. R. Woerner, K. K. Nightingale, J. N. Sofos, L. Goodridge, and K. E. Belk. 2012. Research Note: Evaluation of Lactic Acid as an Initial and Secondary Subprimal Intervention for *Escherichia coli* O157:H7, Non-O157 Shiga Toxin-Producing *E. coli*, and a Non-Pathogenic *E. coli* Surrogate for *E. coli* O157:H7. *J. Food Prot.* 75:1701-1708.
16. Geornaras, I., H. Yang, S. Manios, N. Andritsos, K. E. Belk, K. K. Nightingale, D. R. Woerner, G. C. Smith, and J. N. Sofos. 2012. Comparison of decontamination efficacy of antimicrobial treatments for beef trimmings against *Escherichia coli* O157:H7 and 6 non-O157 shiga toxin-producing *E. coli* serogroups. *J. Food Sci.* 77:M539-M544.
17. *Fouladkhah, A., I. Geornaras, H. Yang, K. E. Belk, K. K. Nightingale, D. R. Woerner, G. C. Smith, and J. N. Sofos. 2012. Sensitivity of shiga toxin-producing *Escherichia coli*, multidrug-resistant *Salmonella*, and antibiotic-susceptible *Salmonella* to lactic acid on inoculated beef trimmings. *J. Food Prot.* 75:1751-1758.

*Denotes that a graduate student was the principal author.