

## DESCRIPTIONS OF RESEARCH MATERIALS



### Beef Marbling Photographs with Pouch

Item #06901

Price: \$26.25 each

Seven full-color photographs, 9" x 6" showing moderately abundant marbling (average Prime), slightly abundant marbling (low Prime),

moderate marbling (upper 2/3 Choice), modest marbling (upper 2/3 Choice), small marbling (low Choice) and slight marbling (Select). Enclosed in a 6 1/2" x 10" black zippered pouch, with marbling texture chart.



### Beef Steak Color Guide

Item #06404

Price: \$1.75 each

The *Beef Steak Color Guide* provides printed color comparisons and cooking temperatures for six degrees of doneness for beef steak—very rare, rare, medium rare, medium, well done and very well done.



### The Guide to Identifying Meat Cuts

Item #06202

Price: \$4.00 each

The *Guide* provides information, cooking recommendations and identifying photos for all cuts of beef, veal, pork and lamb. The 2009 updated edition of the *Guide* includes URMIS numbers for all cuts and identifies those cuts that meet government guidelines for lean.

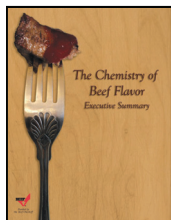


### Bovine Myology and Muscle Profiling Book

Item #12805

Price: \$26.25 each

This program provides information about research that profiles the physical and chemical characteristics of beef muscles, thereby aiding processors in the development and preparation of new products based on the inherent properties of each muscle.

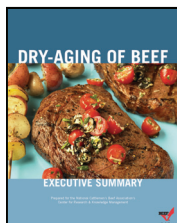


### The Chemistry of Beef Flavor

Item #12814

Price: \$3.50 each

Of all sensory traits, flavor and tenderness are most important for affecting consumer acceptance of beef. This executive summary examines how a wide array of volatile compounds make up beef flavor.



### Dry Aging of Beef

Item #12815

Price: \$3.50 each

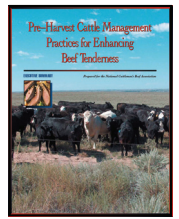
This executive summary describes dry aging and discusses the advantages and disadvantages of the process. Special attention is given to quality, palatability, and economic parameters important to those who market and purchase dry-aged beef.

### Pre-Harvest Cattle Management Practices for Enhancing Beef Tenderness

Item #12811

Price: \$3.50 each

Industry innovation makes it possible to manage product attributes across the entire beef chain. Tenderness is a key determinant of eating satisfaction. This executive summary analyzes several different pre-harvest factors that can be managed to enhance tenderness characteristics.



### Pre-Harvest Factors Affecting Beef Tenderness in Heifers

Item # 12812

Price: \$3.50 each

Existing research suggests that beef produced by heifers is more likely to be tough compared to beef from steers. This executive summary explains the differences and provides tips for heifer management to minimize tenderness problems.

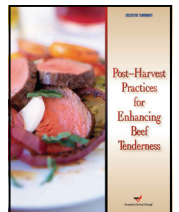


### Post-Harvest Practices for Enhancing Beef Tenderness

Item #12813

Price: \$3.50

Along with flavor, tenderness is the factor consumers rate essential to the beef-eating experience. In this executive summary, the authors analyze the science behind beef tenderness and describe each of the fifteen post-harvest practices proposed to enhance beef tenderness.

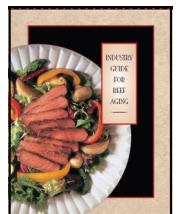


### Industry Guide for Beef Aging

Item #12810

Price: \$3.50 each

This guide is a summary of a checkoff-funded study that determined optimal aging time to enhance tenderness for individual muscles of different USDA Quality Grades. Prior to this study, the industry aging specifications applied only to beef subprimal cuts, without Quality Grade consideration.

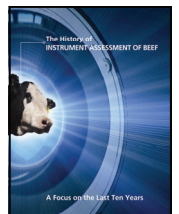


### The History of Instrument Assessment of Beef

Item #12816

Price: \$3.50 each

This Executive Summary reviews the thirty-year history of the evolution of instrumentation as a means for assessing beef yield traits in the United States. A graphic timeline of the history and a description of the various instrumentation approaches are included.

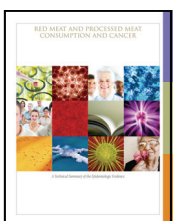


### Red Meat & Processed Meat & Cancer Technical Summary

Item #11502

Price: \$32.00 each

Leading epidemiologists from the Health Sciences Practice of Exponent Inc. evaluated more than 500 scientific studies related to red meat and processed meat consumption in six kinds of cancer: colorectal, prostate, pancreatic, stomach, breast and kidney cancers. Their report is compiled in this 92-page book which concludes that the available epidemiologic evidence is not supportive of a causal relationship between red and processed meat and any of the cancers evaluated.



# LISTING OF FREE MATERIALS

## PRODUCT ENHANCEMENT RESEARCH

- 2005 National Beef Market Basket Survey**—Compares the overall fat thickness for individual retail cuts to the cut options listed in USDA's Nutrient Database for Standard Reference in order to assess needed revisions to ensure the database reflects the actual meat cuts available in the marketplace.
- Executive Summary: Ethanol Co-Product Research**—Summarizes six research projects to determine the impact of feeding high levels of ethanol co-products. Funded by The Beef Checkoff as a result of the November 2006 Ethanol Co-Products meeting.
- Executive Summary: Ethanol Co-Products Summit**—From a meeting in November 2006, summarizes the research regarding ethanol co-products in cattle diets and identifies research needed to fully assess the impact of co-products on the industry.
- Executive Summary: National Beef Instrument Assessment Plan (NBIAP) III Meeting**—Addresses the challenges associated with instrument assessment and describes research and implementation strategies for beef instrumentation technology over the next five years.
- Executive Summary: Non-Conforming Beef Research Summit**—Summarizes the research needs to address non-conforming beef, which is beef from the cattle, carcasses, and cuts missing the broad marketplace targets costing millions of dollars in lost revenue each year.
- Carcass Merit Project: Finding Live Animal Traits for Better Beef**—Summarizes project results which identified genetic selection tools for tenderness.
- White Paper: Preserving Beef Quality with Natural Antioxidants**—Discusses the use of antioxidants to produce high-quality, pre-cooked beef products.
- White Paper: Round Muscle Profiling and Tenderness Markers in Beef**—Summarizes the research identifying expanded uses for selected round muscles.
- White Paper: Beef From Market Cows**—Describes quality of cull cow beef.
- Fact Sheet: Beef Shelf-life**—Discusses all aspects of beef shelf-life in relation to different packaging types.
- Fact Sheet: Slice Shear Force**—Summarizes research on Slice Shear Force and its benefits in determining beef tenderness.
- Fact Sheet: Mechanical Tenderization of Beef**—Describes different types of mechanical tenderization and when they should be used.
- Fact Sheet: Beef Iridescence**—Summarizes the mechanism involved in and the factors affecting the physical phenomenon of iridescence, an attribute consumers often associate with unwholesomeness.
- Fact Sheet: Beef Packaging**—Describes the multiple factors affecting fresh beef packaging and the types of packages currently available in the marketplace.
- Fact Sheet: Marination of Beef for Enhancement**—Describes the latest techniques, equipment and terminology used in processes of marination to improve product quality and consumer satisfaction.
- Fact Sheet: Ranking of Beef Muscles for Tenderness**—Provides a compilation of 60 years of tenderness and sensory research and a ranking of beef muscles based on Warner-Bratzler shear force and sensory panel evaluations of tenderness, juiciness, and beef flavor.
- Fact Sheet: Adding Enzymes to Improve Beef Tenderness**—Discusses different enzyme treatments to enhance tenderness and other factors, such as raw material, holding time and temperature which may also impact the enzyme effectiveness.
- Fact Sheet: Cutout Calculator**—Explains the Beef Cutout Calculator, found at [www.beefresearch.org](http://www.beefresearch.org), (Featured Web Sites section) which provides an in-depth view of carcass composition and value.
- Fact Sheet: Color Changes in Cooked Beef**—Discusses the three non-typical color changes occasionally observed in cooked beef, premature browning, persistent pink and color reversion, which make color an unreliable determinant of product doneness.
- Fact Sheet: Understanding the Different Kinds of Beef in the Marketplace**—Discusses the production and marketing distinctions among conventional, natural, grass-finished and organic beef.

## BEEF SAFETY RESEARCH

- Executive Summary: 2010 Beef Industry Safety Summit**—Summarizes the research and discussions at the 2010 Safety Summit.
- Fact Sheet: Irradiation: Consumer Perceptions**—Presents a comprehensive assessment of consumer attitudes about irradiated ground beef as related to palatability, color, and overall appeal, as well as results of irradiation on pathogen reduction.
- Fact Sheet: A Basic Look at *E. coli* 0157**—Answers the producer's "Frequently Asked Questions" about *E. coli* 0157:H7.
- E. coli* 0157 Solutions: The Pre-Harvest Commitment**—Summarizes the current science on pre-harvest interventions and best practices on the farm to help reduce the prevalence of *E. coli* 0157:H7 and identifies knowledge gaps for research focus.
- Fact Sheet: Advancing the Pre-Harvest Commitment**—Provides a roadmap for future research needed to develop and implement food safety interventions at the pre-harvest level.
- Fact Sheet: A Basic Look at *Salmonella***—Examines the state of the research to identify management practices to address *salmonella* contamination at the pre-harvest level.
- Fact Sheet: Overview of Pre-Harvest Safety Interventions**—Explores strategies and technologies that can be used to reduce pathogen shedding and prevalence in live cattle populations.
- Fact Sheet: A Basic Look at *E. Coli* 0157:H7**—Provides background on *E. coli* 0157 and examines the future of preventing *E. coli* contamination at the pre-harvest level.

## HUMAN NUTRITION RESEARCH

The following fact sheets are not available in hard copy but may be downloaded from [www.beefresearch.org](http://www.beefresearch.org).

- Beef Lipids in Perspective**—Describes the classes of dietary fats, beef's fat profile, and the role of beef's fatty acids in a healthful diet.
- Conjugated Linoleic Acid and Dietary Beef—An Update**—Summarizes recent research on the physiological and health effects of this naturally occurring *trans* fatty acid.
- Stearic Acid—A Unique Saturated Fat**—Outlines the science demonstrating stearic acid's neutral effect on blood cholesterol levels.
- Lean Beef and Heart Health**—Explains how lean beef, similarly to lean poultry and fish, supports a heart-healthy diet plan.
- Beef Nutrients and Cognition**—Describes the science showing how beef's essential nutrients, including iron, zinc, B-vitamins, choline and selenium, positively impact cognition at all life stages.
- Meat Protein, Calcium Balance and Bone Health**—Reviews recent research on the interaction of dietary protein and calcium and their effect on calcium balance and bone health.



These items are available for download on [www.beefresearch.org](http://www.beefresearch.org) or you may purchase hard copies by calling customer service at 1-800-368-3138.



Funded by The Beef Checkoff