

R&KM Quarterly Research Update

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2007 CONVENTION HIGHLIGHTS:

This year's Cattle Industry Annual Convention and Trade Show in Nashville, TN was a great success drawing a near record 6,500 participants. During this meeting, NCBA members discussed critical issues facing the industry and helped shape policy direction for the coming year.

The Joint Research & Knowledge Management Group kicked off a full day of committee meetings with a combined gathering where NCBA research staff members provided a review of program activities. Following individual committee meetings, the joint group gathered again to hear committee reports and discuss future direction. Thanks to all committee members for your participation and for making this meeting positive and productive.

Nashville Issues Forum: Bio-Energy's Impact on the Beef Industry



The recent explosion in ethanol production has had a dramatic effect on feeder cattle prices via the price of corn. As a result, this issue represents one of the biggest structural changes to the beef industry in several decades. Speakers Keith Hansen (Chairman of the Joint Research & Knowledge Management Group), Bill Holbrook (The ProExporter Network) and Gregg Doud (Chief Economist, NCBA) helped cattlemen put this issue into perspective. Speakers and participants discussed projected ethanol industry growth, by-product utilization and opportunities for involvement in the shaping of future U.S. energy policy.

Discovery Symposium

The checkoff-funded 2007 Nutrition Research Discovery Symposium was held in conjunction with the National Cattlemen's Convention in Nashville on February 1, 2007. The purpose of this symposium was to join producer leadership and scientists to discuss opportunities for enhancing beef's nutrient composition. Six nationally recognized scientists shared their expertise on various aspects of beef's nutrient composition. Their presentations can be viewed at www.beefresearch.org under the 2007 Discovery Symposium tab in the Human Nutrition Research section.

The major outcome of the Nutrition Research Discovery Symposium was the consensus that beef composition currently meets the national health guidelines, yet opportunities exist for enhancing beef's nutrient composition. This can be accomplished through animal management (breeding and feeding) and product development. Furthermore, the nutrient considerations for enhancing beef products include the ratio of saturated fat to monounsaturated fat, vitamins and minerals, and omega-3 enrichment. Additionally, nutrition research examining the human health benefits of eating beef with an enriched or modified nutrient composition is currently extremely limited.

PROGRAM UPDATES:

Product Enhancement Research

2007 Convention Update

The Joint Industry Product Enhancement Committee met in February 2nd in Nashville to hear research updates and evaluate proposed research priorities for FY 2008. Elizabeth Dressler of Coleman Natural Foods delivered to the committee a report from the Product Enhancement Advisory Panel. The committee then set research priorities based on the recommendations made by the advisory panel. Research update topics included next generation technologies for instrument grading and product labeling claims (Lawrence Yates, Ph.D. and Marty O'Connor, Ph.D., USDA, AMS); National Beef Tenderness and National Beef Market Basket Survey projects (Jeff W. Savell, Ph.D., Texas A&M University); and product quality implications when feeding ethanol co-products (Galen Erickson, Ph.D. and Chris Calkins, Ph.D., University of Nebraska).

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Funded by The Beef Checkoff

Upcoming Meetings

A checkoff-funded industry meeting related to the National Beef Instrument Assessment Plan is being planned for later this summer. The intent of the meeting will be to address the state of the industry in utilizing instrumentation for beef quality traits and to develop a 3-5 year plan for future research efforts in this area. Stay tuned for additional details.

National Beef Tenderness Survey

Tenderness is an important aspect of beef palatability that ultimately drives customer satisfaction. A series of National Beef Tenderness Surveys, started in 1990 and funded by The Beef Checkoff, periodically benchmark tenderness in retail and foodservice outlets. Recently released 2005 National Beef Tenderness Survey results demonstrated an 18 percent overall increase in tenderness over results recorded in 1999.

In 2005 and 2006, researchers evaluated tenderness of beef from 82 retail establishments and 6 foodservice operators in 11 U.S. cities. Among retail cuts, top loin, bone-in top loin, bone-in ribeye, T-Bone and Porterhouse steaks had the lowest (most tender) shear force values. Among foodservice cuts, top loin steaks were most tender when compared to ribeye and top sirloin steaks. Increased aging times, slower chill rates and a jump in branded beef programs are among the reasons accounting for the 18 percent increase.

National Beef Market Basket Survey

Nutritionists, the media and consumers have often been misled about beef's role as a source of dietary fat because frequently, beef's nutrition perceptions are based on faulty information. The checkoff-funded 2005 National Beef Market Basket Survey demonstrated that fat trim levels and separable fat content of some beef cuts in the retail case are leaner than ever before and leaner than reported in USDA's National Nutrient Database for Standard Reference.

Researchers evaluated more than 10,000 beef cuts from 82 retail stores in 11 cities across the country. Overall fat thickness for retail cuts was 0.24 cm, or less than a tenth of an inch. In addition, analysis determined that average fat percentages for nine of the twelve ground beef classifications sampled were lower than the percentages declared on the package label.

Beef checkoff funds have helped make nutrient database improvement a top priority in recent years. Because the database is used by government agencies when developing national nutrition recommendations, it is critical that beef be accurately represented.

FY2007 RFP/Funding Update

Product Enhancement received a total of 44 proposals through a general Request for Proposals (RFP) and an additional 14 proposals through a targeted RFP covering ethanol co-product research. Proposals were reviewed internally and sent out for peer review from industry leaders and co-funding support was sought from state partners. As a result, nearly 25 FY2007 Product Enhancement projects have been initiated for completion through May 31, 2008.

Beef Safety Research

2007 Convention Update

The Joint Industry Beef Safety Committee met Friday, February 2 in Nashville, TN to review currently funded research as well as the Authorization Request for the 2007 fiscal year. The highlights of the meeting included an update by Dr. Donald Sharp, Food Safety Officer, Centers for Disease Control and Prevention, on topics of mutual interest and a presentation by Dr. Guy Loneragan of West Texas A&M University on emerging microbial threats to beef safety. The Committee voted to allow two resolutions to sunset (Role of Microbial Performance Standards in HACCP Based Meat Inspection and Poisonous Plant Research Facility) and to renew the resolution related to Foreign Inspection. New policy was developed related to a Single Food Safety Agency (NCBA opposes the creation of a single food safety agency and urges continued cooperation between USDA and FDA to further protect public health) and to cloning (NCBA supports the development of cloning technology as another assisted reproductive technology that can be used in the beef industry, but urges complete participation in the voluntary ban to prevent the products of clones and their offspring from entering the food supply until FDA makes a final decision on its risk assessment).

FY 2005 Project Updates

Checkoff projects funded in 2005 and completed in 2006 focused on several aspects of pre- and post-harvest safety interventions. To reduce the colonization and/or shedding of E. coli O157:H7 and Salmonella, a vaccine and bacteriophage (harmless, naturally occurring viruses that specifically kill bacteria) cocktail was assessed. When the bacteriophages were fed to cattle that were artificially inoculated with E. coli O157:H7, the pathogen's concentration in the gastrointestinal tract was reduced by 94% within 16 to 24 hours, but returned to the levels of untreated animals. Continued research is needed before this strategy can be routinely used to control foodborne illness.

As shipping and transportation of cattle may impact bacterial loads on hides and thus carcasses, research was conducted to evaluate possible steps to impact potential contamination. Researchers noted that the dust generated during the loading process increased the number of E. coli O157 and Salmonella positive cattle hides compared to cattle hide samples taken prior to loading.

Hide washes have been implemented in recent years to remove physical contamination from hides as well as reduce the pathogen load at the beginning of the harvest process. Thus, continued efforts to improve and maximize the effectiveness of this intervention strategy were addressed by a group of researchers. Although researchers found chemical de-hairing to be the most effective against E. coli O157:H7 and Salmonella, the combination treatment of sodium hydroxide followed by a high-pressure wash of chlorinated water was also very effective, followed by a lactic acid treatment. In an effort to develop additional effective hide wash treatments, trichloromelamine, a non-toxic biodegradable wash was developed to reduce foodborne pathogens on hides by 50%.

Beef Industry Food Safety Council's (BIFSCo) Safety Summit

The 2007 Beef Industry Safety Summit was held February 28 through March 2 in Dallas, TX. 140 attendees participated in sessions during which the following actions occurred:

- Reviewed the industry's plan to continue the battle against foodborne pathogens.
- Discussed current safety issues with representatives from all sectors of the beef industry during reciprocation sessions
- Built their knowledge base on beef chain pathogens during research results presentations
- Received briefings on emerging issues such as foot-and-mouth disease, Mycobacterium paratuberculosis, multi-drug resistant pathogens and animal biotechnology.
- Determined future courses of action to help each sector reduce foodborne pathogen incidence and enhance the safety of U.S. beef products.

Atypical BSE Think Tank

A group of leading research scientists and industry representatives gathered for a focused discussion held March 19 -20 in Minneapolis, MN. The purpose of the meeting was for the scientists to share information from current projects in the United States and Europe surrounding the similarities and differences between atypical and typical BSE cases. New knowledge about the transmission of the disease, testing method developments, and future research needs were also discussed. The group of research and industry individuals stressed the importance of continued opportunities/meetings to share research developments from their labs as well as from their international colleagues. The participants also stressed the importance of additional research in TSE science to answer additional questions that will ultimately foster consumer confidence in the safety of domestic, imported, and foreign beef supplies.

Centers for Disease Control and Prevention

Several NCBA staff members from the Research and Knowledge Management Group, along with Public Opinion and Issues Management staff and two beef producers, visited the Centers for Disease Control and Prevention (CDC) in Atlanta to discuss topics that affect public health and the beef industry. NCBA staff had the opportunity to discuss checkoff funded beef safety research and communication efforts as well as give a presentation describing beef production. CDC staff shared information on human health issues that are linked to beef products. This visit is part of an on-going effort to build a relationship with the CDC to build open communication and information sharing.

FY 2007 RFP/Funding Update

Beef Safety received 54 proposals. After an internal and industry review process, 15 have been selected for completion by May 31, 2008.

Human Nutrition Research

BOLD

Beef in an Optimal Lean Diet (BOLD) is a major checkoff-funded research study designed to demonstrate that a healthy diet that frequently includes lean beef has positive health endpoints. Dr. Penny Kris-Etherton, Nutrition Scientist at The Pennsylvania State University, is the principle investigator of the BOLD study. Dr. Kris-Etherton presented the rationale, design and timeline for the study at the Joint Human Nutrition Research Committee Meeting in February. This study was initiated in February 2007. A pilot study will be completed by January 2008, and the entire study will be completed by September 30, 2009.

The Naturally Nutrient Rich (NNR) Score

This study, funded by The Beef Checkoff, will promote the concept of nutrient density by developing a nutrient profiling scheme for individual foods, which will be the Naturally Nutrient Rich (NNR) Score. The planned analyses will generate NNR Scores for a large number of foods in the USDA Food and Nutrient Database for Dietary Studies (FNDDS 1.0). The food based NNR approach to characterizing healthy eating habits will then be compared to other measures of a healthy diet. Under this index, beef should score well due to its high concentration of essential nutrients.

Revised Lipid Facts Sheets

Four Beef Nutrition Facts Sheets which focus on dietary fats are currently being revised in order to accurately represent the most current science. The four facts sheets will be available on the beef research Web site by midsummer. The titles will be as follows:

- Lean Beef and Heart Health
- Dietary Fats and Meat
- Stearic Acid – A Unique Saturated Fat
- Conjugated Linoleic Acid and Dietary Beef

Beef Nutrient Database Improvement

This is a collaborative effort between NCBA and USDA-ARS to update and maintain beef composition and nutrient values for beef and beef products in the USDA National Nutrient Database for Standard Reference (SR) in order to assure currency of data. This checkoff-funded project will include several approaches to meet the objectives which include: nutrient analysis of beef products, the addition of new beef items to the SR, revision of current beef items in the SR, and deletion of beef products no longer in the retail market from the SR.

RFP Requests

Research RFP's will be released on April 15, 2007 for emphasis on protein, saturated fat and nutrient analysis of beef cuts.

Market Research

Market Research Working Group Meeting Update

During this meeting, Martin Roth (NCBA) gave an overview of why market research is important by comparing the beef-related attitudes, behavior and knowledge of Working Group attendees

against total U.S. population data. This exercise showed the distinct point-of-view differences between these two groups, and as a consequence, underscored the importance of better understanding how the average consumer thinks and behaves through a comprehensive marketing research program. Current checkoff-funded market research highlights were also shared, including information on the changing U.S. population and its effect on beef demand, data on beef consumption across the various channels of distribution (e.g., foodservice, retail), protein trends at home and away from home, and current attitudes and imagery associated with beef and chicken.

FY 2007 Status

A significant amount of FY07 market research has been completed and will be shared at the upcoming Cattle Industry Summer Conference in Denver, CO (July 17-20, 2007). Highlights from recent research studies will cover:

- Adding value to the Chuck Roll through consumer tested and approved new cuts
- Insight into what resonates with the important and growing Hispanic market at the fresh meat case
- Methods on how to maximize consumer interest in and usage of beef recipes
- The identification of new hand-held/convenience and youth-directed beef products that strike the right chord with consumers

Beef Production Research

Ag Research Funding

The Beef Production Research Committee (BPRC) engaged in a lengthy discussion during the Nashville meeting regarding the current shortage of funding for agricultural research throughout the U.S. This shortage affects both land grant universities and USDA Agricultural Research Service (ARS) stations.

The committee learned of three existing proposals calling for increased federal funding to support agricultural research. The main proposal discussed was the CREATE-21 funding initiative from the National Association of State Universities and Land Grant Colleges (NASULGC) to re-energize agricultural research, teaching and extension. The initiative includes requests to Congress for new funding and provides a new model for funding distribution. The committee also reviewed existing NCBA policy on Agricultural Research Funding.

Though the committee was not able to come to consensus on the appropriate stance to take to show support for increased federal funding during this meeting, committee members did express interest in forming a small working group to review all existing information, including existing proposals and existing NCBA policy, and report recommendations for support back to the whole group. The NCBA Officer Team has approved formation of this working group and committee leadership and staff are now working to initiate group activity. For more information contact Bridget Baird at the National Cattlemen's Beef Association (bbaird@beef.org or 303-850-3336).

COMMITTEE LEADER PROFILE – KEITH HANSEN:

Keith Hansen is the Chairman of the Joint Research & Knowledge Management Group. Following degrees from New Mexico State University (1966) and Texas Tech University (1968) in the Animal Sciences (Nutrition and Meat Sciences), Keith spent four years managing the Bull Testing Program and doing Nutrition and Management Research with beef cattle at the Texas Tech University Research Center at Amarillo. After another year of graduate studies at the University of Nebraska, Keith moved to Hereford, Texas in 1973 where he began a career in Beef Cattle Nutrition Consulting.



Thirty-four years later, still in Hereford, Keith continues to consult with feedyards and ranches in the Southwestern U.S. and Nebraska. In the U.S., Keith's company, XF Enterprises Inc., is composed of four primary groups including a manufacturing division and XTRA Factors, producing beef feed supplements and vitamin/mineral fortification products for all classes of livestock and pets. The consulting arm, Nutrition Service Associates, works with clientele feeding more than 4.5 million beef cattle annually in addition to a large dairy clientele and pet food business. The beef range feed manufacturing, sales and distribution company, ANIPRO, sells liquid feed supplements across the U.S., and XFE Products Company, located in the Midwest, is the sales company for international product sales and microbial products.

Keith has been married to Glenda for 39 years and they have two sons, two daughters-in-law and three grandchildren. They split their time between work in Hereford, grandchildren in the Dallas-Fort Worth area and the mountains in Angel Fire, New Mexico.

“The Research & Knowledge Management Group, consisting of Beef Safety, Product Enhancement, Human Nutrition, Market Research and Beef Production Research, has proven to be an integral part of the effort to expand beef demand by providing solid research to address questions in the beef safety arena, contribute ideas and spear-head the effort to introduce new products, such as the flat iron steak developed from the muscle profiling project, and the identification of marker genes in genomics projects for enhancing product quality. We have seen and continue to see nutrition information and research relating to child development and the very healthy aspects of beef consumption for an active lifestyle out of Human Nutrition Research,” says Keith.

“I appreciate the work of the NCBA staff and the dedication of many of the members of NCBA who provide their time and leadership to share their visions and develop ideas for the future growth of beef through research.”

QUARTERLY UPDATE

Ever Wonder Why?

Ever wonder why strips of dried beef are called beef jerky?

In the days when the West was being settled, meat was often cut into long, thick strips, dried in the sun and carried in saddlebags until needed for a meal. The name given to the meat was charqui, a Spanish word meaning dried meat. When the meat was beef, the dried strips were called “beef charqui,” which was later pronounced – and spelled – “beef jerky.”

Source: Ever Wonder Why, by Douglas B. Smith. A Fawcett Gold Medal Book, ©1991.

Research Annual Report:

The past 10 years of checkoff-funded research, as well as results from several 2005 studies, are highlighted in the new research annual report, *Creating Opportunity with Knowledge*, recently released by the NCBA Center for Research & Knowledge Management. This year’s report provides a historical perspective on many key issues confronting the beef industry and summarizes findings from several benchmark Checkoff research efforts. The report covers the areas of Beef Safety, Product Enhancement, Human Nutrition and Market Research. For a copy of the 2005 annual report, visit www.beefresearch.org or call 303-694-0305.

For Your Information:

All Research & Knowledge Management dissemination materials are available on the Web at www.beefresearch.org. Two new Product Enhancement fact sheets on Beef Iridescence and the new Beef Cutout Calculator, and two new Product Enhancement executive summaries on the 2005 National Beef Tenderness Survey and the 2005 National Beef Market Basket Survey, are available on the Web at www.beefresearch.org in the Product Enhancement Research section.

A new section covering ethanol co-product information has also been added to the home page of www.beefresearch.org. This section contains an executive summary and presentations from the checkoff-funded Ethanol Co-Products Summit held in Kansas City in early November.

Upcoming Meetings and Events April 2007 – March 2008

Jun. 6-9, 2007	Beef Improvement Federation (BIF) Annual Meeting Fort Collins, CO
Jun. 17-20, 2007	American Meat Science Association’s Reciprocal Meats Conference Brookings, SD
Jul. 8-12, 2007	Joint Animal Science Meetings San Antonio, TX
Jul. 17-20, 2007	Cattle Industry Summer Conference Denver, CO
Sep. 19-20, 2007	Beef Promotion and Operating Committee Meeting Denver, CO
Feb. 6-9, 2008	Cattle Industry Annual Convention & Trade Show Reno, NV
Mar. 26-29, 2008	NCBA Spring Legislative Conference Washington D.C.

This issue of Quarterly Research Update is also available on the Web at <http://www.beefresearch.org>.

*Be sure to catch new episodes of NCBA’s
‘Cattlemen to Cattlemen’ television show each
Tuesday evening at 8:30 p.m. EST on RFD-TV.*

For more information contact:

**National Cattlemen's
Beef Association**

on behalf of The Beef Checkoff



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