Date: September 28, 2015

As we transition from summer into fall, the beef community is busy as usual. In the midst of all that’s going on, we hope that Beef Issues Quarterly will provide you with timely updates and information about a variety of topics.

by Nikki Richardson, APR, Director, Reputation Management, National Cattlemen’s Beef Association, a contractor to the Beef Checkoff

As we transition from summer into fall, the beef community is busy as usual. In the midst of all that’s going on, we hope that Beef Issues Quarterly will provide you with timely updates and information about a variety of topics. We have great content ranging from a cattle expansion update to antibiotic stewardship to beef sustainability, among other things. As always, please contact us any time to let us know what you think about BIQ and to share your ideas about specific topics you would like to see addressed.

This publication wouldn’t be possible without the leadership and foresight of the BIQ Trends Advisory Panel. They identified a wide variety of timely content related to research, updates on current issues and new resources for beef producers. Members include: Jason Ahola, Ph.D., Colorado State University; Jude Capper, Ph.D., Livestock Sustainability Consultant/Washington State University; Mandy Carr, Ph.D., NCBA*; Rick Husted, MBA, NCBA*; Duane Lenz, CattleFax; John Lundeen, NCBA*; Shalene McNeill, Ph.D., R.D., NCBA*; Mike Miller, NCBA*; Season Solorio, NCBA*; Josh White, NCBA*; and Daren Williams, NCBA*.

*NCBA is a contractor to the Beef Checkoff

Tags: Beef Issues Quarterly, Fall 2015, Letter from the Editor
Precipitation and Profits Signal Cowherd Expansion

Date: September 27, 2015

Nearly two years of record cow-calf profitability and improved forage conditions have revived the cattle cycle and led to one of the most aggressive starts to a U.S. beef cowherd expansion in recent history.

by Lance Zimmerman, CattleFax

Summary

Nearly two years of record cow-calf profitability and improved forage conditions have revived the cattle cycle and led to one of the most aggressive starts to a U.S. beef cowherd expansion in recent history.

Background

Drought still lingers in the west, but a 20-year U.S. drought cycle started to fade in May 2014. Timely precipitation all but eliminated beef cowherd liquidation in summer 2014, and non-fed cattle slaughter is down more than one million head over the last 18 months.

Discussion

Precipitation continued to replenish pastures across major cow-calf producing regions in 2015, where typical annual rainfall totals were met in many regions by the first half of the year. As rainfall became more prevalent, heifer retention became more intense across the United States.

Calf values rallied to $300/cwt. in the fall as heifer retention kept seasonal supply increases manageable and demand was relatively strong with historically strong profitability in the stocker, backgrounder and feeder segments.

The result was unheard of profitability for U.S. cow-calf producers averaging around $500 per cow in 2014. Adequate forage and profitability were what the cow-calf segment needed to propel the industry into a cowherd expansion, and the segment received both coming out of last year.

With additional heifers staying on pasture and the effects of previous herd liquidations, fed slaughter has been down 1.6 million head during the last year and a half. Supplies are tight this year, but the early signs of expansion in 2014 should lead to year-over-year increases in cattle slaughter during the next 12 months. Monthly forecasts are no more than 2 to 4 percent above the year prior through that period, but the tide is shifting to larger beef supply increases by the second half of 2016 and beyond.

Current weather forecasts are calling for an El Nino pattern to continue into next year, and CattleFax expects expansion efforts to remain intact – and beef supplies to continue to grow – over the next three to five years. Cattle producers and beef processors will need to plan accordingly to manage risk as supply dynamics continue to shift.

Culling Activity Slows

The U.S. beef cow inventory is expected to grow for the second-consecutive year on Jan. 1, 2016, with an increase of more than one million head expected – totaling near 31 million beef cows. The rapid cowherd expansion mentioned earlier will have added around two million head to the U.S. beef cowherd since 2014.

To understand how extreme this herd rebuilding effort has become, the industry can look at a variety of slaughter indicators.
Beef cow slaughter is on pace to be down 350,000 head in 2015 – dropping to the smallest total since at least 1970. On a weekly basis, the 2015 U.S. beef cow slaughter will average around 43.7 thousand head per week. When adjusted to an annualized culling rate, cow-calf producers are culling between 7.0 and 7.5 percent of their herds this year.

From 2008 to 2013, U.S. cow-calf producers culled 10 to 12 percent of cow inventory each year. It was the longest, most aggressive stretch of culling in the last 30 years. The 2015 culling rate will exceed the expansion period average of 8.4 percent – becoming the smallest annual culling rate in three decades.

**Heifers Are Not Entering Production**

With renewed pastures, cow-calf producers are also developing heifers in search of the best herd prospects. Starting last fall, the percentage of heifer calves and feeder heifers sold in U.S. auction markets, direct sales and video auction markets dropped 2 percentage points below fall 2013 levels – averaging around 36 percent of the sales mix.

That decline is reflected in current feedyard placement trends with the July 1, 2015, percentage of heifers on feed reaching a record low 33 percent. Even fed slaughter has seen the influence of heifer retention. The percentage of heifers in the fed slaughter mix dipped to 28 percent for a summer 2015 low, and it will likely finish the year averaging 33 percent.

The influence of these numbers will translate to an additional 600,000 head of beef replacement heifers – placing the Jan. 1, 2016, heifer inventory at an expansion cycle peak of 6.3 million head. Heifer retention will remain noticeable throughout the next few years, but weakening prices will result in fewer heifers entering the herd.

**Additional Beef Supplies**

CattleFax forecasts a 3.2 million head improvement in beef cow inventories from the low in 2014 to the peak around 2018. The most aggressive growth is occurring now, and subsequent additions will increase the cowherd at a decreasing rate. However, the fastest growth is yet to come for U.S. beef supplies.

Commercial beef production will experience an annual decline around 2 percent in 2015 to 23.7 billion pounds. Production will transition quickly to a 3 percent increase next year. Annual increases in beef production could average 5 percent in 2017 and 2018, eventually pushing production above 28 billion pounds by 2020.

The 2020 beef production estimate would be a new record high. In fact, current models suggest beef production could be at new record highs as early as 2018 at 27.1 billion pounds. With U.S. pork and poultry production already at record highs, the importance for additional beef market opportunities will take on a renewed importance.

Combining the above production benchmarks with assumptions for a modest 2 to 6 percent annual growth in beef exports and a 1 to 5 percent decline in beef imports, U.S. per capita retail beef consumption could approach 60 pounds per person by the end of the decade. That would be the largest domestic beef consumption since 2009.

**Conclusion**

**Market Implications**

There is no doubt that cattle and beef prices will continue to come under pressure as supplies increase. Fed cattle and boxed beef prices already started facing resistance in 2015. Price risk in the calf market will become more prevalent during second half 2016.
When the larger calf crop reaches the market in fall 2016, cow-calf producers will experience the first signs of price weakness and leverage that favors buyers. This trend will strengthen with the expectation that cattle feeders, on average, will operate in a negative margin environment for the next several months.

Demand sustained near recent levels projects calf prices can decline 20 percent just based on supply increases alone. Retail beef demand will become increasingly important to market prices as supplies increase.

Weakness back to pre-2014 demand levels would imply calf values back to the low $180/cwt. area – a decline of 30 percent. U.S. beef demand and – perhaps more importantly – global beef demand will be determining factors in the risk cattle values have as supplies increase.

Regardless of retail beef demand changes, increasing supplies will allow retailers and restaurants to gain leverage over cattle producers during the next few years. Growing retail beef demand will be more essential for industry profitability during expansion.

**Additional Resources**

- [CattleFax](#)
Additional Resources

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Date: September 27, 2015

By Lance Zimmerman, CattleFax

Source: USDA, CattleFax

Projected 2016-18

Tags: Beef Issues Quarterly,Fall 2015,Trends Analyses
Transportation Issues Impacting Cattle Well-Being in the U.S. and Considerations for the Future

Date: September 26, 2015

Consumers want to understand how food animals are raised and feel confident that the animals had a good quality of life throughout all stages of the production cycle. They often look to retailers to provide them with assurances that best management practices are being followed.

by Jason Ahola, Ph.D., Associate Professor, Beef Production Systems, Colorado State University; Lily Edwards-Callaway, Head of Animal Welfare, JBS USA LLC ; Karen Schwartzkopf-Genswein, Senior Scientist, Agriculture Canada; Dan Hale, Professor, Texas A&M University; and John Paterson, Executive Director, Education, National Cattlemen’s Beef Association, a contractor to the Beef Checkoff

Summary

Consumers want to understand how food animals are raised and feel confident that the animals had a good quality of life throughout all stages of the production cycle. They often look to retailers to provide them with assurances that best management practices are being followed.

Background

In May 2015, the National Cattlemen’s Beef Association (NCBA), a contractor to the Beef Checkoff, in coordination with Colorado State University and the Beef Quality Assurance (BQA) program, held a symposium on cattle transportation for industry experts and stakeholders to discuss animal well-being issues, research and solutions that relate to cattle transportation. The goal of the symposium was to provide clarity regarding the current state of the industry and the future of cattle transportation in the United States.

Participants reviewed past research findings regarding transportation, examined existing materials being used for educational purposes among transporters and cattle producers, and heard industry representatives discuss hurdles that must be overcome in order to improve cattle transportation and implement a cattle transporter training program that could be implemented nationally.

Discussion

Almost all beef and dairy animals are transported at least once in their lives and often, more than once. For example, feeder calves might be transported from a farm or ranch to a livestock auction market, order-buying station, backgrounding facility, pasture as a stocker, feedyard and finally to a beef processing facility. In this scenario, the calf could be transported six times during its life. Market cows and bulls are also shipped to numerous locations and often across long distances. They could be transported to a livestock auction market, a cattle-buying station and finally a beef processing plant. This does not include multiple short-distance transports between pastures within a single farm or ranch. A recent survey conducted as part of the BQA program found that the mean distance traveled by feeder calves to Texas and Nebraska feedyards was 468 ± 415 miles. Additionally, the 2007 National Market Cow and Bull Quality Audit reported that the average tractor-trailer load of beef cattle arriving at the beef processing plant traveled 472 miles, while dairy cattle traveled 227 miles.

Researchers have reported that loading conditions, time in transit, weather conditions, comingling, segregation of different sexes and weight classes into separate trailer compartments, driver experience, animal nutrition, health status and physical condition are all major factors which must be considered when
transporting cattle (Schwartzkopf-Genswein et al., 2012 and Coffey et al., 2001).

Shrink is a normal occurrence in cattle that affects both the seller and buyer, and a few hours to more than 30 days are required to replenish this weight loss. Shrink is not only a loss of gut fill but also actual tissue loss, which can exceed 60 percent of total body weight loss. High ambient temperature, extra and rough handling of cattle significantly increased the amount of shrink incurred by cattle. In a recent study, Schwartzkopf-Genswein et al. (2012) reported a cause-and-effect relationship between using best management practices (BMPs) for transporting cattle and optimizing cattle welfare and economic results. If following BMPs could result in a 1 percent reduction in shrink, among the more than 28 million feeder cattle shipped at least once in the U.S., there would be a result in a savings of more than $325 million in value at the feeder calf level. While hypothetical, this example demonstrates potential economic benefits to the cattle industry from using BMPs for transporting cattle.

Effects of Transportation Stress on Cattle

Several factors – alone or in combination – determine welfare outcomes during transport and include loading density, transport duration, trailer design and ventilation, driving and handling quality, road and environmental conditions, and fitness of the animals. From an animal welfare perspective, the total duration an animal is transported is more important than the total distance it travels. The entire transport duration an animal experiences includes waiting to depart from the point of origin after loading, driving and stationary periods, waiting to off-load, and any delays occurring during the journey. Currently, little is known about the cumulative transport duration of cattle that are sold through markets or auctions.

Tarrant et al. (1988; 1992) found that stress indicators in plasma, such as cortisol and glucose, increased linearly as loading density increased in transported steers. Appropriate loading densities for different categories of cattle (calves, feeders, feds, culls, etc.) transported under varying environmental conditions (winter vs. summer) are required. Studies of this nature are needed and would aid in defining optimal loading densities that ensure good welfare, meat quality and commerce.

The trailer environment has been identified as having the greatest impact on animal welfare during transport (Mitchell and Kettlewell, 2008). In North America, transport trailers are ventilated passively via perforations in the aluminum walls of the trailer as well as openings in the roof. Consequently, the potential to have poor welfare outcomes is significant, especially under extreme environmental conditions. During summer transport of feeder cattle, Goldhawk et al. (2014) found that the outside temperature had more effect on the trailer environment than loading density. Trailer environment can be affected by numerous factors including ambient temperature and humidity, loading density, use of bedding and airflow.

Handling stress has been shown to vary with such factors as animal temperament (Burdick et al., 2010), handling quality (gentle vs. rough), experience of the handler and animal (Lay et al., 1992a,b), the animal’s condition, and the quality of the handling facilities (Grandin, 2001). Currently, science-based information regarding the relationships between animal type (age, size and condition), temperament, and animal and handler experience as they relate to transport are limited. More research is needed to provide better clarity as to the BMPs for transporting cattle. Studies focusing on loading density, weather and trailer environment, and transport distance and duration, could certainly provide insight into more appropriate management and animal handling techniques during the transportation phase of the cattle production cycle. Results would be included in future training and certification materials.

**Conclusion**

**What is Next?**

End-product users, including large foodservice entities and packing companies, are demanding one
uniform transportation quality assurance system for cattle with accountability to address and reduce cattle transportation-related welfare concerns. In order to satisfy these demands, the cattle industry will need:

- Sound research data, likely including a nationwide benchmark audit with built-in follow-up audits to enable continuous monitoring of transportation parameters and animal-based outcomes,
- Development of robust, uniform, consistent, and agreed-upon guidelines for animal handling and transport via widespread input and buy-in from cattle producers, industry organizations, transportation companies, auction markets, packers of all sizes (including those focused on market cows), and end-product users,
- Education of cattle transportation employees in all segments of the value chain about guidelines,
- Implementation of one cattle transporter quality assurance program specifically for individuals who transport cattle or are involved with transportation processes that provides the ability for verification of certification via an online database and certification number.

The beef industry must be able to show commitment to a transporter training and certification program which includes a practical and robust verification process that can be used throughout the supply chain.

Additional Resources

- [Beef Quality Assurance website](http://www.beefquality.com)

Tags: Beef Issues Quarterly,Fall 2015,Trends Analyses
Slowdown in Australia’s Beef Production and Exports Finally Materializing

Date: September 25, 2015

Australia is the U.S. beef industry’s primary competitor in many key global markets, including Japan, South Korea, Hong Kong, Taiwan and Southeast Asia.

by U.S. Meat Export Federation staff

Summary

Australia is the U.S. beef industry’s primary competitor in many key global markets, including Japan, South Korea, Hong Kong, Taiwan and Southeast Asia.

Australia’s beef production and exports have been record-large over the past two and a half years, due in large part to drought-induced herd liquidation resulting in the highest slaughter levels since the 1970s. Major herd rebuilding efforts were anticipated in 2015, but took longer than expected to materialize. In the first half of the year, slaughter levels and exports surpassed the record-setting pace of 2014. But Australia’s herd rebuilding efforts have finally begun to gain traction, as evidenced by a recent slowdown in exports.

Background

Coming off a record-shattering year for beef production and exports in 2014, the Australian beef industry was expecting to undergo a significant slowdown this year. In fact, Meat and Livestock Australia (MLA) projected a year-over-year decline of 14 percent in beef production and a 20 percent drop in exports.

Through the first half of 2015, this scenario did not materialize. Slaughter levels remained record-large, and beef production through July was up 5 percent from last year, with disappointing rainfall dampening the prospects for herd rebuilding. Beef exports did not skip a beat, as large supplies and the weak Australian dollar helped push first-half export volume to 738,166 metric tons (mt), 9 percent ahead of last year’s record pace.

In July, Australia’s beef production declined by 1 percent, the first year-over-year decrease in 34 months and a significant sign of tighter supplies to come. Correspondingly, Australia’s export growth finally stalled in July, though exports were still steady with last year’s large volume at 121,568 mt. In August, exports dipped below year-ago levels for only the second time since 2013, with volume slowing by 5 percent to 106,010 mt as slaughter numbers also continued to trend downward.

The United States has been the big growth market for Australia’s exports this year, with volume through
August up 37 percent from a year ago to 309,926 mt. The combination of high lean beef prices and the strong U.S. dollar is pulling more beef into the United States — in fact, Australia will fill its duty-free quota for imports entering the U.S. for the first time since the U.S.-Australia Free Trade Agreement was implemented in 2005. Exports to Australia’s other top markets have grown at a more modest pace compared to 2014, with results through August as follows:

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<td>China</td>
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Discussion

With the Japan-Australia Economic Partnership Agreement (JAEPA) taking effect in January 2015, Australia is the only major beef supplier to have gained relief from Japan’s 38.5 percent tariff on imported beef. Under the JAEPA, tariffs on Australian beef now stand at 31.5 percent for chilled product and 28.5 percent for frozen.

These tariff advantages are especially significant when considering the current strength of the U.S. dollar versus both the Japanese yen and Australian dollar. But fortunately, the duty reductions in the JAEPA were front-loaded, and further reductions in subsequent years will be more modest.

Australia’s exports to Korea have been supported by high domestic beef prices and implementation of the Korea-Australia Free Trade Agreement. However, U.S. beef has captured a greater share of Korea’s chilled imports as it regains popularity with retail consumers.

While U.S. beef remains locked out of the Chinese market, Australia is its largest supplier. Australia’s exports to China dipped sharply in mid-2014 when China began testing imports of Australian beef for hormone residues, citing a hormone ban that had been in place for more than a decade. But Australia responded by implementing a certification program to meet China’s requirements, and exports to China quickly rebounded.

Australia’s January-August exports trended lower for many of its smaller markets, including Indonesia, where erratic import policies create great uncertainty for the trade. Exports to Taiwan have also slowed considerably in 2015, dropping nearly 30 percent as U.S. beef continues to gain market share. In fact, U.S. beef currently holds more than 60 percent of the chilled imported beef market in Taiwan, the highest U.S. market share of any Asian destination. But Australia is shipping much larger volumes to Canada, reflecting a situation similar to the U.S. — tight supplies of lean grinding beef due to significantly reduced cow slaughter. Europe is an important destination for Australia’s grain-fed beef, and the Australian industry continues to expand its exports under the European Union’s duty-free high-quality beef quota.
For the final quarter of this year, MLA expects Australia’s beef production to be down about 7 percent from last year’s record pace. This should support continued strength in Australia’s cattle and beef prices as production and exportable supplies slowly return to more normal levels. During the second week of September, Australia’s cattle indicator price kept its record-setting pace, averaging $5.83/kg, up 61 percent from last year. In U.S. dollars, prices were $1.86 per pound, up just 22 percent and reflecting the ever-weakening Australian dollar.

Australia’s cattle feeders are estimated to be losing money, pressured by higher feeder cattle prices and feed costs that remain relatively high. Feedlot capacity utilization is still historically high, so the situation will likely worsen as feeders start to compete to fill pens. The latest inventory survey showed near-record cattle-on-feed numbers of 956,927 head, up 13 percent year-over-year.

**Conclusion**

Australia’s long-awaited herd rebuilding is causing its beef supplies to tighten, and this will improve the competitive position of U.S. beef through the end of this year and into 2016, especially as U.S. beef production rebounds. Prices for some U.S. beef cuts commonly exported to Asia — including short ribs and short plate — have also softened this year, which is providing renewed momentum with Asian buyers. This is particularly true in Korea and Taiwan, where U.S. beef has withstood significant headwinds to post impressive gains — especially in the highly valued chilled beef category.

It is important to note, however, that Australian beef still enjoys significant advantages in Asia, including lower import duties in Japan, a weak Australian dollar and the lack of access for U.S. beef in China. To maintain long-term success in Asia, the United States must continue to strive for market access gains in order to put the U.S. industry on a more level playing field with its primary competitor.

**Additional Resources**

- [U.S. Meat Export Federation](#)
- [U.S. export statistics](#)
- [Meat and Livestock Australia](#)

**Tags:** Beef Issues Quarterly, Fall 2015, Trends Analyses
The Beef Industry’s New Long Range Plan Sets Important Direction

Date: September 24, 2015

The beef industry has adopted a new long range plan (LRP) that will guide the industry from 2016-2020. Developed by a task force of industry leaders, this new plan will focus on growing demand for beef over the next five years by addressing key challenges and opportunities.

by Rick Husted, MBA, Vice President-Strategic Planning and Market Research, National Cattlemen’s Beef Association, a contractor to the Beef Checkoff

Summary

The beef industry has adopted a new long range plan (LRP) that will guide the industry from 2016-2020. Developed by a task force of industry leaders, this new plan will focus on growing demand for beef over the next five years by addressing key challenges and opportunities. The plan’s vision is simple and straightforward, “To responsibly produce the most trusted and preferred protein in the world.” The mission statement summarizes key elements the plan will focus on and states, “A beef community dedicated to growing beef demand by producing and marketing the safest, healthiest, most delicious beef that satisfies the desires of an increasing global population while responsibly managing our livestock and natural resources.”

The plan’s overall objective is to increase wholesale beef demand by 2 percent annually over the next five years. Taking the turnaround in supply that is underway, that will be no small task. Given that, the LRP task force is challenging industry stakeholders across the supply chain to support the plan by taking specific action on those strategic initiatives most relevant to their area of expertise.

Background

In today’s global marketplace, every successful cattle producer or other beef industry stakeholder knows the importance of planning when it comes to business success.

In fact, every decision companies and organizations make is ideally based on sound research and strategic foresight. While all beef related businesses likely have their own internal plans and objectives, the beef industry recently funded the development of a five-year beef industry long range plan to help ensure the industry, at a minimum, has the underpinnings to engage in and align to a consistent direction. More specifically, the beef checkoff will use this plan to very directly guide their efforts and funding decisions moving forward.

Developed by a task force of 16 industry leaders, the plan took about eight months to complete and was ultimately adopted by the National Cattlemen’s Beef Association, a contractor to the Beef Checkoff, and the Cattlemen’s Beef Board during July’s 2015 Cattle Industry Summer Conference in Denver.

“While the beef industry has faced many challenges, the future holds tremendous promise for the industry,” according to Don Schiefelbein, owner/operator of Schiefelbein Farms and task force co-chairman. “The task force took a research-based approach to not only determine where the industry is and how we got here, but also at the trends and issues potentially impacting the beef community so that we can be most successful moving forward.”

The task force identified increasing beef demand as the single most important strategic objective for the industry to pursue and established a specific objective to "increase the wholesale beef demand index by 2 percent annually over the next five years" through focus on four core strategies: drive growth in beef exports; protect and enhance the business and political climate for beef; grow consumer trust in beef and...
The overall vision of the task force was straightforward,” said John Butler, CEO of Beef Marketing Group and task force co-chairman. “Recognizing the growing demand among the world’s middle class for high-quality protein, we want the U.S. beef industry to responsibly produce the most trusted and preferred protein in the world. At this pivotal point in the U.S. beef industry’s history we need to focus our energies and limited resources on those areas that can provide our industry the best results.”

Beyond these four core strategies, the task force identified specific strategic initiatives that support each. These initiatives are much more focused and at times more aggressive than direction provided by long range plans in the past. The task force clearly recognized the importance of calling out ways to address current issues facing the beef industry today.

A High Level Overview of the Long Range Plan Core Strategies and Strategic Initiatives (see the plan for more detail)

- **Drive Growth in Beef Exports**
  This strategy focuses on gaining access to key foreign markets, adopting an animal I.D. traceability system and promoting the unique attributes of U.S. beef to foreign consumers.

- **Protect and Enhance the Business & Political Climate for Beef**
  This strategy begins with motivating stakeholders to become more engaged in policy concerns to improve the industry’s effectiveness in managing political and regulatory issues that threaten the overall business climate of beef production. It must also include efforts to ensure beef’s inclusion in dietary recommendations, the exploration of new production technologies to replace ineffective or unacceptable production inputs or methods, and a crisis prevention and management plan to prepare the industry to manage key risks and vulnerabilities. Finally, strategies must be developed to attract, develop and enable the next generation of beef industry stakeholders while simultaneously becoming more proactive in supporting global food security messages and activities.

- **Grow Consumer Trust in Beef & Beef Production**
  This strategy includes a critical focus on antibiotic stewardship, the implementation of a certification/verification program and continued investment in beef safety initiatives. Moreover, the industry must engage the entire beef community in building consumer trust and collaborate with a broader group of industry partners and outside organizations to protect beef’s image.

- **Promote and Strengthen Beef’s Value Proposition**
  This strategy is designed to revolutionize beef merchandising, invest in research to communicate beef’s nutritional benefits and capitalize on media technologies to communicate beef’s value proposition and connect directly with consumers. Furthermore, the industry must effectively respond to consumer-based market signals with product improvements and increased production efficiencies while continuing an industry-wide commitment to measuring, improving and communicating progress in beef industry sustainability.

A Call to Action
Challenge yourself and your organization to help achieve the long range plan’s objectives by taking specific action on those strategic initiatives you believe you could most positively impact. The plan will only be as good as the outcomes it achieves. Make your mark and get involved today.

**Additional Resources**

- [Beef Industry Long Range Plan](#)

**Tags:** Beef Issues Quarterly,Fall 2015,Research Findings
Antibiotic Stewardship is Not New to Cattle Ranchers: Update on New Regulations and What It Means for the Beef Industry

Date: September 23, 2015

Antibiotic use in food-producing animals has become a topic of interest across food-producing animal industries as well as in consumer and regulatory arenas. Over time, the guidance to industry has evolved and this article captures the current guidance from the Food and Drug Administration (FDA) and the beef industry’s producer programs.

by Josh White, Executive Director, Producer Education and Mandy Carr Johnson, Ph.D., Sr. Executive Director, Science & Product Solutions, National Cattlemen’s Beef Association, a contractor to the Beef Checkoff

Summary

Antibiotic use in food-producing animals has become a topic of interest across food-producing animal industries as well as in consumer and regulatory arenas. Over time, the guidance to industry has evolved and this article captures the current guidance from the Food and Drug Administration (FDA) and the beef industry’s producer programs.

Background

There has been a great deal of discussion lately about how antibiotics are used in raising livestock. The reality is that farmers and ranchers take antibiotic use in livestock very seriously and continuously evaluate the way they use antibiotics based on the best possible science. In fact, for nearly 30 years, there have been quality assurance programs in place to help make sure farmers and ranchers are continuously improving the way they raise beef, including the way they use antibiotics, in order to protect human health, as well as animal health. This is often referred to as “antibiotic stewardship.” Today, cattlemen and the entire livestock community are working together to continuously improve the way antibiotics are used in animals, because they care about how their practices impact antibiotic safety and efficacy. As new FDA Guidance goes into effect, it’s important to understand what this new guidance means for the beef industry.

What is Guidance #209?

The FDA Guidance for Industry (GFI) #209, “The Judicious Use of Medically Important Antimicrobial Drugs in Food-Producing Animals,” was issued in April of 2012. This document outlines the agency’s direction for use in food animals of “medically important antimicrobial drugs” or those deemed “important for therapeutic use in humans.” The document outlines the framework for the voluntary adoption of principles to 1) limit medically important antimicrobial drugs to use in food-producing animals that are considered necessary for assuring animal health; 2) limiting such drugs to uses in food-producing animals that include veterinary oversight or consultation. These efforts are outlined to foster collaboration between the public, public health, animal health, and agriculture communities to develop and implement strategies needed to assure that the public health is protected while also assuring such strategies are feasible and that the health needs of animals are addressed. The continued availability of effective antimicrobial drugs is noted to be critically important in this guidance to help combat infectious disease in both humans and animals.

What is Guidance #213?

In December 2013, FDA issued the Guidance for Industry #213 “New Animal Drugs and New Animal Drug
Combination Products Administered in or on Medicated Feed or Drinking Water of Food-Producing Animals: 

Recommendations for Drug Sponsors for Voluntarily Aligning Product Use Conditions with GFI #209”. This document was intended for sponsors of approved applications for new animal drugs and new animal drug combination products containing medically important antimicrobial new animal drugs for use in or on medicated feed or water of food-producing animals. The guidance describes the voluntary changes to the conditions of use for these types of compounds consistent with GFI #209. These voluntary changes include the phasing out of production uses (growth promotion or feed efficiency) of medically important new and combination products and the need for veterinary oversight of medically important antimicrobial drugs used in feed or water of food-producing animals. Prior to 1993, most antimicrobial drugs were approved for over-the-counter (OTC) use in food-producing animals and many were administered through medicated feed or drinking water. Since 1993, new antimicrobial animal drugs for use in food-producing animals have been labeled with Rx or Veterinary Feed Directive (VFD) marketing status, with exceptions of generic copies of existing OTC and approvals of combination medicated feeds using existing OTC antimicrobial Type A medicated articles. FDA anticipated the complete implementation within 3 years of the final guidance publication, but the implementation happened in less than half that time.

What is a Veterinary Feed Directive?

A Veterinary Feed Directive (VFD) is a written (nonverbal) statement issued by a licensed veterinarian in the course of the veterinarian’s professional practice that authorizes the use of a VFD drug or combination VFD drug in or on an animal feed. This written statement authorizes the client (the owner of the animal or animals or other caretaker) to obtain and use animal feed bearing or containing a VFD drug or combination VFD drugs to treat the client’s animals only in accordance with the conditions for use approved, conditionally approved, or indexed by the FDA. All product labeling and advertising for VFD drugs, combination VFD drugs, and feeds containing VFD drugs or combination VFD drugs must prominently and conspicuously display the following cautionary statement: “Caution: Federal law restricts medicated feed containing this veterinary feed directive (VFD) drug to use by or on the order of a licensed veterinarian.” The use of a VFD feed requires the professional supervision of a licensed veterinarian.

Producers must obtain a VFD order from their veterinarian, then send, or take, the VFD order to a feed manufacturer or supplier to get the VFD feed. Producers, who manufacture their own feed, must have a VFD order to get the VFD product for use in manufacturing the medicated VFD feed. Producers who also manufacture feed for others should be aware that they are acting as a distributor and additional requirements apply.

What is “extra-label use”?

“Extra-label use” is defined in FDA’s regulations as actual or intended use of a drug in an animal in a manner that is not in accordance with the approved labeling. For example, feeding the animals VFD feed for a duration of time that is different from the duration specified on the label, feeding VFD feed formulated with a drug level that is different from what is specified on the label, or feeding VFD feed to an animal species different than what is specified on the label would all be considered extra-label uses. Extra-label use of many injectable animal health products is permitted under the prescriptive guidance of a veterinarian. Extra-label use of medicated feed, including medicated feed containing a VFD drug or a combination VFD drug, is not permitted.

Producer or client responsibilities under a VFD order include:

- Only feed animals a VFD feed or combination VFD feed based on a VFD order issued by a licensed veterinarian;
- Do not feed a VFD feed or combination VFD feed to animals after the expiration date on the VFD order;
Subtherapeutic Antibiotic Use is Discouraged:

Provide a copy of the VFD order to the feed distributor if the issuing veterinarian sends the distributor’s copy of the VFD through you, the client;

Maintain a copy of the VFD order for a minimum of 2 years; and provide VFD orders for inspection and copying by FDA, upon request.

What producer programs exist addressing antimicrobial use?

The Beef Quality Assurance (BQA) program is a voluntary, nationally-coordinated, state-implemented program to provide guidelines for raising cattle under optimum management and environmental conditions. Started by the beef industry in the 1980’s, the program is guided by an Advisory Board composed of veterinarians, animal scientists, meat scientists, cattlemen, dairymen and a state BQA coordinator. Beef Quality Assurance is committed to continually improving training materials and educational resources to extend relevant tools for anyone who works with cattle.

A significant part of the BQA program involves antimicrobial stewardship training about the appropriate use and administration of pharmaceutical products, the honoring of withdrawal times, the prevention of environmental contamination, the need for good record keeping, and the importance of a valid veterinarian-client-patient relationship. A Beef Producer’s Guide for the Judicious Use of Antimicrobials in Cattle highlights fourteen major considerations for using antimicrobial drugs as necessary for the health of cattle.

Conclusion

The BQA program will update training materials to support changing regulations such as the revised Veterinary Feed Directive, effective October of 2015, as well as FDA Guidance 209/213 which will go into effect by December 2016.

**A Producer’s Guide for Judicious Use of Antimicrobials in Cattle (BQA)**

1. **Prevent Problems:** Emphasize appropriate husbandry and hygiene, routine health examinations, and vaccinations.
2. **Select and Use Antibiotics Carefully:** Consult with your veterinarian on the selection and use of antibiotics. Have a valid reason to use an antibiotic. Therapeutic alternatives should be considered prior to using antimicrobial therapy.
3. **Avoid Using Antibiotics Important in Human Medicine as First Line Therapy:** Avoid using as the first antibiotic those medications that are important to treating strategic human or animal infections.
4. **Use the Laboratory to Help You Select Antibiotics:** Culture and sensitivity test results should be used to aid in the selection of antimicrobials, whenever possible.
5. **Combination Antibiotic Therapy is Discouraged Unless There Is Clear Evidence that the Specific Practice Is Beneficial:** Select and utilize an antibiotic to affect a cure.
6. **Avoid Inappropriate Antibiotic Use:** Confine therapeutic antimicrobial use to appropriate clinical indications, avoiding inappropriate uses such as for the treatment of viral infections without bacterial complication.
7. **Treatment Programs Should Reflect Best Use Principles:** Regimens for therapeutic antimicrobial use should be optimized using current pharmacological information and principles.
8. **Treat the Fewest Number of Animals Possible:** Limit antibiotic use to sick or “at risk” animals.
9. **Treat for the Recommended Time Period:** This will minimize the potential for bacteria to become resistant to antimicrobials.
10. **Avoid Environmental Contamination with Antibiotics:** Steps should be taken to minimize antimicrobial drugs from reaching the environment through spillage, contaminated ground run off or aerosolization.
11. **Keep Records of Antibiotic Use:** Accurate records of treatment and associated outcomes should be
used to evaluate therapeutic regimens and always follow proper withdrawal times.

12. **Follow Label Directions:** Follow label instructions and never use antibiotics other than as labeled without a valid veterinary prescription.

13. **Extra-label Antibiotic Use Must Follow USDA Regulations:** Prescriptions, including extra label use of medications, must meet the Animal Medicinal Drug Use Clarification Act (AMDUCA) amendments to the Food, Drug, and Cosmetic Act and its regulations. This includes having a valid Veterinary/Client/Patient Relationship (VCPR).

14. **Subtherapeutic Antibiotic Use is Discouraged:** Antibiotic use should be limited to the treatment, prevention or control of disease.

**Additional Resources**

- [FDA’s Guidance for Industry 213](#)
- [FDA’s Guidance for Industry 209](#)
- [FDA’s Veterinary Feed Directive Producer Requirements](#)
- [BQA Materials and Resources](#)
- [Preparing Cattlemen for Changing Antibiotic Use Regulations](#)
- [Antibiotic Stewardship Is Not New to Cattle Ranchers](#)
- [Antibiotic Use in Cattle 101](#)

**Tags:** Beef Issues Quarterly, Fall 2015, Issues Updates
Carbon Footprint of U.S. Beef vs. Global Beef and Understanding the U.S. Beef Water Footprint

Date: September 22, 2015

As a major contributor in food production, beef production provides a key service to our economy that must be maintained. However, production of beef and the associated feed crops required to produce beef also impact our environment.

by Sara E. Place, Ph.D., Oklahoma State University

Summary
As a major contributor in food production, beef production provides a key service to our economy that must be maintained. However, production of beef and the associated feed crops required to produce beef also impact our environment. Due to the complexity of beef sustainability and the issues it encompasses, partners in the beef value chain often have complex or tough questions that require balanced, objective, science-based responses. Although most of the attention has been given to carbon footprint, there are other environmental impacts that must be considered, like water use. Overall, the U.S. beef industry’s dedication to improvement and innovation has lowered its environmental footprint while improving its social and economic contributions to communities across the country.

Background
Before we can begin a discussion on the carbon and water footprint of U.S. beef production, we must understand what we are referring to when we use the term “footprint.” Carbon footprints are a measure that quantify the greenhouse gas emissions resulting from production and are expressed as carbon dioxide (CO2) equivalent emissions to account for the different greenhouse gases’ potential to trap heat in the earth’s atmosphere. For beef production, a carbon footprint refers to CO2 equivalent emissions per unit of beef produced. Water use estimates, or water footprints are defined as the amount of water used per unit of beef produced.

Comparing the U.S. beef industry’s carbon footprint to other nations is challenging for two main reasons: 1) the methodologies used in different published studies to calculate carbon footprints within and across nations vary in ways that can influence their estimated carbon footprint, and 2) the efficiency of practices in how beef cattle are raised varies greatly across countries (i.e. productive use of resources to maximize the total amount of beef produced), and efficiency is a key driver of beef’s carbon footprint. To overcome these challenges, one can examine the results from individual studies that use the same methodology to estimate CO2 equivalent emissions across the wide range of beef production systems found in the world.

As with measuring the U.S. beef industry’s carbon footprint, measuring its water footprint also presents a challenge. When looking for an answer to the question, “How much water is required to produce beef?” one may find a variety of answers. Water use estimates, or water footprints, are available in the scientific literature and indicate that water footprints range from 317 (Scanlon et al., 2012) up to 23,965 (Pimentel et al., 1997) gallons per pound of boneless beef. Why is the range so large? The range in estimates is mostly due to the methodology used by researchers. For example, some have counted all precipitation that falls toward the total water use of beef while others have left out precipitation altogether. However, irrigation water use is always considered toward the total water use of beef.

Discussion

Carbon Footprint:

In two recent analyses of global livestock systems (Opio et al., 2013; Herrero et al., 2013), North American
beef production systems (including the U.S.) were found to have some of the lowest carbon footprints. As seen in Figure 1, when CO2 equivalent emissions are expressed per kg of protein, the U.S. and other developed nations have lower carbon footprints (10 to 50 times lower) as compared to many nations in sub-Saharan Africa and the Indian subcontinent (Herrero et al., 2013).

The lower CO2 equivalent emissions per kg of protein for beef production systems in the developed world are driven by higher-quality (more digestible) feeds, lower impacts of climate stress (heat) on animals, improved animal genetics, advancements in reproductive performance, and the reduced time required for an animal to reach its slaughter weight as compared to regions with higher carbon footprints (Opio et al., 2013; Herrero et al., 2013). Combined, all of the above mentioned factors drive improvements in the efficiency of beef production while decreasing the use of natural resources and production of environmental emissions per unit of beef produced. Furthermore, it is these factors that are responsible for reducing the U.S. carbon footprint of beef by an estimated 9-16 percent from the 1970’s to the present day (Capper, J.L. 2011; Rotz et al., 2013). Using management techniques and technologies developed through scientific research is key to achieving improvements in beef production efficiency and further reducing beef’s carbon footprint.

**Figure 1.** Greenhouse gas emissions from beef production expressed as kg of CO2 equivalents per gram of protein

![Figure S 47. GHG efficiency of bovine meat production (expressed in kg CO2eq/g protein) in the year 2000](image)

Herrero et al., 2013 PNAS 110: 20888-20893

**Water Footprint**

Regardless of methodology, the production of feed for cattle is the single largest source of water consumption in the beef value chain (~95 percent of the water used to produce a pound of beef). The relative importance of this water use is highly dependent on location, because unlike greenhouse gas emissions, water use and access is a highly regionalized environmental issue, thus one must be cautious about generalizing water footprints for beef or any other product on a national scale.

Beef cattle can, however, play a role in water conservation. For example, in the High Plains of Texas, an integrated beef cattle and crop system used 23 percent less irrigation water than a system with crops only (Allen et al., 2005). The increase in irrigation water use efficiency was mostly due to the incorporation of perennial warm season grass into the farming system (Allen et al., 2005). Perennial grasses would not be as valuable to sustainable farming systems without cattle that have the ability to digest such grasses because humans cannot directly consume and digest grass.

Though the U.S. beef industry reduced its water use by 3 percent from 2005 to 2011 (Battagliese et al., 2013), many opportunities exist to further improve water use across the beef value chain (Figure 2). One area that is often overlooked and is important to all aspects of sustainability, not just water use, is
reducing food waste. Reducing food waste can help reduce the water footprint of beef and all other foods.

**Figure 2.** Examples of opportunities to reduce the water footprint of beef throughout the beef value chain.*

*Photos by USDA, USDA NRCS and USDA ARS

**Conclusion**

The U.S. beef industry has one of the lowest carbon footprints in the world due to cattle genetics, the quality of cattle feeds, animal management techniques and the use of technology. A number of studies have determined the carbon footprint of beef production, with most values ranging from 10 to 15 pound CO2e/lb BW (Rotz et al., 2013). The estimated water required for beef production greatly depends on the methodology used in scientific calculations, especially when considering whether or not precipitation water is included in water footprints. U.S. specific estimates put beef water use at 317 (Capper, J.L. 2011), 441 (Becket and Oltjen, 1993) and 808 (Rotz et al., 2013) gallons per pound of boneless beef when precipitation water is not accounted for in calculations.

As with all food production, reducing food waste and efficiently utilizing irrigation water, particularly in water-stressed regions, as well as continuing to improve production efficiency is an important aspect of beef sustainability. The production of beef results in emissions of greenhouse gases and requires consumptive water use; therefore, it is crucial that U.S. beef’s carbon and water footprint continue to be evaluated for opportunities to minimize their impact in order to increase overall beef value chain sustainability.

**Additional Resources**

- How does the carbon footprint of U.S. beef compare to global beef?
- Does Beef Really Use That Much Water?


Q & A with Dr. John Maas on Beef Quality Assurance and the Pneumatic Dart Gun

Date: September 21, 2015

Beef Quality Assurance is one of many resources that cattlemen and women utilize to help raise safer beef for a nutrition and animal welfare conscious consumer base. Recently, the BQA program directors issued an advisory statement regarding pneumatic dart guns that are used for antibiotic administration on some farms and ranches.

by Brandi Buzzard Frobose, Manager, Issues Communication, National Cattlemen’s Beef Association, a contractor to the Beef Checkoff

Beef Quality Assurance is one of many resources that cattlemen and women utilize to help raise safer beef for a nutrition and animal welfare conscious consumer base. Recently, the BQA program directors issued an advisory statement regarding pneumatic dart guns that are used for antibiotic administration on some farms and ranches. These dart guns, which have raised concerns in some areas of the beef industry, and their implications are being examined thoroughly by beef industry thought leaders, including the members of the BQA Advisory Board. The Beef Issues Quarterly editorial staff spoke with Dr. John Maas, chair of the advisory board, for his insight on the dart gun advisory and the direction that BQA is taking.

Beef Issues Quarterly (BIQ): The BQA program has a rich history of helping develop and promote improved on-farm production practices that lead to improved beef quality for consumers. What is your current role with the Beef Quality Assurance (BQA) program?

John Maas (JM): I am currently chair the BQA Advisory Board. I have been on the board for more than 20 years and I have one more year left in my current term on the board.

BIQ: Could you explain the state and national partnership that exists within the BQA program?

JM: The BQA Advisory Board works with another extremely important group of individuals that comprise the State BQA Coordinators. This is the group of individuals that coordinate and execute BQA trainings in their state. They work with academic scientists and educators to develop educational materials that are tailored to their state’s producers. They work with allied industries, local sales yards, veterinarians, local businesses and local cattle associations to fund and deliver BQA education and certifications. Beef Quality Assurance is fortunate to have corporate sponsorship from Boehringer-Ingleheim, which is particularly helpful in sponsoring producers’ access to on-line training and certification. The whole BQA effort is based on partnerships between local, state, national (CBB and Federation), and corporate arenas. This list of partners is not all-inclusive, but serves as examples of the many ways interested parties have worked together to amplify the BQA message.

BIQ: Why should cattlemen invest time and resources in becoming BQA certified?

JM: First, it is the right thing to do! Beef Quality Assurance information helps to make every producer aware of the many changing aspects of beef production. These include legal, ethical, environmental, food safety, animal health and welfare, production efficiencies, worker safety and consumer perception considerations. It is all about building quality into beef at every step of the production cycle and beyond. The concepts and techniques highlighted in BQA educational materials give guidelines that are important to the way cattle are managed and handled and to meet the needs for the health and welfare of the cattle, food safety, producer efficiency, and consumer perception.

BIQ: What do you see as challenges the BQA program must continue to focus on in the near future?

JM: The future of BQA is the next generation of leadership and the continuing need for high quality beef. The BQA program needs to focus on partnerships, age, and inclusiveness. It is vital for BQA to be inclusive and to work together with all beef sectors. The BQA program needs to focus on certification at the farm level and to continue to evolve its certification program, and on partnerships with local, state, national (CBB and Federation), and corporate arenas.
future?

JM: There are several major opportunities to build upon past BQA efforts. The issue of antibiotic use in cattle and the concerns about antibiotic resistance in the general human population are such opportunities. Accelerated training addressing these issues will be an important opportunity. I think the beef production sectors have a great story to relate to consumers about antibiotic and animal drug stewardship, but we need to be able to back that up with evidence of training, adoption and certification. Another area is environmental sustainability. Again, if you want to see healthy and productive wildlife communities, come to my ranch or to a local ranch in your area where grasslands are managed for the cattle and see that all the other species thrive there as well. We need to be sure we can back up our assertions with evidence that we are pushing the envelope ever forward. Another opportunity is documentation of all the thousands of producers who have actively adopted BQA concepts into their operations. This documentation needs to be in a location that is accessible by our customers, so they can be assured that adoption is widespread. That information needs to tally not only the number of producers, but also the number of cattle being managed by BQA certified operations. The task of BQA efforts is to make sure all aspects are covered—food safety, cattle health, cattle welfare, environmental stewardship, economic efficiencies for producers, transportation, beef quality and consumer confidence.

BIQ: Could you explain the development process around the advisory board's recent pneumatic dart advisory statement?

JM: The BQA Advisory Board has discussed the use of darts to deliver drugs to cattle for a long time. Over the last several years the issue has become a higher priority due to an increased use of these technologies. Additionally, product defects have been found at the packing plant secondary to the use of these technologies. This is analogous to the injection site lesions addressed by BQA audits and subsequent education and management guidelines developed many years ago. The advisory board, state coordinators, and many others see the need for education and guidelines for use of these technologies. Unfortunately, the data and information needed to develop these guidelines based on peer-reviewed science is lacking. The advisory statement was a list of real and potential problems that might be associated with or caused by the use of darts and a call for help to generate or share data and information that is essential to developing science-based guidelines. It was also the conclusion of the statement that the companies manufacturing, selling and promoting these methods of drug and product delivery have the responsibility and the obligation to develop the data to address efficacy, safety, animal welfare, food safety and all other concerns as compared to current BQA approved methods of drug/product administration. The advisory board has never had concerns expressed about the appropriate use of darting techniques in emergency situations under the supervision and/or advice of the herd veterinarian(s).

BIQ: What do you see as the primary purpose(s) of the advisory statement?

JM: The statement was a call for help to generate and/or share information relative to the use of these dart delivery technologies that can be used to develop guidelines that meet or exceed current BQA criteria for efficacy, animal safety, worker safety, animal welfare, animal health, food safety and all the other concerns that BQA education needs to address. It also stated clearly that until the data and information is generated and/or shared the guidelines for use could not be developed. Therefore, current use of this technology does not meet BQA injectable product administration guidelines.

BIQ: What has been the general response from producers and their veterinarians upon the release of the advisory statement?

JM: The response has been very positive. In fact, one of the major dart technology companies sent out a press release recognizing problems do exist and pledging their support and efforts to move this issue forward in a positive manner. There have been a small handful of critical comments, but even these individuals have offered some good insights into how to proceed. The most important point is that many
people and interests are now engaged and that is always a positive situation. A journey of a thousand miles always begins with a single step—the statement has been successful in getting that journey started.

**BIQ:** Is there any additional information you would like to share with Beef Issues Quarterly readers?

**JM:** The BQA effort has been an extremely effective tool to build quality into beef products—not just to rely on inspections at the end of the process. All across America, ranchers recognize they are producing high-quality food for consumers—not just selling calves or growing stockers. This is a huge difference between cattle producers and many other industries.

**Additional Resources**

- [BQA website](#)

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Tags: Beef Issues Quarterly,Fall 2015,Questions and Answers
Q&A with Pia Untalan Olafson and the Tick-Induced Meat Allergy

Date: September 20, 2015

In recent news, individuals in certain parts of the United States have exhibited a delayed allergic response to red meat, and the allergy is reportedly associated with being bitten by the Lone Star tick.

by Joe Hansen, Director, Issues Response, National Cattlemen's Beef Association, a contractor to the Beef Checkoff

Summary

In recent news, individuals in certain parts of the United States have exhibited a delayed allergic response to red meat, and the allergy is reportedly associated with being bitten by the Lone Star tick. If you are concerned, and would like to know more about the tick-meat allergy relationship, read on for answers about this allergy from Pia Untalan Olafson, Research Molecular Biologist, USDA-Agricultural Research Service.

Beef Issues Quarterly (BIQ): Can you explain the mammalian meat allergy we’ve been hearing about in the news?

Pia Untalan Olafson (PUO): Patients experiencing this allergy report intense itching, swelling, and/or develop hives at 3 – 6 hours after eating red meat. It’s this delayed reaction that is an important characteristic of this allergy. Scientists have identified that a sugar modification on red meat causes a heightened immune response in these patients. The sugar modification is called alpha-gal, and it is found on meat and meat products from beef, pork, lamb, venison and rabbit.

BIQ: Can a tick bite really cause humans to develop this allergy to red meat?

PUO: It is possible. It may sound like something straight out of the Twilight Zone, but in the United States there is a strong association between having the mammalian meat allergy and experiencing a history of bites from the Lone Star tick.

BIQ: How does the Lone Star tick change the way the human immune system reacts to alpha-gal1?

PUO: That’s a great question. Eating meat and meat products alone does not prime the immune system. Rather, scientists believe something is transmitted to the human host during tick feeding that stimulates the production of host antibodies that specifically recognize alpha-gal. After this event, exposure to alpha-gal by eating meat or meat products triggers the host immune system and results in the observed allergy.

When ticks attach to their host, in this case a human, they secrete saliva into the host. Tick saliva contains biomolecules that enable the tick to evade the host’s immune system and successfully take a bloodmeal. While we know tick attachment and feeding are important routes of introduction, it still remains unknown
what exactly the tick is transmitting that would prime the human immune system to recognize the alpha-gal on meat and meat products.

BIQ: How severe is the reaction?

PUO: The allergic response varies – it can be minor, but it can also be severe enough in cases to warrant emergency room visits and/or hospitalization.

BIQ: Who does this food allergy affect?

PUO: This food allergy affects both children and adults; however, not everyone who is bitten by the Lone Star Tick develops the food allergy. A significant proportion of those affected report a repeated history of tick bites. The meat allergy can also occur in individuals who have previously consumed red meat without problems, also known as adult onset.

BIQ: Will I ever be able to eat red meat again?

PUO: Scientists have begun to uncover that the response to alpha-gal1 can wane over time; however, additional tick bites in the interim can boost the immune response. According to Dr. Scott Commins, a renowned scientist working with mammalian meat allergy patients, “It’s certainly something that does not appear to be a forever diagnosis2.”

BIQ: How do I know I if have been bitten by the Lone Star tick?

PUO: The Lone Star tick is distributed throughout the eastern and southeastern United States. Adult female Lone Star ticks are easily recognizable because of the white spot on their backs, and these females will attach and feed until they engorge, if not removed. Larval ticks are much smaller and most times aren’t noticed until itching begins and welts start to form on areas where the larvae have attached. The TickEncounter Resource Center provides a chart to assist with identification of ticks from various geographic regions. If you’re unable to identify an adult tick that is attached to you, images of the tick can be submitted for identification to TickSpotters, part of the TickEncounter Resource Center. Larval ticks can be collected from individuals using masking tape or a lint roller. The tape of larval ticks can then be placed in a resealable plastic bag and provided to your State Entomologist for identification.

![Approximate distribution of the Lone Star tick. Source: CDC](https://youtu.be/NIvGYJ_DidA)

BIQ: Is there a way to test if I am producing antibodies to alpha-gal?

PUO: Physicians and allergists are becoming more aware of the tick-induced delayed allergy to red meat, and a laboratory diagnostic test is available to screen patients for the presence of the antibodies that react
to alpha-gal1. An allergist can order the test and provide the results.

BIQ: Is there a time during the year when Lone Star Ticks are more prevalent?

PUO: The different lifestages of the Lone Star tick (larval, nymhal and adult) exhibit seasonal patterns of activity that vary widely by geography and climate. In general, adults peak in spring/early summer (March-July), the nymphs in April-September, and the larvae in June until the first hard frost.

BIQ: How can I reduce my probability of acquiring the tick-induced mammalian meat allergy?

PUO: Warmer temperatures and longer days signal the start to spring and summer outdoor activities like hiking, biking and gardening. While the time spent outdoors is refreshing after the winter months, it also increases the chance of exposure to disease-transmitting insects and ticks, including the Lone Star tick. Tick bite prevention is an essential component to reducing prevalence of the mammalian meat allergy. The Centers for Disease Control recommends measures such as wearing hats, long sleeves, pants and closed-toe shoes when visiting areas likely to be tick-infested, such as brush land or wooded areas. Also suggested are application of repellents containing 20 – 30 % DEET to exposed skin and clothing, as instructed on the product label, and treatment of clothing and gear with products containing 0.5% permethrin. Be sure to conduct a full-body tick check after working in tick-infested areas in order to locate and properly remove attached adult ticks.

Additional Resources

- Centers for Disease Control website

Tags: Beef Issues Quarterly, Fall 2015, Questions and Answers
Issues Media Monitoring and Response Analysis: June 2015 – August 2015

Date: September 19, 2015

On a daily basis, the Issues and Reputation Management team, on behalf of the beef checkoff, carefully surveys the landscape across traditional media, broadcast media and social media to determine which issues warrant a response.

by Season Solorio, Executive Director, Issues & Reputation Management, Joe Hansen, Director, Issues Response, National Cattlemen’s Beef Association and Amy Poague, Manager, Issues Analytics, contractors to the Beef Checkoff

Summary

On a daily basis, the Issues and Reputation Management team, on behalf of the beef checkoff, carefully surveys the landscape across traditional media, broadcast media and social media to determine which issues warrant a response. Using a variety of tools, including CARMA for broadcast and traditional media monitoring and Nuvi for social media monitoring, the team overlays the data from both applications to create a clear picture of how an issue is playing out in the external environment.

Background

Each quarter, CARMA reviews traditional media coverage and a small sampling of social media monitoring coverage and assigns a favorability rating to this coverage. From June through August 2015 a total of 614 traditional media stories and a random sampling of 996 social media mentions were analyzed as part of the quarterly monitoring report through CARMA. The random sampling of 996 social media mentions was a snapshot of more than 1,273,894 mentions of the beef industry during the same period. Nutritional vegetarianism was once again the top issue over the three month period, primarily driven by articles discussing drought and the announcement of Beyonce’s new 22-day vegan diet – she later admitted eating meat on her “vegan” diet. Other issues that were widely covered include antibiotics and cattle & wildfire, primarily because of the wildfires in the Western United States.

Discussion

While the usual arsenal of communications and issues response tools – such as press releases, statements, trained spokespeople, etc. – continues to be important, tracking and responding to issues through online media, particularly social media, is becoming more and more important. Social media data provides the Issues and Reputation Management team with insights on consumer reactions to an issue or media story, and allows the team to uncover trends, and develop predictions. When these two mediums – traditional media and social media – collide, it provides an important case study for the beef industry.

In late August, just a week before Labor Day, Chapman University in California published a study in which they sampled a variety of ground meat products. According to their online press release, the study showed that some samples of wild game meat, such as elk and buffalo meat, which were ordered from some online retailers were mislabeled and were actually other types of meat. The study did test eight beef samples, and all of the beef samples were 100% beef. However, in reading about “ground meats” being mislabeled, several media outlets inaccurately assumed that “ground beef” had been mislabeled. Some stories even displayed photos of ground beef in grocery store meat cases. The social media listening software that the Issues and Reputation Management team uses quickly picked up the study, as well as these inaccurate stories. The team was able to quickly and effectively reach out to Chapman University to let them know of the inaccurate media headlines and the misinterpretation by the media. Chapman
agreed to issue a correction to their original press release, stating that all samples of beef tested were in fact 100% beef. The team then used this correction to reach out to media outlets, including The Daily Mail and Gizmodo, to get them to change their headlines and correct their stories. Additionally, the team created a post on FactsAboutBeef.com, clarifying that “There is No Horse Meat in Ground Beef” and was able to utilize this post for any consumers who may have seen the study and might have been searching for information. Thanks to the quick action by the team, additional measures, such as targeted digital advertising or keyword targeting on Twitter were not needed, as the traditional media outlets corrected their stories and the conversations and coverage through social media remained balanced.

Online media monitoring and quick action by the Issues and Reputation Management Team, prevented the continuous spread of misinformation and allowed consumers to understand the true findings of the study. And ultimately, it made sure that this didn’t become an issue of consumer confidence or consumer demand, especially before one of the biggest grilling holidays of the season.

**Conclusion**

Issues Management is equal parts art and science and the beef checkoff has the tools and the team in in place to protect consumer confidence, and therefore consumer demand, in beef. The ability to serve-up a message or provide perspective during an issue to the right person, at the right time, is critical. The team uses all of the tools – traditional media relations tactics, as well as more high-tech social media tactics – in order to do this on a daily basis.

**Additional Resources**

- Facts About Beef

Tags: Beef Issues Quarterly,Fall 2015,Issues Monitoring
Cattle Feeding Margins Run Red

As the cattle cycle turns there are many implications related to price and profitability for ALL segments of the beef industry. Depending on how quickly cattle supplies build and how beef demand holds up will determine the rate at which cow-calf margins tighten over the next several years. That said, changes in cow-calf margins occurs because of how the cattle cycle impacts the other segments of the beef industry, such as the cattle feeder and what they will be willing to pay for calves and feeder cattle over the next several years.

Cattle feeding profitability, on a cash-to-cash basis, is going from averaging record high last year to presently being well into the red in 2015. Year-to-date, fed cattle profitability has averaged near a $100 per head loss, cash-to-cash. And while many factors impact cattle feeding profitability the losses incurred so far are at least partially the result of still tight feeder and calf availability due to heifers being retained, as well as strong demand for cattle on grass. This supply shortage will slowly begin to shift as this year’s larger calf crop is expected to result in more calves offered this fall and going forward into 2016 and beyond. Heifer retention will still be a factor, but overall available calf and feeder supplies will increase in 2016.

Slaughter and beef production levels are forecast to increase in 2016 which, unless beef demand grows substantially, will mean lower wholesale beef and fed cattle prices next year. In turn, cattle feeders will offer lower prices for feeders and calves as the negative cattle feeding margins take their toll. Cattle feeding breakevens, on average, are expected to average in the low-to-mid $160’s for the remainder of the year. With the current futures market roughly $10/cwt below this level, today there is no room to lock in positive margins on the cattle. And while fed cattle prices are expected to see a seasonal fall rally, depending on how soft beef demand remains, will determine if cattle feeders are able to find any positive margins for the year.

**Bottom Line:** Historically, it takes 2 to 2 ½ turns of cattle feeding losses before cattle feeders begin to buy more favorable breakevens. This suggests it won’t be before 2016 that cattle feeders buy cattle that have a higher probability of being profitable. Furthermore, price risk and margin management will become more important for cattle feeders going forward as the cattle cycle turns and lower prices ensue.

Price Range Expanding Lower

The rapid expansion of the beef cow herd, coupled with declining beef demand has the market going into a correction phase from the rapidly advancing high prices during the past two years. Price trends for open and bred females have weakened overall with the expectation that calf values will be weaker in the coming years. The top of the price range is likely to remain near the $3,000 level for high quality bred heifers and young cows; however the lower end of the practical range is likely to decline from the $2,500 level down to $2,000 for below average quality females. Bred females to market this fall are likely to be met with good demand, but more price conscious buyers.

The bred pair market will remain robust until fall, with prices steady to slightly higher into that time frame. Buyers have a good idea of what the calves will be worth this fall due to the amount of calves forward contracted thus far.

Female buyer caution is warranted for those that will cost near the upper end of the price range.

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2016 CattleFax Outlook & Strategies
December 1, 2015
Denver Marriott South Park Meadows
Visit www.cattlefax.com/meetings or call 800.825.7525 to register
Hay Prices Will Continue to Soften

It is no surprise that hay production will be large this year as Mother Nature has brought plenty of rain and sunshine this spring and summer. The hay acreage for 2015 was predicted lower in the Spring Intended Plantings report by about 550,000 acres. However the larger trend line yield estimates make up for the reduction in acreage, putting estimated hay production flat to slightly higher than 2014 levels.

Due to the weather patterns this year actual yields should out-perform estimates, further increasing production over 2014. Consumption will continue to increase as the cow herd continues to expand, but this shouldn’t have a large effect on hay demand as stockpiled grass and feedstuffs will be plentiful.

Year-to-date, the USDA All-Hay price in 2015 is $19/ton below 2014 prices. In the accompanying chart of the market year hay prices starting in May, prices weaken until the end of the year before pushing higher in the spring. The same pattern will exist this year as plentiful hay stocks should be available. With the amount and frequency of moisture received across the majority of the country, hay quality will suffer this year, further weighing on the USDA reported hay prices. Regionally speaking, the west will see hay prices remain stronger as drought conditions persist. Feedstuffs of all types will be plentiful the remainder of the year, limiting demand for hay.

Hay prices should reach a seasonal low near the end of 2015, moving into the mid-$140/ton area by winter, basis the USDA All-Hay price.

Beef Trade Balance Favors Imports

With the release of the latest USDA meat trade data, the official import/export statistics for the first half of 2015 are now available. Due to a strong US dollar and firm demand for lean trim, beef imports remain much higher year-over-year; up 37 percent through June. Beef imports from Australia were up 48 percent in Q2, but are still up 65 percent year-to-date with Q1 beef imports nearly twice what they were in 2014. The current pace of imports from Australia and New Zealand would reach a tariff rate quota in November, triggering a tariff rate increase from 0 to 26 percent through the remainder of 2015.

Beef exports are down 9.5 percent year-to-date. Crackdowns at the Chinese border have prevented meat products from entering the country, especially via Hong Kong, which was the major access point for the U.S. in capturing a share of the growing Chinese beef demand. U.S. beef exports to the Greater China Region (Hong Kong, Taiwan, Vietnam) are down 20 percent, or roughly 51 million pounds.

Through June, for the first time in 26 years, the U.S. has been a net importer of beef from Mexico. Exports to Mexico are down 24 percent at 169 million pounds, while beef imports are up 41 percent at 201 million pounds. With less U.S. beef flowing to Mexico they have been a better source for pork exports, currently shipments are up 12 percent. Year-to-date total pork exports are down 5 percent and poultry exports are down 9 percent.