

Elanco

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**Leave it
Better**[®]



Leave it Better[™] Beef Sustainability Perspectives

Elanco[™]

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A Message from Katie Cook

In the race to address climate change, many point to cattle as an easy target and replacing animal protein with plant-based alternatives as the sure enough solution.

But what if the real answer isn't an either/or?

A meat-friendly future allows people to continue to enjoy the meals that are just as important to their culture as their nutrition; enables a future that supports the **more than 750,000 Americans¹** who depend on the beef industry for their livelihoods; maintains access to an efficient and affordable protein source; and all the while supports the charge for global climate neutrality.

Cattle aren't the problem. They're part of the solution.

As conversations around beef sustainability have increased, we want to holistically examine the perspectives of those who would be most impacted, including beef producers, and those who have potential for the biggest impact – beef consumers – on the future of our food system.

In late 2022 and early 2023, we embarked on two research projects to do just that.

The findings validate what Elanco has asserted all along: sustainability is complex and a clear-cut, “replace-this-for-that” approach is not only unrealistic and unsustainable, it's also, frankly, undesirable for all involved. As we share our learnings throughout this report, **you'll quickly see two themes emerge:**

- *Sustainability is important to both producers and consumers.*
- *Innovation has a role to play in improving the sustainability of beef.*

More encouraging truths also came to light and are worth sharing to counter the often “doom-and-gloom” tone of sustainability narratives.

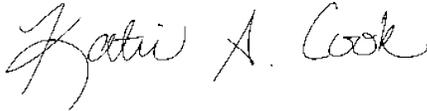
1. *More than **3 in 4** beef consumers agree that they are willing to make small changes to help future generations and **7 in 10 agree** that improving the impact of beef on the planet is a shared responsibility for both consumers and producers.*
2. *Producers are trusted stakeholders among consumers for ensuring the safety of our food, and beef producers agree that **being sustainable is of great importance.***

We're on the cusp of new frontiers for the beef industry and I am more confident than ever that – together with stakeholders across the supply chain – bright days are ahead.

These are days when climate-neutral livestock production becomes a reality as we reduce, measure and monetize emissions improvements in cattle production. Days when consumers can continue to enjoy (with confidence) the nutritious protein they want to eat, while also knowing they're making a positive impact on the environment.

Our research points to a universal truth that progress is the mission and the desire to Leave It Better™ is the goal – whether that is for your own farm, ranch, and/or feedlot and certainly for our planet and our collective futures. The commitment to Leave it Better is one for all of us to embrace for today and tomorrow.

Let's go!



Katie Cook
Vice President Farm Animal Innovation & Marketing
Elanco Animal Health

Methodology



Beef Producers

Phase I Exploratory:

Double-blinded in-depth phone (or Zoom) interviews (n=15) with livestock producers (owners) or livestock production managers of large U.S. feedlot operations (10,000+ head one-time capacity). Interviews lasted about 45 to 50 minutes each.

- **Timing:** October 2022

Phase II Quantitative Follow-Up:

Online survey (n=46) with owners/managers of U.S. feedlot operations from major cattle feeding states. 50% of respondents from operations with >20,000 head one-time capacity. Interviews lasted about 30 minutes on average.

- **Timing:** December 2022

Some respondents were screened out of the research based on their attitudes toward making operational decisions solely based on their own interests.

Conducted by:  **forward group**



Beef Consumers

Phase I Qualitative Bulletin Board:

Online bulletin boards with n=33 U.S. meat-eating grocery shoppers aged 18 to 64 from different regions (Northeast, Midwest, South, West) and areas (urban, suburban, rural).

- **Timing:** November to December 2022

Phase II Quantitative:

Online survey of n=1,200 U.S. meat-eating grocery shoppers

- *Respondents were asked to rank their agreement with the statement, “I have been reducing the amount of meat I eat in favor of plant-based alternatives.” Those who agreed “strongly” or “somewhat” with the statement (n=300) are referred to as “reducetarians.”

Reductarians	n = 300
Meat-eaters	n = 900
Total	n = 1,200

- Respondents were asked about their perceptions on a description of and messages for Experior®, referred to as “Product H” in this study. Neither Elanco nor Experior were mentioned by name anywhere in the study.
- **Timing:** March 2023

Conducted by:  **TRUE GLOBAL INTELLIGENCE**



Executive Summary

While many resources exist about sustainable food generally, Elanco Animal Health identified a need to better understand perceptions on sustainability specific to the beef industry. Rather than looking only at consumer insights – standard practice for food industry market research – Elanco aimed to understand sustainability perspectives holistically across the beef supply chain.

The research centered on two primary audiences:

- Beef producers (feedyard managers)
- Beef consumers

And while each audience has nuanced points-of-view on sustainability, both recognize an opportunity and their role in choosing or producing sustainable beef.

Both audiences were grounded in this description of sustainability:

Sustainability means meeting the needs of the present without sacrificing the ability of future generations to meet their own needs. There are environmental, social and economic aspects to this definition.

This verbiage was well regarded among consumers, with **2 in 3** of those surveyed finding the definition somewhat or very appealing, while **80% of producers surveyed agree** on the importance of their operations being sustainable.

Narrowing in on the environmental aspects of sustainability, more than **3 in 4 beef consumers agree** that they would be willing to make small changes to help future generations, despite **only 3% prioritizing environmental sustainability labels as the top factor for their beef purchases.**

Meanwhile, half of producers are focused on the environmental aspects of the sustainability definition, whereas qualitative feedback demonstrated that most producers view sustainability through the lens of economic viability.

While environmental sustainability might not be top-of-mind for either audience today, both acknowledge it is of increasing importance.



Two-thirds of producers expect to be confronted with requirements on environmental sustainability within the next three to five years.



2 in 5 consumers believe that they will need to make major changes to their lifestyles to stop climate change.

For producers, a financial benefit is necessary.

- **2 in 5 producers are strongly interested** in incorporating innovations that would help reduce the environmental impact of their feedlot, but **74%** need to better understand the financial benefits of implementing sustainability practices. Additionally, **65%** need research to help identify financially viable solutions that reduce the environmental footprint before adopting them.

Consumers want proven safety and see a better environmental footprint as a value-add.

- Price, quality and freshness are the most important factors when purchasing beef, but many consumers agree that if these factors are equal, they are likely to purchase a product with an added environmental impact.
- Looking at a feed ingredient that solves for a specific environmental challenge (reduction of ammonia gas emissions from beef cattle), more than **8 in 10** consumers are neutral or likely to buy beef from cattle fed the ingredient. That said, qualitative feedback was clear that some would only do so if:
 - There are no long-term health effects in humans
 - The product is safe for cattle
 - It positively impacts the environment as it says it does

Outside of rural areas where cattle are produced, there is often a disconnect between beef producers and consumers. In fact, only half of surveyed consumers indicated they're at least somewhat familiar with the U.S. beef industry. Despite this, they have high trust in those who produce their beef, with **78%** indicating they trust cattle ranchers to ensure food safety. Feedyard managers also have above-average trust at **69%**, compared to low-ranking entities like social media influencers (**37%**).

There is mutual respect for beef consumers when it comes to influencing a producer's environmental sustainability practices. Surveyed feedyard managers ranked consumers third behind only veterinarians and nutritionists in terms of their current ability to influence an operation's practices.

I think beef production gets a bad name. Obviously there will always be a few bad apples but overall I think farmers are good people and the service they provide to us is a sacrifice.

Consumer Survey Respondant

Beef Producers' Sustainability Perspectives

The U.S. beef feedlot sector is relatively consolidated, **including 700 operations with 2,500 head or more on feed**, which represent **71%** of the total head on feed nationally.² As such, there is minimal data available that focuses on perspectives from within this important sector of the beef supply chain.

With high input costs and tight margins, it comes as no surprise that feedyard managers who were interviewed view sustainability in the broader context of economic viability. Additionally, most believe they are being environmentally sustainable by being efficient.

Yet, **50%** of surveyed feedyard managers still indicate they are focused on environmental stewardship and a quarter identify environmental sustainability as a top trend that will impact their operation in the next five years (*Figure 1*).

[Environmental sustainability is] highly important and the reason why is the feedlot industry is at an age where they're having to look down the road and say, 'how are we going to be operating in the next 50 years?'

It's a fairly young industry – it's been developing the last 70 to 80 years, and that's fairly new. We're at the point where we have to decide how we're going to continue operating and we've got to see what didn't work and what did work.

Producer Survey Respondant

Most feedlots surveyed believe that packers, retailers and restaurants will implement requirements on environmental sustainability in the next three to five years (*Figure 2*), and larger feedlots (20,000+ head capacity) were slightly more likely to believe that these requirements are coming.



Figure 1. Which of the following trends in the U.S. feedlot industry will have the most impact on your operation in the next five years?

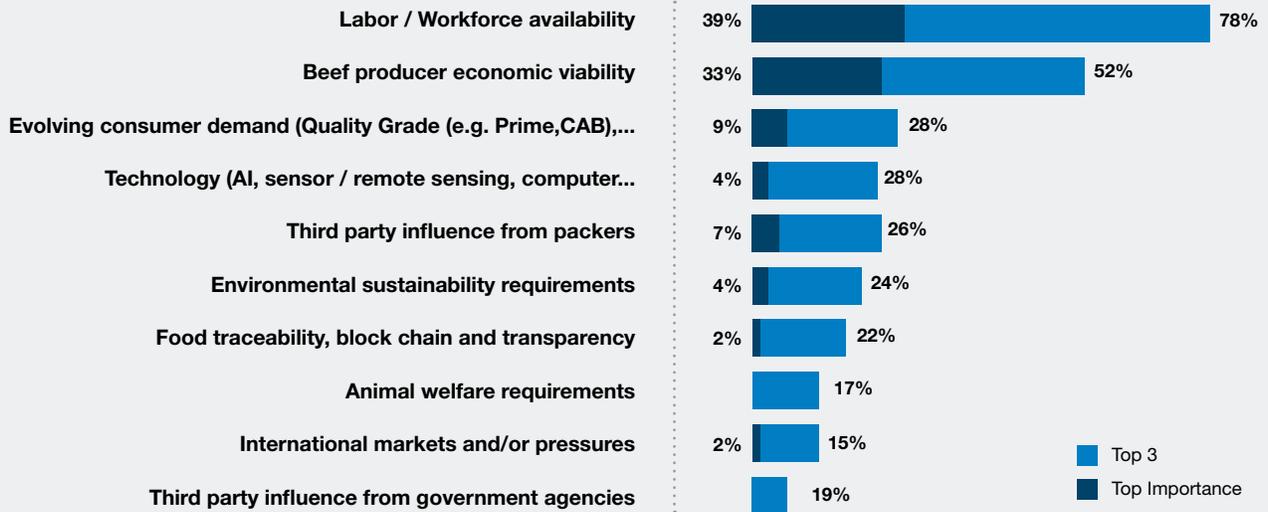
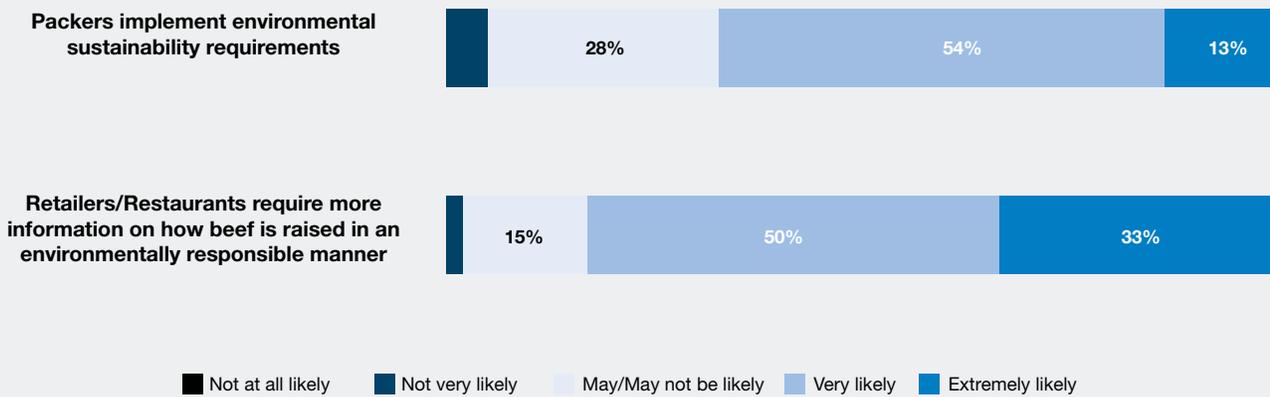


Figure 2. Likelihood of sustainability requirements in the next 3 to 5 years



Likelihood of **Sustainability Requirements** in the next 3-5 years

There are many real and perceived issues that impact the way in which producers manage their feedyards today compared to the last five years. One example is an increased focus on animal welfare. Today, **98%** of surveyed producers indicate they have comprehensive animal health and animal welfare procedures in place. Additionally, **79%** say they are actively communicating about their management practices related to sustainability and animal welfare.

These communications are critical for bolstering the reputation of the beef industry, which is an important and unifying purpose for producers when it comes to understanding and mitigating their environmental impact (Figure 3).

Looking at the current and future state of adopting environmentally sustainable operating practices, there are many stakeholders and factors that will influence a producer's education and adoption.

Currently, feedlots are most influenced by their veterinarians and nutritionists, but anticipate regulators and consumers having more influence in the future (Figure 4).

Figure 3. When you think about your feedlot's potential environmental impact (including air emissions) on the following stakeholders, how important is each stakeholder to consider?

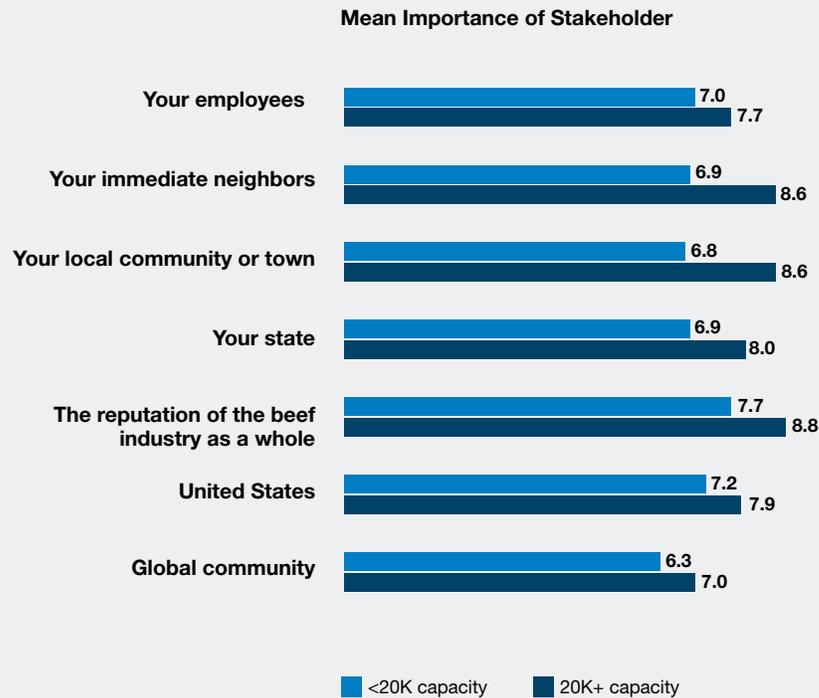
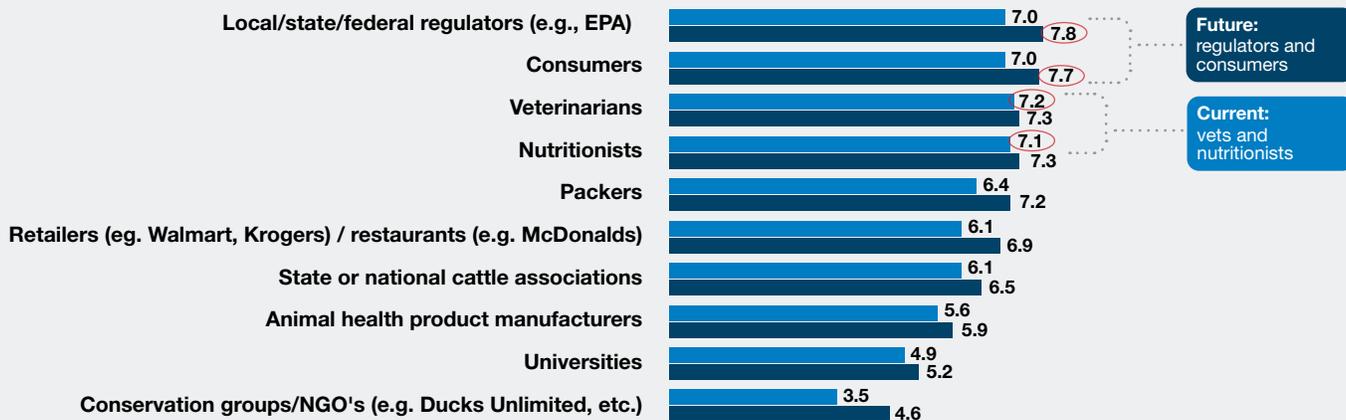


Figure 4. How much influence do the following entities have on your environmental sustainability practices/solutions, and how much do you think they might have in the future?



The majority (**76%**) of producers use self-learning and their own feedlot experiences to become educated and prepare for the deployment of sustainable practices. State or national cattle associations also have a strong opportunity to support these efforts, with **54%** of producers looking to those entities for help in gaining knowledge about and preparing for the use of sustainable practices.

Ultimately, and with economic viability top-of-mind, understanding of the financial benefits of implementing sustainability practices is the most compelling information a producer could receive to influence their adoption of sustainability practices (*Figure 5*).

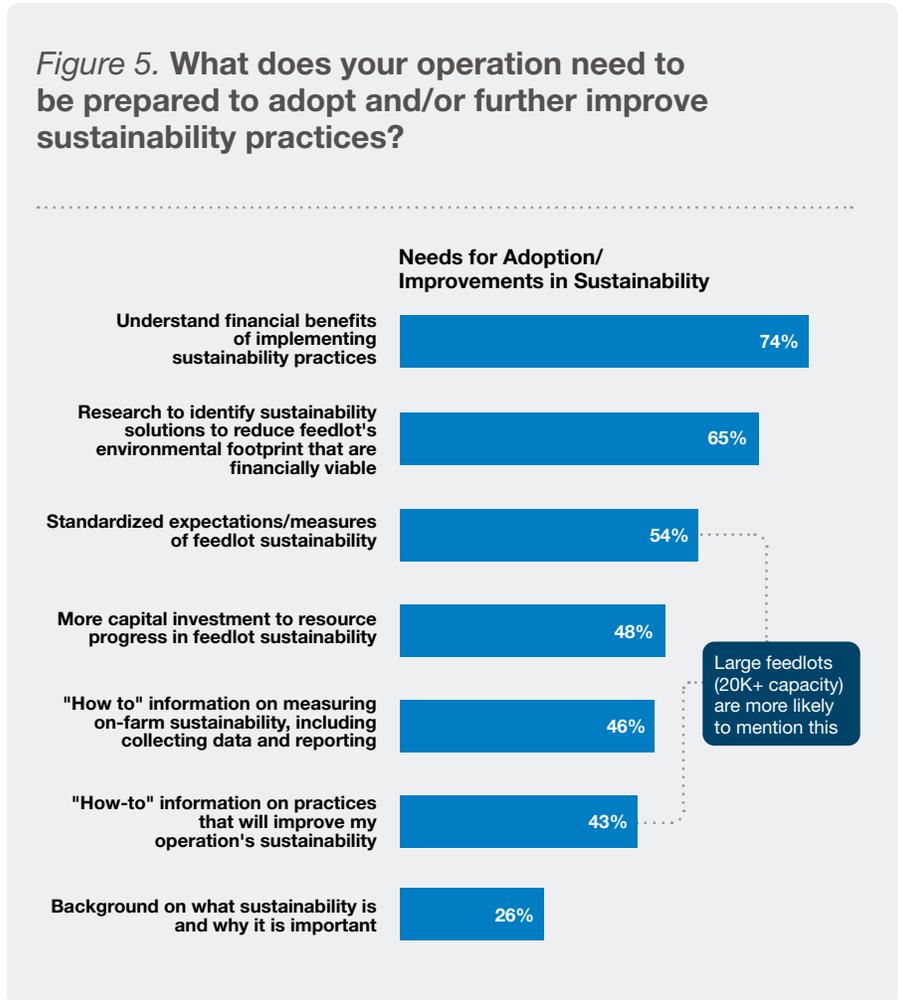
Looking at feed ingredients specifically, an innovation that would garner the most interest would:

- Not negatively impact cattle performance, while also contributing to the environmental sustainability of the feedlot
- Help the beef feedlot industry tell a good sustainability story to retailers and consumers
- Allow feedlots to be proactive in preparing for future sustainability requests/requirements

When considering future advances around sustainable beef production among beef producers, it's critical to recognize that **environmental impact alone is not a driving force for product interest or adoption.**

About **2 in 5** feedlots express strong interest in incorporating innovations that would help to reduce their feedlot's environmental impact, with a statistically significant increase in interest among feedlots with 70%+ company-owned cattle.

Figure 5. What does your operation need to be prepared to adopt and/or further improve sustainability practices?





Beef Consumers' Sustainability Perspectives

Americans have an affinity for beef, which is evident by per capita consumption (56.2 pounds per capita in 2021), which has steadily increased since 2012³. Elanco's research of beef eaters substantiated the rationale behind their affinities for beef – it continues to be a strong part of consumers' lifestyles and culture.

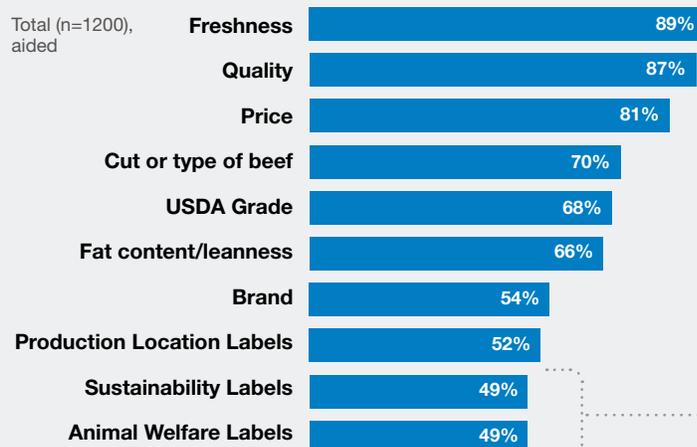
I think of grilling burgers during the summer. Where there is beef, there is always a good time!

One of my earliest food memories is the beef sirloin goulash that my mother used to make. I'll make it for special occasions, and just the smell brings back wonderful memories.

Consumer Survey Respondant

Freshness, quality and price are the most important factors influencing beef consumers' purchase decisions – rising to the top on both an unaided and aided basis (Figure 6).

Figure 6. Importance of factors in purchasing beef



Younger generations (Gen Z and Millennial) are significantly more likely than older generations (Gen X and Baby Boomers) to rate animal welfare and sustainability labels as important.

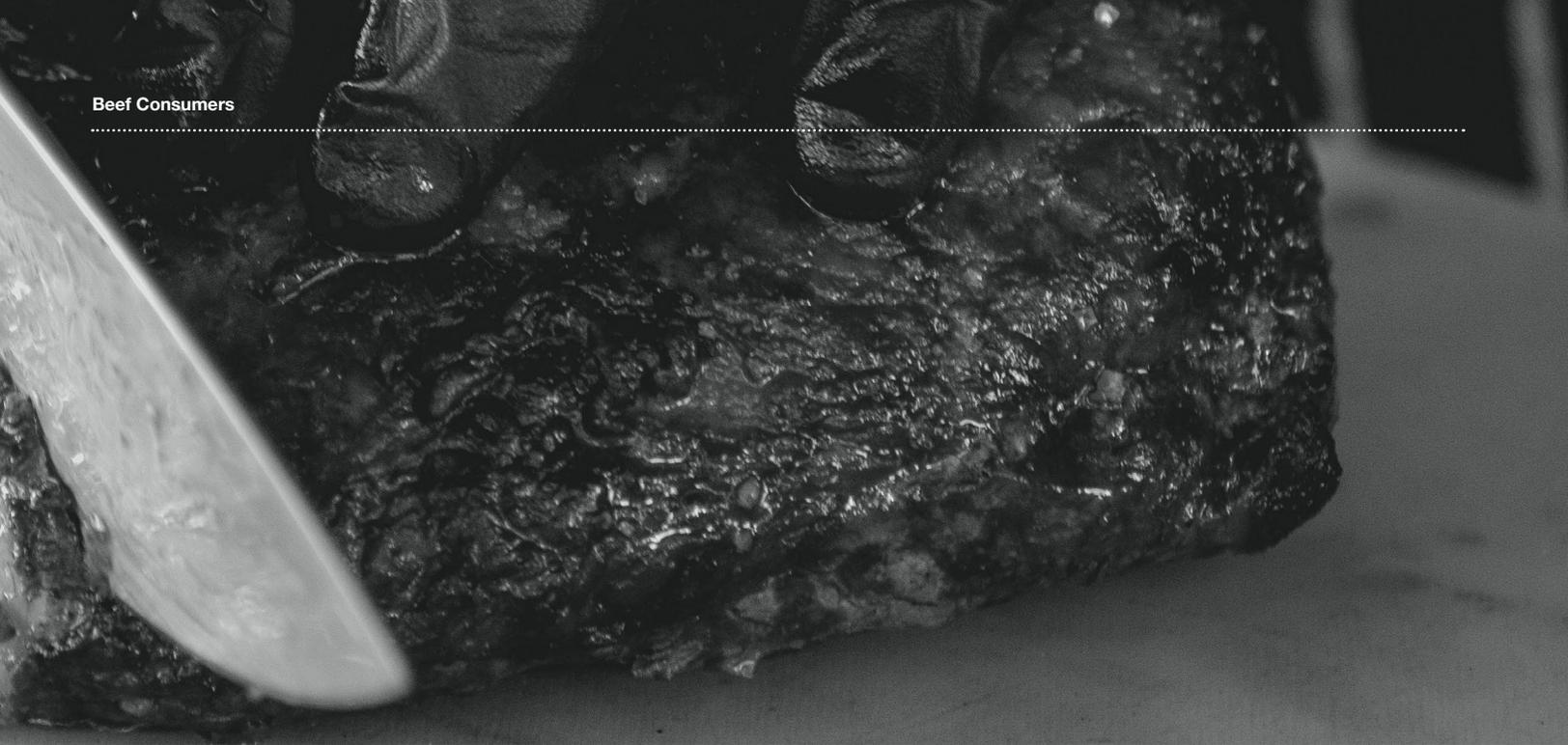
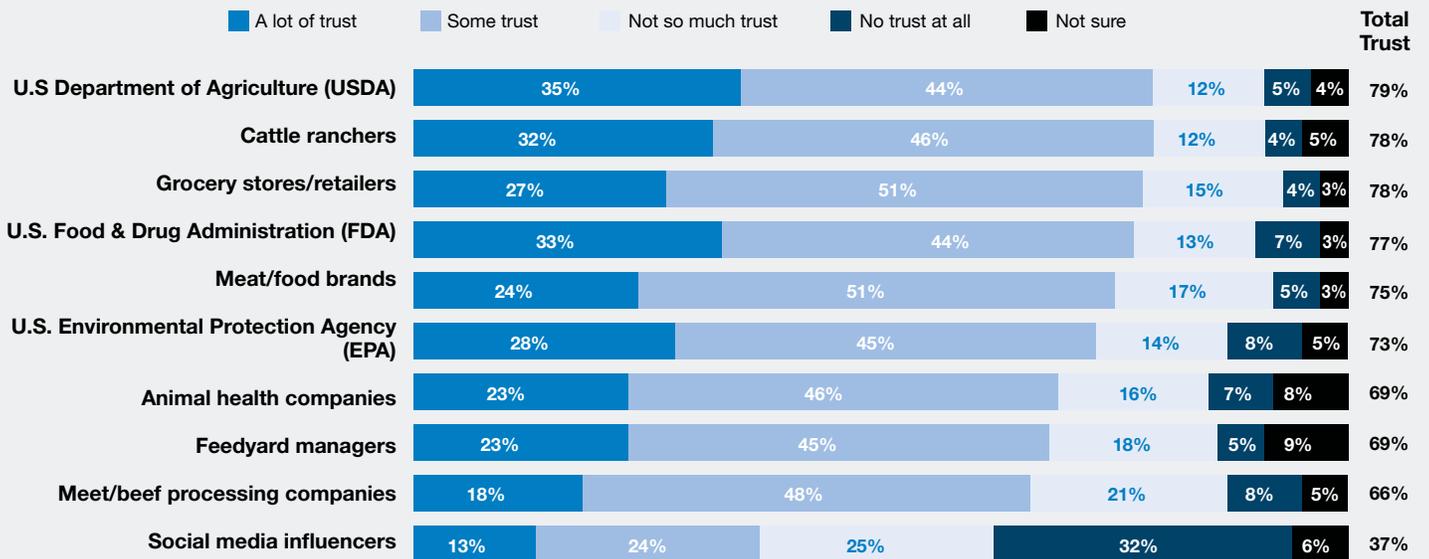


Figure 7. Entities trusted to ensure food safety

Total (n=1200), aided



“Being from Kansas where there are a lot of farms, I do not know anyone that treats their animals badly. Most farmers love their job and their animals. It is really hard work.”

Consumer Survey Respondant

Consumers have a high level of trust in cattle ranchers and organizations like the U.S. Department of Agriculture (USDA) to ensure food safety (Figure 7).

Interestingly, liberal-leaning respondents are significantly more likely than conservative-leaning respondents to have “a lot of trust” in organizations like the FDA, EPA and USDA, and trust for cattle ranchers and feedyard managers was higher among those respondents who indicated they are at least somewhat familiar with the beef industry.

Consumers' Understanding of Sustainability and Their Respective Roles Varies

Some consumers understand what sustainability means, and some do not. Whereas producers view sustainability through the economic lens, consumers are quick to jump to the environmental aspects of sustainability.

Regarding the environmental sustainability of their food, many meat eaters are caught in the dichotomy of being “just one person” and “doing my part...” struggling to think their individual efforts to improve sustainability will have an effect, but also willing (**78%**) to make small changes in the way they live today if they knew it would help future generations.

Gen Z are significantly more likely than other generations to agree that they would be willing to make small changes if they knew it would help future generations.

I am just one person, and don't know that limiting my consumption would make a difference.

It will not change my habits because if I don't eat it, someone else will.

If studies show there are no effects to the cattle and humans, then it is just an added bonus that I can be environmentally friendly, without going out of my way to do so, and without paying more.

Consumer Survey Respondant

Half of beef consumers surveyed say that they are at least somewhat familiar with the industry that produces their meat, but they aren't sure how sustainable the industry is. In the qualitative phase of research, most consumers associated beef cattle with methane emissions, and few had a strong understanding of other gas emissions from cattle that impact the environment.

When prompted, around **two thirds** of consumers say they were aware that humans and animals naturally emit ammonia gas, and around a third of consumers surveyed are at least somewhat concerned about ammonia gas emissions from the United States beef industry. Additionally, **1 in 4** indicate that they would buy less beef after learning about the industry's contribution to ammonia gas emissions in the U.S., but around half (**53%**) said that the information would not change their beef buying habits.

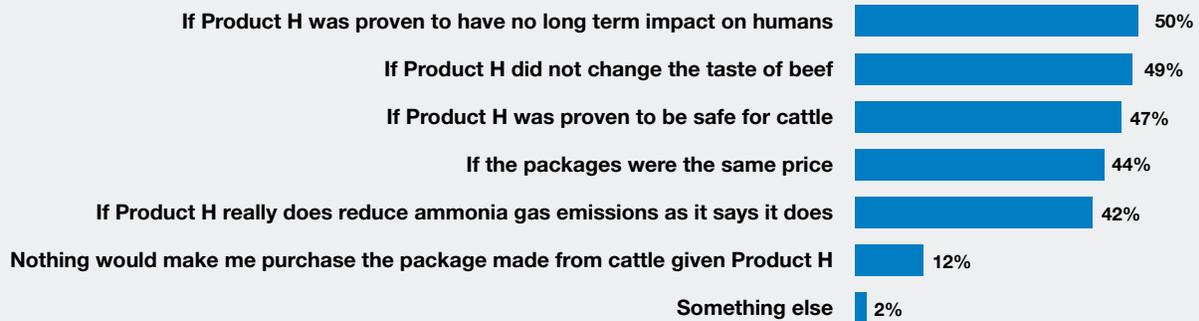
In the survey, “Product H” was positioned as a feed ingredient that reduces ammonia gas emissions from beef cattle. Without further explanation of the product, **8 in 10** consumers indicated they are neutral to likely to buy beef from cattle given “Product H.”

Younger generations (Gen Z & Millennials) are more likely than older generations (Gen X, Baby Boomers) to say that they would be “very” or “somewhat likely” to purchase beef from cattle given the product.

Upon further testing, affirmations of the product's safety for both humans and cattle were the most likely to influence consumer's purchases of beef from cattle produced with “Product H” (Figure 8).

Figure 8. Purchase Factors for “Product H”

Total (n=1200)



Consumer confidence and acceptance of innovations like “Product H” are contingent on:

- Long-term scientific data to prove no negative impact on human health
- Safety for the cattle
- No impact on the taste of beef
- Little-to-no impact on the price of beef
- Proof of its positive environmental impact

With all the above accounted for, almost two thirds of consumers agree that the use of a feed ingredient like “Product H” is an easy way for feedyard managers to help the environment, and almost **two thirds** of consumers also agree that buying beef from cattle given such a product is an easy way for consumers to help the environment.



A Closer Look at Reducetarian Perspectives

In designing the survey, Elanco wanted to test the hypothesis that consumers who were actively trying to reduce their beef consumption in favor of plant-based alternatives, i.e. reducetarians, would care more about the environmental impact and sustainability of beef, as well as innovative solutions to support sustainability.

Respondents were asked to rank their agreement with the statement, “I have been reducing the amount of meat I eat in favor of plant-based alternatives.”

“Reducetarians” are categorized as those who agreed “strongly” or “somewhat” with that statement (n=300), and tended to be highly Millennial (43%) and more likely to lean toward liberal political views (36%) compared to other meat eaters.

More than half of reducetarian respondents cited their attempt to eat healthier as a primary reason for reducing their meat consumption (58%), followed by environmental concerns (33%).

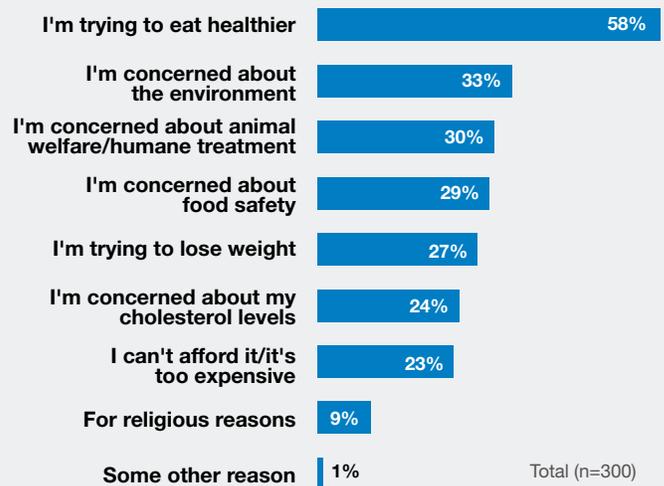


[I would consider buying beef produced with “Product H”] only if I knew absolutely without a doubt that it not only worked but wasn't going to harm me or my family. I don't trust someone's word of mouth; I would need to see viable data.

Survey Respondant



Figure 9. Reasons for Reducing Meat Consumption



Despite environmental concerns not being the leading rationale for reducing meat consumption, environmental factors seem to have the ability to influence a reducetarian’s perspectives of the beef industry and their beef purchases.

Notable findings showed that reducetarians are:

- Significantly more likely than other meat-eaters (**48% vs. 36%**) to believe that they need to make major changes to their lifestyles to stop climate change.
- Significantly more likely than other meat-eaters (**34% vs. 9%**) to say that they are “very familiar” with the U.S. beef industry.
- More concerned about ammonia gas emissions from the U.S. beef industry than other meat-eaters (**52% vs. 27%**) following aided introduction to the topic. **1 in 5** indicate they’d be likely to buy less beef after hearing about ammonia gas emissions from the industry.

When introduced to “Product H” as a feed ingredient that reduces ammonia gas emissions from beef cattle, **62%** of reducetarians indicated they would be very likely to purchase beef from cattle fed the product. This rose to **71%** after reading additional messaging on the product. Additionally, **3 in 5** reducetarians would consider increasing the amount of meat they ate with the option of beef made from cattle fed “Product H” (Figure 10).

Figure 10. Influence of Product H on reducetarian meat consumption before messaging*

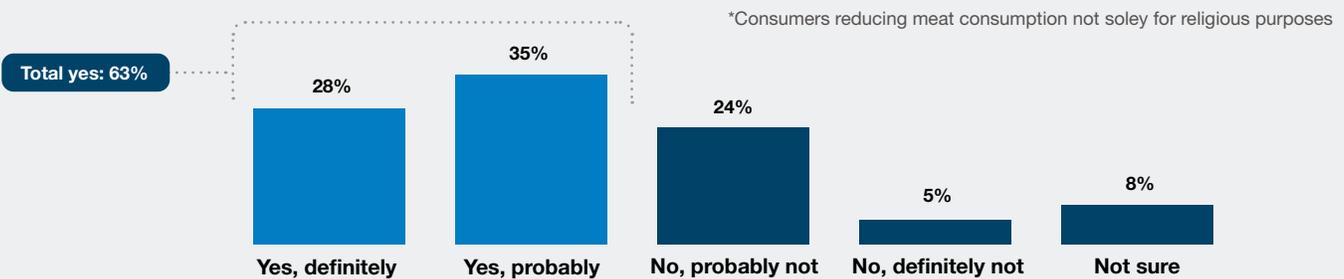
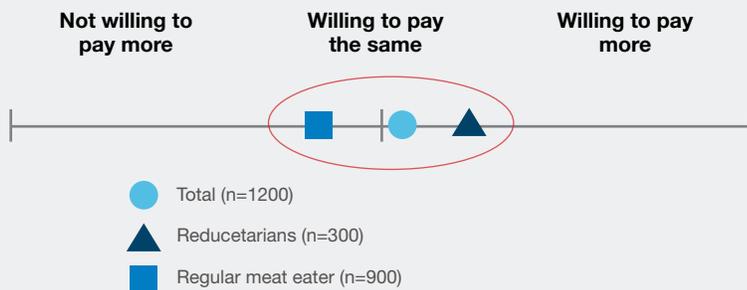


Figure 11. Willingness to pay for beef from cattle fed “Product H”



There were no significant differences in changes to meat consumption for reducetarians who are reducing meat intake for environmental, animal welfare, or food safety reasons.

While most consumers are willing to pay the same amount of money for “normal” beef and from beef from cattle fed “Product H,” reducetarians are willing to pay a little more (Figure 11).

Applying the Insights

Looking ahead

While environmental sustainability is not the first attribute that beef-eating consumers look for, and not the most pressing issue that beef producers face, it continues to grow in importance and relevance.

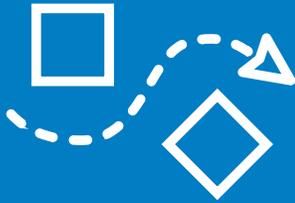
As the U.S. beef industry works to Leave it Better™ and improve sustainability, consider the following:



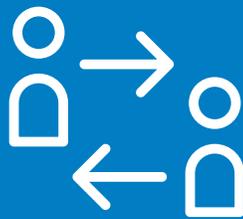
There is an appetite from both consumers and producers for well-researched innovations that help reduce the environmental footprint of beef. For consumers, well-researched means in terms of human safety.



Sustainability solutions should be financially viable for producers, without requiring major lifestyle changes for consumers.



Addressing potential barriers of health and safety for humans and animals is a requirement for the adoption of new innovations, and consumers are seeking long-term and credible studies to prove there is no negative impact on human health.



Innovative products can move the needle among consumers who are choosing to reduce their meat consumption for a variety of reasons.



Beef producers are a trusted source of information for consumers. The industry should collectively equip and support their communications efforts.

References:

¹Beef Cattle Production in the US – Employment Statistics 2004-2029. IBISWorld. 21 Feb 2023. <https://www.ibisworld.com/industry-statistics/employment/beef-cattle-production-united-states/>. Accessed 8 May 2023.

²Larger Feedlots Increase, Smaller Lots Decline, Census Says. Drovers. 11 Apr 2019. <https://www.drovers.com/markets-news/ag-policy/larger-feedlots-increase-smaller-lots-decline-census-says>. Accessed 8 May 2023.

³Food Availability and Consumption. Economic Research Service, U.S. Department of Agriculture.

Important Safety Information for Experior®

Caution: Not approved for use in breeding animals because safety and effectiveness have not been evaluated in these animals. Do not allow horses or other equines access to feed containing Experior. A decrease in dry matter intake may be noticed in some animals

The label contains complete use information, including cautions and warnings. Always read, understand, and follow the label, and use directions.

Indications for use: For the reduction of ammonia gas emissions per pound of live weight and hot carcass weight in beef steers and heifers fed in confinement for slaughter during the last 14 to 91 days on feed.

Directions for use: Feed. 1.25 to 4.54 g/ton (1.39 to 5 ppm) of complete feed (90% dry matter basis) to provide 13-90 mg lubabegron/head/day continuously to beef steers and heifers fed in confinement for slaughter as sole ration during the last 14 to 91 days on feed.

Based on existing information, reliable predictions of the reduction of ammonia gas emissions cannot be made on a herd, farm or larger scale.

Market insights brought to you by

Elanco

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For more information on Elanco's Leave it Better™ initiative or innovations like
Experior®, talk to your Elanco representative or visit
www.elancoleaveitbetter.com and www.experiorbeef.com