

2021 Kansas State University  
**Agricultural  
Lenders Conference**



**FEATURING...**

- Costs of Production for Cow-Calf Producers
- Insurance Options for Cow-Calf Producers
- Beef Demand Trends and Recent Research
- Farmland Values Tool—Stepped-Up Basis
- Cash Rental Rates for Kansas Crops
- Grain Market Outlook for 2022

**Clarion Inn**

Garden City, September 28, 2021

**Hilton Garden Inn**

Manhattan, September 29, 2021

Online Livestream From Manhattan  
September 29, 2021



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# Meat Demand Considerations

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## Questions touched on today...

- ❖ Is meat demand per capita meat consumption?
- ❖ Why is meat demand important?
- ❖ What do we know about COVID-19 impacts on U.S. meat demand?
- ❖ What factors impact U.S. beef demand?
- ❖ What is the impact of plant-based protein alternatives on U.S. beef demand?



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Demand is **NOT** Per Capita Consumption

## 2013 Beef Demand Determinants Study



<http://www.beefboard.org/evaluation/130612demanddeterminantstudy.asp>



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**Cow Calf Weekly**  
Your news, anywhere, anytime.

**BEEF**

GET IT NOW!



MARKETING > OUTLOOK

### What's The Similarity Between Blue Jeans and Beef Demand?

Beef consumption and beef demand isn't the same thing. Here's an explanation.

Burt Rutherford | Sep 19, 2013



<http://www.beefmagazine.com/beef-demand/what-s-similarity-between-blue-jeans-and-beef-demand>

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# How Does Domestic Demand Impact Producers?

1% increase in domestic demand =

➤ +2.30% live cattle & +3.50% feeder prices (McKendree et al., 2019)

## ▪ **Q4.2017 Domestic Demand Index +2% (vs. Q4.2016)**

### ▪ **Realized Prices:**

▪ \$118 (live) & \$157 (feeder)

### ▪ **Without domestic demand increase, would have been:**

▪ \$112.57 (live) & \$146.02 (feeder)

▪ **\$5.43/cwt & \$10.98/cwt price impacts**



# **Bottleneck Impact on Fed Cattle Prices was Reduced Due to Beef Demand Strength!**

Kansas State University Department Of Agricultural Economics Extension Publication

04/04/2020

## Assessing Impact of Packing Plant Utilization on Livestock Prices

Glynn Tonsor ([gtonsor@ksu.edu](mailto:gtonsor@ksu.edu)) Kansas State University Department of Agricultural Economics

Lee Schulz ([lschulz@iastate.edu](mailto:lschulz@iastate.edu)) Iowa State University Department of Economics

“...if the industry operates at 20% lower capacity rates, then we may anticipate fed cattle prices to decline by 26.49%”

40% Yr-o-Yr Decline in Cattle Slaughter Occurred with LESS THAN a 23% price decline...

- 5-Mkt Live Prices (\$/cwt):
- 1/5/20: \$124 & 3/29/20: \$119
  - 4/26/20: \$97 & 7/5/20: \$95



# Recent Beef Demand Patterns



## Monthly Meat Demand Monitor, Methods, and Supporting Information

Home / Livestock & Meat / Meat Demand / Monthly Meat Demand Monitor [Survey Data]

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[Agronomy](#)

[Animal Science](#)

[Kansas Ag Mediation Service \(KAMS\)](#)

[Extension Agent Link](#)

### Livestock & Meat

- [Projected Feeder Cattle Prices](#)
- [Cattle Finishing Returns](#)
- [Meat Demand](#)
- [Meat Demand Research Studies](#)
- [Monthly Domestic Meat Demand Indices \[USDA/BLS Data\]](#)
- [Monthly Export Meat Demand Indices \[USDA/BLS Data\]](#)
- [Monthly Meat Demand Monitor \[Survey Data\]](#)

### Monthly Meat Demand Monitor [Survey Data]



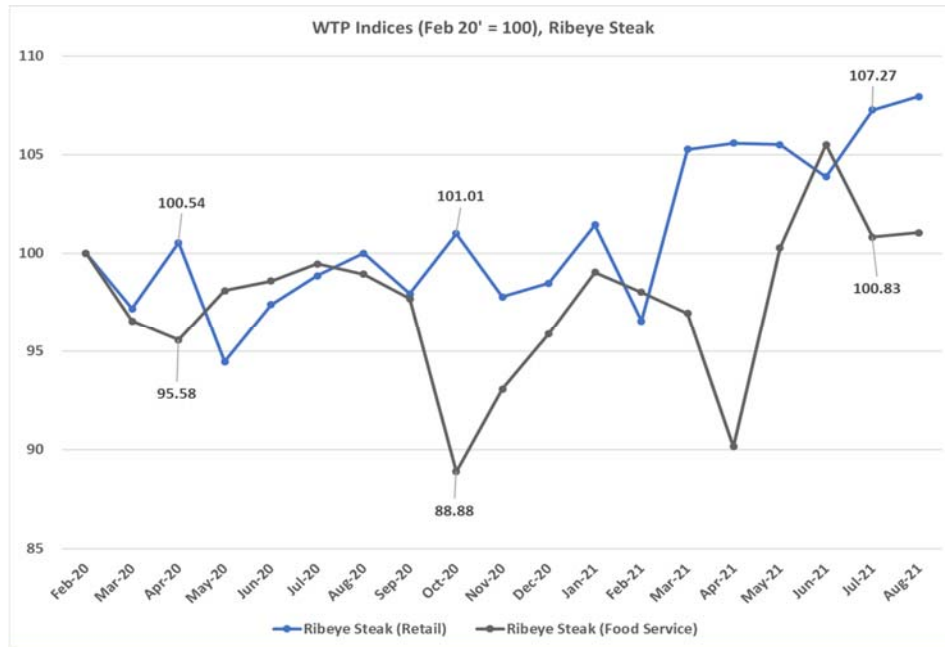
The Meat Demand Monitor (MDM) project is funded in-part by the beef checkoff and the pork checkoff. Monthly reports and supporting documentation are available here.



### Monthly Meat Demand Monitor

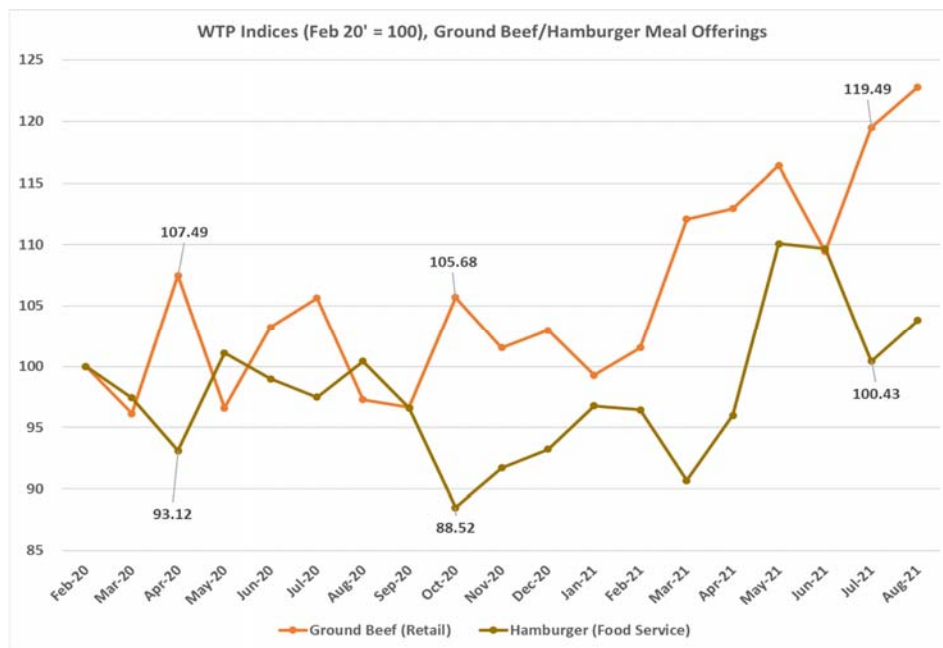
Title	Author	Date	Downloads
Meat Demand Monitor - August 2020	Tonsor	September 4, 2020	<a href="#">Downloads -</a>
Meat Demand Monitor - July 2020	Tonsor	August 4, 2020	<a href="#">Downloads -</a>
Meat Demand Monitor - February-June 2020 Summary Report	Tonsor	July 27, 2020	<a href="#">Downloads -</a>
Meat Demand Monitor - June 2020	Tonsor	July 2, 2020	<a href="#">Downloads -</a>
Meat Demand Monitor - May 2020	Tonsor	May 29, 2020	<a href="#">Downloads -</a>
Meat Demand Monitor - Coronavirus (COVID-19) Impact on U.S. Meat Demand:	Tonsor	May 12, 2020	<a href="#">Downloads -</a>





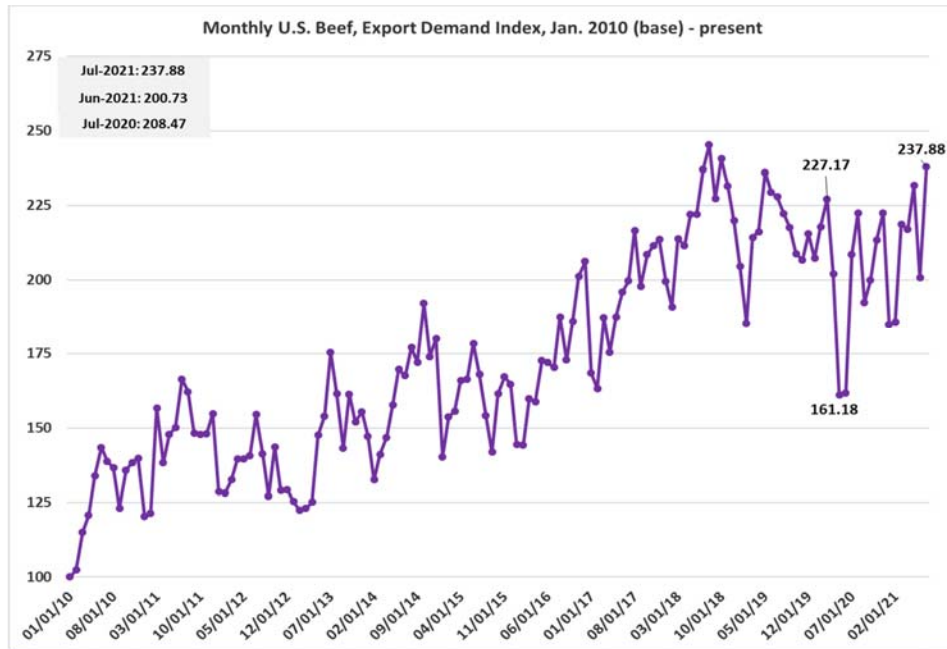
<https://www.agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data>

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<https://www.agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data>

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AgManager.info

<https://www.agmanager.info/livestock-meat/meat-demand/monthly-export-meat-demand-indices-usdabls-data>

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# 3 LARGE COVID-19 SHOCKS

## Each Had/Have Demand Impacts...

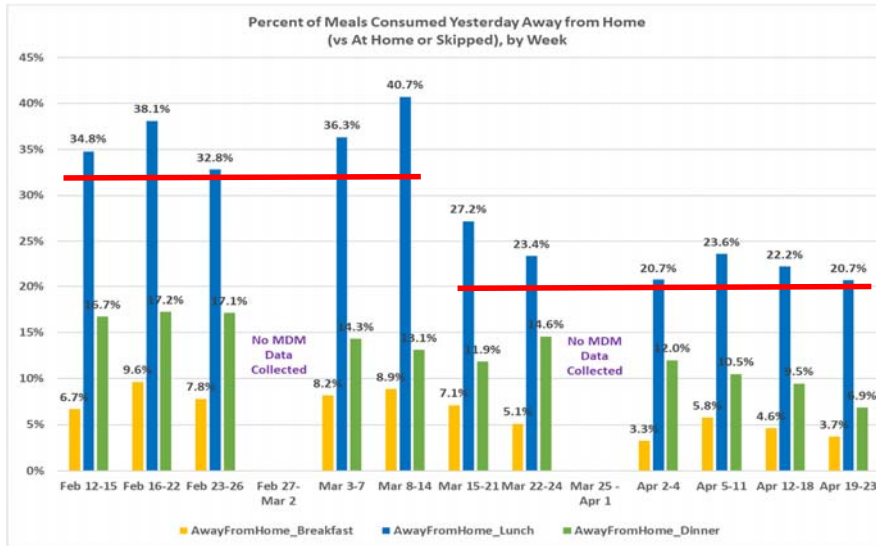


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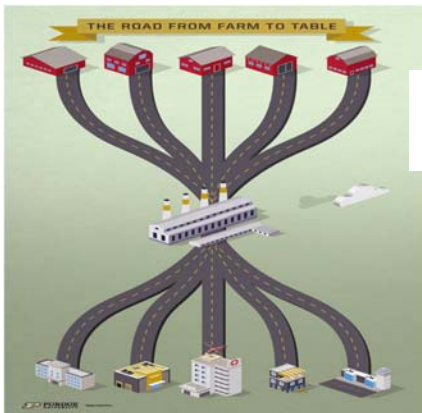
# SHOCK #1: Shift to At-Home



<https://www.agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data/meat-demand-monitor-coronavirus>

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# SHOCK #2: Animal-to-Meat Bottleneck in April-May Societal Calls: *Where's my Meat?*

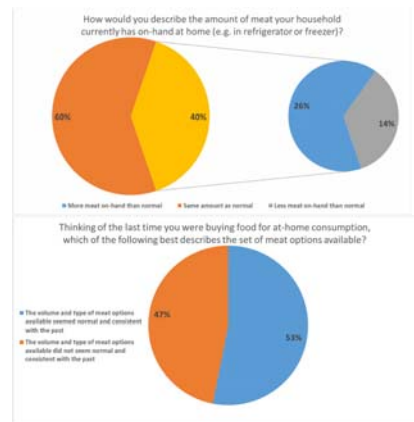


## TIME

COVID-19 Meat Shortages Could Last for Months. Here's What to Know Before Your Next Grocery Shopping Trip  
<https://time.com/5830178/meat-shortages-coronavirus/>



Meat shortages as virus forces plants to close  
The effects of the coronavirus pandemic continue to ripple through the food industry. Dean Reynolds reports.  
APR 8, 2020  
<https://www.cbsnews.com/video/meat-shortages-as-virus-forces-plants-to-close/>



<https://www.purdue.edu/newsroom/releases/2020/Q2/questions-and-answers-about-the-road-from-farm-to-table.html>

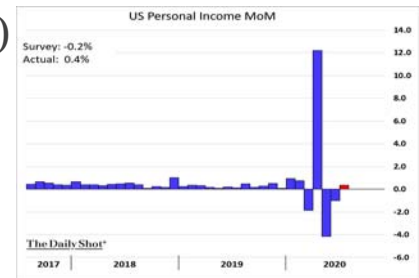
<https://www.agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data/meat-demand-monitor-coronavirus>



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## SHOCK #3 Consumer Meat Demand

- Recession
  - Weaker Meat Demand (**typically** at least)
- Stimulus & Spending
  - Supports Demand (April 20' incomes were up!)



# INSIGHTS FROM PAST DEMAND WORK





# Assessing Beef Demand Determinants

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Glynn T. Tonsor, Jayson L. Lusk, and Ted C. Schroeder

Joint Evaluation Advisory Committee Meeting

January 31, 2018

[https://www.beefboard.org/news/files/FY2018/Assessing%20Beef%20Demand%20Determinants\\_FullReport.pdf](https://www.beefboard.org/news/files/FY2018/Assessing%20Beef%20Demand%20Determinants_FullReport.pdf)

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Presentation at 2018 Cattle Industry Convention

Phoenix, AZ



## Project Purpose

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### Main Goal

Provide a multi-faceted assessment of current factors impacting domestic beef demand.



## 1. Aggregate Demand Elasticities Update

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❖ Estimated multiple models similar to 2007 Beef Demand Determinants Study:

- Quarterly per-capita disappearance based volumes
- ERS Choice Beef (1970-2017) or All-Fresh (1988-2017) Beef prices

Key Findings:

1988-2017 Period

- 1% increase in beef price = 0.48% drop in beef consumption
- 1% increase in pork price = 0.09% increase in beef demand
- 1% increase in chicken price = 0.02% increase in beef demand
- 1% increase in total expend. = 0.80% increase in beef demand



## 1. Aggregate Demand Elasticities Update

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Key Findings:

Insights across time periods: “Beef demand is \_\_\_\_\_”

- ... becoming less sensitive to own-price changes,
- ... **becoming more sensitive to consumer expenditures,**
- ... comparatively insensitive to competing protein prices



## 2. Media and Medical Information Effects

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### Key Findings: 2008-2017 Period

#### Demand Catalysts: 1% Increase in Coverage:

<input type="checkbox"/> Atkins =	+0.014% in beef demand
<input type="checkbox"/> Cancer =	+0.197% in beef demand
<input type="checkbox"/> Fat =	+0.031% in beef demand
<input type="checkbox"/> Sustain =	+0.058% in beef demand
<input checked="" type="checkbox"/> Taste, Tender, Flavor =	+0.479% in beef demand
<input type="checkbox"/> Welfare =	+0.098% in beef demand

#### Demand Detriments: 1% Increase in Coverage:

<input type="checkbox"/> Climate =	-0.209% in beef demand
<input type="checkbox"/> Convenience =	-0.054% in beef demand
<input type="checkbox"/> Safety =	-0.072% in beef demand
<input type="checkbox"/> Vegan =	-0.240% in beef demand
<input type="checkbox"/> Zinc, Iron, Protein =	-0.198% in beef demand



## 2. Media and Medical Information Effects

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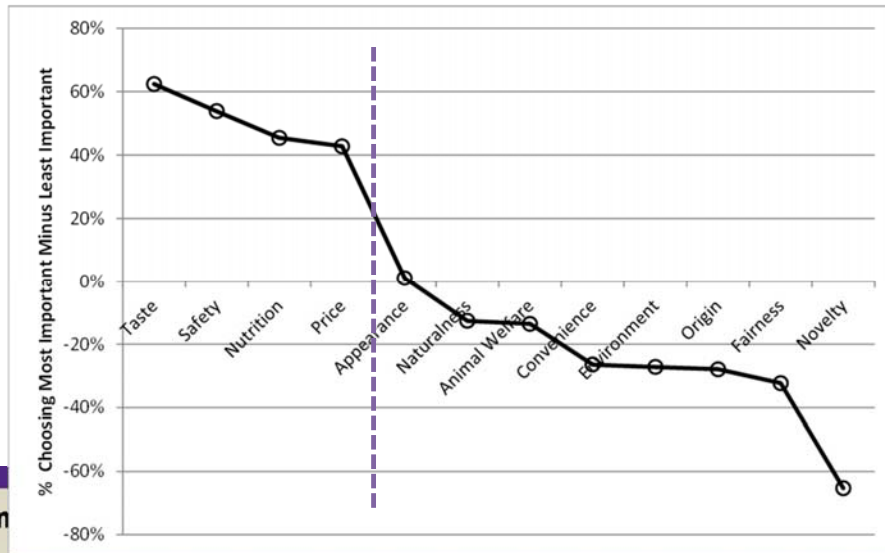
### Differences from 1990-2007:

- Atkins positive effect reduced
- Fat effect was negative, now positive
- 6 “new topics” now significant
- Seasonality effects reduced



### 3. Food Demand Survey (FooDS) Insights

#### ❑ Food Values, Relative Importance When Purchasing Food



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### 3. Food Demand Survey (FooDS) Insights

#### Key Findings: Steak Demand

##### ❖ Higher (+)

##### ❖ Observables

❖ Higher Incomes, Older Respondent, Larger Households, College, Hispanic, Midwest, Politically Conservative,

##### ❖ Food Values

❖ Taste, Convenience, Novelty, Origin, Appearance

##### ❖ Lower (-)

##### ❖ Observables

❖ White, Females

##### ❖ Food Values

❖ Naturalness, Price, Nutrition, Environment, Animal Welfare



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### 3. Food Demand Survey (FooDS) Insights

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Key Findings: Ground Demand (*BOLD denotes change from Steak Demand*)

- ❖ Higher (+)
  - ❖ Observables
    - ❖ **Lower Incomes**, Older Respondent, Larger Households, College, **White**, Black, Midwest, Politically Conservative,
  - ❖ Food Values
    - ❖ **Price**, Taste, Safety, Convenience, Novelty, Appearance
- ❖ Lower (-)
  - ❖ Observables
    - ❖ **Hispanic**, Females
  - ❖ Food Values
    - ❖ Naturalness, Nutrition, Environment, Animal Welfare



### Key Determinants “Short List”

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- Ranked list ill-advised given multiple methods and data/information involved
- Short-list (unranked) of key determinants includes:
  - ✓ Beef Quality (taste, appearance, convenience, freshness)
  - ✓ Consumer Incomes
  - ✓ Coverage of Safety, Animal Welfare, Sustainability, Cancer, and Nutrition topics
  - ✓ Shifts in Race composition in U.S. population



## Main Unifying Themes / Recommendations

- ❑ Meat prices have become less important while consumer income has become more important
  - Elevates importance of beef quality focus
  
- ❑ Beef demand has increased or been stable over the past 5 years depending on measurement approach
  - Good news given volume of “negative media”
  
- ❑ Different methods offer unique insights into beef demand consistent with realities of available data
  - Encourage use of multiple information sources



## Main Unifying Themes / Recommendations

- ❑ “Hot topics” change notably over time
  - Impact on beef demand can substantially change
  - Don’t over-react at expense of loyal beef customers
  
- ❑ Several drivers of steak and ground beef demand differ
  - Target marketing by beef product type and household type is encouraged
  
- ❑ Examples of demand concepts being confused continue to exist
  - Ongoing support of education on demand concepts and economic value to producers is encouraged



# Assessing Beef Demand Determinants (Jan. 18, 2018)

Glynn T. Tonsor, Jayson L. Lusk, and Ted C. Schroeder

Cattlemen's Beef Board

[https://www.beefboard.org/news/files/FY2018/Assessing%20Beef%20Demand%20Determinants\\_FullReport.pdf](https://www.beefboard.org/news/files/FY2018/Assessing%20Beef%20Demand%20Determinants_FullReport.pdf)



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## *Impacts of New Plant-Based Protein Alternatives on U.S. Beef Demand*

Dr. Glynn Tonsor, Kansas State University  
Dr. Jayson Lusk, Purdue University  
Dr. Ted Schroeder, Kansas State University

<https://www.agmanager.info/livestock-meat/meat-demand/meat-demand-research-studies/impact-new-plant-based-protein-0>

## Project Purpose

### Main Objective

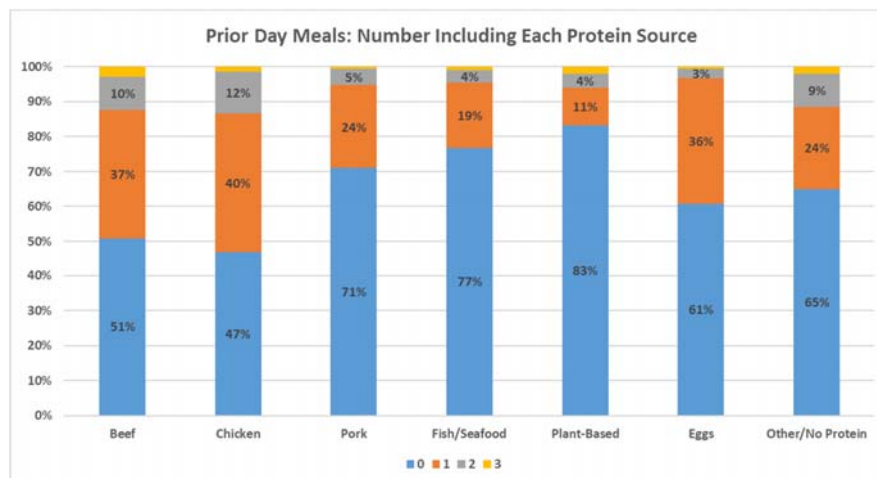
Provide economic insights into the current situation and competitive threats to U.S. beef demand posed by plant-based protein alternatives.



## CURRENT CONSUMPTION & PERCEPTIONS

### 1) Beef chosen 3x more often than plant-based

- 49% had beef prior day & 17% had plant-based prior day





## ***CURRENT CONSUMPTION & PERCEPTIONS***

### **1) Beef chosen 3x more often than plant-based**

- **PRIOR DAY MEAL COMBOS**
  - Beef & Plant-Based 6%
  - Beef, No Plant-Based 43%
  - No Beef, Plant-Based 11%
  - Neither Beef nor Plant-Based 40%
- ✓ **Beef & Plant-Based protein consumption are NOT entirely exclusive**



## ***CURRENT CONSUMPTION & PERCEPTIONS***

### **1) Beef chosen 3x more often than plant-based**

- **Characteristics of those more likely to select plant-based proteins include:**
  - ✓ **Younger, having children under 12, higher household income, residing in a Western state, and affiliating with Democratic party**



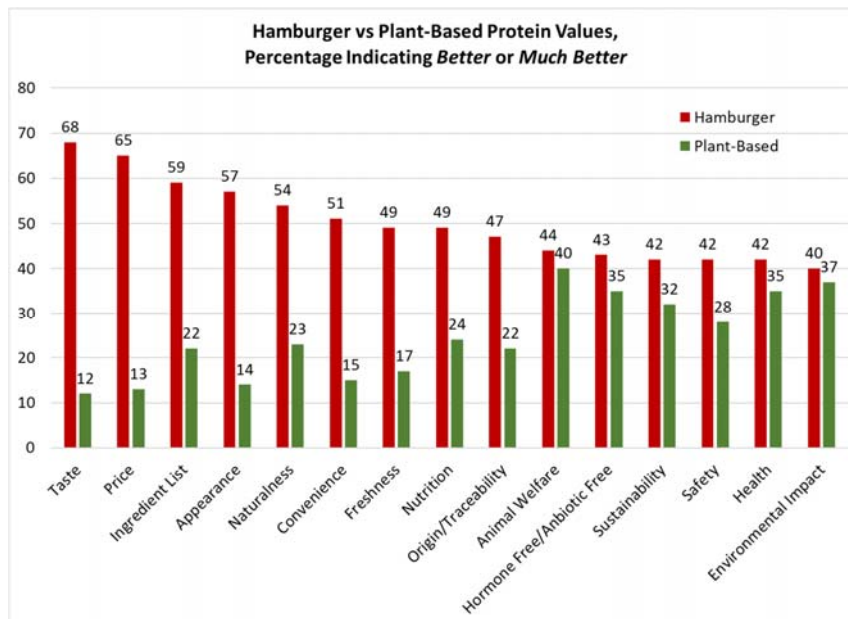
# CURRENT CONSUMPTION & PERCEPTIONS

1) Beef chosen 3x more often than plant-based

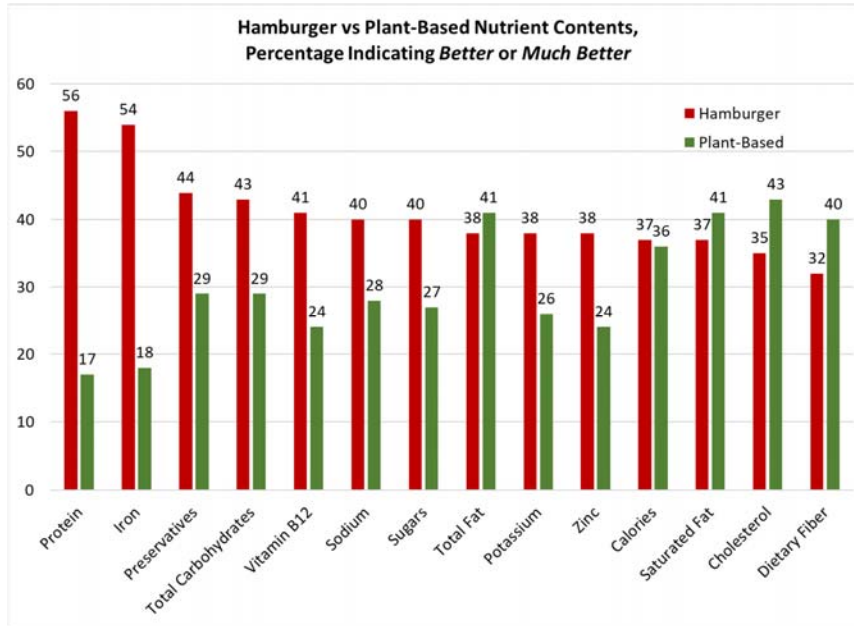
2) Beef has a good image



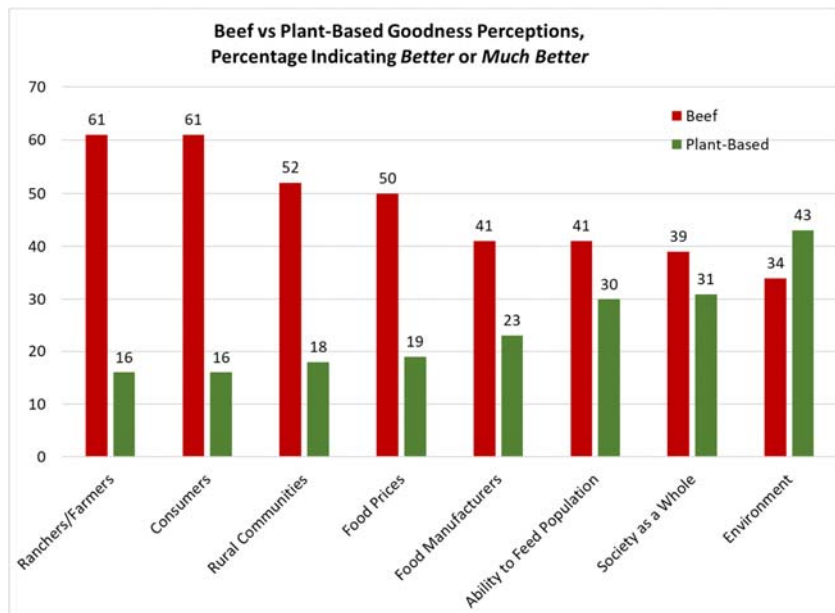
# CURRENT CONSUMPTION & PERCEPTIONS



## CURRENT CONSUMPTION & PERCEPTIONS



## CURRENT CONSUMPTION & PERCEPTIONS



## ***CURRENT CONSUMPTION & PERCEPTIONS***

1) Beef chosen 3x more often than plant-based

### 2) Beef has a good image

- Average responses for all 15 attributes indicate beef favored
- Consumer perceptions of nutrients are generally accurate
- Beef perceived better overall for Farmers, Consumers, Rural Communities, and Food Prices



## ***CURRENT CONSUMPTION & PERCEPTIONS***

1) Beef chosen 3x more often than plant-based

2) Beef has a good image

### 3) Plant-based strengths

- Scores highest on Animal Welfare, Health, & Environment
  - Yet on average, beef is perceived slightly higher
- Ranks higher on average for Cholesterol, Fat, and Dietary Fiber
- Perceived as better overall for Environment



## CURRENT CONSUMPTION & PERCEPTIONS

- 1) Beef chosen 3x more often than plant-based
- 2) Beef has a good image
- 3) Plant-based strengths

### 4) Self-Declared Diet (full sample n=3,225)

- Regularly Consume Meat, Fish/Seafood, or Products Derived from Animals (68%)

- Vegan (7%)
- Vegetarian (4%)
- Flexitarian/Semi-Vegetarian (12%)
- None of the Above (9%)

“Alternative Diet” or  
“Non-Regular Meat Consumer”



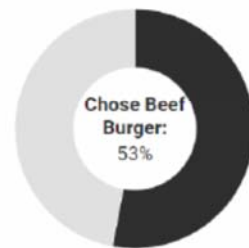
## EXPERIMENTAL RESULTS HIGHLIGHTS

### Food Service: Beyond Meat Introduction Treatment

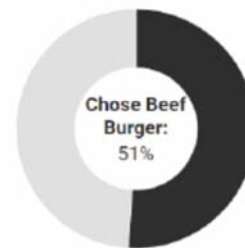
- ✓ Replacing Chicken Wrap with a Plant-Based Protein menu offering has small (<3%) impact on Beef Burger meal selections

#### Choice of Beef in Presence of Chicken Wrap vs. Beyond Meat

- Chose Beef Burger
- Chose Something Else



In Presence of Chicken Wrap



In Presence of Beyond Meat



## ***EXPERIMENTAL RESULTS HIGHLIGHTS***

### **Willingness-to-Pay (\$/meal or \$/lb)**

- **Regular Meat Consumer**
    - Food Service: \$1.87/meal more for Beef Burger meal than a Beyond Meat meal
    - Retail: \$0.29/lb more for Store-Brand, 80% Lean Ground beef than Beyond Meat
  
  - **Alternative Diet Consumer**
    - Food Service: \$1.48/meal more for Beyond Meat meal than a Beef Burger meal
    - Retail: \$2.32/lb more for Beyond Meat than Store-Brand, 80% Lean Ground beef
- ✓ Regular Meat Consumers retain preference for Beef over Plant-Based offerings



## ***EXPERIMENTAL RESULTS HIGHLIGHTS***

### **Selection Frequency / Market Share (% of Choices at Current Prices)**

- **Regular Meat Consumer**
    - Food Service: 5% would select a Beyond Meat meal & 55% Beef or Bacon Beef Burger meal
    - Retail: 2% would select Beyond Meat or Impossible Burger & 29% a Ground Beef option
  
  - **Alternative Diet Consumer**
    - Food Service: 23% would select a Beyond Meat meal & 34% Beef or Bacon Beef Burger meal
    - Retail: 25% would select Beyond Meat or Impossible Burger & 25% a Ground Beef option
- ✓ Alternative Diet Consumers select BOTH plant-based and beef offerings



## ***EXPERIMENTAL RESULTS HIGHLIGHTS***

### **Impact of 1% Price Changes on Consumer Choices**

- **All Consumers**
  - **Food Service:**
    - 1% increase in Beef Burger meal price = -2.5% Beef Burger meal selections
    - 1% decrease in Beyond Meat meal price = -0.21% Beef Burger meal selections
  - **Retail (choose one treatment):**
    - 1% increase in Store-Brand 80% Lean Ground Beef price = -1.73% Store-Brand selections
    - 1% decrease in Beyond Meat meal price = -0.18% Store-Brand selections
  - ✓ **Change in price of beef has a MUCH larger impact on decisions to buy beef than changes in plant-based prices: plant-based offerings are weak substitutes**



## **RECOMMENDATIONS**

### **1) Alternative Diet Consumers = Opportunity**

- **Plant-based purchases often made with beef or chicken**
- **Seeks ways to attract Flexitarians**

### **2) Seek Supply-Side Gains to Enhance Beef's Competitiveness**

- **Beef's own-price has much larger impact than plant-based price**

### **3) Sustain valued attributes: Taste, Safety, Nutrition, Iron, Protein**

- **Key to retaining current core consumers**

## RECOMMENDATIONS

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### 4) Boost image around Fat, Cholesterol, Fiber

- May alter consumer perceptions currently favoring plant-based

### 5) Sustain focus on chicken industry & beef demand impacts

- Chicken breast prices much more influential than plant-based

### 6) Monitor plant-based changes in Price, Taste, and Appearance

- Key attributes that may impact substitution for beef

### 7) Prioritize market size and overall profits rather than market share



More information available at:



This presentation will be available in PDF format at:

<http://www.agmanager.info/about/contributors/individual/tonsor.asp>

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