



# *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

# Project Purpose

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## **Main Objective**

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

# Project Process – *Modified*

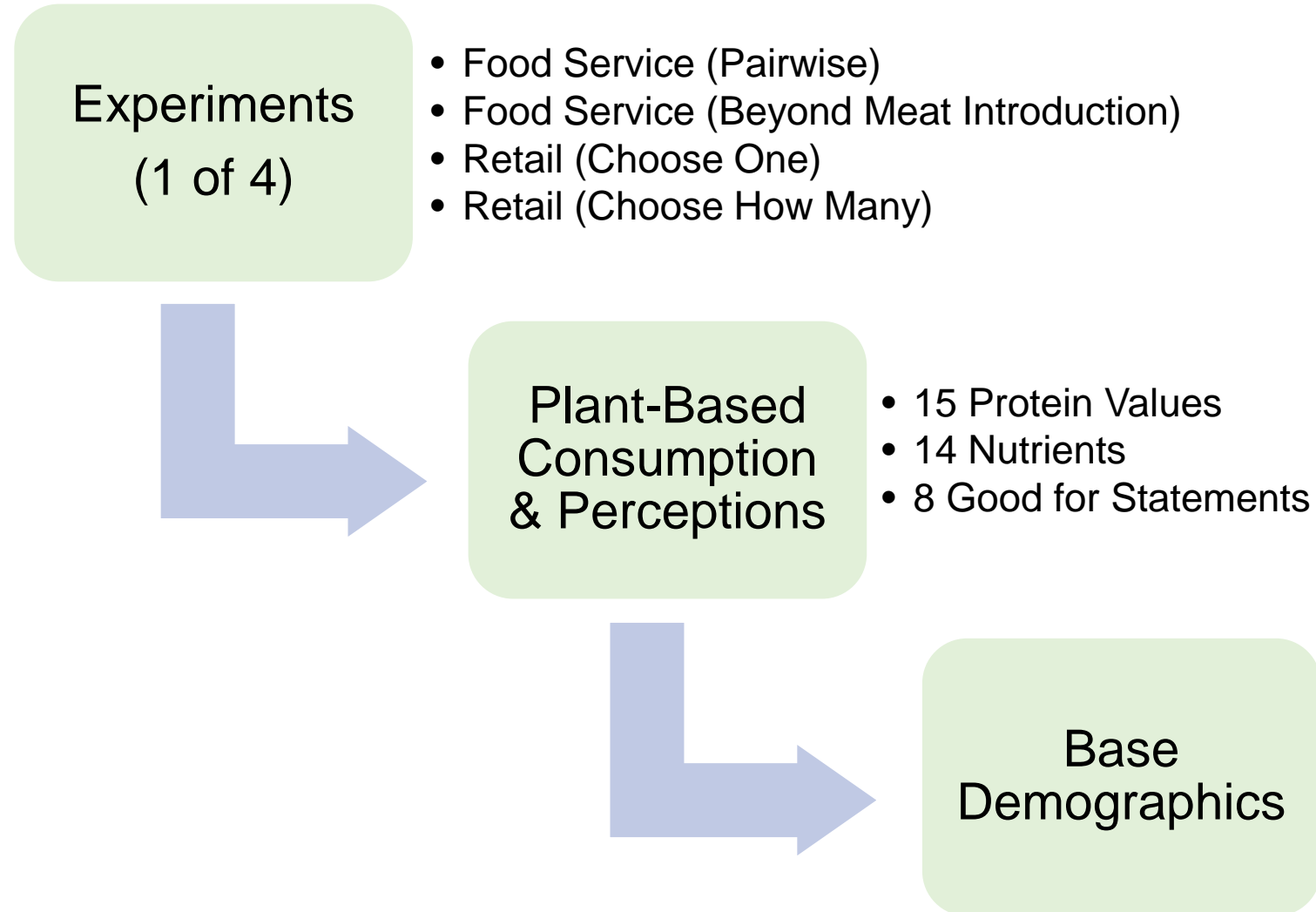
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## Process: 6 Steps

1. Summarize Existing Literature
2. Leverage Other Project Opportunity (Dec. 2019)
  - See What Label Items Catch Consumer Attention
3. Refine Focus Given Eval. Cmt. Feedback
4. Survey U.S. Residents (*Sept. 2020*)
  - Document consumption prevalence
  - Separate analysis for at-home and away-from-home
  - Quantify importance of protein values
5. Provide Expert Opinion on Related Economic Effects
6. Provide Outputs: Full Report, Eval. Cmt. Mtg, CBB Media

# PROCESS VISUAL: SURVEY & EXPERIMENTS

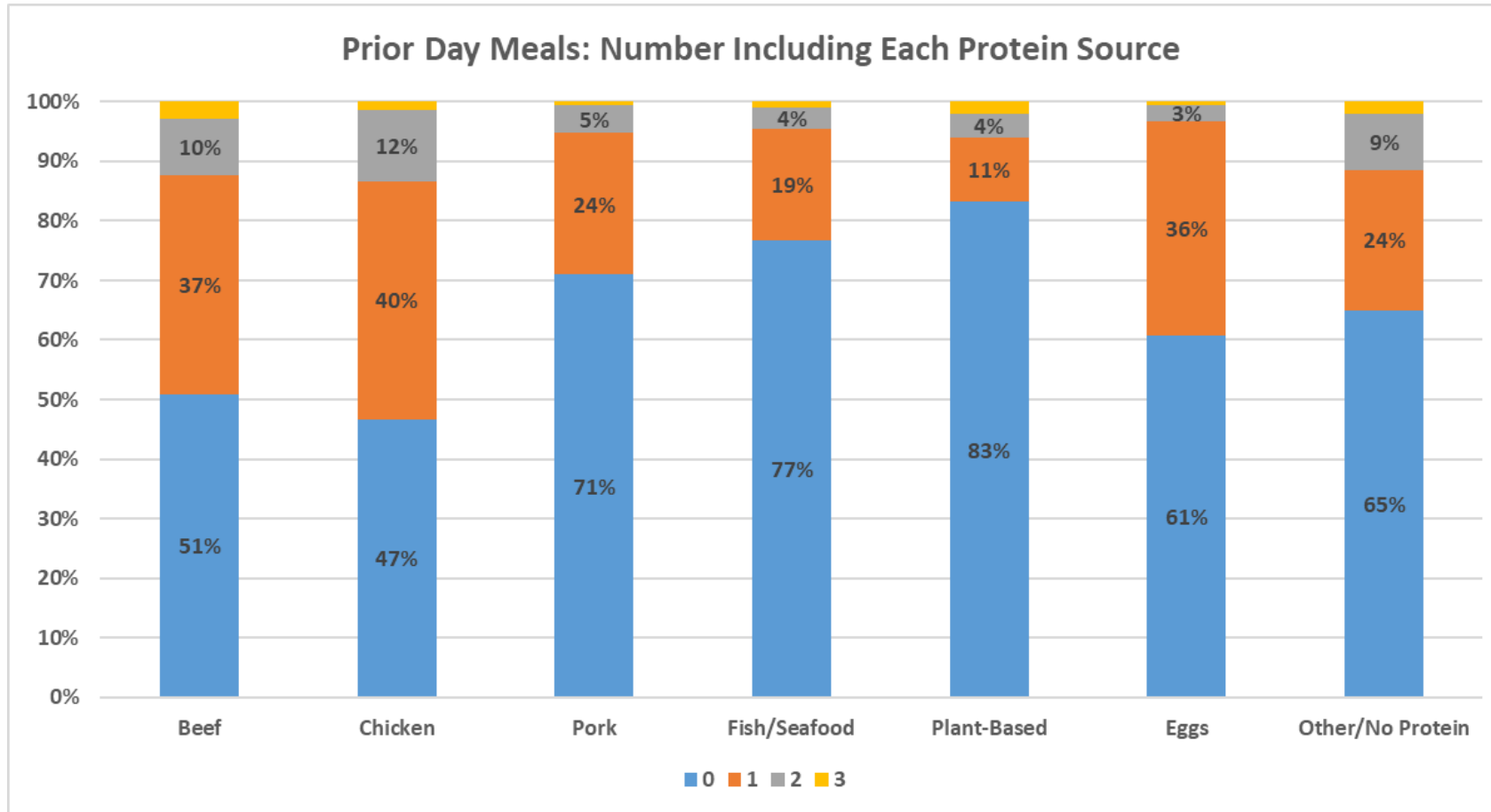
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# CURRENT CONSUMPTION & PERCEPTIONS

## 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**



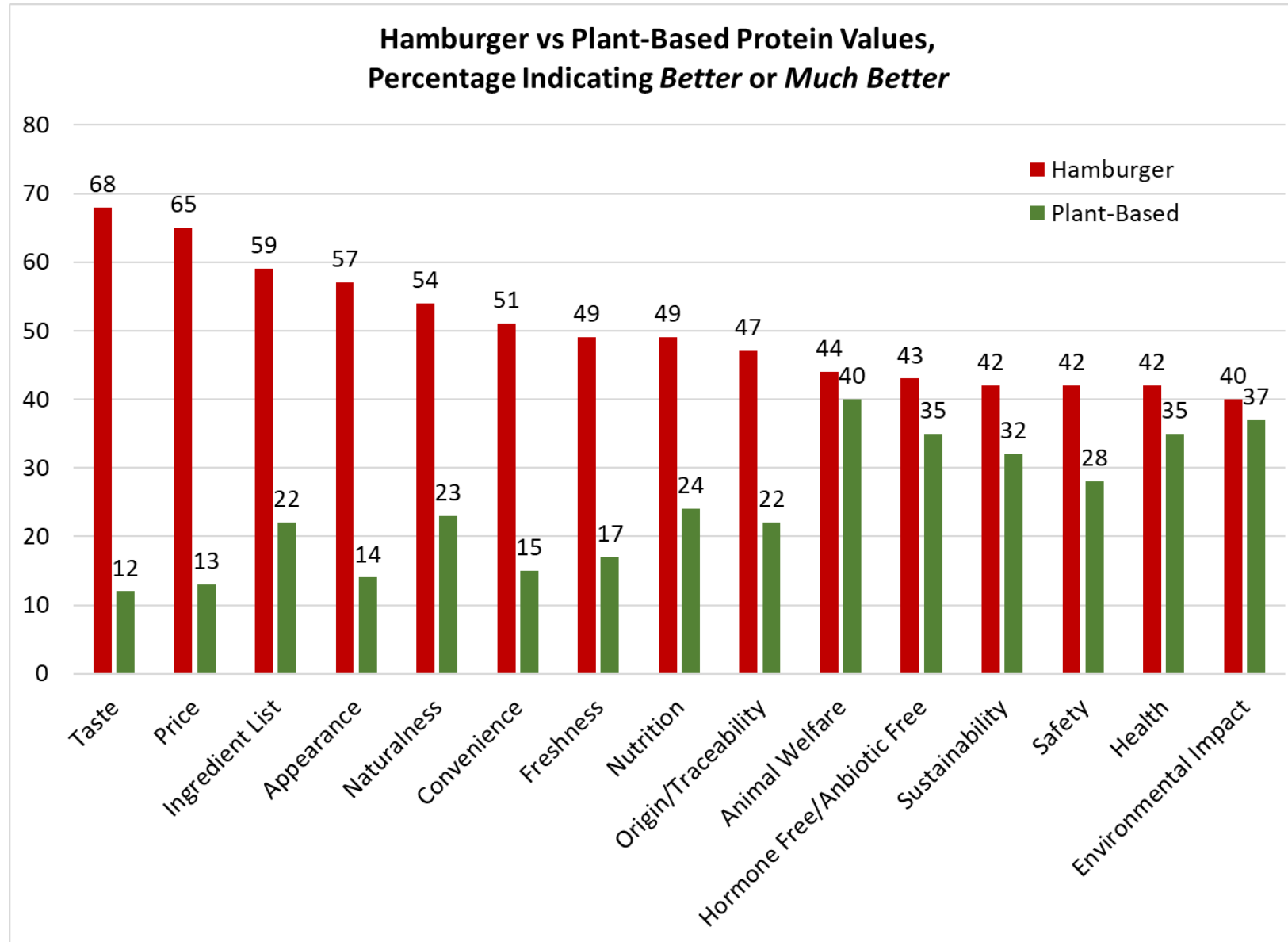
# *CURRENT CONSUMPTION & PERCEPTIONS*

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

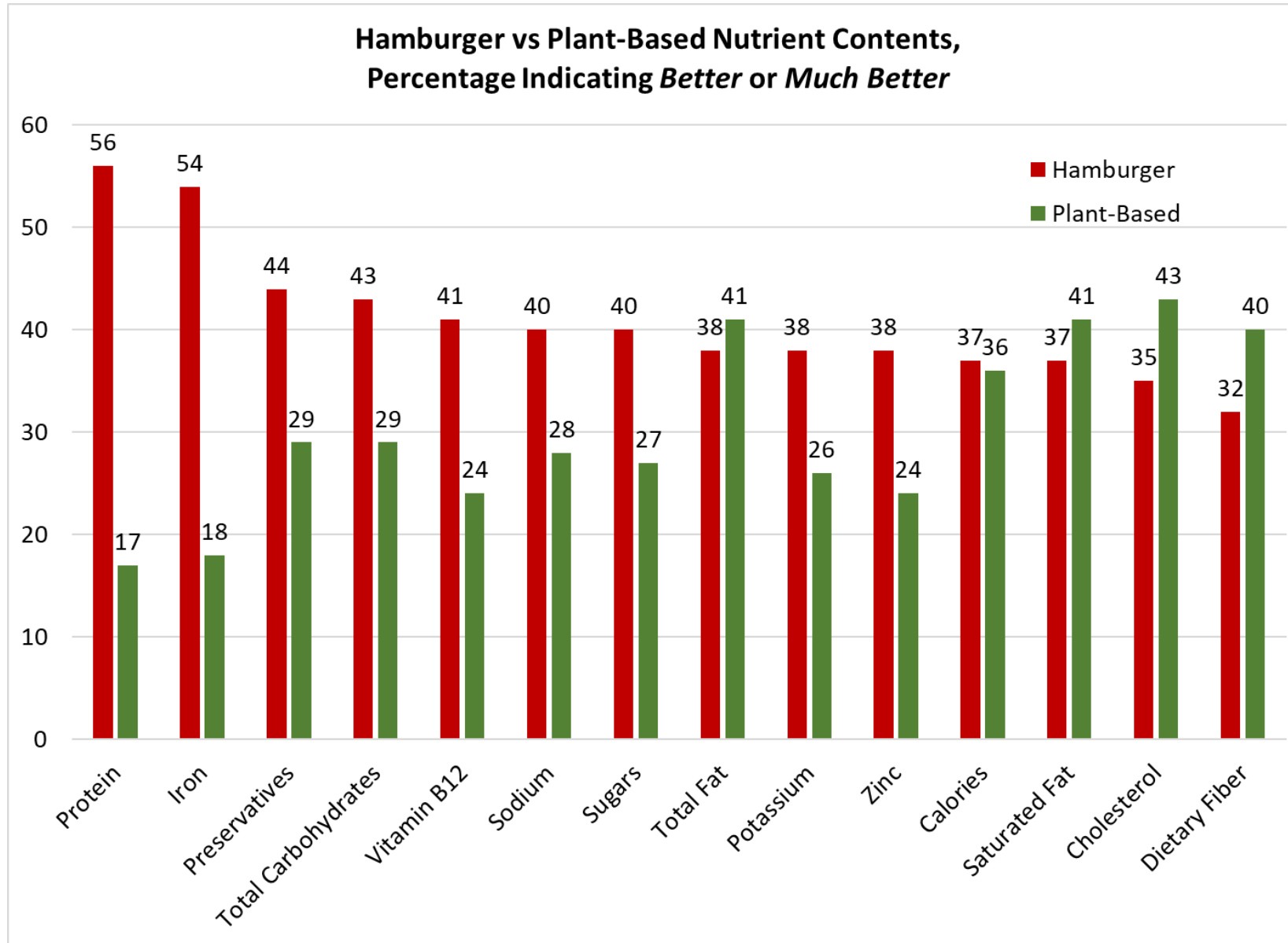
**2) Beef has a good image**



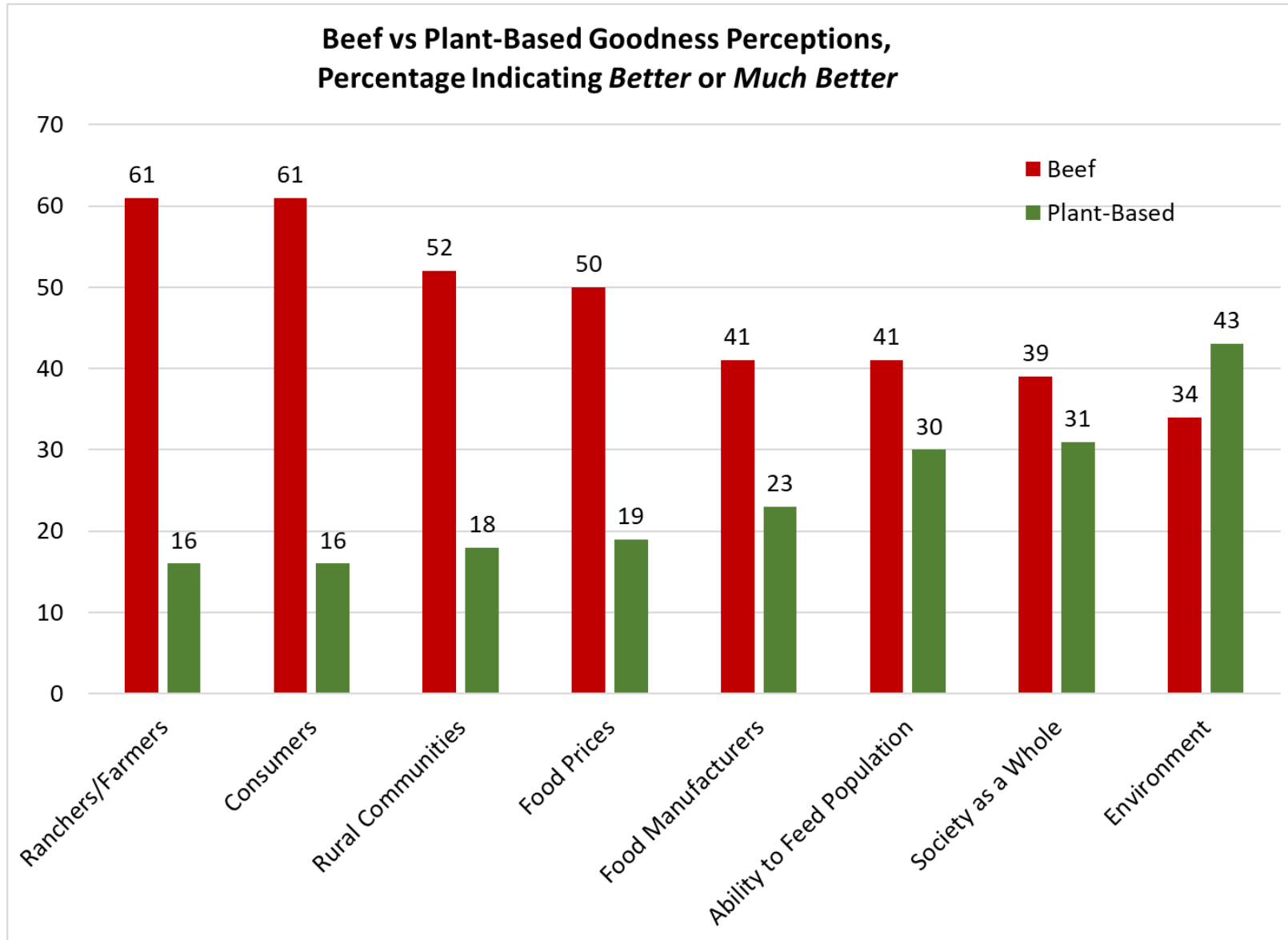
# CURRENT CONSUMPTION & PERCEPTIONS



# 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: Pairwise Treatment

- ✓ Providing consumers information highlighting ingredient lists or nutrient panel contents does NOT significantly impact selection between Beef Burger and Plant-Based meals

Figure 15. Food Service, Pair-Wise Nutrient Content Treatment

Which of the following would you purchase?

			
	<b>Beef Burger</b>	<b>Beyond Meat Burger</b>	
	<i>Nutrient Contents</i>	<i>Nutrient Contents</i>	
	Calories: 540	Calories: 500	
	Fat: 32g	Fat: 29g	
	Protein: 23g	Protein: 22g	
	Sugar: 11g	Sugar: 8g	
	Carbohydrates: 40g	Carbohydrates: 40g	
	Trans Fat: 1g	Trans Fat: 0g	
	Saturated Fat: 11g	Saturated Fat: 5g	
	Cholesterol: 60mg	Cholesterol: 5mg	
	Fiber: 2g	Fiber: 3g	
	Sodium: 760mg	Sodium: 1,110mg	
	Calcium: 10% Daily value	Calcium: 6% Daily value	
	Iron: 25% Daily value	Iron: 45% Daily value	
	Vitamin A: 8% Daily value	Vitamin A: 0% Daily value	
	Vitamin C: 6% Daily value	Vitamin C: 4% Daily value	
	Price: \$7.99/meal	Price: \$7.99/meal	
I would choose:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If these were the only options, I would buy something else.



# EXPERIMENTAL RESULTS HIGHLIGHTS

## Food Service: Beyond Meat Introduction Treatment

Which of the following would you purchase?

					If these were the only options, I would buy something else.
	<u>Beef Burger</u>	<u>Bacon Beef Burger</u>	<u>Chicken Sandwich</u>	<u>Chicken Wrap</u>	
	Price: \$10.29/meal	Price: \$10.49/meal	Price: \$8.09/meal	Price: \$9.19/meal	
I would choose:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Which of the following would you purchase?

					If these were the only options, I would buy something else.
	<u>Beef Burger</u>	<u>Bacon Beef Burger</u>	<u>Chicken Sandwich</u>	<u>Beyond Meat Burger</u>	
	Price: \$10.29/meal	Price: \$10.49/meal	Price: \$8.09/meal	Price: \$9.19/meal	
I would choose:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

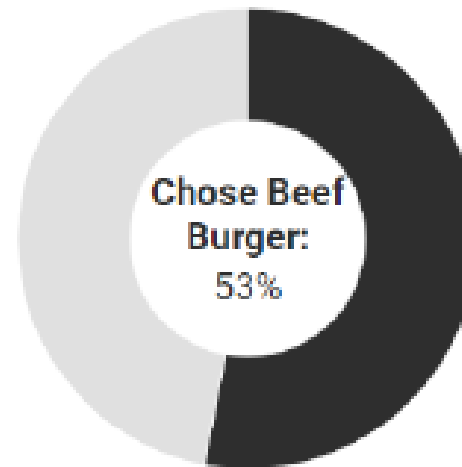
# EXPERIMENTAL RESULTS HIGHLIGHTS

## Food Service: Beyond Meat Introduction Treatment

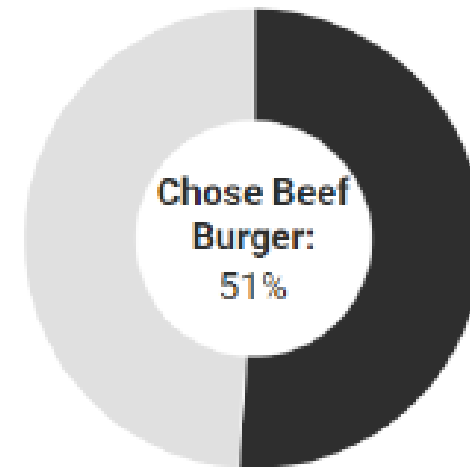
- ✓ Replacing Chicken Wrap with a Plant-Based Protein menu offering has small (<3%) impact on Beef Burger meal selections

### 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

## Retail: Choose One & Choose How Many Treatments

Which of the following would you purchase?

					If these were the only options, I would buy something else.
<u>Beyond Beef</u>	<u>Impossible Burger</u>	<u>Chicken Breast</u>	<u>Laura's Lean Natural Ground Beef</u>	<u>Store Brand, 80% Lean Ground Beef</u>	
Price: \$12.49/lb	Price: \$14.49/lb	Price: \$1.99/lb	Price: \$4.49/lb	Price: \$7.99/lb	
I would choose:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How many pounds of each product would you purchase?

				
<u>Beyond Beef</u>	<u>Impossible Burger</u>	<u>Chicken Breast</u>	<u>Laura's Lean Natural Ground Beef</u>	<u>Store Brand, 80% Lean Ground Beef</u>
Price: \$12.49/lb	Price: \$14.49/lb	Price: \$1.99/lb	Price: \$4.49/lb	Price: \$7.99/lb
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

# ***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**

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## **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**



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