# Understanding beef nutritional attributes contributes to consumers' willingness-to-pay for a healthier product

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#### Introduction

- Nutritional value impacts consumers' purchasing decisions of food products.
- Beef: nutrient rich foodstuff excelling in protein, vitamins, and minerals.
- There is growing controversy regarding fat content of beef and its healthfulness in the diet.
- Although much of the fatty acid (FA) content in beef is considered "healthy fats," many consumers are confused about the different classifications of fatty acids.

# **Objectives**

The objective of this study is to determine:

- Consumers generally understanding about beef nutritional value
- How much consumers' knowledge of beef nutritional value improves as information is provided
- The importance of nutritional content of beef on consumers' purchasing decisions
- Consumers' willingness-to-pay for beef of improved nutritional value

#### Materials and Methods

- A national survey was administered online to over 1,000 respondents.
- Seven questions asking the respondent to choose between two strip steaks that varied by polyunsaturated and saturated fatty acid levels, iron content, and price (Figure 1).
- Respondents were asked to categorize "Trans Fat," "Saturated Fat," "Monounsaturated Fat," and "Polyunsaturated Fat," as either "Healthy Fats" or "Unhealthy Fats."
- After completing the initial set of questions, respondents were given information explaining the fatty acid classifications.
- Respondents were re-asked the seven steak choice questions and the fatcategorization question.
- Respondents were asked demographic questions along with questions regarding their normal fat consumption habits.

Figure 1: Example of a question included in the national survey designed to measure the willingness-to-pay for increased nutritional value of beef.

Shown below are two steaks. Imagine you were really shopping in the grocery store and had to pay the price associated with one of the steaks below. Which steak would you choose?

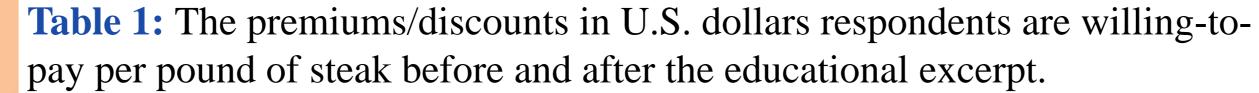
Polyunsaturated Fat: 50% more than a typical steak typical steak Iron: 70% more than a typical Price: \$13 per pound

Polyunsaturated Fat: 100% more than a typical steak Saturated Fat: 10% less than a Saturated Fat: 20% less than a typical steak Iron: 35% more than a typical Price: \$16 per pound

I would not choose either option







	Premiums/discounts	
Nutritional	Before information	After information
Improvement		
50% more favorable fat	-1.0	3.0
composition		
100% more favorable	-1.4	4.2
fat composition		
50% iron content increase	0.2	0.1
100% iron content	1 3	-0.5
increase	1.0	0.0

## References

<sup>1</sup>US Department of Agriculture, Agricultural Research Service, Nutrient Data Laboratory. USDA National Nutrient Database for Standard Reference, Release 28 (Slightly revised). Version Current: May 2016. Internet: http://www.ars.usda.gov/ba/bhnrc/ndl

### Results

- Initially, only 66.40%, 69.05%, 79.14% and 79.24% of respondents correctly categorized the monounsaturated, polyunsaturated, saturated, and trans fat, respectively.
- However, a favorable shift occurred and more than 90% of respondents correctly categorized the various FA once provided the educational excerpt.
- Once respondents better understood the healthfulness of FA in beef, respondents were willing-to-pay a premium for a product of improved FA composition (Table 1).
- Prior to information regarding FA, respondents preferred more iron content, especially compared to better FA composition, but these preferences reversed after the informational excerpt was provided and respondents better understood that not all fat in beef is bad.

#### Conclusions

- The beef industry does an excellent job promoting the high protein content and essential nutrients within beef. There is a large effort to promote the recent years of findings regarding beneficial fats in beef.
- In the past, much controversy surrounding fat content of red meat and its role in the diet led to many health professionals recommending cutting such food from the diet.
- Recent research on different FA categories supports the idea that not all fat is bad. Our results indicate that relaying this information to consumers is extremely important to their purchasing decisions and willingness-to-pay for beef.
- About 50% of beef fat is monounsaturated FA<sup>1</sup> (healthy fats).
- UF research: there is variation among cattle for polyunsaturated and saturated fatty acids.
- This provides opportunity to identify cattle with a favorable FA composition and market such product to the increasing population of health-conscious consumers.

### Financial Support

UF-IFAS Ag Experimental Station; Florida Beef Council

PhDPosters.com

UF FIORIDA

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**Figure 1:** Example of a question included in the national survey designed to measure the willingness-to-pay for increased nutritional value of beef.

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**Figure 2:** Question in survey used to understand respondents' perceptions of fat classifications.

What fat types are healthy and which are unhealthy? Drag the types of fat below to the correct box.

#### **Items**

Monounsaturated Fat

Polyunsaturated Fat

Trans Fat

Saturated Fat





**Table 1:** The premiums/discounts in U.S. dollars respondents are willing-to-pay per pound of steak before and after the educational excerpt.

	Premiums/discounts	
Nutritional	Before information	After information
Improvement		
50% more favorable fat	-1.0	3.0
composition		
100% more favorable fat composition	-1.4	4.2
50% iron content increase	0.2	0.1
100% iron content increase	1.3	-0.5

**Table 2:** Percentage of respondents categorizing different classes of fatty acids correctly into healthy or unhealthy, before and after reading the educational excerpt.

	Percentage of participants categorizing correctly	
Fatty acid class	Before	After
Monounsaturated	66.40%	94.32%
Polyunsaturated	69.05%	93.54%
Saturated	79.14%	91.67%
Trans	79.24%	94.42%

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