

# UF-Gainesville Beef Cattle News Corner

## Knowledge about beef nutritional attributes and consumers' willingness-to-pay (Part 3)

**Sarah Flowers, Chad Carr, Brandon McFadden\***, and **Raluca Mateescu**, Department of Animal Sciences, University of Florida; \*Department of Applied Economics and Statistics, University of Delaware

As discussed in the previous two issues of The Florida Cattleman & Livestock Journal, differences in fatty acid (FA) composition among breeds led to a two-part study funded by the Florida Beef Council. The study was conducted to determine consumers' knowledge about the nutritional value of beef and its importance in purchasing decisions, and to gain a better understanding about preferences for changes in FA composition. The study consisted of: 1) an online survey (discussed in the previous issue); and 2) a taste panel auction (discussed here).

### Taste Panel Auction

A taste panel was conducted at the University of Florida Food Science and Human Nutrition lab to test consumers' true willingness-to-pay (WTP) for a steak of improved nutritional composition. Participants (n = 95) were selected from a diverse population but required to be regular beef consumers. Participants were informed they would receive a \$20 beef certificate, funded by the Florida Beef Council, as compensation for participation.

Directions informed participants they would taste four samples of beef strip steak that differed only in nutritional value. Participants were informed the average price for a retail strip steak is \$10/lb (USDA, 2017). After consuming each sample, participants gave a bid for the per pound price they would pay for the current steak. Panelists were informed that at the end of the experiment, one of the steaks would be chosen for purchase and the two participants (in the respective group of approximately 10 participants) who bid the highest prices would be required to purchase the steak at the third-highest bid price from their \$20 beef certificate.

Tenderness and crude fat content were analyzed to identify the most uniform, highly-palatable steaks to be used for the taste panel auction. Steaks were cooked to a medium degree of doneness and after resting, all external fat was cut from each side of the steak. The purpose of selecting and cooking a uniform product was to ensure the only difference participants focused on and determined their WTP values upon was nutritional content.

Following the tasting of the four steak samples, participants were asked the most important and least important factors to them when purchasing beef, how often they consume beef, and their desired cooking level of beef.

### Results

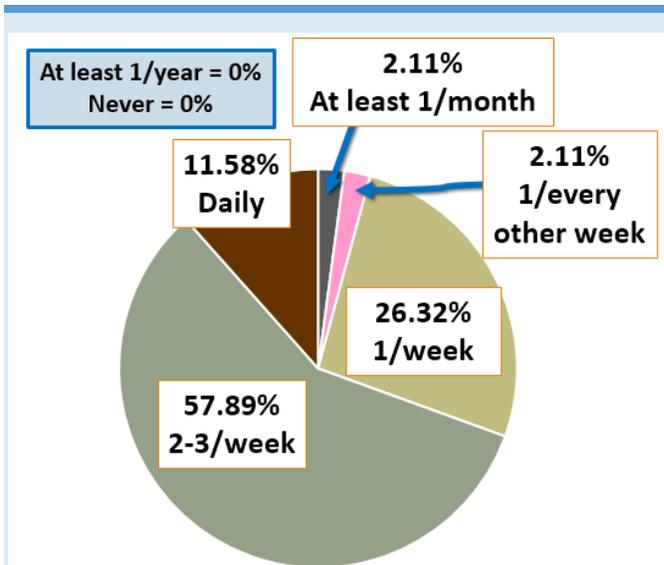
**Table 1** shows WTP for each of the four steaks. Participants were willing-to-pay a numerically higher dollar value for beef of improved nutritional content, but the values were not statistically significant.

**Table 1: Participants willingness-to-pay (WTP) in dollar price per lb. for each of the 4 steak samples with various nutritional content.**

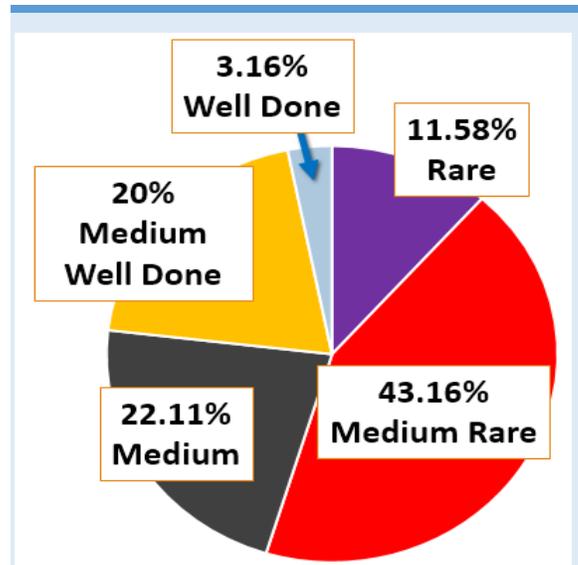
<b>Sample</b>	<b>WTP</b>
<b>“Average” (avg. healthy fat, avg. unhealthy fat, avg. iron)</b>	<b>\$8.26</b>
<b>“Better Fat” (increased healthy fat, decreased unhealthy fat, avg. iron)</b>	<b>\$8.99</b>
<b>“More Iron” (avg. healthy fat, avg. unhealthy fat, increased iron)</b>	<b>\$8.49</b>
<b>“Better Fat + More Iron” (increased healthy fat, decreased unhealthy fat, increased iron)</b>	<b>\$8.85</b>

Participants were asked to classify which attributes, besides price, are most important and least important when purchasing beef. They were provided a list of 12 attributes: brand name of product, breed of animal, marbling level, nutrient content, taste/eating experience, USDA grade of product, visual appearance, where/how animal was raised, growth promotants, antibiotics, grass fed, organic. The top three most important attributes by percentage of participants were “Taste,” “Appearance,” and “Grade” and the top three least important attributes by percentage of participants were “Breed,” “Organic,” and “Brand.” It is interesting to note that the top three most important attributes and the top three least important attributes were the same in both the national online survey and the in-person taste panel auction.

Most participants (57.89% of the population) said they consume beef 2-3 times per week (**Figure 1**) and no participants said they consumer beef “At least once a year” or “Never.” This is to be expected since participants were required to be normal beef consumers to partake in the panel. Most (43.16%) participants said they prefer a medium rare degree of doneness (**Figure 2**). This suggests that consumers that are regular beef consumers or eat beef more often, are comfortable with cooking beef to a lower degree of doneness.



**Figure 1.** How often participants consume beef as percentage of panelists.



**Figure 2.** Participants' desired cooking level of beef as percentage of panelists.

For all four samples, age was statistically significant, where the WTP decreased with an increase in the age of the panelist. Income was significant only for the “Average” sample, where for every \$10,000 increase in income the WTP increased by \$0.39/lb. There was also a correlation for WTP of the four steak samples within individuals, thus, WTP was either high or low across all four samples per individual. In other words, if a participant was WTP \$5.00/lb for one sample, they often were WTP \$5.00/lb for the other samples as well.

In the past, there has been much controversy surrounding the fat content of red meat. In recent years, 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. WTP was much higher with varying nutritional value in the online survey than in the taste panel auction. One reason for this is the way the two parts of the study were designed. The survey shows the impact of presenting information in a way that mimics the use of marketing. By not providing any information in the beginning, our findings show there was not much difference in WTP for better fat content, only in iron. Once consumers better understood that not all fat is bad, through information provided in such a way that mimics marketing, respondents were willing to pay a premium for a product of improved fat content. In the taste panel auction, however, participants were not conditioned with information such as in the survey.

### **What does this mean for the beef industry?**

These results suggest there is plenty of work to be done since consumers are still overcoming the confusion from past propaganda of beef nutritional content, specific to fat. These results have provided the beef industry necessary insight of consumers' perception of beef and beef's contribution to a healthy, balanced diet. This insight can be used to better market and promote beef in a positive light in terms of nutritional value. Our findings suggest

that when marketing a product based on its health attributes, in order to receive a premium for such product, it is essential for information to be provided in a thorough way the consumer can easily realize the health benefits of the product. The difference in WTP between our online survey and the consumer taste panel suggests the possibility that marketing the health attributes in a way that compares a typical beef product and one of improved FA composition can have an effect on whether consumers would be willing to pay more for the improved product. These results are particularly important to the Florida beef industry given the vast use of *Bos indicus* influenced cattle which produce a leaner product. Our research shows the leaner product from *Bos indicus* influenced cattle results in a more favorable product in terms of nutritional value (specifically FA composition). The insight gained about consumers' understanding of FA composition of beef and their varying WTP for such a product opens the door for Florida beef producers to market their product in an innovative way. These results deliver intriguing insight of how to properly market this leaner product in such a way that captures the maximum potential premium and thus, positively impact Florida beef producers.

*Sarah Flowers graduated with a M.S. degree from the Department of Animal Sciences at University of Florida under Dr. Mateescu.*