# Communicating About Agricultural Issues with Consumers: How Much do Labels Matter?

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## Introduction

Nearly half of American consumers actively seek out and purchase organic (GMO-free) food (Riffkin, 2014) despite knowing very little about what makes food organic or genetically engineered. In addition, recent legislation will require labeling for food that contains GMOs (Sunstein, 2016) altering the way the food industry communicates with consumers through food labels. Additionally, Florida's Natural, a major orange juice distributor, voluntarily began labeling their citrus products as non-GMO (free of genetically engineered ingredients) around 2013 without much explanation for the new label (Bodnar, 2014). While there are currenly no GMO oranges on the market (Food and Drug Administration, 2015), the technology might be necessary to save the citrus industry (Allen, 2016). Citrus greening, a devastating citrus disease present in all major citrus producing states, has the potential to destroy the United States' citrus industry. Researchers believe GMOs might be the key to stopping the spread of the disease (The National Academies of Sciences, Engineering, and Medicine, 2010). However, if GMOs are used to save the citrus industry, agricultural communicators will need to better understand consumers' purchasing intent of orange juice to best position products, particularly against competitors using non-GMO fruit. The purpose of this study was to determine how United States consumers' purchasing intent of orange juice related to price and label. This research can be used by agricultural communicators to develop strategic communication and is in accordance with Priority Area One of the National Research Agenda (Roberts, Harder, & Brashears, 2016).

## Literature Review

The theory of loss aversion guided this study. The theory states that messages framed around loss are more influential than those framed around gains (Tversky & Kahneman,1981). Liberman, Idson, and Higgins (2005) expanded this principle to include the frames of non-loss and non-gain, where non-loss describes the absence of a negative attribute (e.g. cholesterol free). Liberman et al. (2005) concluded people who were affected by non-loss frames were likely motivated by trying to prevent some type of outcome. In a separate study on food labels, Jeong and Lundy (2015) concluded the effect of gain/loss frames were not consistant and depended on the type of food product and label. Previous labelling research has found consumers are willing to pay a premium for non-GMO labeled products (which can be considered a non-loss frame; Liberman et al., 2005) compared to identical products with no additional label (Wolfe et al., 2016).

## Methods

An online survey was created to fulfill the purpose of this study. The survey was distributed via the online survey company Qualtrics to a non-probability, opt-in sample of 1,751 people, 18 years and older in the United States. Quota sampling was used to ensure approximatey equal responses from all 50 states. Attention filter questions were also used to ensure respondents were carefully considering each questions. There were 1,051 usable responses after incomplete responses and those failing attention filters were discarded. The data were weighted using the 2010 National Census to address bias related to non-probability sampling procedures (Baker et al., 2013). While part of a larger study about public perceptions of genetic engineering as a solution to citrus greening, three questions were specifically analyzed in this study. To determine consumers' purchasing intent related to orange juice, identical orange juice bottles were manipulated so one used a label that read "GMO-free" with a price tag of $3.49 while the other label had no additional information and cost $2.99. The GMO-free bottle was considered the non-loss frame (Liberman et al., 2005). A fictitious orange juice brand, SunnyView Oranges, was created for the study to alleviate bias and was identical between the two bottles. The

respondents were told to take 10 seconds to decide which bottle of orange juice they would purchase in the grocery store. The second question asked if the respondents were able to view the images and served as a manipulation check. One respondent was unable to view the images reducing the sample size to 1,050. The final question asked why the respondents chose the orange juice bottle they did with the following check-all-that-apply options: price, GMO-free, liked the label, size of bottle, and other. Data were analyzed descriptively using SPSS. The data were separated by bottle choice to explore why respondents selected the particular product.

## Results

Over half of the respondents (56.7%, $n = 596$) chose the bottle with the lower price and no additional label, and 43.3% ($n = 454$) chose the more expensive bottle labeled GMO-free. Of the respondents who selected the orange juice bottle with a GMO-free label for a higher price, 73.9% ($n = 336$) indicated they made the decision because the product was GMO-free, 20.4% ($n = 93$) indicated they liked the label, 12.5% ($n = 57$) indicated price, and less than 5% ($n = 19$) indicated other reasons. When respondents selected the orange juice bottle without a GMO-free label for a lower price, 92% ($n = 548$) indicated they made the decision because of price, 4.9% ($n = 29$) indicated they liked the label, 6.1% ($n = 37$) indicated other reasons, and 3% ($n = 18$) said they selected the product because it was GMO-free even though it had no label.

## Conclusions, Implications, and Recommendations

The results from this study indicated the majority of respondents purchased their orange juice based on the price rather than the product being free of GMOs, which indicated the non-loss frame did not resonate with the respondents (Liberman et al., 2005). While the majority of consumers reported a preference for the bottle with no additional label, more than 40% of respondents were willing to pay a premium for GMO-free juice, which aligned with previous research (Riffkin, 2014; Wolfe et al., 2016). This implies the recent GMO labeling law (Sunstein, 2016) could cause problems for the citrus industry if GMO citrus are developed and nearly half of consumers are willing to pay extra to purchase non-GMO juice. Fewer repondents said they made their selection due to the GMO-free label than the number of respondents who actually selected the GMO-free bottle. All consumers may not be taking the time to read labels in the store and make selections based on other attributes. When comparing the purchasing reasons between the two bottles, there is a difference between the top reason in each group. Price may be a stronger indicator for purchasing compared to label information. Considering the price of orange juice will likely increase if citrus greening persists, a decrease in sales can be expected. Agricultural communicators need to work with growers and produce marketers to determine best practices for selling GMO citrus products if the technology is used to combat greening. In addition, extension educators should collaborate to develop educational programming regarding the possible development and use of GMO orange juice. Future research should determine the demographic and psychographic profiles of the consumers who prefer to purchase GMO-free orange juice. This information will allow insight into consumer profiles to develop targeted communication strategies. Future research should also investigate consumer behaviors related to orange juice purchases in a controlled supermarket environment. This research provided respondents with a hypothetical situation, and purchasing behaviors may be different when actually looking at a supermarket shelf and making a selection. In this environment additional labels could be tested to understand consumers' purchasing intent. These labels could include: "Contains GMO Ingredients," "Organic," and "Natural." Finally, testing purchasing intent of GMO orange juice in citrus producing and non-citrus producing states could add valuable insight into how to market the product, and other GMO products, in the future.

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