

A World without Citrus: How will we make our Margaritas?

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Introduction

Citrus greening, a citrus disease spread by an invasive insect, has reached all major citrus producing states in the United States (US) and has been identified in every commercial grove in Florida (Kelley, 2017; Teague, 2017; UF/IFAS Citrus Extension, 2016). Because this disease decreases the production and viability of citrus trees, orange juice prices are expected to increase (Perez, 2017). However, citrus consumption is predicted to increase (United States Department of Agriculture-Foreign Agricultural Services [USDA-FAS], 2016), which makes citrus greening an issue for consumers and producers alike. If the disease continues to spread, consumers will no longer have affordable or domestic options for citrus to be used for snacks, juices, home goods, or mixed drinks (Florida Department of Citrus, 2017). Currently, there is no cure for citrus greening (Singerman & Useche, 2016), but research points toward biotechnology as a potential and likely long-term solution (Voosen, 2014). Yet the industry remains concerned that if the public is not willing to accept this new biotechnology in citrus, the industry will collapse (Voosen, 2014). To help agricultural communicators and Extension professionals develop communication and education programs related to citrus greening, there is a need to understand how the public will react to information related to potential solutions for the disease. In accordance with priority area 2 of the national research agenda (Lindner, Rodriguez, Strong, Jones, & Layfield, 2016), the purpose of this study was to understand consumers' ability and motivation to process information related to solutions for citrus greening.

Conceptual Framework

The elaboration likelihood model (ELM) of persuasion was used to guide this study. This theory proposes that people will use one of two processing routes to inform their attitude when presented with information (Petty, Brinol, & Priester, 2009). The central processing route will be used when people have the motivation (e.g. personal relevancy) and ability (e.g. knowledge) to process the information (Petty & Cacioppo, 1986). In these cases, people elaborate upon their past experiences, and if the message elicits more or less favorable thoughts, a long-lasting change in attitude occurs. When people do not possess motivation and/or ability to process the information, they move through the peripheral processing route (Petty & Cacioppo, 1986). These individuals rely on peripheral cues, like message source or imagery, to inform their attitude. If an attitude change occurs, the new attitude is not strong or predictive of behavior (Petty & Cacioppo, 1986). Past research has concluded that consumers typically use the peripheral processing route when presented with information about agricultural and life science topics because they do not possess the motivation to elaborate upon the messages (Krause, Meyers, Irlbeck, & Chambers, 2015; Ruth & Rumble, 2017).

Methods

Qualitative data were collected through focus group research to fulfill the purpose of the study. Eight, 90-minute focus groups ($n = 73$) were conducted in four regions of the US in January 2018: two citrus producing states (Florida and California) and two major media markets (Illinois and New Jersey; Nielsen, 2016). The purpose of these focus groups was to understand consumers' perceptions of biotechnology solutions used to combat citrus greening. Participants were told what citrus greening was before reading information about different technologies, like genetically engineered trees, a genetically engineered virus, and a topical spray, that could be used to combat the disease. Participants were asked how they felt about these solutions and their

likeliness to purchase citrus produced with the technology. A priori coding of the transcripts was used to understand the participants' ability and motivation to process the information delivered in the session (Kuzel, 1999). Peer debriefing served as an external check for analysis and an audit trail for coding was recorded (Lincoln & Guba, 1985).

Findings

When assessing participants' *ability to process* the communication about citrus greening, it became apparent they did not have the knowledge necessary to evaluate the information. "I have never heard of citrus greening," said a New Jersey participant. The description of the potential solutions to citrus greening were met with questions rather than thoughts about the solutions. These questions included, "Is citrus greening even in the US yet?" (IL); "Is this technology real?" (CA); and "What will this technology do to the tree? How will it affect the tree and the environment?" (NJ). Participants agreed, "we need more information" (CA). The lack of citrus greening knowledge also appeared to influence *motivation to process* communication about the technology. An Illinois participant said, "It is hard to care about a solution that you have not heard about." Motivation to process information also appeared related to understanding the severity of the disease. For example, a participant in Florida said, "people need to be aware the citrus industry is dying before they can react to communication." Participants also asked "What is the scope of this issue?" (IL), and "Why are we discussing it now?" (NJ). The personal relevancy of citrus appeared to influence motivation as well. While some participants stated "citrus greening doesn't affect me, so I don't care," (IL), others described how they "couldn't imagine [their] grandchildren not being able to eat an orange in the future," (FL). When an Illinois participant said he decided he could live without citrus, another one replied, "Well I need them for my mimosas!" Similarly in Florida, when participants were discussing a future without citrus, one replied, "What will we make our margaritas with [if there is no citrus]?"

Conclusions & Recommendations

These focus groups revealed that participants' ability and motivation to process information related to citrus greening was low (Petty et al., 2009). Their lack of knowledge regarding citrus greening appeared to inhibit their ability to process the information about potential solutions and only led participants to asking questions. The focus groups also revealed a general lack of understanding for the severity of the citrus disease, which decreased the participants' motivation to care about the information. Despite the fact that some people believed the disease would not affect them personally, many indicated they wanted citrus for their families or to use in drinks. Due to a lack of ability and motivation to process the information, participants appeared to not use either ELM route and retained their initial attitudes (Petty, et al., 2009). Rather than elaborating on the information or assessing peripheral cues (Petty & Cacioppo, 1986), the majority of participants only expressed questions or said they did not know enough to think one way or another. Practitioners need to be cognizant of this finding as they develop communication related to citrus greening. Consumers first need to know a problem exists to have the ability to process communication about viable solutions. Focusing communication on the severity of citrus greening could help to increase consumer motivation to process future communication about solutions. Personal relevancy of the information could be increased by framing messages around a hypothetical world without citrus in children's lunches or a world without mimosas, margaritas, sangria, etc. These message strategies should be tested in a survey of a random sample of the population to help generalize the findings. This research should also be considered when developing communication for other problems facing the agriculture industry.

References

- Florida Department of Citrus. (2017). *News and tips*. Retrieved from <http://www.floridacitrus.org/oj/news>
- Kelley, R. (2017, January 28). High-stakes war is waged to save trees. *Valley Morning Star*. Retrieved from <http://www.valleymorningstar.com/>
- Krause, A., Meyers, C., Irlbeck, E., & Chambers, T. (2015). *What side are you on? An examination of the persuasive message factors in proposition 37 videos on YouTube*. Paper presented at the 2015 American Association for Agricultural Education, San Antonio, TX
- Kuzel, A. J. (1999). Sampling in qualitative inquiry. In B. F. Crabtree & W. L. Miller (Eds.), *Doing qualitative research* (2nd ed., pp. 33-46). Newbury Park, CA: Sage Publications.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.
- Lindner, J. R., Rodriguez, M. T., Strong, R., Jones, D., & Layfield, D. (2016). New technologies, practices, and product adoption decisions. In T. G. Roberts, A. Harder, & M. T. Baker (Eds.), *American Association for Agricultural Education national research agenda: 2016-2020*. Gainesville, FL: Department of Agricultural Education and Communication.
- Nielsen. (2016, September 24). *Local television market universe estimates*. Retrieved from <http://www.nielsen.com/>
- Perez, M. G. (2017, February 8). Florida's once-signature crop is shrinking away amid disease is *Bloomberg*. Retrieved February 9, 2017 from <https://www.bloomberg.com/news/articles/2017-02-08/florida-orange-crop-seen-below-usda-outlook-as-processing-trails-iywyqan1>
- Petty, R. E., Brinol, P., & Priester, J. R. (2009). Mass media attitude change: Implications of the elaboration likelihood model of persuasion. In J. Bryant, & M. Oliver (Eds.), *Media effects: Advances in theory and research* (3rd ed., pp. 125-164). New York, NY: Routledge.
- Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York, NY: Springer/Verlag.
- Ruth, T. K., & Rumble, J. N. (2017). What's in a name? The influence of persuasive communication on Florida consumers' attitude toward genetically modified food. *Journal of Applied Communications*. 101(2), 72-85. <https://dx.doi.org/10.4148/1051-0834.1006>
- Singerman, A., & Useche, P. (2016). *Impact of citrus greening on citrus operations in Florida* (FE983). Retrieved from UF/IFAS website: <http://edis.ifas.ufl.edu/fe983>
- Teague, E. (2017, February 1). Gardening tips: How to prevent the spread of citrus disease. *The Fresno Bee*. Retrieved from <http://www.fresnobee.com/living/home-garden/article129222789.html>
- UF/IFAS Citrus Extension. (2016, August 1). *Citrus Greening (Huanglongbing)*. Retrieved from <http://www.crec.ifas.ufl.edu/extension/greening/index.shtml>
- United States Department of Agriculture - Foreign Agricultural Services. (2016). *Citrus: World market trade*. Retrieved from <http://apps.fas.usda.gov/psdonline/circulars/citrus.pdf>
- Voosen, P. (2014, September 13). Can genetic engineering save the Florida orange? *National Geographic*. Retrieved from <http://news.nationalgeographic.com/news/2014/09/140914-florida-orange-citrus-greening-gmo-environment-science/>