

Is Perception Reality? Improving Agricultural Messages by Discovering How Consumers Perceive Messages

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Keywords

agricultural communication, framing, social cognitive theory, messages, commodity organization

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This study assessed how consumers interpret agricultural messages typically found on commodity organizations' websites in Florida. Four focus groups were held in the fall of 2010. Results indicate that the participants found most of the messages to be unfavorable, rather than favorable. Additionally, the conclusions made by the participants were explained as being influenced by previous experience, corporate influence, history, the creation of mental images, lack of supporting information, and media influence. Participants provided researchers with suggestions to improve the messages and create a more favorable response from consumers. Further research should be done in this area to continue to improve the effectiveness of agricultural messages. In addition, this research should be replicated in other geographic locations. The implications of this study provide valuable information for agricultural communicators, commodity organizations, industry professionals, and those wanting to tell the story of agriculture.

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Introduction

American agriculture has transformed drastically throughout the last century. Where there once were multitudes of farms, now there are few (Dimitri, Effland, & Conklin, 2005). Technology has driven advances in agricultural production to its current state, which has allowed agriculture to continue to support our growing population. However, technology has also allowed many individuals to leave the farm for alternative occupations. Today, less than 2% of the working U.S. population is employed in an agricultural field. Additionally, well under 5% of the U.S. population now lives on a farm, while around only 20% of the population lives in a rural area (Dimitri et al., 2005).

The widening gap between those who produce and consume agricultural products has sometimes led to differing views between those who have an agricultural background and those who do not. For example, differing perspectives currently exist between producers and consumers on the issue of sustaining agriculture while being cognizant of natural resources and the environment, as well as other issues (The Center for Public Issues Education in Agriculture and Natural Resources [PIE Center], 2010). This phenomenon of differing views between consumers and producers has been character-

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ized as the “green divide,” a “farm-to-plate knowledge gap,” and a lack of “agricultural literacy” (National Research Council, 1988; PIE Center, 2010; Smart, 2009).

In 1988, the National Research Council found that “Most Americans know very little about agriculture, its social and economic significance in the United States, and particularly, its links to human health and environmental quality” (p. 9), suggesting that agricultural literacy among the members of the general public is minimal. Several additional studies have supported and expanded upon this finding (Duncan & Broyles, 2006; Frick, Birkenholz, & Machtmes, 1995; Frick, Birkenholz, Gardner, & Machtmes, 1995; Mayer & Mayer, 1974; Terry, Herring, & Larke, 1992; Wright, Stewart, & Birkenholz, 1994). Duncan and Broyles (2006) suggest knowledge and perception of agriculture, especially among young adults, is influenced by factors in their life such as media, acquaintances, involvement in organizations, and family.

Recently there has been a movement among agricultural commodity organizations and those involved in agriculture to try and develop greater awareness and understanding between producers and consumers. The movement is urging those involved in agriculture to become advocates for the industry and to tell their side of the story (Advocates for Agriculture, 2007; American Farm Bureau, 2003; Radke, 2009). As a result of this movement, many of those involved in agriculture are working toward developing more effective ways to communicate with the general public, especially via the Web. Creating an effective web presence allows the agricultural industry to extend their advocacy, build a community, and build relationships (Ohio Farm Bureau, 2009). However, it is important to assess the effectiveness of the messages the agricultural industry is sending to consumers. This is important because the intended meaning of a message may be perceived differently by consumers (Stevenson, 1997).

In agriculture, as well as in any business, it is essential to successfully promote a product or service (Moffitt, 2004). Through this promotion, information is given to the consumers and persuasion is often used (Kolter & Armstrong, 2006). A successful promotion will attract consumers and maintain or even increase profits. Often, strategic messages are designed to set the product or service apart from competitors (Moffitt, 2004). Understanding the perceptions of audiences and the way in which they interpret messages is crucial to developing effective communications strategies, if the goal is to favorably influence attitudes toward agricultural products, practices, and production industries.

Theoretical Framework

Much of consumers’ interpretation of messages may be explained through framing and social cognitive theory. Thus, these two theories guided this study.

Framing is described as a function of messages that influences how an audience perceives the messages (Scheufele & Tewksbury, 2007). Entman’s definition of framing provides further explanation:

To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem, definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described. (1993, p. 52)

Additionally, framing is used to provide simplification to complex issues or concepts. Framing can exist on two levels. These levels have been identified as the media level and the individual level,

also known as the macro-level and micro-level (Scheufele, 1999; Scheufele & Tewksbury, 2007). The media or macro-level describes how communicators or the media decide how to present information (Scheufele & Tewksbury, 2007; Shoemaker & Reese, 1996). At the individual or micro-level, framing is used by individuals to create their feeling or position in regards to the information presented to them (Scheufele & Tewksbury, 2007).

Framing can exist in four locations, including in the communicator, text, receiver, and culture (Entman, 1993). When deciding what information to include in a message, communicators select information that fits their schema, thus framing the message to fit their purpose or the purpose of the organization they are representing. The words that are used in a message can also include frames. The presence or absence of certain words, the inclusion of an image, the organization of the message and other components can influence the message to be interpreted in a certain way. Additionally, the receiver will possess pre-existing frames, influenced by previous social cues, which will direct their thinking, attitude, and behavior in response to the message (Carrier, 2004; Entman, 1993). The existing culture is composed of existing frames that describe the common social structure in the culture. Entman (1993) suggests that framing information with easily identified cultural symbols can increase the influence that the message has on an audience.

Consumers receive most of their information about agriculture from news organizations and the mass media (Terry, Dunsford, & Lacewell, 1996). Thus, several researchers have studied framing on agricultural topics (Ashlock, Cartmell & Kelemen, 2006; Ward, Donaldson, & Lowe, 2004; Whitaker & Dyer, 2000). A study of news coverage following a food safety crisis found that over half of the news articles analyzed regarding the issue framed agriculture negatively (Ashlock et al., 2006). An additional study compared the framing of agricultural articles in regular news sources and agricultural news sources (i.e. *Progressive Farmer*) (Whitaker & Dyer, 2000). That study found that agricultural news sources tended to frame their information with agricultural sources, while the regular news sources framed their stories with activist based sources. Additionally, the study found that news organizations framed their stories with images more regularly than did agricultural news organizations. Policy framing was discussed in a study by Ward et al. (2004) in reference to the United Kingdom's foot and mouth disease crisis. During this crisis policy framing of the issue was closed to those outside of the industry and was specific and restrictive. These studies looked at how the media framed agricultural messages, and also how agricultural organizations framed these messages.

As mentioned above, a receiver of a message will possess pre-existing frames, influenced by previous social cues, which will direct their thinking, attitude, and behavior in response to the message (Carrier, 2004; Entman, 1993). Social cognitive theory further explains the influence of previous social cues on the frames that one perceives in a message. The theory explains that cognitive processes are triggered by one's environment that ultimately impacts behavior (Bandura, 2009). An individual is influenced by his or her environment as a result of observational learning. For example, this may include an individual observing someone who is recycling and as a result of their observation they learn to recycle themselves. Individuals are more likely to observe and learn from items or people in their environment that they are attracted to, including media figures (Bandura, 2002; Nabi & Oliver, 2010). Through observational learning, individuals develop new and build on existing knowledge, values, attitudes, behaviors, and beliefs (Bandura, 1986; Bandura 2002).

Bandura describes the social cognitive process as involving the personal, environmental, and behavioral components of one's life (2009). His model suggests that these three things are related bi-directionally to one another. Individuals learn new things from their environment, cognitively

process them, retain them, and then use them at a later point in time. However, one's existing personal components and behaviors can influence how a new component from the environment is stored or used (Bandura, 2009). Ultimately, new information builds on previously learned information and the resulting behaviors are determined through cognitive processing. Due to the complexity and difficult testing of this theory many researchers use it as a reference and as a way to support their findings (Nabi & Oliver, 2010).

Purpose

The purpose of this study was to understand how consumers interpret agricultural messages by assessing the conclusions, feelings, opinions, and views consumers place on messages found on commodity organizations' websites in Florida. The following objectives guided this study:

1. To determine which messages produce favorable and unfavorable responses from Florida consumers.
2. To understand what factors led consumers to view messages as favorable or un-favorable.
3. To understand what messages Florida consumers would prefer to hear regarding Florida agriculture.

Methods

Focus group methodology was used to fulfill the purpose and objectives of this study. Focus group methodology is often used when little is known about the topic being researched (Ary, Jacobs, Razavieh, & Sorenson, 2006). Additionally, focus groups allow researchers to assess group interaction and the opinions of individuals (Krueger, 1994). This methodology "can improve the planning and design of new programs, provide means of evaluating existing programs, and produce insights for developing marketing strategies" (Krueger, 1994, p. 3). Focus group methodology was appropriate for this study because individuals' attitudes, perceptions, and opinions are often influenced by interaction with others, thus focus groups are useful in evaluating these tendencies.

Four focus groups were conducted within a two-week period. This timeframe allowed the researchers to reduce the threat of the history effect (Ary et al., 2006). The focus groups were conducted in two different geographic locations of Florida with two focus groups held at each location. A total of 36 participants participated in the focus groups with 7 to 10 participants participating in each group. Ary et al. (2006) recommend that the size of focus groups should be between 6 and 12 participants. An external market research firm was hired and used telephone random digit dialing (RDD) sampling to qualify potential participants. Probability samples were generated using a pre-determined sampling frame based on demographic variables for both focus groups. A protocol was developed to guide both focus groups using the procedures set forth by Krueger (1998b). The protocol procedure consisted of showing the focus group participants a series of ten messages commonly used to educate and inform consumers about agriculture. The messages used in the study's protocol were first identified and determined by reviewing Florida commodity organization websites. Secondly, a pilot test was administered to graduate students in the Agricultural Education and Communication Department at the University of Florida. The pilot test consisted of an online survey hosted by Qualtrics. Qualtrics is an online survey software which has become a leader in market research and enterprise feedback management (Qualtrics, 2010). The survey included numerous messages and was administered to ensure that the messages were understood, as well as to identify the best

messages to include in the focus groups. Krueger (1998a) indicates that pilot testing the focus group material for understanding increases the validity of the methodology. Once the messages were collected from commodity organizations websites and pilot tested, the final protocol was reviewed by a panel of researchers and industry professionals for face and content validity.

Each focus group lasted approximately one and a half hours. The focus groups were all conducted by the same experienced and trained moderator. The moderator was accompanied by an assistant moderator as well as two individuals who took field notes. Each focus group was both audio and video recorded for transcription purposes. The focus groups followed a protocol to ensure that a consistent questioning route was followed, participant observation and clarification occurred, and that participants verified a summary of each focus group before concluding. This process in combination with the pilot test creates trustworthy and valid results (Krueger, 1998a). Following the completion of the focus groups, data were transcribed by an external marketing firm. After transcription, data were uploaded into Weft-QDA for qualitative analysis. The constant comparative method was used to identify common categories within the data (Glaser, 1965). Categories were analyzed across all four groups and findings are based on agreements across all four groups or three of the four groups.

Results

Of those participating in the focus groups, 18 participants were males and 18 were females. The ages of the participants ranged from 18-80. Participants reported living in an urban or suburban area. The most common household income among the participants was reported as \$60,000-\$80,000. Additionally, 12 participants had a bachelor's degree and 31 identified with the Caucasian ethnicity. A diversity of professions was represented among the participants, some of which included stay-at-home moms, teachers, health professionals, manufacturing personnel, and administrative personnel.

The participants were asked about their perceptions of the 10 messages selected from commodity organizations' websites that showed positive results in the pilot test and were approved by a panel of researchers and industry professionals. Messages were shown to participants in three sets in order to minimize the length of the focus groups as well as participant fatigue. The messages were grouped according to similarities. The first set of messages included "Best management practices," "Preservation of natural resources," "Wide open green pastures," and "Sustainable growth." Following these messages "Safe, fresh, and nutritious product," "Committed to producing the best quality product," and "Quality food begins with quality care" were included in the second set of messages. Lastly, "Farmers were the first environmentalists," "Stewards of the land," and "Scientifically proven, socially responsible, and economically sound" were included in the last set of messages.

Objective 1: To determine which messages produce favorable and unfavorable responses from Florida consumers.

To determine which messages consumers found to be favorable and unfavorable, the participants were asked to indicate whether they had positive or negative feelings about each message. All four focus groups indicated that they found "Stewards of the land" and "Preservation of natural resources" to be favorable. In addition, three of the four groups found "Wide open green pastures" and "Sustainable growth" to be positive.

Messages that created unfavorable feelings or negativity among the participants included: "Best management practices;" "Safe, fresh, and nutritious product;" "Committed to producing the best quality product;" "Quality food begins with quality care;" and "Scientifically proven, socially respon-

sible, and economically sound.” Additionally, three of the four groups found “Farmers were the first environmentalists” to be unfavorable.

Favorable Messages

When discussing “Preservation of natural resources,” many participants expressed that natural resources were important and essential. One participant indicated favorability toward this message by saying, “Preservation and natural resources and of course that’s wonderful.” The message “Stewards of the land” was also discussed favorably with many participants referencing the responsibility that the message demonstrated. An example of a participant’s positive feelings toward this message is expressed in the following quote: “And I do like ‘Stewards of the land.’ They do have to have the land, even if they only have livestock; they still have to have the land to do whatever they need to do.” “Wide open green pastures” also drew favorable responses from participants, as they were able to express the mental aesthetics that the message created. A participant indicated favorability toward the message by saying, “I guess it’s better than little tiny cages. But, I feel better about green pastures.” Lastly, several participants favored “Sustainable growth” because it was a message that allowed them to look toward the future in a positive manner. One participant expressed positive feelings toward the message by saying, “This is sustainable growth, and I’m like him on the growth thing. Life goes on, we sustain, we keep going.”

Unfavorable Messages

When discussing “Best management practices,” many people associated failure or distrust with this message. One participant said, “I’m really biased about best management practices. I guess I’ve been around best management practices for so long that I’ve come to totally distrust them. If it comes from that high up in the tower, it probably doesn’t work.” The group of messages that included “Safe, fresh, and nutritious product,” “Committed to producing the best quality product,” and “Quality food begins with quality care” caused skepticism and distrust among the participants. An example of the observed skepticism and distrust is demonstrated in the following quotes “I’m the cynic so I say prove it. You know I wouldn’t take any of that at face value.” “Yeah and that’s like, we’ve been lied to so much, it’s hard to believe any of them.” “I feel a zero response for that. In expressing a word, they mean nothing to me. They sound like something that anyone can put on a product.”

When participants discussed the message, “Scientifically proven, socially responsible, and economically sound,” they discussed feeling unfavorable toward the message because it was lengthy and had a questionable meaning. One participant said, “‘Scientifically proven, socially responsible.’ That’s a lot of bias and diversity in that statement. What aspect are you looking at, what’s your belief in science and social responsibility and economics?” Additionally, “Farmers were the first environmentalists” was not favored because the participants felt that the statement was not accurate. An example of a participant’s feelings toward this message is exhibited in the following quote:

I can understand their imperative but to fling that out there is a bold statement. Hunter-gatherers really were the first environmentalists because they never taxed their environment beyond its carrying capacity. Because when they saw it wasn’t going well, they moved on.

Objective 2: To understand what factors led consumers to view messages as favorable or unfavorable.

In order to understand why participants viewed these messages as favorable or unfavorable, par-

Participants were asked to further elaborate about their negative and positive associations with each message. In all four of the focus groups, themes emerged referencing previous experiences, business sounding terms, and examples of specific corporations as reasons behind the positive and negative connotations. Additionally, three of the four focus groups referenced history, the creation of mental images, lack of supporting information, and media or advertisements as leading them to their conclusions about whether the messages they viewed were favorable or unfavorable.

Previous Experience

When participants referenced previous experiences they often referenced knowledge they had, something they had heard from a friend, or something that they learned from an organization. One participant said:

I think our oil situation is going to be solved very shortly. There's a huge basin of oil that was discovered in North Dakota and it takes about half the state and it goes all the way into Montana and there's enough oil to keep the United States going full-blast for the next 150 years. And this guy that's a friend of mine in Virginia was telling me about it, who is an oil driller and it's been kept a secret. But it's going to come out shortly. So maybe that'll end all this misery in the Gulf and Alaska and everywhere else, I hope.

Another said, "More positive, like my father had the grange, which the farmers belonged to. And they were also 4-H leaders for 10 years. So there are a lot of good farmers that obtained those."

Corporate/Business Involvement

Participants tended to be skeptical of business sounding terms and often referenced this as being a reason why they found messages to be unfavorable. A participant made the following statement:

Because we have so many business people out there, they're going to use it just so they can make money. They're not really concerned you know out of 100% of the food that they're selling, probably 50% may contain that, but the other 50% is because they are going to make money off that 50%. It could be you know, cats' eyes, whatever, you don't ever know. To me, I don't trust it.

Another example of a participant's response is, "I think there's a difference between having a farm and growing food for your family and having that sort of thing going on and having a big industry farm, where you're there to make money and it's your business."

Similarly, participants referenced specific corporations that they knew had done something that they viewed as being unfavorable. They related to these unfavorable corporations when drawing conclusions about the agricultural messages. One participant said:

And we used to have buzzwords before, best management practices, we could go off and we'd study GE or we'd study whatever. And guess what, it wasn't in the best management practices; it was in the management that needed the best management practices. And Ford didn't have that kind of management so we could study the best management practices until we all died or retired, whatever came first. And it wasn't going to change anything because we still

had the layer of clay that was the management. So it's another distraction, another bad thing to me.

History

A few of the messages prompted participants to think about events in history and, as a result, they drew their conclusions about a message based on history. The two historical events that came up in three of the four groups were the Dust Bowl and a discussion of the first settlers in America. One participant said:

You start looking back at history where we fail to follow best management practices at the expense of our natural resources. You know like what was the Dust Bowl back in the days, you know all the topsoil got blown away.

Another said, "It's a very strong point you just made. Hunters and gathers were ahead of farmers in terms of environmentalists. Weren't they, the hunters and gathers? They were really the first environmentalists."

Development of mental images

"Wide open green pastures" was a message that led participants to be able to develop a mental image. They developed favorable images in their mind and therefore the participants felt favorable about the message. Some of the responses included, "I might buy into wide, open green pastures just because of that pretty image," and "I just think of wide, open, green pastures with windmills or something and I kind of have a picture."

Lack of supporting information

Several participants indicated that the messages sounded great, but they had no supporting information, thus causing them to feel skeptical of the message. Some of these responses included, "It's just a statement," and "Yeah, I think the last one is meaningless. It all sounds wonderful but scientifically proven, what is proved?"

Media/Advertisement influence

Participants referenced some of the messages as being something they had heard or seen in the media. Additionally, some participants thought that they had seen some of the messages on labels or in advertisements. When participants recognized a media or advertisement relationship within a message, they generally viewed it negatively and with skepticism. Some of the responses in this category included, "I think I heard some of them in the last presidential election. I think the preservation of natural resources was one," "I'm thinking of all of these in the context of something you see advertised in the grocery store," and "Commercials."

Objective 3: To understand what messages Florida consumers would prefer to hear regarding Florida agriculture.

Throughout the course of the discussion, three of the four groups made suggestions about how the messages could be made stronger or what messages they would like to hear. Some of the participants suggested changing some of the words in a message, including more local and farmer-

related terms, providing examples and explanations along with the messages, and using more messages that create visual images.

Alternative words

Participants indicated that using alternative words could be beneficial because some of the words were not consumer friendly and created negative connotations. One specific suggestion included, “There’s not any such thing as best management practice, maybe better management practice, or good management practices.”

Local and Farmer

When the participants were given the chance to express what kinds of messages they would prefer to hear many indicated that they favored terms with a local or farmer connotation. One participant said:

Yeah, I would like to be able to see the local farmers, who’s doing it, the area, you know, what they’re using, how they’re even making it, what type of pesticides or if it’s a natural thing, composting, things like that.

Examples and explanations

Due to the skepticism that many of the messages created for the participants, they suggested that including examples and explanations in conjunction with the messages would make the messages more favorable.

I would expect them to follow through. I would expect some explanation behind these words. They couldn’t just say best management practices. Like, ok, these are catch terms but of course there’s got to be some kind of info to back these up. You can’t just stamp it on something and have me go, “Oh, great.”

Create visual images

The participants suggested that part of the reason they favored “Wide open green pastures” was because it was something they could visualize. They discussed that they really liked being able to visualize what a message was referring to and thus provided incorporating more messages that create visual images as a recommendation. The following quote is one example of this recommendation: “The fact that none of them really send a real visual message with the exception of wide, open, green pastures. If you can just get the other ones to just draw something and maybe they’d be better.”

Discussion/Conclusions

The findings of this study indicate that six of the messages tested were found to be un-favorable, while four of the messages were found to be favorable. Participants indicated that previous experience, business or corporate involvement, history, mental images, lack of support, and media or advertising language as leading them toward their favorable or un-favorable feelings about each message. To improve the messages, participants suggested incorporating more local and farmer-type terms, including examples and explanations, and using messages that create more visual images.

These results provide valuable information for agricultural communicators, commodity organi-

zations, industry professionals, and those wanting to tell the story of agriculture. Much can be gained from understanding messages that consumers find favorable and unfavorable, what factors lead them to these conclusions, and what they would like to hear and see in messages. Understanding these message elements will allow agricultural messages to be framed in a way that is potentially more likely to be perceived as favorable in the public eye.

Favorable and Unfavorable Messages

The findings of this study show that out of ten messages that were intended to positively promote the agriculture industry, only four were doing so in the minds of the participants. The six messages identified as unfavorable by the participants provide evidence that consumers do not always perceive an agriculturally themed message the way in which it was intended to be perceived. This finding supports Stevenson's claim that occasionally the intended meaning of a message is perceived differently by consumers (1997). Thus, it is important for communicators to recognize areas of differing perceptions in order to promote the agricultural industry (Moffitt, 2004).

Underlying factors of favorable or unfavorable feelings

The results of the study show that participants drew on previous experiences and elements they had observed in media or advertisements when determining if messages were favorable or unfavorable. This demonstrates implications of social cognitive theory, as individuals learn from their social acquaintances and media figures (Bandura, 2002; Nabi & Oliver, 2010). Additionally, it was evident, based on their responses, that these previous experiences were influencing the participants' attitudes, behaviors, values, and beliefs (Bandura, 1986; Bandura, 2002). These findings suggest that the participants' perceptions of agriculture are influenced by factors in their life (Duncan & Broyles, 2006)

Participant preferences

The way in which the messages were framed by their creators and how they were framed by the participants were not the always the same, suggesting that framing at the media level does not consistently correspond with framing at the individual level (Scheufele, 1999; Scheufele & Tewksbury, 2007). As suggested by the participants, including explanations and/or examples with messages may enhance the credibility of the messages with consumers. Providing more supporting information to the messages will also decrease the distrust, skepticism, and questions observed in the participants discussion.

Recommendations

It is recommended that to increase the occurrence of more favorable messages, agricultural communicators should focus on things that are important and essential in the eyes of the consumer, as well as words that relay responsibility, mental images, and a positive outlook for the future. Agricultural communicators should attempt to think like an average consumer who does not have an extensive agriculture background when creating messages. Being aware of both positive and negative media advertising trends will also aid agricultural communicators in using these trends to their advantage. Additionally, based on the frequent recall of previous media-related experiences or observations by participants, it is suggested that the agricultural industry work toward increasing their presence and the presence of accurate agricultural information in the media.

In addition, to decrease the occurrence of unfavorable messages, it is recommended that agri-

cultural communicators avoid messages that cause failure, distrust, skepticism, and inaccuracy in the eyes of the consumer. To ensure that the correct components are being included in a message, it is recommended that all messages are pilot tested with a group of consumers to ensure that they are being perceived in the manner intended by the individual or organization that created the message.

Additionally, the participants indicated that business- or corporate-sounding messages created unfavorable responses. In order to improve consumers' perceptions of the messages released by the agriculture industry, it is recommended that messages designed for lay audiences be framed in personal terms rather than corporate terms. Additionally, it is recommended that an alternative message be developed in place of "best management practices." This message was the most un-favored by all of the groups. In addition, this message caused participants to think of corporate organizations who had claimed to have "best management practices." In an effort to minimize comparisons to other industries as well as prevent skepticism, this message should be used with caution or not at all.

The recommendations provided by the participants suggest that in order to correct the imbalance of individual- and media-level framing, message creators should work toward framing their messages to include more local and farmer-based terms as well as words that create mental images. It is recommended that messages be framed to include examples and supporting information. Additionally, communicators should frame messages to fit the current social structure in the culture, possibly through easily identifiable cultural symbols (Entman, 1993). Some of these cultural symbols may include stereotypic images of small farms and farmers.

Researchers should continue to conduct studies to determine how consumers perceive agricultural messages. It is recommended that this study be replicated in other geographic locations to determine if the results are similar in other areas. In addition, it is recommended that a study be conducted to determine how consumers perceive the original messages in comparison with revised messages framed according to the recommendations above. The results of this study and continuing research on agricultural messages have the potential to improve consumers' perceptions about agriculture and make strides toward bridging perceptual gaps between agricultural producers and consumers.

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