Consumer perceptions of the safety, health, and environmental impact of various scales and geographic origin of food supply chains

Rich Pirog
Associate Director and Marketing and Food Systems Program Leader
Leopold Center for Sustainable Agriculture – Iowa State University

Andy Larson
MBA graduate student - Iowa State University College of Business

Photos: USDA On Line Photography Center

Report contact:  Rich Pirog (phone) 515 294-1854; (e-mail) rspirog@iastate.edu
On the web, go to: http://www.leopold.iastate.edu/pubs/staff/consumer/consumer.htm

September 2007
## Table of Contents

**Executive Summary** ...................................................................................................................... 2

**Introduction** ................................................................................................................................... 5

**Methodology** .................................................................................................................................. 6

**Consumer Survey Analysis** .......................................................................................................... 6

  - Food safety and origins .................................................................................................................. 6
  - Impacts of food supply chains on climate change ......................................................................... 12
  - Organic and local food supply chains and health ......................................................................... 19

**Conclusions** ................................................................................................................................ 233

  - Food safety and origins .................................................................................................................. 23
  - Impacts of food supply chains on climate change ......................................................................... 24
  - Organic and local food supply chains and health ......................................................................... 2525
  - Linking food safety, environmental impact, and health ................................................................. 25

**Appendix 1. Survey Instrument** ..................................................................................................... 277

**Appendix 2. Response Data** ......................................................................................................... 344

  - Food safety and origins .................................................................................................................. 344
  - Impacts of food supply chains on climate change ......................................................................... 377
  - Organic and local food supply chains and health ......................................................................... 400

**Appendix 3. Demographics** ........................................................................................................... 422

---

### Acknowledgements

The authors wish to thank Mary Adams, Leopold Center Editor, for her thoughtful editing of this report. We also would like to thank the following for their comments on survey questions and other assistance: Sonja Brodt, Gail Feenstra, Bobby Martens, Laura Miller, Matt Russell, and Gretchen Zdorkowski.
Executive Summary

Concerns have increased about the environmental impacts and safety of our food supply in the past several years. This public uneasiness has spurred multiple investigations of where and how food is produced and the corresponding impacts on our environment and climate. In addition, the consumer demand for local food products nationwide has risen. Given these developments, the Leopold Center’s Marketing and Food Systems Initiative conducted consumer market research in July 2007 to examine the complex relationships among food safety, health, greenhouse gas emissions and climate change, and different food system scales (local, national, global).

Specific objectives for this research were to:

1. Ascertain consumer perceptions regarding food safety, within the context of where their food comes from and how it is grown;

2. Assess consumer understanding of the impact that various scales and production methods of the food system have on greenhouse gas emissions;

3. Determine whether consumers are willing to pay more for a food system that has a net reduction in greenhouse gas emissions; and

4. Gauge consumer perceptions of health benefits from local and organic foods.

Survey questions were designed to address these objectives and elicit consumers’ responses regarding food safety and product origin, greenhouse gas emissions in the food system, willingness to pay for food products with lower emissions, and perceptions surrounding health benefits of local and organic food. The survey was designed and administered using Survey Monkey, a web-based survey software suite available at http://www.surveymonkey.com/. Survey distribution was contracted to Authentic Response, a third-party company (http://www.authenticresponse.net/). Five hundred usable surveys from a representative sample of the U.S. adult population were received.

Respondents to this survey placed high importance on food safety, freshness (harvest date), and pesticide use on fresh produce they purchase, with somewhat lower importance placed on whether the produce was locally grown, the level of greenhouse gas emissions it took to produce and transport the produce, and whether the respondent could contact the farmer who grew it.

The majority of respondents (70 percent) perceived the U.S. food system to be safe. But when asked about the safety of fresh produce based on continent of origin, respondents showed varying levels of confidence. North America was perceived as the most safe (85 percent) followed by Europe (50 percent) and Australia (48 percent). Products originating from Asia and Africa were least likely to be viewed as safe. When asked which specific countries raised the most concern, China was cited most frequently, with 31 percent of respondents singling it out.

Concern with the safety of the global food system was found among the respondents when comparing a global food system to a national (U.S.), regional, or local food system. Eighty-five
and 88 percent of respondents, respectively, perceived local and regional food systems to be somewhat safe or very safe, compared to only 12 percent for the global food system.

Respondents were asked a series of questions about their perceptions of greenhouse gas emissions based on sector of the economy, modes of transportation, and links within food supply chains. Respondent perceptions of these issues did, to considerable extent, mirror existing data published by federal agencies and other organizations. One notable instance of disagreement was the perception of respondents that trucks emitted more greenhouse gases than airplanes on a per pound basis of product transported. In fact, airplane emissions are higher on a per unit weight basis than truck emissions.¹ The amount of food being transported by airplane has been the focus for much debate in Great Britain and elsewhere in Europe because of its potential impact on the environment. For example, only 1.5 percent of fresh fruits and vegetables are transported by air in Great Britain, but that portion produces 50 percent of all emissions from fruit and vegetable transportation.² These findings point to a need for more consumer education on this subject in the United States.

Are consumers willing to pay more for food from supply chains that emit half as much greenhouse gas as conventional chains? Nearly half of respondents were willing to pay a 10 to 30 percent premium, but a similar percentage was not. However, when looking at those respondents who had shopped at venues where locally-grown foods were more likely to be for sale, 58 percent were willing to pay more (compared to those who did not shop at venues were locally-grown foods were likely for sale), and 38 percent indicated they would pay the same. These results have marketing implications for small and midsize farmers and the associated organizations working with them to promote local foods.

There are few peer-reviewed research studies showing that organic products possess additional health benefits when compared to conventional products, but their number are increasing.³⁴ Fifty-seven percent of respondents in this survey “somewhat” or “strongly” agreed that organic food was healthier than conventional. To the authors’ knowledge, there are no peer-reviewed studies that document increased health benefits related to consumption of locally-grown food when compared to food sourced from conventional locations in national and global markets. However, more than two-thirds of respondents (69 percent) “somewhat” or “strongly” agreed that local food is better for their personal health than food that has traveled across the country. When asked whether they perceived that science had indeed proven that local food was healthier than distant food, 40 percent of respondents “somewhat” or “strongly” agreed.

With the dramatic rise in popularity of local foods, the farmers who grow these foods and the organizations that champion both the farmers and the foods will be called upon to prove the existence of economic, environmental, and health benefits stemming from these products, and ensure their continued safety as part of the food supply. It is critical that government agencies (at the state and federal level), universities, health professionals, private companies, and non-profit organizations partner with those farmers growing and processing local foods to develop an appropriate research agenda for these food supply chains. This agenda must be focused on and responsive to the public questions that arise as local foods capture an increasing portion of per capita food consumption totals in the United States.
Introduction
The Leopold Center for Sustainable Agriculture is a research and education center with statewide programs to develop sustainable agriculture practices that are both profitable and conserve natural resources. It was established under the Iowa Groundwater Protection Act of 1987 with a three-fold mission: (1) to conduct research into the negative impacts of agricultural practices; (2) to assist in developing alternative practices; and (3) to work with Iowa State University (ISU) Extension to inform the public of Leopold Center findings.

The Center’s work is organized in three program areas: Ecology, Marketing and Food Systems, and Policy – each aimed at enhancing the condition and viability of Iowa’s natural and social resources in varying, but integrated ways. Within the Center’s Marketing and Food Systems Initiative, there are three objectives:

- Research and test new marketing strategies and business structures that allow Iowa’s farmers to retain more of the value for food, fiber, or energy produced with high standards of stewardship that protect Iowa’s water resources.
- Support education, conduct research, and facilitate partnerships to increase investment and support of local and regional food, fiber, and energy enterprises that protect Iowa’s water resources and provide significant economic benefits to Iowa farmers and rural communities.
- Conduct research and education to address challenges that impede farmers and farmer networks from being equal partners with other players in food, fiber, or energy-based value chains.\(^5\)

The initiative accomplishes these objectives through a competitive grants program (in coordination with the Ecology and Policy Initiatives), special projects and collaborations, and in-house research. Since 2001, the Marketing and Food Systems Initiative has completed eight reports on food products and systems. Several of these reports (written in collaboration with faculty and students from the ISU College of Business) focused on consumer perceptions of local, place-based, and organic foods.

Since the last of these reports appeared in 2004, growing concerns about global climate change and food safety have spurred increased investigations of where and how food is produced and the impacts the food system has on our environment and climate. There also has been a growing consumer demand for local food products nationwide. Given these developments, the Marketing and Food Systems Initiative decided to conduct consumer market research in this area to examine the complex relationships among greenhouse gas emissions and climate change, food safety, health, and different food system scales (local, national, global). The results could be used to inform future research efforts in food systems.

Specific objectives for this research were to:
1. Ascertain consumer perceptions regarding food safety, within the context of where their food comes from and how it is grown;

\(^5\)A value chain is a network of businesses cooperating to satisfy market demands for a particular product.
2. Assess consumer understanding of the impact that various scales and production methods of the food system have on greenhouse gas emissions;

3. Determine whether consumers are willing to pay more for a food system that has a net reduction in greenhouse gas emissions; and


**Methodology**

Survey questions were designed to address the objectives and elicit consumers’ responses regarding food safety and product origin, greenhouse gas emissions in the food system, willingness to pay for food products with lower emissions, and perceptions surrounding health benefits of local food. The survey was designed and administered using Survey Monkey, a web-based survey software suite available at [http://www.surveymonkey.com/](http://www.surveymonkey.com/). The survey was pre-tested for ease of use and completion by six individuals in academia and non-profit organizations engaged in food systems research.

The survey was then reviewed by the Iowa State University Office of Research Assurances, which houses the university’s Institutional Review Board for Human Subjects Research. Leopold Center staff involved in the survey project were required to satisfactorily complete Web Training for Human Subjects Research.

Survey distribution was contracted to Authentic Response, a third-party company ([http://www.authenticresponse.net/](http://www.authenticresponse.net/)). Authentic Response maintains panels of potential survey respondents who have voluntarily elected to participate by way of a double opt-in process. Invitations to participate in a survey are distributed by e-mail and respondents are directed to Authentic Response’s panelist portal called My View, found at [http://portal.myview.com/portal/app](http://portal.myview.com/portal/app). The panel sample was designed to be representative of the adult U.S. general population (18 years and older). Each response was collected for a flat per-interview fee.

Completed surveys were collected and compiled automatically in July 2007 by Survey Monkey, without gathering any personally identifiable information from the respondents or their computers. The responses were individually inspected for usability by Leopold Center staff, and incomplete responses were discarded. Five hundred usable surveys were received. A print version of the web-administered survey can be found in Appendix 1. Tables containing percent responses to each question appear in Appendix 2. Respondent demographics are presented in Appendix 3.

**Consumer Survey Analysis**

Food safety and origins

Figure 1 examines the relative importance that consumer respondents assigned to various types of information about fresh produce. Responses of “somewhat important” and “very important” were combined. Highest importance (79 percent) was placed on knowing whether or not the
farm of origin had passed a food safety inspection. Clearly, proper on-farm production and handling practices are very important to the consumer respondents. Of the remaining choices, secondary importance was placed upon knowing the date on which the produce was harvested (76 percent), presumably to determine the item’s freshness. Implementing a version of the “born-on” date label might require additional consumer education regarding produce with a long storage life, such as apples and potatoes. Also of great importance (72 percent) was knowledge about the use of pesticides on the produce item. Currently, only accurate and voluntary disclosure by the producer would fully provide that information to the consumer.

By a margin of 50 percent to 33 percent, respondents rated the distance produce traveled from farm to store as more important than knowing the total amount of greenhouse gases emitted during production and transportation to the store. If the respondents’ foremost consideration with this information was the amount of fuel energy consumed in the supply chain, the latter piece of information would presumably provide a more complete picture. This may be a result of the media penetration of the “food miles” metaphor, or it may mean that distance traveled also is being used as an indicator of freshness, vis-à-vis amount of handling and time in transit. Contact information for the farmer was rated least important of the options presented.

![Figure 1. Perceived importance of information on fresh produce](image)

When respondents were asked how safe they perceived the U.S. food system to be, the majority (57 percent) answered “somewhat safe” and 13 percent answered “very safe” (Figure 2). Percentages of respondents answering “somewhat unsafe” and “neutral” were 14 percent and 13

---

6 Food miles refers to the distance a food travels from where it was grown to where it is purchased for consumption. Several Leopold Center reports that calculate food miles for produce and yogurt from local and conventional sources can be found at [http://www.leopold.iastate.edu](http://www.leopold.iastate.edu).
percent, respectively, and only 2 percent of respondents thought the U.S. food system was “very unsafe.”

Respondents were asked about their level of agreement or disagreement on major food safety concerns such as pesticide residues, bio-terrorism, bacteria, genetic engineering, and foreign objects (Figure 3). They were then given the opportunity to share any personal experiences regarding food safety (Table 1). Approximately 84 percent of respondents somewhat or strongly agreed that bacteria were a major food safety concern. It is possible that recent food scares involving *E. coli* have contributed to this perception. In addition, food poisoning was the most commonly recalled personal food safety experience, with 30 respondents citing this ailment. Other personal food safety experiences are noted in Table 1.

<table>
<thead>
<tr>
<th>Table 1. Respondents’ most frequently cited personal experiences with food safety issues (number of respondents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Got food poisoning</td>
</tr>
<tr>
<td>Found foreign material</td>
</tr>
<tr>
<td>Involved in a recall</td>
</tr>
<tr>
<td>Food spoilage</td>
</tr>
<tr>
<td>Insects in food</td>
</tr>
</tbody>
</table>

Nearly three-quarters of respondents “somewhat” or “strongly” agreed that pesticide residues and bio-terrorism are major food safety concerns, although only one respondent cited an allergy
to pesticides and no one reported an experience with bio-terrorism. Sixty-three percent agreed “somewhat” or “strongly” that foreign materials are a major food safety concern; 19 respondents reported specific instances of foreign materials in their food. Genetic engineering attracted the lowest level of concern, with just under half of the respondents calling it a major concern. It should be noted that neither “genetic engineering,” nor any of the other terms, were defined in the question.

Respondents were asked how safe they would consider fresh produce grown on each of the food-producing continents (Figure 4), and then were given the opportunity to identify specific countries about which they were most concerned (Table 2). North America was considered the safest, with 85 percent of respondents answering “somewhat” or “very” safe. Europe (50 percent) and Australia (48 percent) occupied a second tier of safety for respondents with approximately half answering that produce from these continents would be “somewhat” or “very” safe. Roughly one-third of respondents had this perception about produce from South America. Produce from Asia and Africa was ranked lowest, with only 14 percent and 10 percent, respectively, of respondents considering it “somewhat” or “very” safe.
Figure 4. Perceived safety of fresh produce by continent of origin

Although Asian produce was perceived as being slightly safer than African-grown produce, China was far and away the country most often targeted for respondents’ personal food safety concerns (Table 2). Twenty-one other countries, most of them Asian and South American, were mentioned at least once.

<table>
<thead>
<tr>
<th>Table 2. Countries about which respondents have food safety concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
</tr>
<tr>
<td>Mexico</td>
</tr>
<tr>
<td>Middle East</td>
</tr>
<tr>
<td>Other(^7)</td>
</tr>
</tbody>
</table>

Respondents were asked to rate the safety of different scales of food supply chains that operate within the confines of varying geographic areas, including local (occurring entirely within home county and neighboring counties), regional (occurring entirely with home state and neighboring states), national (within the United States), and global (Figure 5). Eighty-five percent indicated that local produce was “somewhat” or “very” safe, with 74 percent indicating they perceived the national food supply chain to be safe. Only 12 percent indicated that the global food supply

\(^7\) Other countries mentioned: Chile, India, Japan, Russia, North Korea, Thailand, Vietnam, Bangladesh, France, Iraq, Iran, Syria, Guatemala, Belize, El Salvador, Panama, Nicaragua, Nigeria, Peru, United States, Venezuela, and Indonesia.
A chain was “somewhat” or “very” safe. More than half of respondents (53 percent) considered the global food supply chain “somewhat” or “very” unsafe.

![Figure 5. Perceived safety of food supply chains of varying scale](image)

When asked where they thought the food in their grocery store was grown, the majority of respondents indicated that more than half of the food was grown in the United States, while less than half was grown in their home county and nearby counties, in their state, or in another country (Figure 6). According to 2005 consumption data from the USDA’s Economic Research Service, nearly 14 percent of fresh fruit and 17 percent of fresh vegetables consumed are imported, and the dollar sales of fresh fruit imports have risen from $2.7 billion in 1998 to $4.8 billion in 2006.\(^8\) When considering all fruits – fresh, frozen, prepared, and preserved – the United States imported more than $6.5 billion in 2006, an 11.5 percent increase from 2005. When considering all vegetables – fresh, frozen, prepared, and preserved – the United States imported nearly $6.9 billion in 2006, a 9.3 percent higher than in 2005.\(^9\)

---


Impacts of food supply chains on climate change

In 2005, the estimated U.S. anthropogenic emission of greenhouse gases was more than 7 billion metric tons carbon dioxide equivalent (a measure equal to total emissions multiplied by global warming potential), which is a 16.9 percent increase from 1990.\textsuperscript{10} Respondents were asked to rank, according to their perceptions, the industry, transportation, commercial (non-industrial business), residential, and agriculture sectors from lowest annual emissions of greenhouse gases to highest (Figure 7). Industry had the highest average perceived ranking, with more than half of respondents ranking it as the highest-emitting sector. Transportation was second, commercial business third, agriculture fourth, and residential energy use was ranked as the lowest-emitting sector on average.

The U.S. Energy Information Administration (EIA), which groups agriculture within the industrial sector\textsuperscript{11}, reports that from 1949 to 2006, the industrial sector has consumed the most energy, followed by the transportation, residential, and commercial sectors in second, third, and fourth places, respectively.\textsuperscript{12} Regarding total greenhouse gas emissions, these four sectors of the


\textsuperscript{11} According to 2005 EIA estimates, agriculture’s emissions contributions were primarily in the forms of methane and nitrous oxide. Agricultural sources represented 30 percent of total U.S. methane emissions (93 percent of which resulted from livestock management) and 76 percent of nitrous oxide emissions (60 percent of which resulted from nitrogen fertilization). Energy Information Administration, Emissions of Greenhouse Gases in the United States 2005, p. xviii. ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057305.pdf.

U.S. economy are in the same rank order, with industry being the largest emitter, followed by transportation, then commercial, and finally residential. If agriculture was considered separately from industry, and the resultant emissions from the production of electricity were attributed to the sectors that consume it, agriculture would be in last place behind the other sectors considered in the question.

Food distribution is a portion of the transportation sector. Respondents were asked to rank various modes of transport, including truck, airplane, train, and ship, from highest to lowest greenhouse gas emissions per pound of agricultural product transported (Figure 8). Respondents viewed ships as the lowest emitter of greenhouse gases per pound transported, followed closely by trains. Although trucks and airplanes are indeed the two higher greenhouse gas emitters per pound transported, more than half of the respondents ranked trucks as the highest emitter, even though airplanes actually emit more greenhouse gases than trucks.

---

When respondents were asked which link in the food supply chain contributed the most greenhouse gases annually, distribution (which, for the purposes of this survey, includes storage) was the top-ranked selection, with more than one-third of respondents choosing this option (Figure 9). Processing came in second with more than a quarter of the responses. Consumer travel (to and from the food store) came in third, followed very closely by agricultural production of the food. Packaging, marketing, and in-home preparation garnered 5, 2, and 1 percent of the responses, respectively. Actual estimates of greenhouse gases emitted by links in the food supply chain will vary with the particular food chain in question.\textsuperscript{16, 17, 18}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure8.png}
\caption{Consumer perception - ranking greenhouse gas emissions for various modes of transport (higher numbers are higher rankings)}
\end{figure}

\textsuperscript{17} Annika Carlsson-Kanyama. 1998. “Climate change and dietary choices – how can emissions of greenhouse gases from food consumption be reduced?” Food Policy 23 (3/4) 277-93.
Concerning the greenhouse gas emissions of different forms of food production, respondents were asked to provide rankings from highest to lowest emissions of greenhouse gases for four produce supply chains with different origins and production systems (Figure 10). Two-thirds of respondents ranked local produce grown in an open field in a neighboring county as the supply chain option with the lowest greenhouse gases. Nearly two-thirds of respondents ranked produce grown in a temperature-controlled greenhouse and then shipped cross-country as the food chain with the highest emissions. The preferred ranking of the remaining two chains was less clear, but the supply chain for local produce grown in a temperature-controlled greenhouse was perceived to generate fewer emissions than that for produce grown in an open field and shipped cross-county.

In comparisons between products grown locally in a greenhouse versus cross-country in open fields, factors like distance shipped, irrigation, greenhouse efficiency, and intensity of agrochemical use could potentially contribute to either chain emitting more greenhouse gases. When using life cycle analysis to compare the greenhouse gas emissions across two different food supply chains, higher emissions in food transport (long-distance travel) coupled with low emissions in food production (open field) may in some cases net lower greenhouse gases than lower emissions in food transport (locally grown) coupled with higher emissions in production (greenhouse grown). \(^{19}\)

Figure 10. Consumer perception - ranking greenhouse gas emissions for various produce origins and production systems (higher numbers are higher rankings)

Figure 11 shows the comparisons of greenhouse gas intensity of produce supply chains between organic production and conventional production. This time, approximately 75 percent of the respondents surveyed thought the supply chain that brought organic produce from a neighboring county had the fewest greenhouse gas emissions, and the one that brought conventional produce from across the country was perceived to emit the most. The local supply chain, this time transporting conventional produce, was thought to emit fewer greenhouse gases than the cross-county chain, this time moving organic produce. And once again, the actual situation is not as clear-cut. Available studies show that organic production systems may or may not result in lower greenhouse gas emissions or net energy use than conventional systems, although for many foods the environmental impact of organic agriculture is lower.20 21

Consumer respondents were asked about their willingness to pay for fresh produce from a supply chain that released half as much greenhouse gas as identical produce that came via a typical supply chain (Figure 12). Nearly half of respondents (47 percent) indicated that they would pay the same amount for produce acquired through either supply chain. More than one-third of respondents (36 percent) said they would pay a 10 percent premium for the lower-emission supply chain, and 9 percent said they would pay a 20 percent premium. Overall, 48 percent of respondents would pay some level of premium. Only a small percentage of respondents (6 percent) indicated they would pay less for produce with lower greenhouse gas emissions.
We separated out respondents who, in the last month, had shopped at places where they would be more likely to encounter local and non-conventional foods, including farmers markets, community-supported agriculture programs (CSAs), farm stands, food cooperatives, and natural/organic food stores. Then, we tested consumer willingness to pay for foods that generated 50 percent fewer emissions (Figure 13). The two most frequent responses were still “I’d pay the same amount” and “I’d pay 10 percent more”. It is worth noting that in this group, the number of people who were willing to pay the 10 percent premium (58 percent) exceeded the number who would only pay the same amount (38 percent).
Organic and local food supply chains and health

Respondents were asked how information on production system and scale of supply chain would affect their motivation to purchase a fresh produce item (Figure 14). (It is important to note that whether this change in motivation was positive or negative was not specified.) Although overall variability was relatively small, local conventional and in-state conventional produce supply chains had the largest number of respondents who answered “somewhat” or “very” important effects on their motivation. Within each geographic scale – local, in-state, domestic, and international – respondents had a three to seven percent higher overall change in motivation to buy in response to conventional production systems than to organic production systems.
Respondents were asked how important various factors are to farmers considering the transition to organic production (Figure 15), and were allowed to list additional factors they considered important. Seventy-one percent of respondents indicated that the amount of additional work was a “somewhat” or “very” important factor, followed by market access with 64 percent, lack of technical information with 60 percent, aversion to risk with 59 percent, and aversion to change with 56 percent. Only 40 percent of respondents considered social pressure a “somewhat” or “very” important factor in the decision to transition to organic. Cost of organic production was listed as an additional important decision factor by just over 4 percent of respondents; lack of government support, lower yields, pests, and increasing corporate influence on the industry also were mentioned.
Respondents were asked how the food origin and production system affected their personal health (Figure 16). More than two-thirds of respondents (69 percent) “somewhat” or “strongly” agreed that local food is better for their personal health than food from across the country; 57 percent similarly agreed that organic food was healthier than conventional. Slightly less than half of respondents (49 percent) “somewhat” or “strongly” agreed that conventional food grown locally was better for their health than organic food brought in from across the country. This response is surprising, considering that many people who purchase organic food do so because of perceived health benefits.
Respondents were asked the same question regarding health benefits of food with different origins grown under different production systems, but this time were asked how strongly they agreed that science actually has proven any such superiority (Figure 17). This time, overall levels of agreement were lower (the minority of respondents in all three cases). The largest number of respondents (44 percent) “somewhat” or “strongly” agreed with the statement that science had proven the benefits of organic food over conventional. The lowest fraction of respondents (29 percent) concurred that local conventional food is better than distant organic food.
Figure 17. Perceptions as to whether science has proven existence of health benefits of foods by origin and production system

Conclusions

Food safety and origins

Respondents to this survey attach high importance to food safety, freshness (harvest date), and pesticide use on fresh produce they purchase, with lower importance placed on whether the produce was locally grown, the level of greenhouse gas emissions it took to produce and transport the produce, and whether the respondent could contact the farmer who grew it. Specific food safety concerns of respondents were more pronounced for bacteria, pesticide residue, and bio-terrorism problems than about genetic engineering.

The majority of respondents (70 percent) perceived the U.S. food system to be safe. But when asked about the safety of fresh produce based on continent of origin, respondents showed varying levels of confidence. North America was perceived as the most safe (85 percent) followed by Europe (50 percent) and Australia (48 percent). Produce originating from Asia and Africa was least likely to be viewed as safe. When asked which specific countries raised the most concern, China was cited most frequently, singled out by 31 percent of respondents. Given the media attention China has received in 2007 for safety problems relating to pet food and human food, as well as toys, it is not surprising to see this type of response.


The serious concerns expressed by respondents over the safety of from foods imported from certain continents and countries appear to signal a general uneasiness with the global food system. This lack of respondent confidence in the safety of the global food system was further confirmed when they were asked to compare a global food system with a national (U.S.), regional, or local food system. Eighty-five and 88 percent of respondents, respectively, perceived local and regional food systems to be somewhat safe or very safe, compared to only 12 percent for the global food system. The high level of perceived confidence in the safety of local food systems is surprising, given that only 30 percent of respondents had shopped at a farmers market in the past month, and less than 2 percent belong to a community-supported agriculture enterprise.

Impacts of food supply chains on climate change
The impacts that the food supply chain has on greenhouse gas emissions and climate change is a relatively unexplored field of research in the United States. In Europe, however, there is a higher level of interest, as evidenced by the establishment of the Food Climate Research Network based in Great Britain.  

Asking our consumer respondents about the perceived greenhouse gas emissions of various sectors of the U.S. economy, modes of transportation, and the links in the food supply chain may seem less than helpful because we assume these perceptions are not based on scientific study. Their responses, however, can be useful in determining the most effective communications and food systems research needed to answer some of these critical questions. The responses also may provide valuable feedback in the development of dynamic ecolabels that can inform and educate, rather than confuse, consumers.

For example, only 1.5 percent of fresh fruits and vegetable imports are transported by air in Great Britain, but that portion produces 50 percent of all emissions from fruit and vegetable transportation. As part of its carbon labeling program in Europe, supermarket chain retailer Tesco is placing a small “airplane” symbol sticker on food items that used airplanes for part of their travel to the store or warehouse. The assumption is that Tesco understands that with the amount of information available to the public about environmental impacts of the food system, their customers realize that air transport uses more fuel and releases more greenhouse gases into the atmosphere (on a per unit weight basis) than other forms of transportation such as trucks. However, in our internet survey of American consumers, more respondents perceived truck transport to emit higher levels of greenhouse gas than airplanes. These findings point to a need for more consumer education on this subject in the United States.

In the United States, some food companies are starting to take action after watching the developing documentation of greenhouse gas emissions from various food supply chains in Great Britain and the rest of Europe. For example, the food service management company Bon Apetit'
has recently unveiled a “low-carbon diet” that includes plans to reduce the carbon emissions of their food procurement system. Also, beginning in April 2008, Bon Appétit Management Company will introduce a carbon point system so that guests can calculate the impact of their personal food choices.

Are consumers willing to pay more for food from supply chains that emit half as much greenhouse gas as conventional chains? Nearly half of respondents were willing to pay more, but a similar percentage was not. However, when looking at those respondents who had shopped at venues where locally-grown foods were more likely to be for sale, a higher percentage were willing to pay more (compared to the entire respondent sample), and a lower percentage indicated they would pay the same. These results have marketing implications for small and midsize farmers and the associated organizations that promote local foods.

**Organic and local food supply chains and health**

There are few peer-reviewed research studies showing that organic products possess additional health benefits when compared to conventional products, but their number and documentation are increasing. To the authors’ knowledge, however, there are no peer-reviewed studies that document increased health benefits related to consumption of locally-grown food as compared to food sourced from conventional locations in national and global markets. It is interesting to note, however, that a high number of survey respondents perceived that locally grown foods were healthier than foods grown at distant locations, and that science has proven these health benefits.

Previous Leopold Center market research has shown that consumers appreciate local food for its taste, freshness, and quality. One can argue that healthy foods, such as fresh fruits and vegetables, may be eaten more frequently if taste, freshness and quality are superior to comparable products currently being consumed. Studies that include sensory analysis and consumer behavior patterns would need to be conducted in everyday situations to determine if these qualities would lead to increased consumption of fresh fruits and vegetables (and lowered consumption of less healthy foods) thereby improving nutrition and health.

**Linking food safety, environmental impact, and health**

Respondents to this internet survey were concerned about the safety of the global food system, and put more confidence in the safety of a U.S. based, regional, or local food system. These respondents perceived that local food supply chains (for produce) were likely to emit fewer greenhouse gases than a comparable distant supply chain, and nearly half were willing to pay more for produce from a system that emitted half as much greenhouse gas. A large number of our survey respondents perceived that locally grown foods were healthier than foods grown at distant locations, and that science has proven these health benefits.

---

28 Ibid.
With the dramatic rise in popularity of local foods, the farmers who grow these foods and the organizations that champion both the farmers and the foods will be called upon to prove the existence of economic, environmental, and health benefits stemming from these products, and ensure their continued safety as part of the food supply. It is critical that government agencies (at the state and federal level), universities, health professionals, private companies, and non-profit organizations partner with those farmers growing and processing local foods to develop an appropriate research agenda for these food supply chains. This agenda must be focused on and responsive to the public questions that arise as local foods capture an increasing portion of per capita food consumption in the United States.
Appendix 1. Survey Instrument

Print-formatted version of the web-based survey summarized in this report.

<table>
<thead>
<tr>
<th>Consent to Participate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hello! This survey has been designed for informal market research into consumer perceptions of our food supply chain, including questions about food safety, production systems, and origin, as well as implications for climate change.</td>
</tr>
<tr>
<td>This survey will take 5-10 minutes to complete, depending on your responses, and you must be 18 years of age or older to participate. Participation in this survey is voluntary and you can skip any questions that you do not feel comfortable answering, with the exception of the consent question on this page. You may leave at any time by clicking the “Exit this survey” link at the upper right hand corner of your screen.</td>
</tr>
<tr>
<td>Information you provide will be aggregated with other responses and cannot be traced back to you personally. If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, <a href="mailto:IRB@iastate.edu">IRB@iastate.edu</a>, or Director, Office of Research Assurances, (515) 294-3115, 1138 Pearson Hall, Ames, IA 50011.</td>
</tr>
<tr>
<td>Please indicate your eligibility to participate in this survey.</td>
</tr>
<tr>
<td>☐ I am at least 18 years of age and consent to participating in this survey.</td>
</tr>
<tr>
<td>☐ I am under 18 and/or do not wish to participate in this survey.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Safety and Origins</th>
</tr>
</thead>
<tbody>
<tr>
<td>These questions will help us determine your opinions and perceptions about the sources and safety of our food supply.</td>
</tr>
</tbody>
</table>

How important would you consider the following pieces of information if they appeared on a fresh produce item in your grocery store?

<table>
<thead>
<tr>
<th>Information</th>
<th>very unimportant</th>
<th>somewhat unimportant</th>
<th>neutral</th>
<th>somewhat important</th>
<th>very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>How far the item has traveled from farm to store</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Whether or not the farm has passed a food safety inspection</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Whether or not pesticides were used on the item</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The date on which the produce item was harvested</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Contact information for the farmer (name, address, phone)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The amount of greenhouse gas emitted during production and transportation to your store</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Please indicate the answer that most closely reflects your perception.

<table>
<thead>
<tr>
<th>Perceived food safety in the United States</th>
<th>very unsafe</th>
<th>somewhat unsafe</th>
<th>neutral</th>
<th>somewhat safe</th>
<th>very safe</th>
</tr>
</thead>
<tbody>
<tr>
<td>How safe would you consider the food system in the United States?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Please indicate the degree to which you agree with the following statements.
<table>
<thead>
<tr>
<th>Pesticide residues are a major food safety concern</th>
<th>strongly disagree</th>
<th>somewhat disagree</th>
<th>neutral</th>
<th>somewhat agree</th>
<th>strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio-terrorism is a major food safety concern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bacteria are a major food safety concern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genetic engineering is a major food safety concern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign objects are a major food safety concern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Have you ever personally experienced an issue with food safety? If yes, please describe:

---

**How safe would you consider fresh produce at your grocery store that was grown on each of the following continents?**

<table>
<thead>
<tr>
<th>Continent</th>
<th>very unsafe</th>
<th>somewhat unsafe</th>
<th>neutral</th>
<th>somewhat safe</th>
<th>very safe</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South America</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is there a particular country (or countries) about which you have food safety concerns?

---

**How safe would you consider the following food supply chains? (Assume that a food supply chain includes the production, processing, and transportation of an agricultural product from farm to consumer.)**

<table>
<thead>
<tr>
<th>Supply Chain Description</th>
<th>very unsafe</th>
<th>somewhat unsafe</th>
<th>neutral</th>
<th>somewhat safe</th>
<th>very safe</th>
</tr>
</thead>
<tbody>
<tr>
<td>A localized supply chain that occurs entirely within your county and neighboring counties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A regional supply chain that occurs entirely within your state and neighboring states</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A national supply chain that occurs entirely within the United States</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A global supply chain that occurs in multiple countries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**How much of the food in your grocery store do you think was grown:**

<table>
<thead>
<tr>
<th>Location</th>
<th>0-25%</th>
<th>26-50%</th>
<th>51-75%</th>
<th>76-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your county and neighboring counties?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In your state?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the United States?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Impacts of Food Supply on Climate

These questions will help us determine your opinions and perceptions about the ecological effects of our food supply, specifically as they relate to greenhouse gas emissions. Greenhouse gases trap heat energy closer to the earth, which may contribute to climate change. The burning of fossil fuels releases carbon dioxide, one of the major greenhouse gases.

Please rank the following sectors, according to your perceptions, from the lowest annual emissions of greenhouse gases to the highest annual emissions of greenhouse gases.

<table>
<thead>
<tr>
<th>Sector</th>
<th>1 (lowest emissions)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (highest emissions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial (non-industrial business)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please rank the following modes of transportation, according to your perceptions, from the lowest greenhouse gas emissions to the highest greenhouse gas emissions per pound of agricultural product transported.

<table>
<thead>
<tr>
<th>Mode</th>
<th>1 (lowest emissions)</th>
<th>2</th>
<th>3</th>
<th>4 (highest emissions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ship</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Train</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airplane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Which link in the domestic food supply chain do you think causes the highest annual emissions of greenhouse gases?

- [ ] production
- [ ] processing
- [ ] packaging
- [ ] distribution (includes storage)
- [ ] wholesale/retail marketing
- [ ] consumer travel to and from the food store
- [ ] in-home food preparation

Please rank the following food supply chains, according to your perceptions,
from the lowest greenhouse gas emissions to the highest greenhouse gas emissions per pound of produce trucked to your grocery store.

<table>
<thead>
<tr>
<th>Produce Type</th>
<th>1 (Lowest Emissions)</th>
<th>2</th>
<th>3</th>
<th>4 (Highest Emissions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local produce grown in an open field from a neighboring county</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local produce grown in a temperature-controlled greenhouse from a neighboring county</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produce grown in an open field from across the country</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produce grown in a temperature-controlled greenhouse from across the country</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please rank the following food supply chains, according to your perceptions, from the lowest greenhouse gas emissions to the highest greenhouse gas emissions per pound of produce trucked to your grocery store.

<table>
<thead>
<tr>
<th>Supply Chain</th>
<th>1 (Lowest Emissions)</th>
<th>2</th>
<th>3</th>
<th>4 (Highest Emissions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local organic produce from a neighboring county</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local conventional produce from a neighboring county</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic produce from across the country</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional produce from across the country</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Assuming identical quality and appearance, how much would you be willing to pay for a fresh produce item whose supply chain emitted half the greenhouse gases of a typical produce supply chain? Assume other environmental impacts are the same.

- I’d pay 30% more
- I’d pay 20% more
- I’d pay 10% more
- I’d pay the same amount
- I’d pay 10% less
- I’d pay 20% less
- I’d pay 30% less
- Other (please specify another percentage):
## Organic Food Supply Chains

These questions will help us determine your opinions and perceptions about organic food supply chains and organic farming.

**Assume the following pieces of information regarding origin are labeled on a fresh produce item at your grocery store. How important would each label be in your motivation to buy the item?**

<table>
<thead>
<tr>
<th>Information</th>
<th>very unimportant</th>
<th>somewhat unimportant</th>
<th>neutral</th>
<th>somewhat important</th>
<th>very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional produce grown in your county or a neighboring county</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic produce grown in your county or a neighboring county</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional produce grown in your state of residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic produce grown in your state of residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional produce grown in the U.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic produce grown in the U.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional produce grown outside the U.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic produce grown outside the U.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Although demand for organic products is growing in the United States, many farmers are not transitioning to organic production practices. How important would you consider the following factors in their decision?**

<table>
<thead>
<tr>
<th>Factor</th>
<th>very unimportant</th>
<th>somewhat unimportant</th>
<th>neutral</th>
<th>somewhat important</th>
<th>very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of additional work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aversion to risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to markets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of technical information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aversion to change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please list any other important decision factors you think ought to be included:

<table>
<thead>
<tr>
<th>Factor</th>
<th>strongly disagree</th>
<th>somewhat disagree</th>
<th>neutral</th>
<th>somewhat agree</th>
<th>strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think that organic food is better for my health than conventional food</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think that local food is better for my health than food transported from across the country</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think that local food grown conventionally is better for my health than organic food</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Please indicate the degree to which you agree with the statements provided.**
transported from across the country.

Please choose the degree to which you agree with the statements provided.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neutral</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science has proven that organic food is better for my health than conventional food.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Science has proven that local food is better for my health than food transported from across the country.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Science has proven that local food grown conventionally is better for my health than organic food transported from across the country.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Demographics

We would like to know a little more about you. Please answer the questions with which you feel comfortable.

Please choose the answers that best describe yourself.

<table>
<thead>
<tr>
<th>Gender?</th>
<th>Age?</th>
<th>Ethnicity?</th>
<th>Level of education attained?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please choose the answers that best describe your household.

<table>
<thead>
<tr>
<th>Number of adults (10 and over)?</th>
<th>Number of children (under 10)?</th>
<th>Annual household taxable income?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In what type of area do you live?

- City with population greater than 50,000
- Town with population between 5,000 and 50,000
- Village with population less than 5,000
- On a farm/in a rural area

Where have you purchased food in the past month? (please mark all that apply)

- Community-supported agriculture (CSA) subscription
- Convenience store
- Conventional grocery store chain
- Farm stand/on a farm
- Farmers market
- Food cooperative
- Internet/mail-order
- Natural/organic grocery store chain
- Restaurant/cafeteria
- Superstore/supercenter
- Other (please specify)
What is your ZIP code?

ZIP/Postal Code:  

The End

Thank you so much for your interest in our survey. Please click the Submit button below to send your response.
Appendix 2. Response Data

Print-formatted summary of responses received to this survey.

Food safety and origins

<table>
<thead>
<tr>
<th>Please indicate your eligibility to participate in this survey.</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am at least 18 years of age and consent to participating in this survey.</td>
<td>100.0%</td>
<td>500</td>
</tr>
<tr>
<td>I am under 18 and/or do not wish to participate in this survey</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

answered question 500

skipped question 0

How important would you consider the following pieces of information if they appeared on a fresh produce item in your grocery store?

<table>
<thead>
<tr>
<th>Information</th>
<th>very unimportant</th>
<th>somewhat unimportant</th>
<th>neutral</th>
<th>somewhat important</th>
<th>very important</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact information for the farmer (name, address, phone)</td>
<td>15.7% (76)</td>
<td>21.5% (107)</td>
<td>32.6% (162)</td>
<td>10.5% (52)</td>
<td>11.9% (59)</td>
<td>2.09</td>
<td>496</td>
</tr>
<tr>
<td>The date on which the produce item was harvested</td>
<td>8.0% (41)</td>
<td>4.6% (23)</td>
<td>10.9% (54)</td>
<td>36.2% (180)</td>
<td>40.2% (200)</td>
<td>3.08</td>
<td>497</td>
</tr>
<tr>
<td>Whether or not pesticides were used on the item</td>
<td>8.2% (41)</td>
<td>5.6% (26)</td>
<td>13.8% (69)</td>
<td>26.3% (135)</td>
<td>42.9% (214)</td>
<td>3.03</td>
<td>499</td>
</tr>
<tr>
<td>How far the item has traveled from farm to store</td>
<td>9.0% (45)</td>
<td>13.1% (65)</td>
<td>27.5% (137)</td>
<td>33.3% (169)</td>
<td>15.5% (82)</td>
<td>3.30</td>
<td>498</td>
</tr>
<tr>
<td>The amount of greenhouse gas emitted during production and transportation to your store</td>
<td>16.2% (81)</td>
<td>17.0% (85)</td>
<td>33.3% (166)</td>
<td>20.4% (102)</td>
<td>13.0% (65)</td>
<td>2.07</td>
<td>499</td>
</tr>
<tr>
<td>Whether or not the farm has passed a food safety inspection</td>
<td>8.0% (40)</td>
<td>4.4% (22)</td>
<td>8.6% (43)</td>
<td>23.0% (119)</td>
<td>56.0% (274)</td>
<td>4.13</td>
<td>498</td>
</tr>
</tbody>
</table>

answered question 500

skipped question 0

Please indicate the answer that most closely reflects your perception.

<table>
<thead>
<tr>
<th>How safe would you consider the food system in the United States?</th>
<th>very unsafe</th>
<th>somewhat unsafe</th>
<th>neutral</th>
<th>somewhat safe</th>
<th>very safe</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.0% (10)</td>
<td>14.3% (71)</td>
<td>12.9% (64)</td>
<td>57.4% (285)</td>
<td>13.5% (67)</td>
<td>3.65</td>
<td>496</td>
</tr>
</tbody>
</table>

answered question 496

skipped question 2
<table>
<thead>
<tr>
<th>Statement</th>
<th>strongly disagree</th>
<th>somewhat disagree</th>
<th>neutral</th>
<th>somewhat agree</th>
<th>strongly agree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pesticide residues are a major food safety concern</td>
<td>3.4% (17)</td>
<td>9.0% (45)</td>
<td>13.1% (65)</td>
<td>46.4% (261)</td>
<td>34.1% (170)</td>
<td>3.93</td>
<td>498</td>
</tr>
<tr>
<td>Bio-terrorism is a major food safety concern</td>
<td>3.0% (15)</td>
<td>9.5% (47)</td>
<td>15.3% (78)</td>
<td>36.7% (177)</td>
<td>36.5% (184)</td>
<td>3.93</td>
<td>498</td>
</tr>
<tr>
<td>Bacteria are a major food safety concern</td>
<td>2.8% (13)</td>
<td>3.6% (18)</td>
<td>9.3% (46)</td>
<td>36.4% (181)</td>
<td>48.1% (239)</td>
<td>4.24</td>
<td>497</td>
</tr>
<tr>
<td>Genetic engineering is a major food safety concern</td>
<td>8.7% (43)</td>
<td>10.1% (55)</td>
<td>28.6% (142)</td>
<td>27.8% (133)</td>
<td>21.8% (108)</td>
<td>3.41</td>
<td>490</td>
</tr>
<tr>
<td>Foreign objects are a major food safety concern</td>
<td>4.5% (22)</td>
<td>9.8% (42)</td>
<td>29.2% (114)</td>
<td>35.4% (171)</td>
<td>29.3% (138)</td>
<td>3.75</td>
<td>491</td>
</tr>
</tbody>
</table>

Have you ever personally experienced an issue with food safety? If yes, please describe: 241

answered question 499

skipped question 1

<table>
<thead>
<tr>
<th>Continent</th>
<th>very unsafe</th>
<th>somewhat unsafe</th>
<th>neutral</th>
<th>somewhat safe</th>
<th>very safe</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>1.0% (5)</td>
<td>3.2% (15)</td>
<td>10.0% (50)</td>
<td>49.8% (248)</td>
<td>35.9% (179)</td>
<td>4.16</td>
<td>498</td>
</tr>
<tr>
<td>South America</td>
<td>3.6% (18)</td>
<td>24.2% (120)</td>
<td>37.7% (187)</td>
<td>30.0% (152)</td>
<td>3.8% (19)</td>
<td>3.07</td>
<td>490</td>
</tr>
<tr>
<td>Europe</td>
<td>2.6% (13)</td>
<td>10.1% (50)</td>
<td>37.2% (195)</td>
<td>40.0% (199)</td>
<td>10.1% (50)</td>
<td>3.45</td>
<td>497</td>
</tr>
<tr>
<td>Africa</td>
<td>17.4% (88)</td>
<td>36.0% (176)</td>
<td>37.6% (183)</td>
<td>6.8% (42)</td>
<td>1.2% (6)</td>
<td>2.40</td>
<td>495</td>
</tr>
<tr>
<td>Asia</td>
<td>18.4% (91)</td>
<td>38.4% (175)</td>
<td>32.2% (159)</td>
<td>12.1% (63)</td>
<td>1.8% (5)</td>
<td>2.44</td>
<td>494</td>
</tr>
<tr>
<td>Australia</td>
<td>2.6% (14)</td>
<td>8.3% (43)</td>
<td>38.6% (189)</td>
<td>39.9% (190)</td>
<td>10.7% (52)</td>
<td>3.46</td>
<td>437</td>
</tr>
</tbody>
</table>

Is there a particular country (or countries) about which you have food safety concerns? 399

answered question 498

skipped question 2
How safe would you consider the following food supply chains? (Assume that a food supply chain includes the production, processing, and transportation of an agricultural product from farm to consumer.)

<table>
<thead>
<tr>
<th>Supply Chain Description</th>
<th>Very Unsafe</th>
<th>Somewhat Unsafe</th>
<th>Neutral</th>
<th>Somewhat Safe</th>
<th>Very Safe</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>A localized supply chain that occurs entirely within your county and neighboring counties</td>
<td>0.4% (2)</td>
<td>2.4% (12)</td>
<td>11.6% (56)</td>
<td>43.0% (217)</td>
<td>42.0% (209)</td>
<td>4.24</td>
<td>496</td>
</tr>
<tr>
<td>A regional supply chain that occurs entirely within your state and neighboring states</td>
<td>0.6% (3)</td>
<td>1.6% (8)</td>
<td>9.0% (45)</td>
<td>53.0% (264)</td>
<td>35.7% (178)</td>
<td>4.22</td>
<td>498</td>
</tr>
<tr>
<td>A national supply chain that occurs entirely within the United States</td>
<td>0.6% (3)</td>
<td>4.4% (22)</td>
<td>20.3% (101)</td>
<td>57.5% (286)</td>
<td>17.1% (88)</td>
<td>3.66</td>
<td>497</td>
</tr>
<tr>
<td>A global supply chain that occurs in multiple countries</td>
<td>10.0% (54)</td>
<td>42.9% (213)</td>
<td>34.3% (170)</td>
<td>10.7% (53)</td>
<td>1.2% (6)</td>
<td>2.48</td>
<td>498</td>
</tr>
</tbody>
</table>

answered question 496

How much of the food in your grocery store do you think was grown:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-25%</td>
<td>44.3% (221)</td>
<td>1.87</td>
</tr>
<tr>
<td>26-50%</td>
<td>29.3% (146)</td>
<td>1.75</td>
</tr>
<tr>
<td>51-75%</td>
<td>22.0% (110)</td>
<td>2.58</td>
</tr>
<tr>
<td>76-100%</td>
<td>4.4% (22)</td>
<td>1.98</td>
</tr>
</tbody>
</table>

In your county and neighboring counties?
In your state?
In the United States?
Outside of the United States?

answered question 590

skipped question 0
## Impacts of food supply chains on climate change

Please rank the following sectors, according to your perceptions, from the lowest annual emissions of greenhouse gases to the highest annual emissions of greenhouse gases.

<table>
<thead>
<tr>
<th>Sector</th>
<th>1 (lowest emissions)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (highest emissions)</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>1.6% (7)</td>
<td>4.0% (22)</td>
<td>11.6% (52)</td>
<td>25.2% (119)</td>
<td>60.8% (258)</td>
<td>4.31</td>
<td>440</td>
</tr>
<tr>
<td>Transportation</td>
<td>2.0% (9)</td>
<td>4.7% (21)</td>
<td>16.0% (72)</td>
<td>28.4% (129)</td>
<td>30.0% (139)</td>
<td>4.00</td>
<td>450</td>
</tr>
<tr>
<td>Commercial (non-industrial business)</td>
<td>11.7% (53)</td>
<td>25.2% (114)</td>
<td>39.6% (179)</td>
<td>15.5% (79)</td>
<td>6.0% (30)</td>
<td>2.83</td>
<td>452</td>
</tr>
<tr>
<td>Residential</td>
<td>48.2% (222)</td>
<td>28.4% (131)</td>
<td>16.3% (78)</td>
<td>5.4% (25)</td>
<td>1.7% (9)</td>
<td>1.64</td>
<td>481</td>
</tr>
<tr>
<td>Agriculture</td>
<td>27.0% (126)</td>
<td>36.6% (165)</td>
<td>20.4% (92)</td>
<td>10.2% (48)</td>
<td>4.9% (22)</td>
<td>2.27</td>
<td>451</td>
</tr>
</tbody>
</table>

### Answered questions: 497

### Skipped questions: 3

Please rank the following modes of transportation, according to your perceptions, from the lowest greenhouse gas emissions per pound of agricultural product transported to the highest greenhouse gas emissions per pound of agricultural product transported.

<table>
<thead>
<tr>
<th>Mode</th>
<th>1 (lowest emissions)</th>
<th>2</th>
<th>3</th>
<th>4 (highest emissions)</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airplane</td>
<td>11.6% (56)</td>
<td>20.3% (87)</td>
<td>34.2% (164)</td>
<td>34.0% (163)</td>
<td>2.01</td>
<td>470</td>
</tr>
<tr>
<td>Train</td>
<td>20.8% (141)</td>
<td>36.4% (172)</td>
<td>28.6% (127)</td>
<td>7.0% (33)</td>
<td>2.11</td>
<td>473</td>
</tr>
<tr>
<td>Ship</td>
<td>42.1% (200)</td>
<td>34.1% (162)</td>
<td>18.5% (89)</td>
<td>5.3% (25)</td>
<td>1.67</td>
<td>475</td>
</tr>
<tr>
<td>Truck</td>
<td>14.0% (58)</td>
<td>10.3% (50)</td>
<td>22.3% (108)</td>
<td>53.3% (258)</td>
<td>3.15</td>
<td>484</td>
</tr>
</tbody>
</table>

### Answered questions: 497

### Skipped questions: 3
Which link in the domestic food supply chain do you think causes the highest annual emissions of greenhouse gases?

<table>
<thead>
<tr>
<th>Link</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>production</td>
<td>14.3%</td>
<td>71</td>
</tr>
<tr>
<td>processing</td>
<td>28.1%</td>
<td>140</td>
</tr>
<tr>
<td>packaging</td>
<td>4.5%</td>
<td>23</td>
</tr>
<tr>
<td>distribution (includes storage)</td>
<td>34.1%</td>
<td>170</td>
</tr>
<tr>
<td>wholesale/retail marketing</td>
<td>1.5%</td>
<td>8</td>
</tr>
<tr>
<td>consumer travel to and from the food store</td>
<td>18.7%</td>
<td>83</td>
</tr>
<tr>
<td>in-home food preparation</td>
<td>0.0%</td>
<td>3</td>
</tr>
</tbody>
</table>

answered question 498

skipped question 2

Please rank the following food supply chains, according to your perceptions, from the lowest greenhouse gas emissions to the highest greenhouse gas emissions per pound of produce trucked to your grocery store.

<table>
<thead>
<tr>
<th>1 (lowest emissions)</th>
<th>2</th>
<th>3</th>
<th>4 (highest emissions)</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local produce grown in an open field from a neighboring county</td>
<td>71.8% (336)</td>
<td>14.3% (67)</td>
<td>9.1% (38)</td>
<td>6.0% (26)</td>
<td>1.48</td>
</tr>
<tr>
<td>Local produce grown in a temperature-controlled greenhouse from a neighboring county</td>
<td>13.2% (62)</td>
<td>48.4% (228)</td>
<td>32.9% (155)</td>
<td>5.5% (28)</td>
<td>2.31</td>
</tr>
<tr>
<td>Produce grown in an open field from across the country</td>
<td>7.3% (30)</td>
<td>31.4% (151)</td>
<td>41.6% (200)</td>
<td>12.8% (63)</td>
<td>2.74</td>
</tr>
<tr>
<td>Produce grown in a temperature-controlled greenhouse from across the country</td>
<td>9.0% (43)</td>
<td>8.4% (40)</td>
<td>16.7% (80)</td>
<td>66.6% (316)</td>
<td>3.40</td>
</tr>
</tbody>
</table>

answered question 493

skipped question 7
Please rank the following food supply chains, according to your perceptions, from the lowest greenhouse gas emissions to the highest greenhouse gas emissions per pound of produce trucked to your grocery store.

<table>
<thead>
<tr>
<th></th>
<th>1 (lowest emissions)</th>
<th>2</th>
<th>3</th>
<th>4 (highest emissions)</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local organic produce from a</td>
<td>78.6% (381)</td>
<td>12.5% (101)</td>
<td>4.9% (24)</td>
<td>3.9% (19)</td>
<td>1.34</td>
<td>485</td>
</tr>
<tr>
<td>neighboring county</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local conventional produce from a</td>
<td>0.0% (4)</td>
<td>56.2% (263)</td>
<td>30.3% (144)</td>
<td>5.5% (28)</td>
<td>2.32</td>
<td>476</td>
</tr>
<tr>
<td>neighboring county</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic produce from across the</td>
<td>7.8% (37)</td>
<td>25.5% (136)</td>
<td>52.8% (251)</td>
<td>10.7% (51)</td>
<td>2.67</td>
<td>475</td>
</tr>
<tr>
<td>country</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional produce from across the</td>
<td>3.5% (17)</td>
<td>5.2% (25)</td>
<td>12.6% (61)</td>
<td>78.7% (381)</td>
<td>3.67</td>
<td>484</td>
</tr>
<tr>
<td>country</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

answered question 485

skipped question 6

Assuming identical quality and appearance, how much would you be willing to pay for a fresh produce item whose supply chain emitted half the greenhouse gases of a typical produce supply chain? Assume other environmental impacts are the same.

<table>
<thead>
<tr>
<th></th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>I’d pay 30% more</td>
<td>2.8%</td>
<td>14</td>
</tr>
<tr>
<td>I’d pay 20% more</td>
<td>8.8%</td>
<td>44</td>
</tr>
<tr>
<td>I’d pay 10% more</td>
<td>35.5%</td>
<td>177</td>
</tr>
<tr>
<td>I’d pay the same amount</td>
<td>46.6%</td>
<td>232</td>
</tr>
<tr>
<td>I’d pay 10% less</td>
<td>1.6%</td>
<td>0</td>
</tr>
<tr>
<td>I’d pay 20% less</td>
<td>0.8%</td>
<td>4</td>
</tr>
<tr>
<td>I’d pay 30% less</td>
<td>2.6%</td>
<td>13</td>
</tr>
<tr>
<td>Other (please specify another percentage):</td>
<td>1.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

answered question 496

skipped question 2
## Organic and local food supply chains and health

Assume the following pieces of information regarding origin are labeled on a fresh produce item at your grocery store. How important would each label be in your motivation to buy the item?

<table>
<thead>
<tr>
<th>Origin of the Produce</th>
<th>Very Unimportant</th>
<th>Somewhat Unimportant</th>
<th>Neutral</th>
<th>Somewhat Important</th>
<th>Very Important</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional produce grown in your county or a neighboring county</td>
<td>5.8% (29)</td>
<td>6.0% (30)</td>
<td>21.0% (107)</td>
<td>37.1% (184)</td>
<td>29.0% (147)</td>
<td>3.70</td>
<td>498</td>
</tr>
<tr>
<td>Conventional produce grown in your state of residence</td>
<td>4.3% (24)</td>
<td>5.3% (26)</td>
<td>23.6% (117)</td>
<td>41.0% (203)</td>
<td>25.3% (125)</td>
<td>3.77</td>
<td>495</td>
</tr>
<tr>
<td>Organic produce grown in your state of residence</td>
<td>0.9% (34)</td>
<td>6.0% (44)</td>
<td>24.7% (122)</td>
<td>32.7% (161)</td>
<td>20.8% (132)</td>
<td>3.03</td>
<td>493</td>
</tr>
<tr>
<td>Conventional produce grown in the U.S.</td>
<td>3.4% (17)</td>
<td>6.2% (28)</td>
<td>30.0% (146)</td>
<td>36.1% (179)</td>
<td>25.2% (125)</td>
<td>3.74</td>
<td>498</td>
</tr>
<tr>
<td>Organic produce grown in the U.S.</td>
<td>0.2% (33)</td>
<td>7.0% (34)</td>
<td>30.4% (148)</td>
<td>31.6% (154)</td>
<td>24.9% (121)</td>
<td>3.62</td>
<td>487</td>
</tr>
<tr>
<td>Conventional produce grown outside the U.S.</td>
<td>0.7% (33)</td>
<td>9.9% (49)</td>
<td>25.3% (126)</td>
<td>21.4% (105)</td>
<td>36.6% (182)</td>
<td>3.72</td>
<td>495</td>
</tr>
<tr>
<td>Organic produce grown outside the U.S.</td>
<td>0.5% (47)</td>
<td>10.7% (53)</td>
<td>23.0% (118)</td>
<td>10.8% (57)</td>
<td>36.4% (180)</td>
<td>3.83</td>
<td>495</td>
</tr>
</tbody>
</table>

Answered question: 497

Skipped question: 3

Although demand for organic products is growing in the United States, many farmers are not transitioning to organic production practices. How important would you consider the following factors in their decision?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Very Unimportant</th>
<th>Somewhat Unimportant</th>
<th>Neutral</th>
<th>Somewhat Important</th>
<th>Very Important</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to markets</td>
<td>3.2% (18)</td>
<td>6.0% (34)</td>
<td>25.4% (126)</td>
<td>36.5% (180)</td>
<td>29.0% (138)</td>
<td>3.70</td>
<td>493</td>
</tr>
<tr>
<td>Aversion to change</td>
<td>3.9% (19)</td>
<td>9.3% (46)</td>
<td>20.5% (145)</td>
<td>37.0% (182)</td>
<td>20.3% (100)</td>
<td>3.61</td>
<td>492</td>
</tr>
<tr>
<td>Aversion to risk</td>
<td>3.7% (18)</td>
<td>7.1% (35)</td>
<td>23.9% (142)</td>
<td>31.1% (153)</td>
<td>29.3% (144)</td>
<td>3.75</td>
<td>492</td>
</tr>
<tr>
<td>Lack of technical information</td>
<td>4.3% (21)</td>
<td>7.7% (38)</td>
<td>20.9% (123)</td>
<td>35.4% (175)</td>
<td>25.7% (127)</td>
<td>3.71</td>
<td>494</td>
</tr>
<tr>
<td>Amount of additional work</td>
<td>2.6% (12)</td>
<td>5.6% (27)</td>
<td>10.9% (69)</td>
<td>30.3% (179)</td>
<td>36.7% (178)</td>
<td>3.67</td>
<td>493</td>
</tr>
<tr>
<td>Social pressure</td>
<td>7.7% (36)</td>
<td>13.6% (57)</td>
<td>30.7% (151)</td>
<td>24.3% (120)</td>
<td>15.8% (78)</td>
<td>3.27</td>
<td>494</td>
</tr>
</tbody>
</table>

Please list any other important decision factors you think ought to be included: 87

Answered question: 496

Skipped question: 4
### Please indicate the degree to which you agree with the statements provided.

<table>
<thead>
<tr>
<th>Statement</th>
<th>strongly disagree</th>
<th>somewhat disagree</th>
<th>neutral</th>
<th>somewhat agree</th>
<th>strongly agree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think that organic food is better for my health than conventional food.</td>
<td>5.1% (30)</td>
<td>10.7% (63)</td>
<td>25.7% (127)</td>
<td>38.7% (191)</td>
<td>18.8% (93)</td>
<td>3.53</td>
<td>494</td>
</tr>
<tr>
<td>I think that local food is better for my health than food transported from across the country.</td>
<td>2.2% (11)</td>
<td>5.7% (29)</td>
<td>22.1% (109)</td>
<td>39.1% (193)</td>
<td>30.8% (152)</td>
<td>3.01</td>
<td>493</td>
</tr>
<tr>
<td>I think that local food grown conventionally is better for my health than organic food transported from across the country.</td>
<td>3.9% (19)</td>
<td>10.4% (51)</td>
<td>36.6% (175)</td>
<td>30.8% (151)</td>
<td>19.3% (95)</td>
<td>3.51</td>
<td>491</td>
</tr>
</tbody>
</table>

*answered question 494*

*skipped question 6*

### Please choose the degree to which you agree with the statements provided.

<table>
<thead>
<tr>
<th>Statement</th>
<th>strongly disagree</th>
<th>somewhat disagree</th>
<th>neutral</th>
<th>somewhat agree</th>
<th>strongly agree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science has proven that organic food is better for my health than conventional food.</td>
<td>5.8% (26)</td>
<td>12.3% (61)</td>
<td>37.4% (180)</td>
<td>32.0% (156)</td>
<td>12.5% (62)</td>
<td>3.33</td>
<td>497</td>
</tr>
<tr>
<td>Science has proven that local food is better for my health than food transported from across the country.</td>
<td>4.6% (23)</td>
<td>9.7% (43)</td>
<td>46.6% (223)</td>
<td>27.8% (137)</td>
<td>13.1% (65)</td>
<td>3.35</td>
<td>496</td>
</tr>
<tr>
<td>Science has proven that local food grown conventionally is better for my health than organic food transported from across the country.</td>
<td>5.7% (26)</td>
<td>11.7% (68)</td>
<td>52.2% (262)</td>
<td>21.2% (105)</td>
<td>9.8% (42)</td>
<td>3.15</td>
<td>495</td>
</tr>
</tbody>
</table>

*answered question 497*

*skipped question 3*
## Appendix 3. Demographics

Respondent demographics.

### Gender?

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your?</td>
<td>47.4% (236)</td>
<td>52.6% (261)</td>
<td>496</td>
</tr>
</tbody>
</table>

### Age?

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-27</td>
<td></td>
</tr>
<tr>
<td>23-47</td>
<td></td>
</tr>
<tr>
<td>48-70</td>
<td></td>
</tr>
<tr>
<td>71 and over</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-27</td>
<td></td>
</tr>
<tr>
<td>23-47</td>
<td></td>
</tr>
<tr>
<td>48-70</td>
<td></td>
</tr>
<tr>
<td>71 and over</td>
<td></td>
</tr>
</tbody>
</table>

### Ethnicity?

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>White, non-Hispanic</td>
<td></td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td></td>
</tr>
<tr>
<td>Latino or Hispanic</td>
<td></td>
</tr>
<tr>
<td>Alaskan Native</td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>White, non-Hispanic</td>
<td></td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td></td>
</tr>
<tr>
<td>Latino or Hispanic</td>
<td></td>
</tr>
<tr>
<td>Alaskan Native</td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

### Level of education attained?

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>high school</td>
<td></td>
</tr>
<tr>
<td>some college</td>
<td></td>
</tr>
<tr>
<td>bachelor's degree</td>
<td></td>
</tr>
<tr>
<td>master's degree</td>
<td></td>
</tr>
<tr>
<td>doctorate degree</td>
<td></td>
</tr>
<tr>
<td>none of these</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>high school</td>
<td></td>
</tr>
<tr>
<td>some college</td>
<td></td>
</tr>
<tr>
<td>bachelor's degree</td>
<td></td>
</tr>
<tr>
<td>master's degree</td>
<td></td>
</tr>
<tr>
<td>doctorate degree</td>
<td></td>
</tr>
<tr>
<td>none of these</td>
<td></td>
</tr>
</tbody>
</table>

**answered question** 497

**skipped question** 3
Please choose the answers that best describe your household.

### Number of adults (18 and over)?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4 or more</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>My household has:</td>
<td>10.1% (34)</td>
<td>58.7% (289)</td>
<td>14.0% (59)</td>
<td>8.1% (40)</td>
<td>492</td>
</tr>
</tbody>
</table>

### Number of children (under 18)?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 or more</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>My household has:</td>
<td>61.3% (271)</td>
<td>18.1% (90)</td>
<td>14.5% (64)</td>
<td>3.6% (17)</td>
<td>2.0% (9)</td>
<td>0.2% (1)</td>
<td>442</td>
</tr>
</tbody>
</table>

### Annual household taxable income?

<table>
<thead>
<tr>
<th></th>
<th>less than $40,000</th>
<th>$40,001-70,000</th>
<th>$70,001-100,000</th>
<th>more than $100,000</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>My household has:</td>
<td>33.9% (103)</td>
<td>35.6% (172)</td>
<td>15.7% (90)</td>
<td>11.0% (50)</td>
<td>481</td>
</tr>
</tbody>
</table>

- **answered question** 496
- **skipped question** 4

### In what type of area do you live?

<table>
<thead>
<tr>
<th>Area</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>city with population greater than 50,000</td>
<td>37.4%</td>
<td>180</td>
</tr>
<tr>
<td>town with population between 5,000 and 50,000</td>
<td>41.7%</td>
<td>207</td>
</tr>
<tr>
<td>village with population less than 5,000</td>
<td>7.9%</td>
<td>39</td>
</tr>
<tr>
<td>on a farm/in a rural area</td>
<td>13.1%</td>
<td>65</td>
</tr>
</tbody>
</table>

- **answered question** 497
- **skipped question** 3
### Where have you purchased food in the past month? (please mark all that apply)

<table>
<thead>
<tr>
<th>Location</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional grocery store chain</td>
<td>67.3%</td>
<td>433</td>
</tr>
<tr>
<td>Natural/organic grocery store chain</td>
<td>16.1%</td>
<td>80</td>
</tr>
<tr>
<td>Superstore/supercenter</td>
<td>57.7%</td>
<td>288</td>
</tr>
<tr>
<td>Food cooperative</td>
<td>3.0%</td>
<td>15</td>
</tr>
<tr>
<td>Restaurant/cafeteria</td>
<td>53.2%</td>
<td>264</td>
</tr>
<tr>
<td>Convenience store</td>
<td>27.8%</td>
<td>138</td>
</tr>
<tr>
<td>Farmers market</td>
<td>30.4%</td>
<td>151</td>
</tr>
<tr>
<td>Community-supported agriculture (CSA) subscription</td>
<td>1.5%</td>
<td>8</td>
</tr>
<tr>
<td>Farm stand/on a farm</td>
<td>27.8%</td>
<td>138</td>
</tr>
<tr>
<td>Internet/mail-order</td>
<td>3.8%</td>
<td>19</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>3.2%</td>
<td>16</td>
</tr>
</tbody>
</table>

**answered question** 496

**skipped question** 4

### What is your ZIP code?

<table>
<thead>
<tr>
<th>ZIP/Postal Code:</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZIP/Postal Code:</td>
<td>100.0%</td>
<td>488</td>
</tr>
</tbody>
</table>

**answered question** 488

**skipped question** 14