

Perception of Indiana State Residents:  
Animal Agriculture and Meat Products in 2014

By Ann Cummins, Dr. Nicole Olynk Widmar, Dr. Candace Cronney and Dr. Joan Fulton



Published by the Center for Animal Welfare Science at Purdue University  
RP.2015-01 | May 2015

## Executive Summary

Researchers conducted an online survey of 797 Indiana residents in July 2014 to understand their perceptions of animal agriculture, attitudes toward the growth of livestock industries, food consumption patterns and lifestyle choices, such as visiting agritourism sites and other leisure or educational activities. The majority of Indiana residents believe agriculture is important to the state and consider themselves to be educated about food consumption. They support growth of the livestock industry, have not had negative experiences with livestock operations and do not believe livestock operations are environmentally harmful. Consumers also indicated that, compared to everyone in the supply chain, the farmer has the most influence on ensuring proper animal handling and treatment. This study also investigated concerns consumers have regarding production processes and found that practices related to pig housing at different stages of the rearing process, especially housing in crates, continue to be of interest. The study included questions that sought to understand consumers' self-perceived and true level of knowledge about the pork production process.

**Keywords:** consumer perceptions, animal welfare, pork production, agritourism

## Introduction

Consumers' perceptions of animal rearing and livestock agriculture have impacted U.S. food production processes throughout recent history. There is continued interest in agricultural production practices, including how food is grown and/or processed, as well as the treatment of livestock. Current livestock production practices allow for efficiencies that facilitate an abundance of reasonably low-cost foods, but this production model has become increasingly contentious. With only 1.5 percent of the U.S. population employed in agriculture (Bureau of Labor Statistics, 2013), many consumers are unfamiliar with food production processes and want to learn more. Consumers can familiarize themselves with agricultural production by exploring information sources, such as special interest groups; social media; articles from government, industry or university specialists; or agritourism locations.

In Indiana, approximately 1.4 percent of the population is employed in agriculture (U.S. Census Bureau, 2012b), which represents \$25.4 billion of the state's economic value (Indiana Business Research Center, 2013). This study focuses on understanding Indiana residents' nature and level of concern associated with different livestock production systems and the underlying socio-cultural and demographic factors.

## Research Methods and Data

### *Survey Instrument*

Researchers collected consumers' perspectives using an online survey conducted in Qualtrics. They administered the survey in July 2014 to Indiana households through Global Market Insight (GMI), a large opt-in survey panel manager. The targeted sample was representative of the Indiana population in terms of gender, age, pre-tax income and economic region of residency using economic regions defined by the Indiana Department of Workforce Development (2005)<sup>1</sup>. All respondents were required to be at least 18 years old. Information collected included general household lifestyle and travel, familiarity with animal agriculture, pork purchasing behaviors, agritourism experience, and consumer perceptions of pork production and livestock products.

According to the National Telecommunications and Information Administration and Economics and Statistics Administration in the U.S. Department of Commerce (NTIA and ESA, 2013), using the Internet to collect responses instead of traditional mail or phone has become an increasingly common survey method since the late 1990s, which marked the beginning of Internet commercialization in the United States. Internet surveys, with their lower costs and rapid completion times, are becoming increasingly popular (Louviere et al., 2008; Gao and Schroeder, 2009; Olynk, Tonsor and Wolf, 2010; Tonsor and Wolf, 2010; Olynk and Ortega, 2013). Hudson et al. (2004) found that Internet surveys did not exhibit non-response bias. In addition, Fleming and Bowden (2009) and Marta-Pedroso, Freitas and Domingos (2007) found no significant differences when comparing results of Web-based surveys, conventional mail and in-person interviews. According to Dillman (2007), the Web survey is "a much more sophisticated survey method which has far more flexibility and power."

Various authors do discuss some differences in survey methods; however, Dillman (2007) noted that "while the technology is relatively new, the general principles that govern people's decisions to respond are not new." Now, "The United States has made considerable progress toward ubiquitous broadband access, with more than 93 percent of the population living in areas offering wired broadband service, and about 98 percent having access to either wired or terrestrial wireless connectivity at speeds of at least 3 Mbps download and 768 Kbps upload" (NTIA & ESA, 2013). With such widespread Internet access, as well as the flexibility and power it provides, Web surveys are now common and increasingly considered an acceptable and reasonable survey method.

### *Sample Summary Statistics and Demographics*

The survey sample consists of 797 completed responses. **Table 1** shows the respondents demographics compared with the census statistics (U.S. Census Bureau, 2012c) for age, gender, income (U.S. Census Bureau 2012d) and economic region (US-Places.com, 2012). Respondents were required to be at least 18 years old and currently reside in Indiana. The source used for economic region is based on the 2012 census statistics for population by Indiana county data. As seen in **Table 1**, the sample had slightly more females than desired, with 56 percent of participants being female; the remaining categories are fairly similar to the census data.

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<sup>1</sup> Eleven economic regions were used, as defined for Indiana by the Indiana Department of Workforce Development. Economic regions are available at <http://www.in.gov/dwd/2653.htm>.

Researchers collected additional demographics that are of interest, particularly when looking at consumers' consumption of meat and perceptions of livestock rearing and farm animal welfare. **Table 2** shows the participants' education levels. According to the U.S. Census Bureau (2012), 87 percent of Americans over the age of 25 are at least high school graduates and 30 percent have completed at least four years of college. This sample is slightly "overeducated," with 98 percent of respondents having graduated from high school and 39 percent of respondents receiving at minimum a bachelor's degree. A potential reason for this "over education" is that the Web survey required participants to have access to a computer and Internet, as well as be literate, in order to respond.

Given that the study looked primarily at meat consumption, focusing on pork and animal welfare perspectives, it is valuable to understand the percentage of vegetarian and vegan respondents. In this survey, 2 percent of respondents were vegetarian and 0.5 percent were vegan. A Vegetarian Times (2008) study found that 3.2 percent of the U.S. population was vegetarian and 0.5 percent vegan.

Researchers hypothesize that close relations to animals of any species has the potential to influence consumers' perceptions of animal welfare for livestock and food production. McKendree and Widmar (2013) found that 66 percent of U.S. households owned a pet, with 48 percent and 41 percent of households owning dogs and cats, respectively. Similar to their findings, 48 percent of this survey's participants owned at least one dog, and 38 percent indicated they owned one or more cats.

**Table 1. Sample Summary Statistics (n=797)**

| Variable Description       | Survey        | Census        |
|----------------------------|---------------|---------------|
|                            | Frequency (%) | Frequency (%) |
| <b>Female</b>              | 56%           | 51%           |
| <b>Age</b>                 |               |               |
| <b>18 to 24 years</b>      | 4%            | 13%           |
| <b>25 to 44 years</b>      | 33%           | 34%           |
| <b>45 to 64 years</b>      | 43%           | 35%           |
| <b>65 years and older</b>  | 20%           | 18%           |
| <b>Household Income</b>    |               |               |
| <b>Less than \$25,000</b>  | 21%           | 25%           |
| <b>\$25,000–\$34,999</b>   | 13%           | 12%           |
| <b>\$35,000–\$49,999</b>   | 17%           | 16%           |
| <b>\$50,000–\$74,999</b>   | 22%           | 20%           |
| <b>\$75,000–\$99,999</b>   | 13%           | 12%           |
| <b>\$100,000–\$149,999</b> | 11%           | 10%           |
| <b>\$150,000 or more</b>   | 4%            | 5%            |
| <b>Economic Region</b>     |               |               |
| <b>Region 1</b>            | 14%           | 15%           |
| <b>Region 2</b>            | 13%           | 11%           |
| <b>Region 3</b>            | 14%           | 13%           |
| <b>Region 4</b>            | 9%            | 9%            |
| <b>Region 5</b>            | 21%           | 17%           |
| <b>Region 6</b>            | 6%            | 6%            |
| <b>Region 7</b>            | 4%            | 4%            |
| <b>Region 8</b>            | 6%            | 6%            |
| <b>Region 9</b>            | 4%            | 6%            |
| <b>Region 10</b>           | 5%            | 5%            |
| <b>Region 11</b>           | 6%            | 8%            |

**Table 2. Sample Summary Statistics (n=797)**

| Variable Description   | Survey        |
|--|---------------|
|  | Frequency (%) |
| <b>Education</b>   |               |
| Did not graduate from high school                                | 2%            |
| Graduated from high school                                       | 21%           |
| Attended college, no degree earned                               | 24%           |
| Attended college, associate or trade degree earned               | 13%           |
| Attended college, bachelor’s (BS or BA) degree earned            | 24%           |
| Attended college, advanced (MS, Ph.D., law school) degree earned | 15%           |
| Other  | 1%            |
| <b>Vegetarian</b>  | 2%            |
| <b>Vegan</b>   | 0.50%         |
| <b>Pet Owner</b>   |               |
| Cat owner  | 38%           |
| Dog owner  | 48%           |
| <b>Household has experienced in the past six months:</b>         |               |
| Divorce  | 5%            |
| New marriage   | 4%            |
| Moving   | 13%           |
| Death  | 12%           |
| Serious illness  | 16%           |
| Start of new job   | 16%           |
| Loss of job  | 10%           |
| Serious financial distress                                       | 19%           |
| <b>Political Affiliation</b>                                     |               |
| Democratic Party   | 21%           |
| Republican Party   | 33%           |
| Independent  | 29%           |
| None of the above  | 18%           |
| <b>Race</b>  |               |
| White, Caucasian   | 94%           |
| Black, African American  | 2%            |
| Asian, Pacific Islander  | 1%            |
| Mexican, Latino  | 1%            |
| American Indian  | 0%            |
| Other  | 2%            |

## Results and Discussion

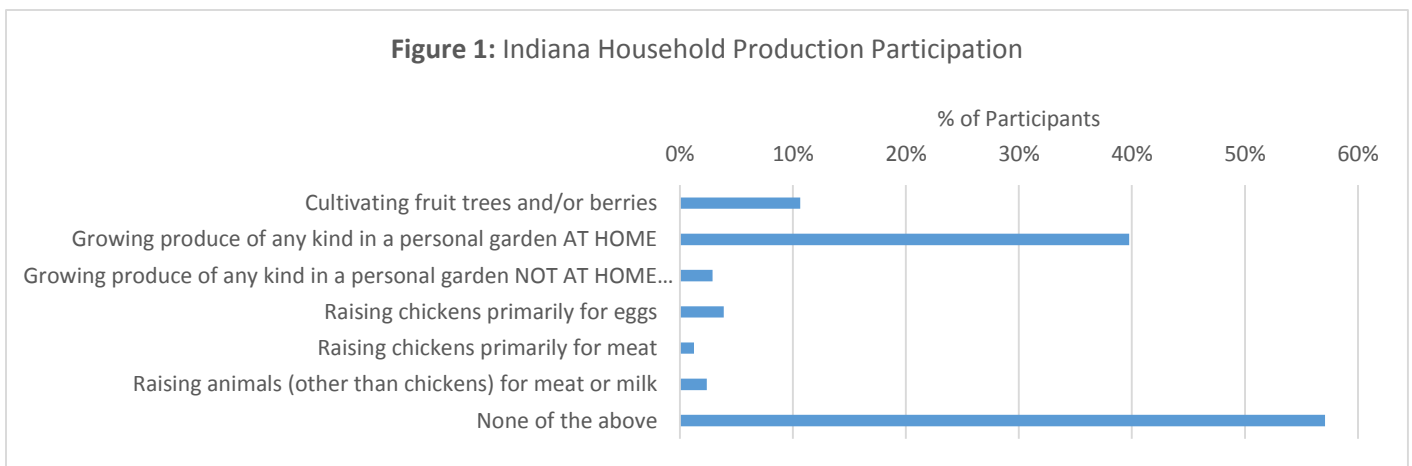
### *Household Lifestyle and Travel*

When studying consumers' perceptions of livestock production and animal welfare, it is helpful to understand their level of familiarity with agriculture. For example, consumers can own or operate farm businesses or have relatives who farm. On a smaller scale, they can be familiar with agriculture through home-based food production for personal consumption. In addition, individuals can gain some level of familiarity to agriculture by visiting agricultural operations or agritourism locations. According to U.S. Census Bureau projections, 1.4 percent of the Indiana population is employed in agriculture. Two percent of this survey's participants indicated that they owned or operated a farm business, and 10 percent had a family member or relative who owned or operated a farm business. The majority, 88 percent, said they had no connection to agricultural business ownership or operation.

Even if consumers do not own or operate a farm, they can be involved in food production for personal consumption. Researchers in this study asked participants to identify which type of food-producing activities their household participated in during the last three years, if any. The options included:

- Cultivating fruit trees and/or berries
- Growing produce of any kind in a personal garden at home
- Growing produce of any kind in a personal garden not at home (in a garden plot or community garden)
- Raising chickens primarily for eggs
- Raising chickens primarily for meat
- Raising animals (other than chickens) for meat or milk

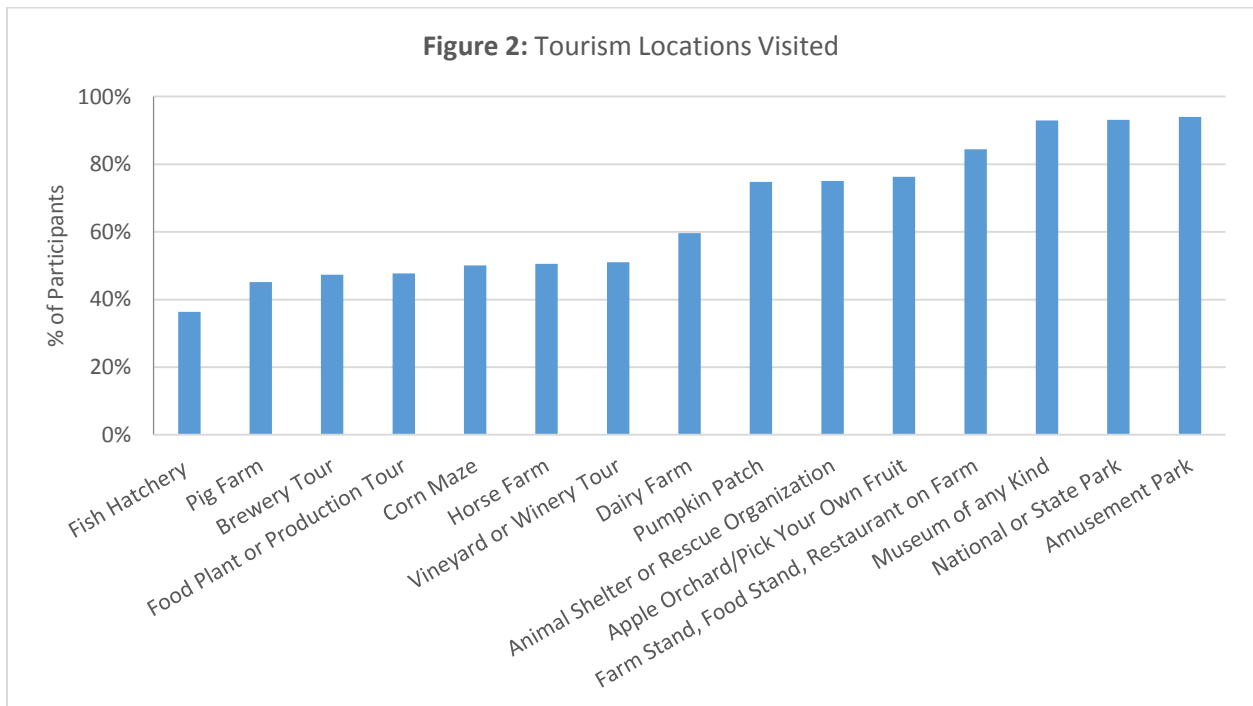
**Figure 1** shows that the most common household production practice was growing a personal garden; 40 percent of respondents indicated that they have had a personal garden to grow produce at home in the last three years. The second most common activity was cultivating fruit trees and/or berries, with 11 percent of participants reporting this activity. Fifty-seven percent of participants indicated that their



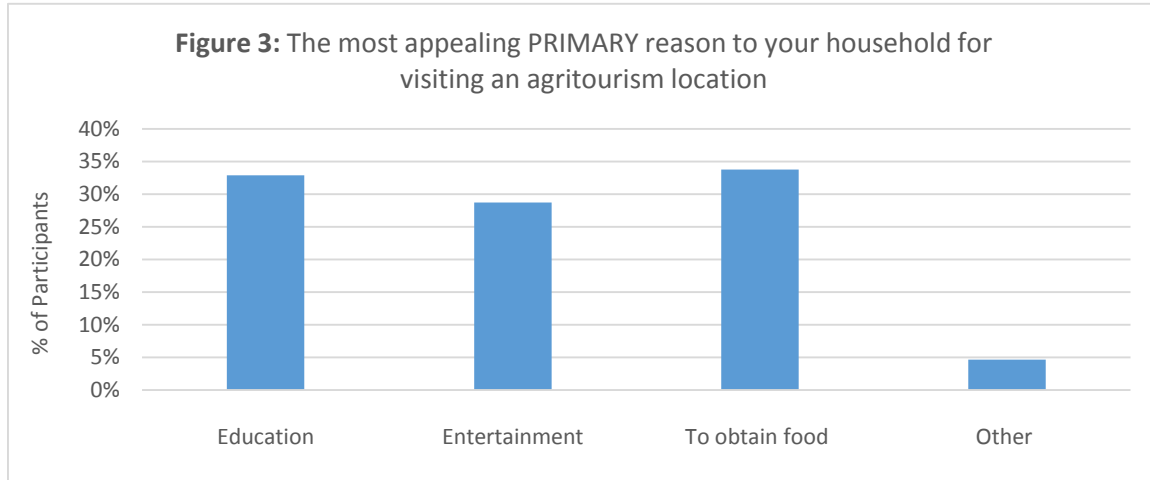
household did not engage in any of the activities during the last three years. Overall, 30 percent of respondents reported only participating in one of the activities listed; 10 percent participated in two activities; and 3 percent participated in three or more activities.

If Indiana residents are not personally involved in production, it's possible for them to experience agriculture through tourism. This study presented respondents with three questions to better understand their tourism activities. One question asked participants to indicate the last time they visited 15 different tourism location types including museums, amusement parks, animal-related operations and food production locations. Another question asked them about the distance they have traveled for tourism of any kind and their primary reason for visiting an agritourism operation. These questions helped to gain deeper insight on which households were traveling to agritourism locations, relative to other tourist attractions, as well as their primary reason for visiting.

Approximately 48 percent of all participants indicated that they have traveled more than 250 miles (total round-trip) from their home to an attraction. When asked about visits to different attraction types, only 3 percent of respondents indicated that they had never been to any of the potential tourism locations listed. Eleven percent of respondents indicated they had gone to five or fewer of the operations; 38 percent had gone to between six and ten of the operations; and 48 percent had gone to eleven or more. **Figure 2** shows the participants who indicated they had visited each of the different potential tourism locations. Amusement parks, national or state parks and museum of any kind were the top three most visited operation types, with 94 percent, 93 percent and 93 percent respectively. Meanwhile, fish hatcheries, pig farms, brewery tours and food plant or production tours had the fewest visits.



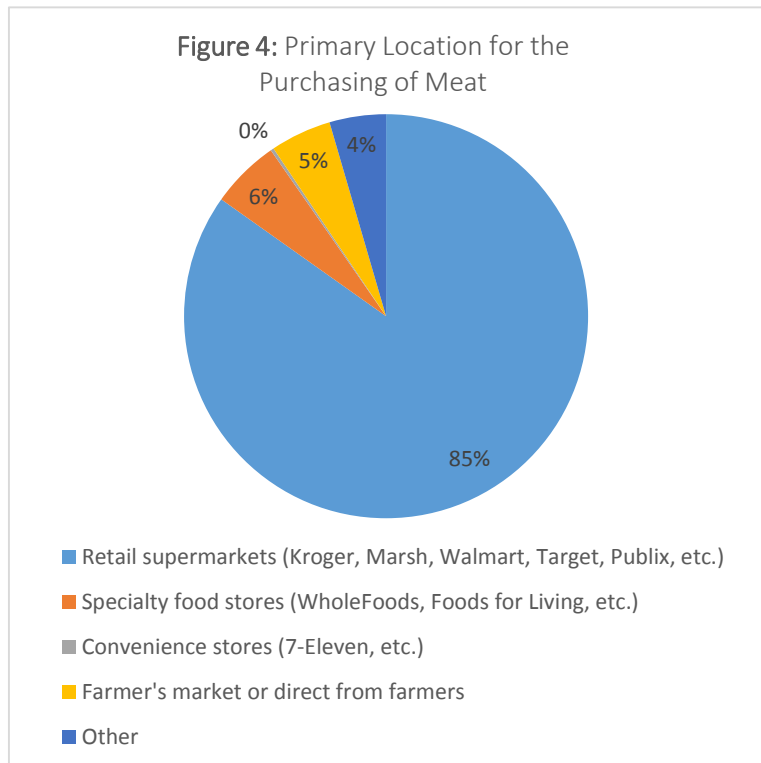
Researchers asked participants to identify the most appealing primary reason for their household to visit an agritourism location. As seen in **Figure 3**, the largest group of participants, 34 percent, selected to obtain food, 33 percent selected education, 29 percent selected entertainment and 5 percent selected other as the primary reason their household would visit an agritourism location.



### ***Consumption of Food Products***

A subset of questions within the survey sought to gain insight on consumption behaviors for different food products. These questions asked about household weekly food expenditures, locations where the household was purchasing different food categories and how often they purchased pork products.

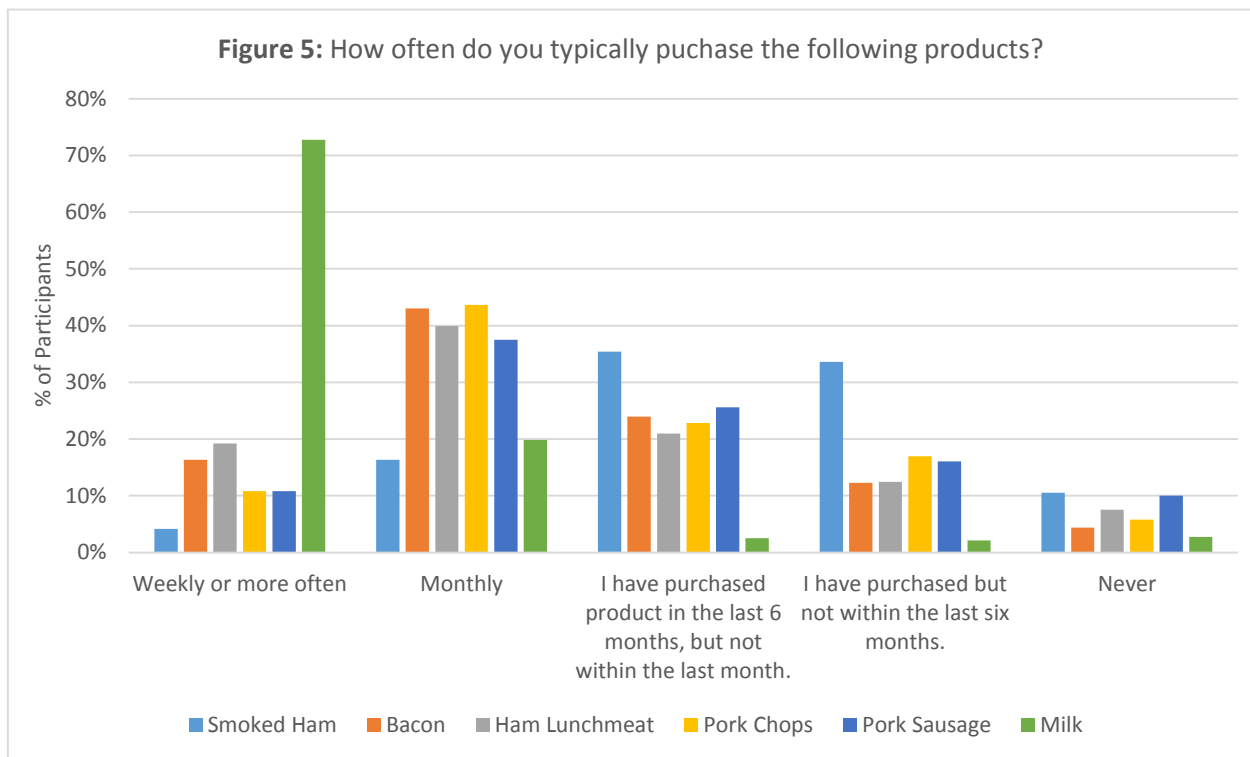
Results showed that, on average, Indiana households spent \$156.61 on food per week. The survey asked participants to indicate the primary location for food purchases, which were divided into four categories: dairy, meat, produce/fruit/vegetables and “all other food.” For every food category, the majority of participants indicated that their primary food purchase location was a retail supermarket, as opposed to specialty food stores, convenience stores, farmer markets or direct from farmers or other. Specifically looking at the meat category, as seen in **Figure 4**, 85 percent of all respondents indicated that their primary location for purchasing meat





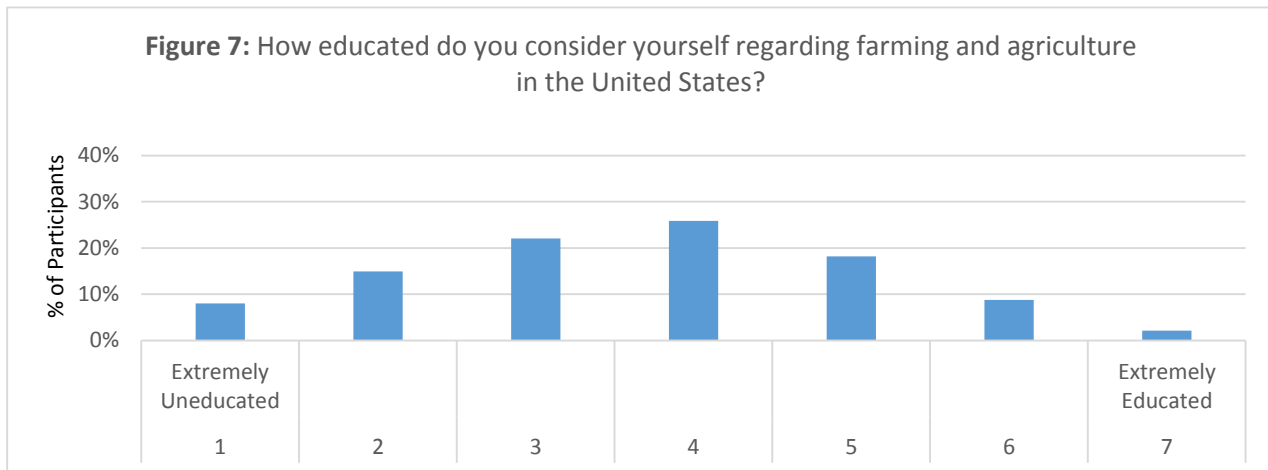
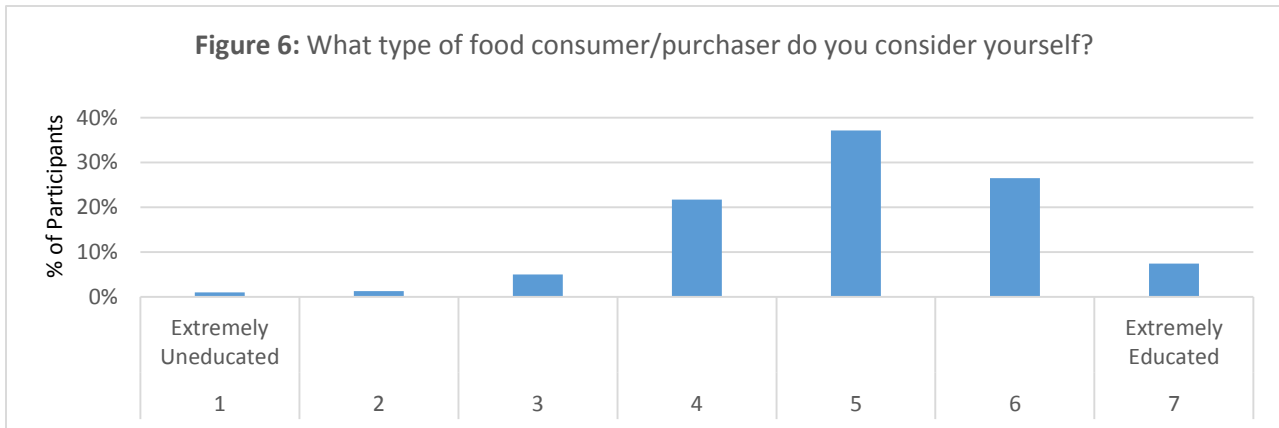
was in retail supermarkets, followed by 6 percent at specialty food stores, 5 percent at farmers markets or direct from farmers and 4 percent from other locations. No participants in this survey indicated that they primarily purchased meat from convenience stores.

Ninety percent of respondents stated that they have purchased pork products within the last year. The survey asked participants how often they purchased different pork products and milk, which helped researchers understand how frequently they purchased livestock products. Results are presented in **Figure 5**. The majority of respondents indicated they purchased milk on a weekly basis. Most of the participants purchased bacon, ham lunchmeat, pork chops and pork sausage on a monthly basis. Looking at smoked ham, participants indicated that they have purchased it in the last six months, but not within the last month.



## Familiarity with Animal Agriculture

In addition to household lifestyle and production practice experiences, researchers assessed self-reported familiarity with animal agriculture to gain a better understanding of how educated consumers are, or perceive themselves to be, about livestock production. The survey asked two questions: 1) “What type of food consumer/purchaser do you consider yourself?” (Figure 6), and 2) “How educated do you consider yourself regarding farming and agriculture in the United States?” (Figure 7). The participants responded on a scale of one to seven, where one indicated they considered themselves extremely uneducated and seven indicated they considered themselves extremely educated. The mean response to the type of food consumer/purchaser was 5.02, while the mean response to how educated they considered themselves regarding farming and agriculture in the United States was 3.66. These results imply participants consider themselves uneducated about food production and agriculture, but educated about food consumption. This disconnect might mean that people feel educated about what they are eating and where they are getting it, but less educated about the processes used to produce their food.



Researchers wanted to know how familiar respondents were with various aspects of animal production. Consequently, the survey asked participants several questions about livestock, animals in general and agricultural production practices. Participants identified the life expectancy, in years (decimals were

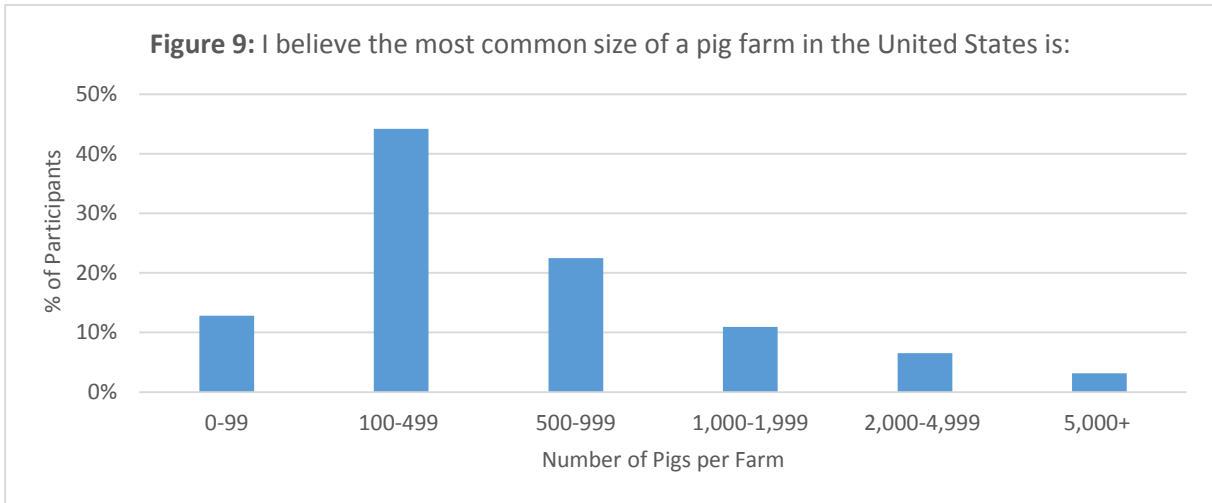
allowed), for a dairy cow on a dairy farm, beef cow on a beef (cow-calf) farm/ranch, egg-producing/laying hen, indoor house cat and pig raised for pork. Results from these questions can be found in **Table 3**.

**Table 3. Life Expectancy Estimates of Various Animals**

|        | Dairy Cow | Beef Cow | Egg-Producing Hen | Indoor House Cat | Pig Raised for Pork |
|--------|-----------|----------|-------------------|------------------|---------------------|
| Mean   | 10.77     | 6.01     | 5.09              | 13.17            | 3.52                |
| Median | 10        | 4        | 5                 | 14               | 2                   |
| Mode   | 10        | 2        | 5                 | 15               | 2                   |

With the exception of the indoor house cat, the mean, median and mode life expectancies reported for the dairy cow, egg-producing hen and pig raised for pork were all significantly higher than the actual average age. The beef cow on a cow-calf operation offers an interesting case in which the mean was approximately 6 years, but the median was 4 years, and the mode was 2 years. Potentially, participants misunderstood the difference between a beef cow, which would generally produce calves annually for a number of years, and a beef animal raised for slaughter. However, aside from the beef cow, the significant overestimation of age is thought provoking. In general, the mean age consumers reported was significantly higher than the actual ages of these production animals. Researchers may explore the impact of providing information about the actual life expectancies of these production animals in future studies.

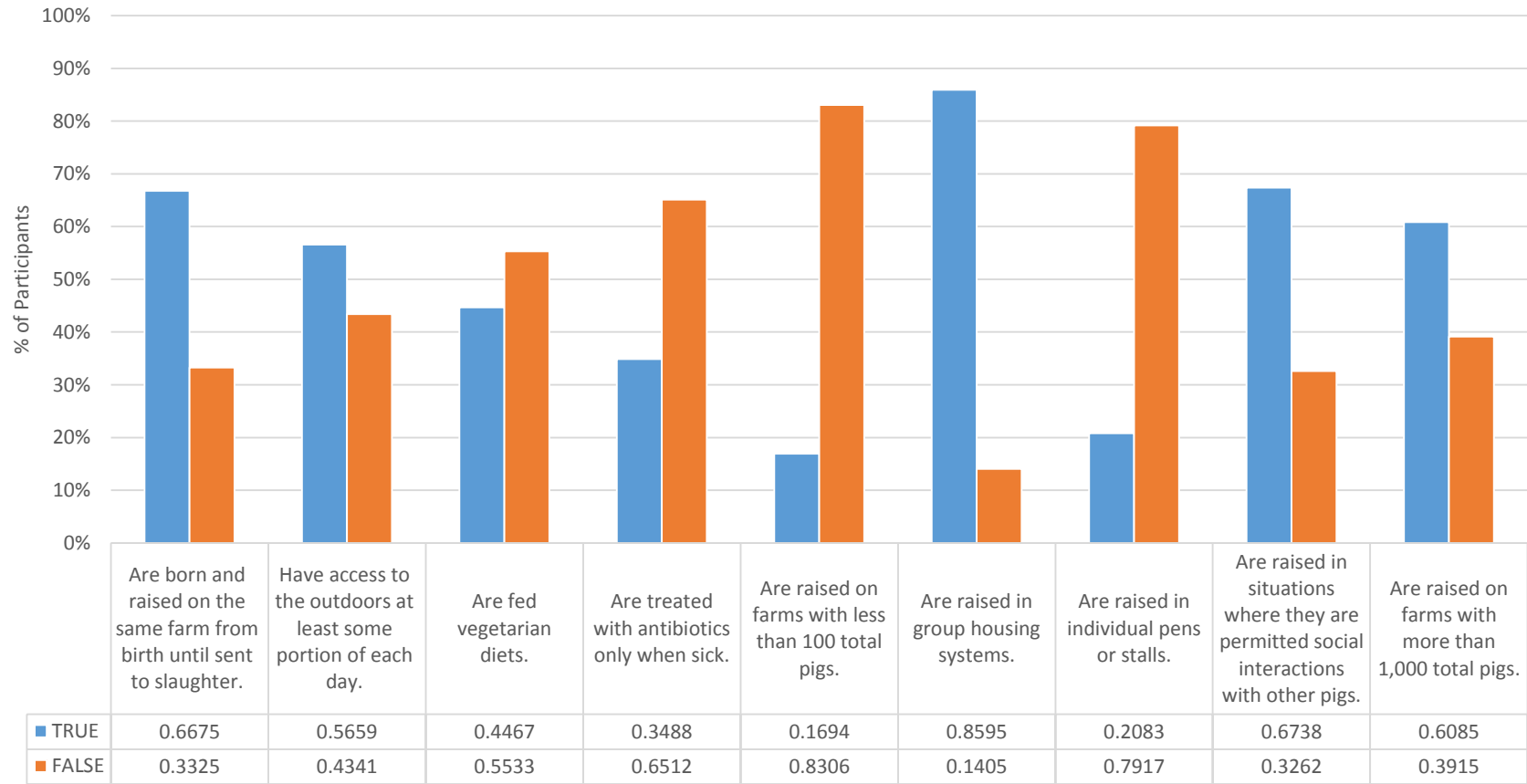
The study also asked participants what they believe is the most common size of a pig farm, as well as what farm size represents a majority of the operations used to raise pigs for pork in the United States. According to the USDA-NASS (2013), 71 percent of U.S. pig farms have 0-99 pigs. Only 5 percent of U.S. pig farms have more than 5,000 pigs (USDA-NASS, 2013). The majority of pigs raised in the United States, 62 percent, come from farms with more than 5,000 pigs (USDA-NASS, 2013). Therefore, while the majority of pig farms are small, most pork originates from pigs raised on large operations. **Figures 9 and 10** illustrate that the majority of survey participants believed the most common pig farm size is larger than 0-99 pigs, and that they also believed that the majority of pork is coming from a farm that has far fewer pigs than is typical for U.S. pork suppliers.



To gain deeper insight into consumers' knowledge about pork production, researchers presented a set of nine statements to participants regarding pigs raised for pork in the United States. They asked participants to identify the statement as true or false. Most respondents believed the majority of pigs raised for pork in the United States are born and raised on the same farm, have access to the outdoors for some portion of each day, are not fed vegetarian diets, are treated with antibiotics in times other than when the animal is sick, are not raised on farms with fewer than 100 pigs, are raised in group housing systems, are not raised in individual pens, are raised in situations where they are permitted to have social interactions with other pigs, and are raised on farms with more than 1,000 pigs. Results are seen in **Figure 11**. The majority of responses were incorrect, indicating that respondents are unfamiliar with how pork is currently raised.

In general, participants thought they were highly educated about food but uneducated about agriculture. This implies that there is a disconnect in consumers' minds between being an educated food consumer and being educated about agriculture and food production. Despite how educated individuals perceive themselves, there are some gaps in basic knowledge.

**Figure 11: To the best of my knowledge, the majority of pigs raised for pork in the United States:**

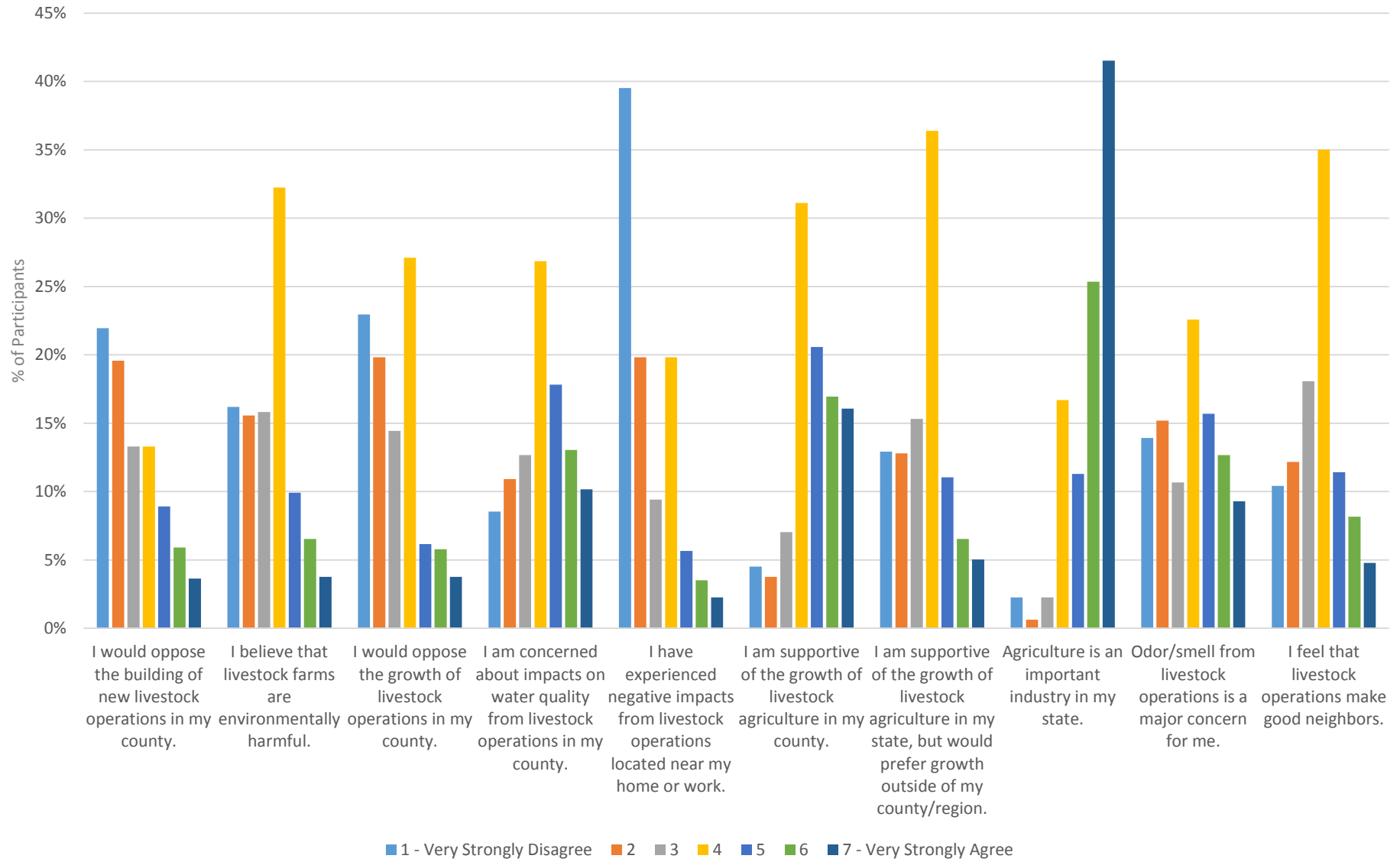


### ***Views on Livestock Production and Growth***

To identify Indiana residents' views on livestock production, researchers asked questions regarding their perspectives on growth and expansion of animal livestock operations. The survey provided statements about animal agriculture growth, and the respondents indicated their level of agreement on a scale where one was strongly disagree and seven was strongly agree. **Figure 12** illustrates the findings.

The majority of participants, 78 percent, indicated that they believe the agriculture industry is important to Indiana. The majority also indicated that they would not oppose the building or growth of livestock operations in their county. They were either neutral or agreed that they were supportive of growth of livestock agriculture in their county. Thus, the majority of participants were generally friendly toward livestock operation growth. Participants indicated they were neutral to the statement that livestock operations make good neighbors, and most strongly disagreed with the statement "I have experienced negative impacts from livestock operations near my home or work." The majority of respondents indicated that they did not believe that livestock farms are environmentally harmful but agreed to the statement indicating they are concerned about water impacts. Respondents were split on if the odor/smell from livestock operations is a concern to them.

**Figure 12: Perspectives of Indiana Residents on Animal Agriculture Growth**



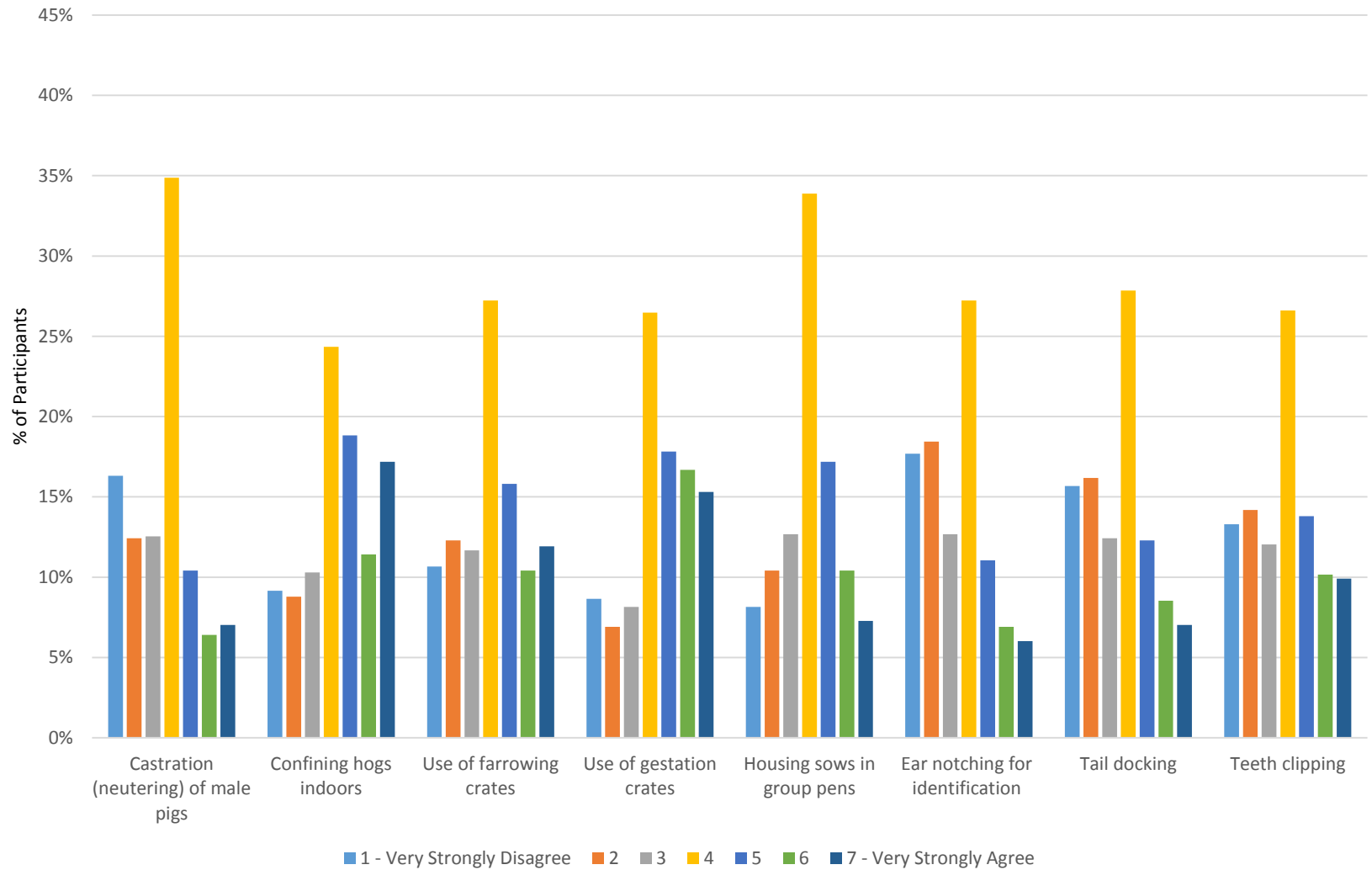
### ***Perceptions of Animal Welfare***

When looking at animal welfare, particularly concerning pork production, one step is to understand which practices people believe seriously reduce animal welfare. This survey asked participants to review a list of practices related to the welfare/humane treatment of pigs and indicate, on a scale, their level of agreement or disagreement. Results can be found in **Figure 13**.

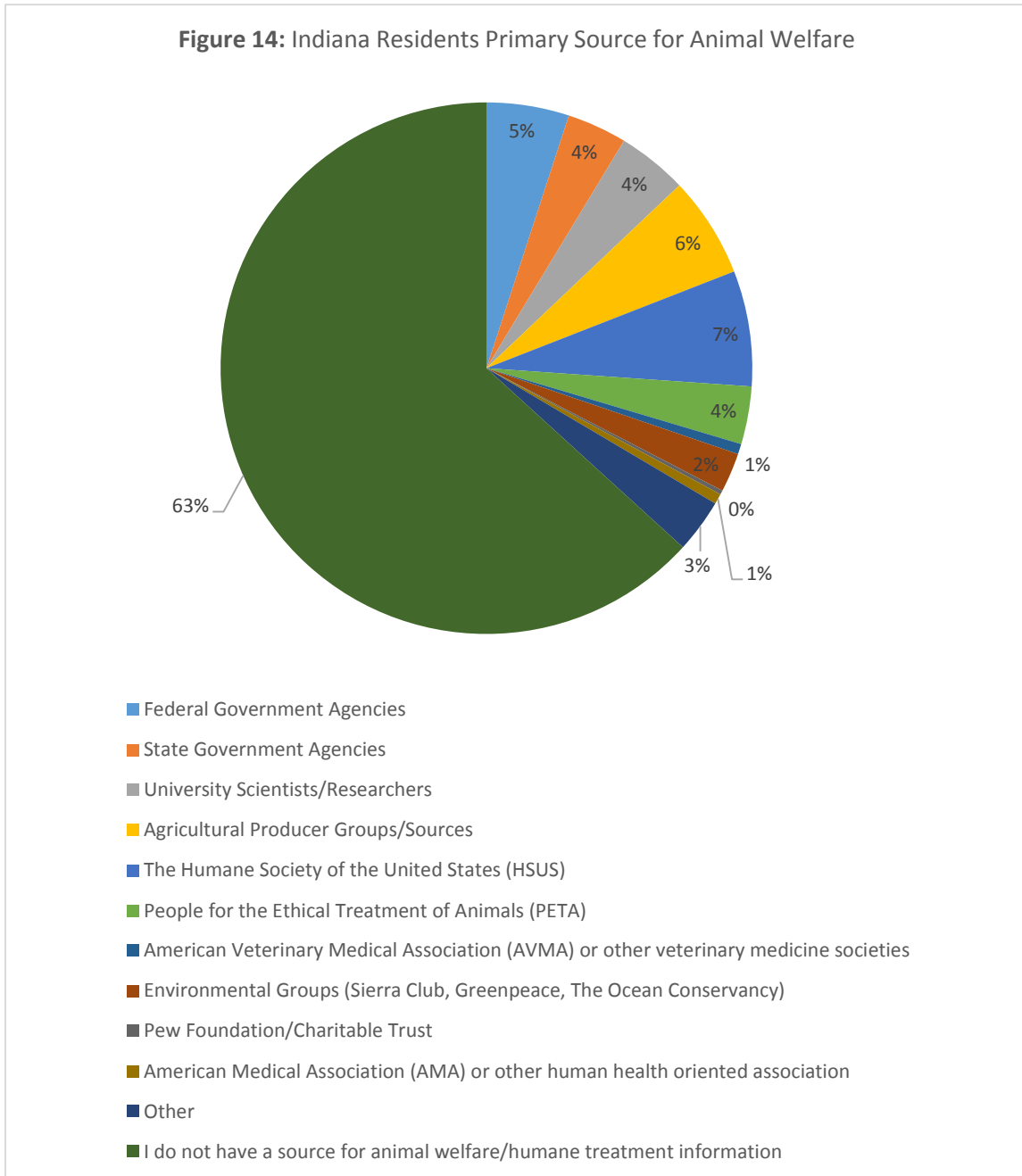
The majority of respondents for each practice listed selected the number four, which indicated neutral. This response can be interpreted two different ways, either “do not know” or “no strong feelings either way.” When looking to those who selected something other than number four, it indicated that consumers believe that confining hogs indoors, using farrowing and gestation crates and housing sows in group pens seriously reduced the welfare/humane treatment of pigs. On the other hand, participants indicated that castration (neutering) of male pigs, ear notching for identification, tail docking and teeth clipping were all practices that did not seriously reduce the welfare/humane treatment of pigs. These findings are identical to those of McKendree and Widmar (2013,) which hypothesized that the potential reason people are more accepting of castration, ear notching, tail docking and teeth clipping is because these are common or known practices for household pets and that “respondents could also assume that pigs, like pets, are given analgesia or anesthesia during ear notching, castration and tail docking” (McKendree and Widmar, 2013).



**Figure 13:** How much do you agree that the following practices seriously REDUCE the welfare/humane treatment of pigs?



This survey inquired about respondents' primary source for animal welfare information (**Figure 14**). According to McKendree et al. (2014), "Understanding the primary sources of information that are used by the general public is key in understanding to whom consumers look for guidance on animal welfare issues." This survey found that the majority of participants, 63 percent, indicated that they had no source for animal welfare information. The top three primary sources were the Humane Society of the United States (HSUS), agricultural producer groups/sources and federal government agencies. McKendree et al. (2014) found in their nationally representative survey taken in 2012, the majority, 56 percent of respondents, also did not have a source, and of those who did, the most common source for animal welfare information was the HSUS.

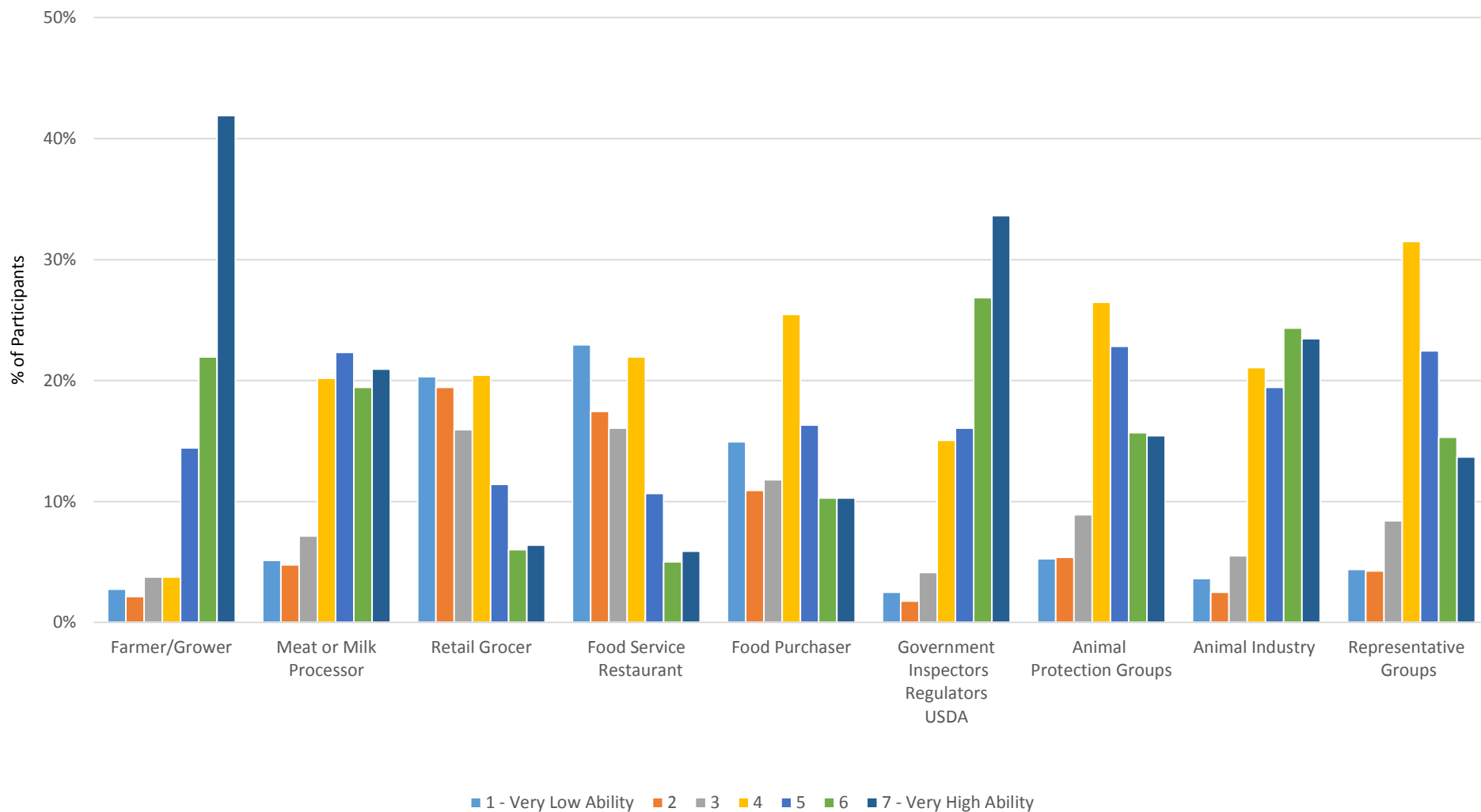


Some differences between the findings of McKendree et al. (2014) and this study exist. For example, in this study, there was a slightly larger percentage of respondents who indicated that their primary information source was state government agencies (2 percent in 2012 compared with 4 percent in this survey). Another difference is a smaller percentage in the number of people who indicated that People for the Ethical Treatment of Animals (PETA) was their primary source for animal welfare information. McKendree et al. reported 7 percent of U.S. residents used PETA as their primary source, compared with the 4 percent of respondents in this survey. McKendree et al. (2014) looked into relationships between the different information sources and consumer's reported concern for animal welfare. They found that the differences in levels of animal welfare concern were better correlated with having or not having a source, rather than which sources were used (McKendree et al., 2014).

The survey asked participants to rate the ability different parties have to influence and ensure the proper animal welfare/humane treatment/practices. These parties included: farmer/grower, meat or milk processor, retail grocer, food service restaurant, consumer-food purchaser, government inspectors/regulators/USDA, animal protection groups and representative groups.

Approximately 42 percent of participants indicated that the farmer/grower group had a very high ability to influence and ensure proper animal treatment practices. This was larger than any other party in the supply chain. Participants also perceived government parties and meat or milk processors to have a high level of influence on treatment practices. Animal protection groups and representative groups were also highly ranked. The three parties that participants indicated they believed had a low level of influence were retail grocers, food service restaurants and food purchasers. A full presentation of the findings can be found in **Figure 15**.

**Figure 15:** How much ability does each of the following parties have to influence and ensure proper animal welfare/humane treatment practices?



To understand how animal welfare concerns have impacted pork consumption, researchers asked participants if they had reduced their consumption of pork in the last three years due to concerns of animal welfare/humane treatment or handling. Nine percent of respondents indicated that they had reduced consumption due to animal welfare concerns. Of those who reduced pork consumption due to animal welfare concerns, the mean reduction was 59 percent; the mode and median reduction were both 50 percent of pork consumption. McKendree and Widmar (2013) found in their U.S. survey sample that 14 percent of U.S. consumers reduced their pork consumption due to animal welfare concerns in the three years previous to their study. They found that, on average, those who reduced pork consumption lowered it by 56 percent (McKendree and Widmar, 2013).

### ***Fair Oaks Farms (FOF)***

This survey included elements that focused on how agritourism impacts the perceptions of livestock production and animal welfare. In order to study this in relation to pork production, the survey asked respondents to indicate if they had heard of and if they had visited Fair Oaks Farms (FOF)<sup>2</sup>. Thirty-six percent of respondents indicated that they had heard of FOF, and of those who had heard of FOF, approximately 40 percent had visited. Thus, 14 percent of the total survey respondents had visited FOF. Of those who visited, the majority, 64 percent, brought their family, and 43 percent indicated they had visited multiple times.

Respondents who had heard of or visited FOF answered additional questions about their experiences and perspectives. Researchers also compared their entire survey responses to respondents who had not heard of or visited FOF to see if differences existed in demographics, household lifestyle, consumption behaviors, familiarity with animal agriculture, and views on animal agriculture growth and animal welfare. **Appendix 1** includes more findings and explanations of the FOF-focused section of this study.

## **Conclusions and Impacts**

The majority of Indiana residents indicated that they believe agriculture is important to their state. They consider themselves to be educated about food, but less educated about agriculture. Sixty-three percent of participants indicated that they do not have a source for animal welfare information. While only a small percentage were directly employed in agriculture, 43 percent of respondents indicated that they were involved in some form of household food production in the last three years. Of those who participated in the survey, the largest group indicated that the primary reason to attend an agritourism location would be to obtain food, not for education or entertainment. The majority of participants were supportive of growth in the livestock industry, but were split on issues such as odor/smell from livestock operations. They were concerned with animal-rearing practices involving the use of crates for pork production. They believed that of all the parties in the supply chain, the farmer has the highest ability to influence and ensure proper treatment of animals in the production process.

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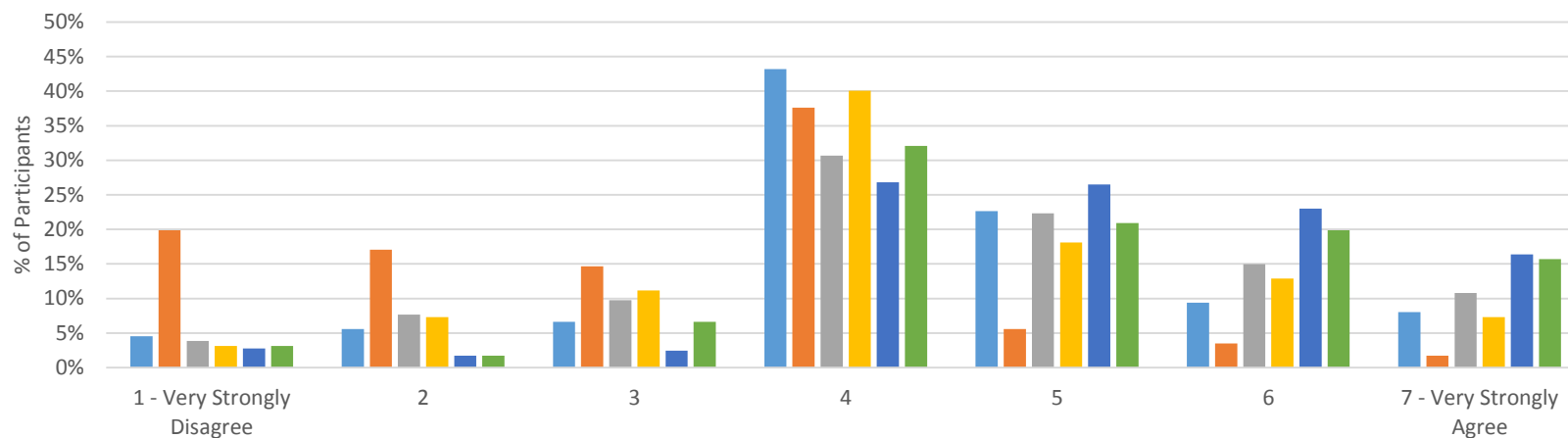
<sup>2</sup> Fair Oaks Farms is located in Fair Oaks, Indiana. “The goal for Fair Oaks Farms, is to educate the public about modern farming procedures while providing a transparent look at everything we do, taking care of our animals and our planet and providing the best, most nutritious products to our customers.” from <http://fofarms.com/blog/>  
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## Appendix 1: Fair Oaks Farms (FOF)

Thirty-six percent of respondents from the Indiana consumer sample indicated they had heard of FOF. Thus, the total sample size was 287. Of those who had heard of FOF, 40 percent had visited. Researchers made comparisons between those who had been to FOF and those who had not, as well as those who had heard of FOF and those who had not by using crosstabs and z-scores in SPSS. All findings referenced as being significant are at the 5 percent level.

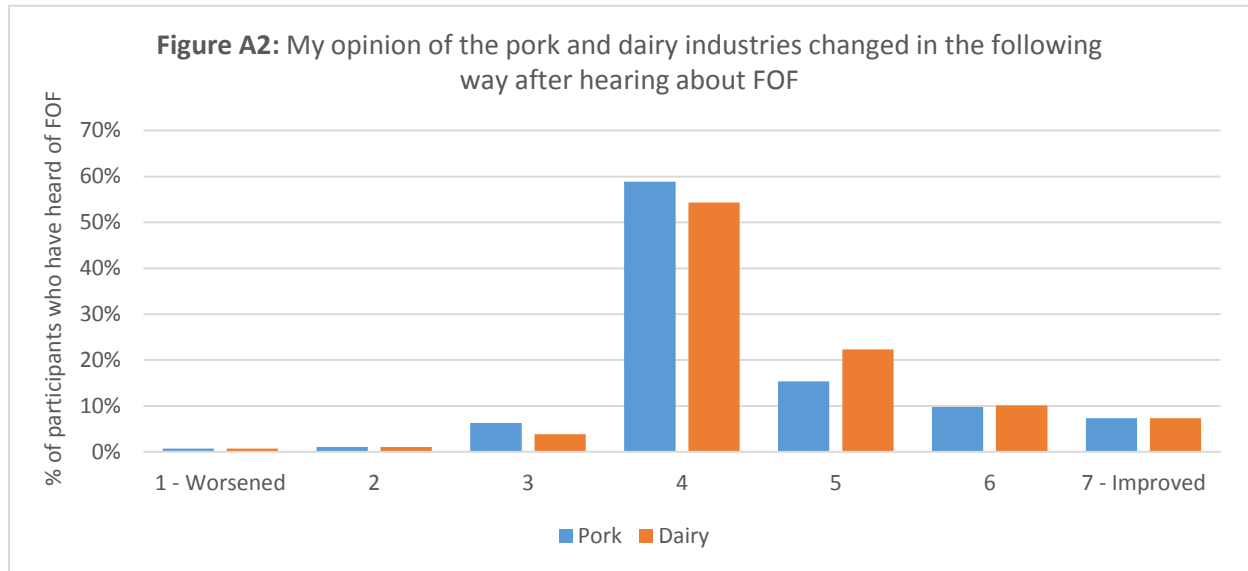
The study asked participants who had heard of FOF, regardless of if they had visited or not, several questions about their opinions on pork production. The survey presented them with a scale of seven and asked them to disagree/agree with statements about FOF. **Figure A1** includes the findings. The majority of respondents selected 4, or neutral, for each of the statements, but when excluding those who selected neutral, researchers saw that more participants indicated that they were favorable toward livestock farming operations. Also, respondents believed that both the dairy and pig farms at FOF were representative of those of the same farm type in the area. Overall, respondents strongly believed FOF was a credible source of information on dairy and pig farming.

**Figure A1: General perceptions of the credibility of FOF from Indiana residents who have heard of FOF**



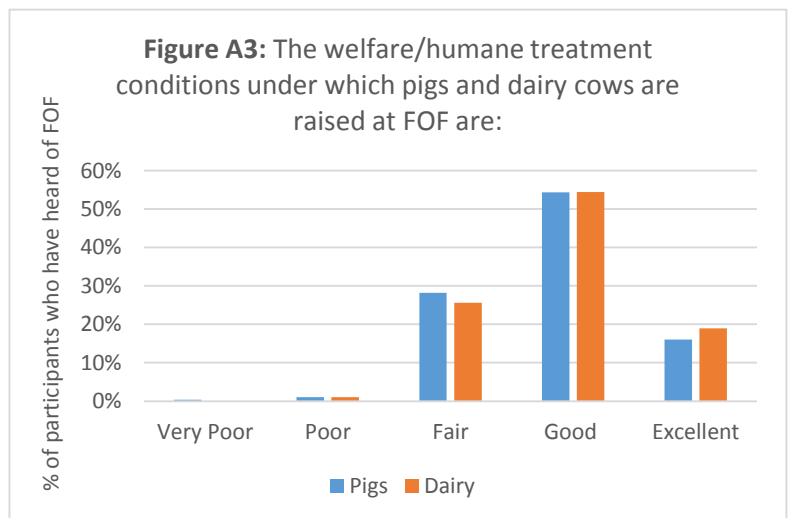
- Hearing about Fair Oaks Farms changed my opinion about farming and agriculture; I am now MORE favorable toward livestock farming operations.
- Hearing about Fair Oaks Farms changed my opinion about farming and agriculture; I am now LESS favorable toward livestock farming operations.
- I believe Fair Oaks Farms DAIRY FARM to be a representative dairy farm, meaning that it is very similar to other working dairy farms in the area.
- I believe Fair Oaks Farms PIG FARM to be a representative pig farm, meaning that it is very similar to other working pig farms in the area.
- I believe Fair Oaks Farms is a credible source of information on dairy farming.
- I believe Fair Oaks Farms is a credible source of information on pig farming.

Researchers were interested in understanding if the existence of agritourism locations changes consumers' opinions about livestock industries. Therefore, they asked participants who had heard of FOF to indicate on a scale of one to seven if their opinion of the dairy and pork industries worsened (1) or improved (7) after hearing about FOF. Results can be seen in **Figure A2**. Most participants indicated that their opinion either did not change or improved after hearing about FOF for both the dairy and pork industries, meaning that, in general, the public opinion is either not changed or improves knowing that FOF exists.



The survey also asked participants to share their perspectives on the credibility of FOF. The majority of participants, 53 percent of those who had heard of FOF, stated that they believed the pigs raised at FOF were in above-average condition; 46 percent stated that they felt the pigs were raised in average conditions; and 0.7 percent stated in below-average conditions. Similarly, the majority, 58 percent of those who had heard of FOF, stated they believed the cows were raised in above-average conditions, and 40 percent believed the cows were raised in average conditions; the remaining 1.4 percent stated in below-average conditions.

Participants indicated if they felt the practices employed at FOF with respect to environmental management and preservations were above average, average, or below average. The majority, 50 percent, selected above average, 48 percent selected average and 1.4 percent selected below average. As seen in **Figure A3**, the majority of participants who had heard of FOF believed that the welfare/humane treatment conditions under which pigs and dairy cows, respectively, are raised at FOF was good.





## ***Lifestyle Differences***

### *Demographic Differences*

Researchers compared/contrasted demographic factors between respondents who had versus had not heard of or been to FOF. A smaller percentage of those who had heard of FOF were female, and a larger percentage of those who had heard of FOF were male, but there were no differences in age or gender of those who had been to FOF versus those who had not. There were also no differences in the percentage of vegans or vegetarians who had been to FOF versus those who had not. Differences found include a larger percentage of those who had not been to FOF have incomes less than \$25,000, and a larger percentage of those who had been to FOF have incomes of \$100,000-\$149,999, indicating that more of those who had been to FOF had higher incomes. Those who had been to FOF had higher average levels of education than those who had not visited. Also, a larger percentage of those who had been to FOF were employed in the education industry, likely because a large segment of FOF visitors are school groups. A larger percentage of those who had not been indicated that they lived in economic region 9, which is admittedly relatively further away from FOF location in the state than most other regions<sup>3</sup>.

### *Other Lifestyle Differences*

No differences existed between people who had been to FOF and those who had not regarding the number of people who owned and operated a farm or had a family member or relative who own or operate a farm operation. Researchers also did not find any differences between the numbers of households that participated in food-production activities.

### *Tourism Differences*

When examining the differences in tourism between those who had been to FOF and those who had not, a larger percentage of people who have been to FOF indicated that they have traveled more than 250 miles (round-trip) from their home to visit an attraction of any kind. Thus, there are a larger number of people who went to FOF that also drive long distances for tourism compared with those who have not been to FOF.

When asked what their primary reason for visiting an agritourism location would be, respondents who had been to FOF responded no differently than those who had not been to FOF.

A larger percentage of those who had been to FOF have also been to the majority of other tourism attractions investigated. There were, however, no differences found in attendance of pig farms, horse farms, animal shelters or museums between those who had been to FOF and those who had not. Overall, those who went to FOF tended to visit other tourist locations more frequently, i.e. they tend to be tourists.

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<sup>3</sup> Economic regions available at <http://www.in.gov/dwd/2653.htm>.

### **Consumption Differences**

Those who had been to FOF stated that they spent, on average, \$162.39 on total household food consumption, including groceries and restaurants each week. The average total household food consumption was practically the same at \$155.63 for those who had not been to FOF.

The purchase locations for dairy, meat and fruit/produce/vegetables did not differ between those who had been and those who hadn't been to FOF. What differed was the "all other foods" category. A smaller percentage of those who had been to FOF stated that retail supermarkets was their primary purchase location for "other food categories."

There were no differences between those who had or hadn't been to FOF and whether or not they have purchased pork within the last year.

### **Familiarity with Animal Agriculture Differences**

There were no differences in how educated the respondents classified themselves about food or agriculture based on if they had been to FOF or not. When looking at the sample of those who had heard of FOF, researchers saw that they identified themselves as a 7-very educated food consumer and a larger percentage indicated that they were a 5, 6 or 7 about farming and agriculture. Thus, those who had been to FOF identified themselves no differently than those who had not been, but those who had heard of it feel as if they are more educated compared with those who had not heard of FOF about both food consumption and farming and agriculture in the United States.

Average life expectancy for different animals can be found in **Table A1**. The values are the mean life expectancy estimates for both those who had not been to FOF and those who had. All values between the groups are extremely similar, even for dairy cows and pigs for pork production, which FOF visitors may arguably better understand.

**Table A1. Life Expectancy Estimates of Various Animals**

|                 | Dairy Cow | Beef Cow | Egg-Producing Hen | House Cat | Pig for Pork |
|-----------------|-----------|----------|-------------------|-----------|--------------|
| Not been to FOF | 10.72     | 6.11     | 5.03              | 13.14     | 3.52         |
| Been to FOF     | 11.05     | 5.37     | 5.43              | 13.33     | 3.50         |

When the survey asked participants to identify the most common size of pig farm, there were no differences in the responses of those who had been to FOF versus those who had not. There was, however, a smaller percentage of people who had heard of FOF who said that they believed the most common size of a pig farm in the United States was between 0-99 pigs and a larger percentage chose 2,000-4,999 pigs. Also a smaller percentage of those who had heard of FOF stated they believed that the majority of pigs raised for pork in the United States lived on farms with 100-499 pigs and a larger percentage selected 1,000-1,999.

The series of true/false questions about the majority of pigs raised in the United States regarding farming practices showed that those who had heard of FOF had a larger percentage of respondents who selected false to the statement that animals are born and raised on the same farm. Also, a smaller

percentage of those who had heard of FOF believed that the animals have access to the outdoors daily, and a larger percentage believed that the majority of pigs raised in the United States were raised in group housing systems. For those who had been to FOF versus those who had not, the only difference in responses to the true/false statements was in response to the statement that “the majority of pigs raised in the United States are raised on farms with less than 100 total pigs.” A larger percentage of those who had been to FOF selected false to this statement.

### ***Views on Animal Agriculture and Growth Differences***

There are several instances in which those who had heard of or been to FOF had different opinions about animal agriculture and the growth of operations. The differences between those who had heard of FOF and those who had not were that a smaller percentage of those who had heard of FOF strongly disagreed with the statement: “I would oppose the building of new livestock operations in my county,” and a larger percentage of those who had heard of FOF strongly agreed that they feel that agriculture is an important industry in Indiana.

For those who had been to FOF compared with those who had not, researchers saw many differences in perspectives. A larger percentage of those who had been to FOF strongly agreed with the statement: “I would oppose the growth of livestock operations in my county.” A larger percentage of those who had been to FOF indicated they are supportive of growth in the state, but would prefer it to be done outside of their county. A larger percentage of those who had been to FOF indicated that the odor from the operation is a major concern to them, and a larger percentage felt livestock operations would not make good neighbors. Despite the fact that those who had been to FOF have stronger opposition to the growth of livestock operations, a larger percentage of those who had been indicated they strongly agreed that agriculture is important in Indiana.

### ***Animal Welfare Perceptions Differences***

#### *Practices*

Researchers assessed the differences in animal welfare perceptions based on if respondents had heard of FOF or if they had been there. For those respondents who had heard of FOF versus those who had not, there were no differences in how they viewed the practices of castration of males, confining hogs indoors, the use of farrowing crates, housing sows in group pens and ear notching. There was a difference in the concern about the use of gestation crates, where a larger percentage of those who have heard of FOF agreed that the practice seriously reduced the animal welfare for pigs. A larger percentage of people who heard of FOF selected “disagree” to the statement that tail docking seriously reduced animal welfare. A smaller percentage of those who had heard of FOF selected neutral about teeth clipping, and a larger percentage stated they disagreed that the practice of teeth clipping seriously reduced the animal welfare of pigs. For those who had heard of FOF, a larger percentage felt that animal welfare is reduced due to the use of gestation crates, but not because of tail docking or teeth clipping.

For those who had been to FOF versus those who had not, a larger percentage stated that they agreed that the use of housing sows in group pen seriously reduced the animal welfare of pigs. But, on all other practices there were no differences found.

#### *Sources of Animal Welfare Information*

The participants were asked to identify their primary source of animal welfare information. For those who had heard of FOF compared with those who had not, a larger percentage of those who had not heard of FOF stated that they did not have a source for animal welfare information. For those who had been to FOF versus those who had not been, there were no differences in the primary sources used for animal welfare information.

There were no statistical differences between those who had been or heard of FOF and those who had not for the perceived influence of different parties on animal welfare and treatment. This implies that people's belief about different parties (farmers, retailers, production, etc.) and the capabilities that they have to influence animal welfare isn't different depending on whether they had or had not been to FOF.

Respondents were asked to indicate if they reduced their consumption of pork in the past three years due to animal welfare concerns. There were no differences in the percentage of people who reduced their pork consumption based on if they had been to FOF or not. Also, there was no difference in the percentage of total reduction.

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## **Funding Acknowledgement**

Researchers at Purdue University developed the concept for this study in collaboration with Fair Oaks Farms, Belstra Milling Co., Indiana Pork and Indiana Soybean Alliance. Indiana Pork and Indiana Soybean Alliance provided the funding for the study. Researchers at Purdue University conducted the research study and analysis, without input, collaboration, sharing of survey design or participation in data collection by funders, Fair Oaks Farms or Belstra Milling Co. in order to avoid biases or the perception of biases arising from working with industry groups.