



Views on Animal Agriculture in Rural Versus Urban Indiana Counties

Introduction

Agriculture is important to Indiana's economy. In 2011 Indiana had \$25.4 billion of its economic value coming from agriculture industries (*Agriculture's Bounty: The Economic Contribution of Agriculture*, 2013). According to the National Agricultural Statistics Service, Indiana is ranked fifth in the nation (by quantity) for hogs and pigs production and ranked tenth in the country in terms of total agricultural production (NASS, 2013).

Issues

Public perception of agriculture, and especially animal welfare and livestock production, is important for decision makers in industry and the public sector (McKendree and Widmar, 2013). Given agriculture's importance to Indiana, understanding the views of residents in both rural and urban settings is necessary for decision makers. It is imperative to study the perceptions of livestock production by Indiana's residents because the perceptions and beliefs of residents may influence legislation, markets, and overall livestock industry climate in the state moving forward. In particular, differences between rural and urban residents may be important. Further, given expansion possibilities for livestock production in Indiana, it is important to understand residents' perspectives on animal agriculture growth in rural counties.

In this article we first explore where consumers are purchasing food. Next we examine their sources of information on animal welfare. Information on whether their household had been involved in food production is then considered, followed by perceptions of livestock operation growth. We then look at consumers' perceptions of the impact of livestock operations.

Situation

An online survey was conducted in July of 2014 to understand Indiana residents' consumption behavior and perspectives on animal agriculture growth. A total of 797 completed responses were collected. Global Marketing Insight, GMI, a survey distributor, was used to distribute this survey to representative Indiana residents in terms of age, gender, income, and economic region of residency. All respondents were required to be at least 18 years of age.

According to *Population Trends in Rural Indiana* by Waldorf, Ayres, and McKendree (2013), approximately 14% of Indiana residents live in rural counties, 62% in urban, and 24% in rural/mixed counties, with urban counties seeing the most population growth. Counties were classified into following the "Indiana County Grouping" (Ayers et al., 2013). The respondents to this survey were similar,

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Audience: Local and state leaders in industry, government, and education in both rural and urban counties in Indiana.

Purpose: To discover differences in behaviors associated with food purchasing and perceptions of animal agriculture.

Method: Survey of Indiana residents designed to determine their perceptions of livestock production and the importance of agriculture in their communities.

Potential Topics: Business development, food purchasing, perceptions of animal agriculture, livestock industry growth, agriculture, natural resources.

Outcome: Better informed decisions by leaders in livestock-related industries, government officials, and educators.

with 12% from rural, 61% from urban, and 27% from rural/mixed counties within Indiana. The results are presented according to whether respondents were from rural counties, urban counties, or rural/mixed counties.

Food Purchasing Decisions

To study consumption patterns, respondents were asked to indicate the primary outlet where their household purchased the following food categories: Dairy, Meat, Produce/Fruit/Vegetables, and Other Food Categories. The respondents were asked to select one of the following to indicate their primary outlet: retail supermarket, specialty food stores, convenience stores, farmers markets, direct from farmers, or other. For Dairy, Produce/Fruit/Vegetables, and Other Food Categories, there was no statistically significant differences for consumers purchasing outlet based on the county classification of residence. The primary purchase outlet of retail supermarkets was indicated by the majority of participants, 94%, 79%, and 92% for Dairy, Produce, and Other food category, respectively.

Regarding where consumers purchase meat, the majority of participants (85%) primarily purchase meat from retail supermarkets. However, there are differences between county classification with regards to the other primary purchase outlet for meat. As seen in Figure 1, a larger percent of people from urban counties primarily purchase meat from a specialty food store compared to those from rural or rural/mixed counties. Also, a larger percentage of rural county residents purchase meat at farmers markets or direct from farmers, than urban county residents. Additionally, a larger percent of rural/mixed county residents primarily purchase meat from other locations. The differences between county classification regarding primary purchasing outlet are most likely due to accessibility.

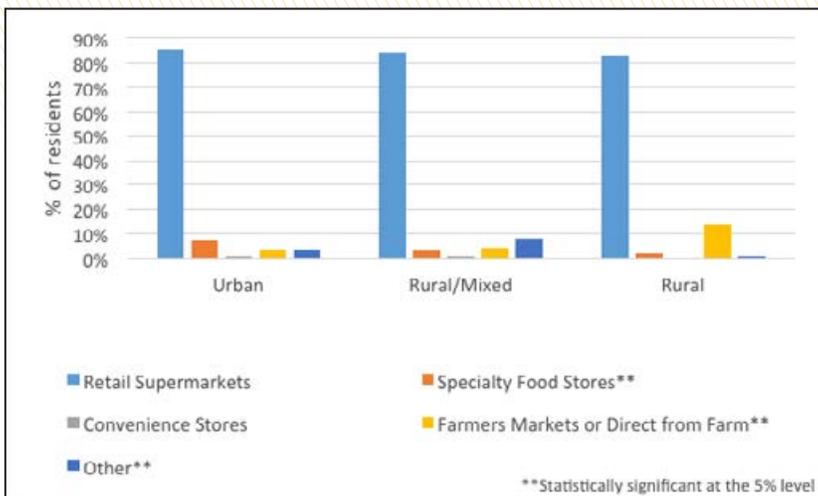


Figure 1. Primary Location for Meat Purchases

Table 1. Sources for Animal Welfare Information

| | Urban | Rural/Mixed | Rural | Total |
|---|-------|-------------|-------|-------|
| Government | 9% | 9% | 7% | 9% |
| Ag Industry** | 7% | 3% | 7% | 6% |
| Social | 10% | 12% | 10% | 11% |
| Other | 13% | 10% | 8% | 11% |
| None | 61% | 67% | 67% | 63% |
| **statistically significant at the 5% level | | | | |

primary source as social groups, and 11% of respondents indicated “other.” When looking at agriculture industry sources, only 3% of respondents from rural/mixed counties used this source, while 7% of respondents from both urban and rural counties used this source.

To better understand the impact of consumers’ concerns about livestock treatment on their consumption of meat or livestock products, respondents were asked if they had reduced pork consumption over the past three years because of animal welfare/humane treatment/handling concerns. Of the respondents, 9% stated “yes.” It is interesting to note that there were no statistical differences between consumers based on county classification as urban, rural, or rural/mixed.

Household Food Production

Respondents were asked to identify if, in the past three years, their household had been actively involved in producing food for their own family. This household production could have included any of the following: 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, raising chickens primarily for eggs, and raising animals (other than chickens for meat or milk). For every household food production practice investigated (with the exception of community plot, which had no differences based on county classification), a higher percent of rural and rural/mixed county residents had actively participated in the past three years, compared to the percent of resident from urban areas who had participated in the activity.

Frequency of Consumption

Survey respondents were asked to identify how often they typically purchase different pork products. Results indicated that there were no differences based on classification of counties as rural, urban, or rural/mixed. Two products, bacon and pork chops, had slight differences in the frequency of purchase based on county classification. A larger percentage of urban respondents than those from rural or mixed counties indicated that they purchase bacon on a weekly basis. Also, a larger percentage of people from rural/mixed counties compared with rural counties purchased pork chops in the previous six months but not within the last month.

Sources of Information on Animal Welfare and Impacts on Consumption

There are many different sources of information about animal welfare, often with different views or perspectives. Respondents were asked to identify their primary source of information on animal welfare. From Table 1, regardless of county classification, about 63% of respondents indicated that they had no source, approximately 9% of respondents indicated their primary source was from a government entity, 11% of respondents reported their

This result matches expectations and indicates that a larger percentage of consumers from rural or rural/mixed counties are familiar with home-based food production activities.

Livestock Operations and Growth Perceptions

To understand more thoroughly the concerns and perceptions of Indiana residents regarding livestock operations and growth potential, respondents were asked to respond to a series of statements. Of particular interest were the rural counties in which residents may be more intimately affected by the growth of livestock industries. Respondents were asked to agree or disagree on a scale where 1 was strongly disagree and 7 was strongly agree with statements provided. These statements can be divided into two categories- Livestock Growth and Livestock Operation Impacts.

Livestock Growth

A larger percentage of people from rural counties disagree with the statements “I would oppose the building of new livestock operations in my county” and “I would oppose the growth of livestock operations in my county.” This means that people from rural counties are more “friendly” to both the building of new and expansion or growth of current livestock operations in their county. Similarly, a larger proportion of people from rural counties agree with the statement “I am supportive of growth of livestock agriculture in my county.” In general, we can conclude that residents of rural counties are friendlier toward growth of livestock agriculture than urban residents.

Livestock Operation Impacts

Respondents were asked to share their level of concern about several hot topics related to livestock operations, including environmental friendliness, water quality, proximity of livestock operation to home or work location, and odor. In each case the respondent was asked to select a value between 1 and 7 (1=Strongly Disagree, 7=Strongly Agree). The results presented in Figure 2 show the weighted (by county classification of urban, rural, or mixed) average response value for each question. There is little or no difference by county classification for most of the statements. The statement, “I believe that livestock farms are environmentally harmful” had a larger percentage of rural respondents disagree than did urban respondents. The statement, “I am concerned about impacts on water quality from livestock operations in my county,” is depicted in Figure 3. A larger percentage of respondents from rural counties disagreed with the statement than those from urban or rural/mixed counties. This suggests that there is a greater proportion of rural residents who are not concerned about impacts on water quality from livestock operations.

The majority of residents have not experienced negative impacts from livestock operations located near them. With 69% of respondents disagreeing to the statement, “I have experienced negative impacts from livestock operations located near my home

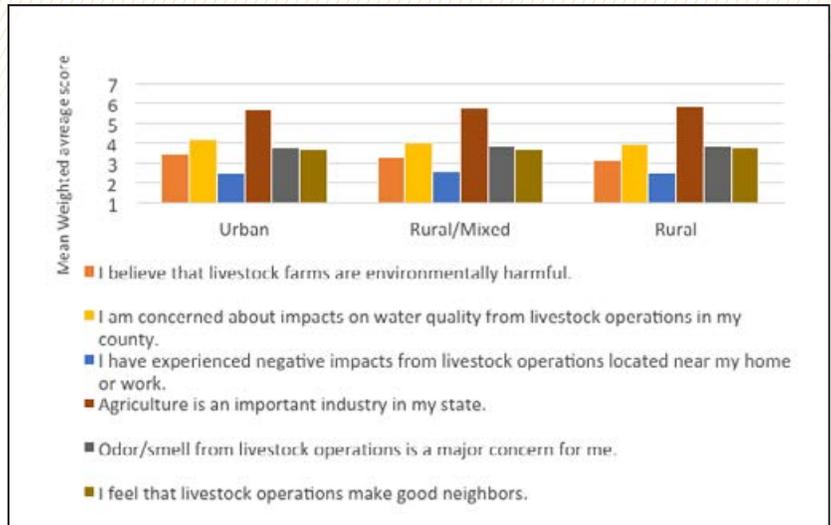


Figure 2. Perspective on Animal Agriculture Growth (mean)

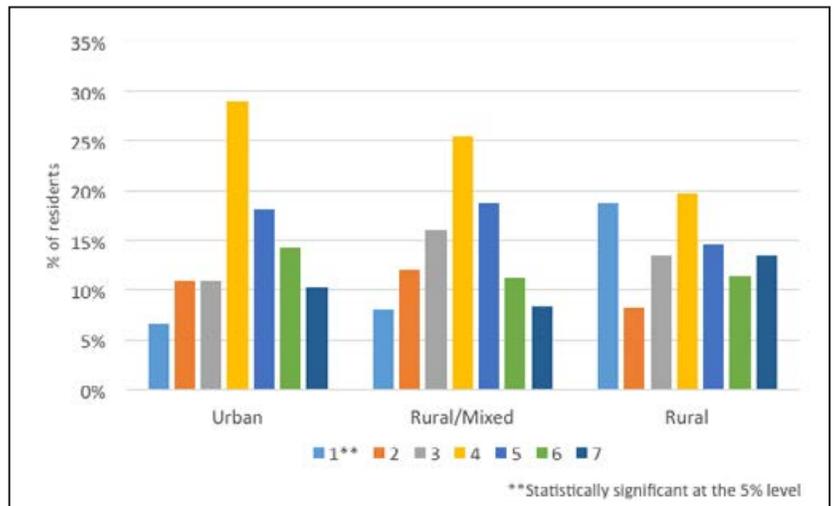


Figure 3. I Am Concerned About Impacts on Water Quality from Livestock Operations in My County.

or work,” there were no statistical differences in response based on county classification. Similarly, the majority of responses were neutral to the statement “Odor/Smell from livestock operations is a major concern for me,” with 40% indicating some level of disagreement and 38% indicating some level of agreement. However, there were no statistical differences based on county classification.

The statement “I feel that livestock operations make good neighbors,” had a weighted mean average response of approximately 3.8 (on a scale of 1 through 7), indicating a mean weighted response of neutral to disagreement with the statement. There was no statistical difference in response based on county classification. This is interesting because while people who live in rural counties are friendlier to growth, their perception of livestock operations as good neighbors is not statistically different from those in urban or rural/mixed counties.

Perhaps a key difference in views on operation growth is that a larger percentage of rural residents indicated that they agree with the statement “agriculture is an important industry in my state.”

Implications

Overall, consumption behavior and patterns of Indiana residents do not differ by whether they live in rural, urban, or mixed counties. But, while we do not see differences in consumption, there are differences in views on production agriculture, specifically animal agriculture. Rural residents (compared with urban residents) are more familiar with food production, particularly at-home production for personal consumption, like home gardens. Residents of rural counties are also friendlier towards livestock production growth. A greater proportion of residents in rural or rural/mixed counties see agriculture as an important industry in the state. Rural residents tend to be more accepting of livestock production growth, despite the fact that they have reported similar impacts and experiences with livestock production as urban residents. Residents of rural counties have more favorable views towards livestock production and growth in general, compared to residents of urban counties. It could be hypothesized that the more favorable view by rural residents is due, at least in part, to their more direct linkages to food production and agriculture than their urban counterparts.

Given the expansion of the livestock industry in recent years in Indiana, communication with Indiana residents will be important for industry representatives, as well as local government leaders and educators. Recognition of key differences in perceptions of animal agriculture among residents of rural versus urban counties will be important for effective communication. These findings point towards rural counties leaning towards being more in favor of growth in agriculture, as may be expected. But, as livestock production expands or seeks to expand, differences in perceptions by county, geography, and/or demographics should be acknowledged when communicating or working with various residents or stakeholders.

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