

## **ADULT SOUTH CAROLINIANS' OPINIONS ABOUT ANIMAL AGRICULTURE<sup>1</sup>**

**B. J. Vander Mey, H. Harris, M. Warner, C. Mobley, C. Sieverdes, P. Skewes,  
J. E. Hawdon, and J. Allen, Clemson University**

### **EXECUTIVE SUMMARY**

A random sample of 700 SC residents was interviewed between December 1997 and February 1998. Interviews were conducted via telephone, using Clemson University's CATI (Computer-Assisted Telephone Interview) laboratory. The foci of the study were opinions about the effect and importance of animal agriculture, and support for additional animal agriculture. The error margin for this study is  $\pm 4\%$ .

The survey instrument was predicated upon a review of literature (see references), combined with several meetings of the team members. Requests for a copy of this survey instrument should be addressed to Dr. B. J. Vander Mey.<sup>2</sup>

In general, most respondents were supportive (73%) of additional animal agriculture in their counties. They look to animal agriculture to support farmers (especially family farms), to employ others and to bring in other businesses. They are concerned about the possibility of odors, environmental problems and flies. The majority (57.7%) agreed that tougher environmental regulations for animal agriculture are needed, but 71.6% think that people are working to reduce the environmental impacts of animal agriculture. Stronger support for animal agriculture was found among whites, people who haven't been bothered by odors, those who think animal agriculture is economically important, and those who agreed with positive statements about animal agriculture and preserving the family farm and negative statements about environmental groups. Few agreed that animal agriculture was a real nuisance because of odor (22.3%) or that animal agriculture had reduced their quality of life (12.0%). However, 39.9% agreed that "animal agriculture raises serious ethical concerns regarding the treatment of animals."

### **Sampling Strategy**

Given the foci of the survey, South Carolina counties were inversely weighted by population. Then, a random selection procedure was followed. In this way, counties that are more rural – those most likely to be home to any additional animal agriculture, were slightly oversampled in this study.

### **Counties Represented**

The counties with 35 or more respondents in this survey were Allendale, Barnwell, Calhoun, Chester, Darlington, Dillon, Edgefield, Florence, Greenwood, Jasper, Laurens, Lexington, Oconee, and Orangeburg. The counties with less than 35 respondents were Abbeville, Aiken, Beaufort, Cherokee, Clarendon, Fairfield, Hampton, Lee, Pickens, Richland, and Saluda. Thus, respondents represented 25 of the state's 46 counties.

---

<sup>1</sup> This research was funded by a grant from the PSA Agrisystems Productivity and Profitability Competitive Grants Program.

<sup>2</sup> B. J. Vander Mey, Dept. of Sociology, Box 341513, Bracket 132, Clemson University, Clemson, SC, 29634-1513. Tel: 864.656.3821. Fax: 864.656.1252. E-mail: vanmey@clemson.edu

## The Respondents

Figure 1. Current and Past Residence Type of Respondents.

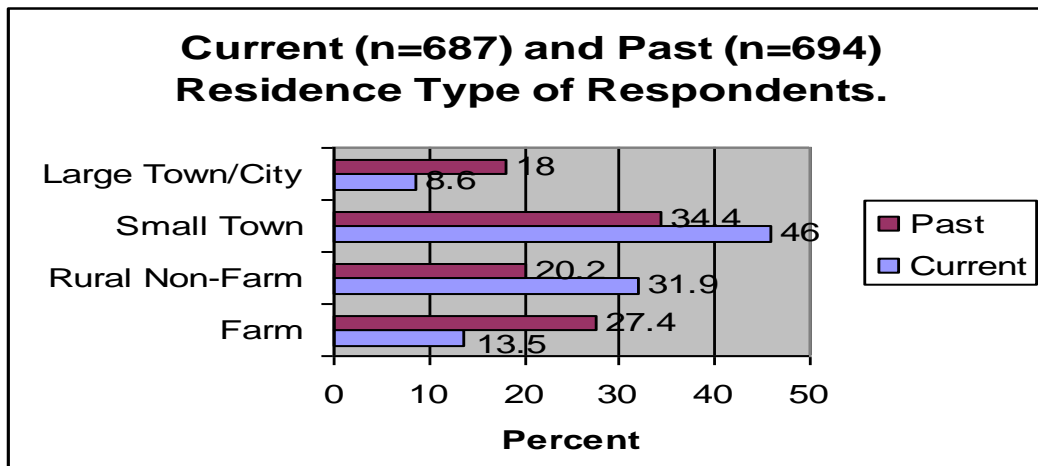
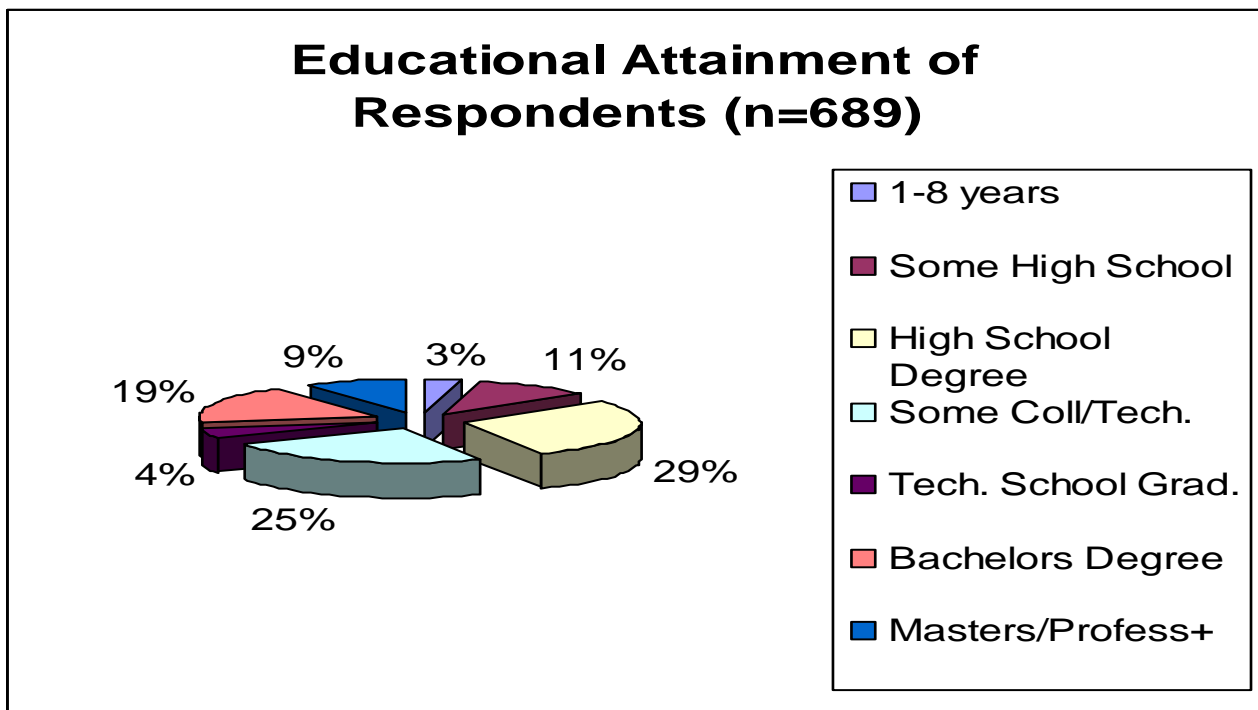
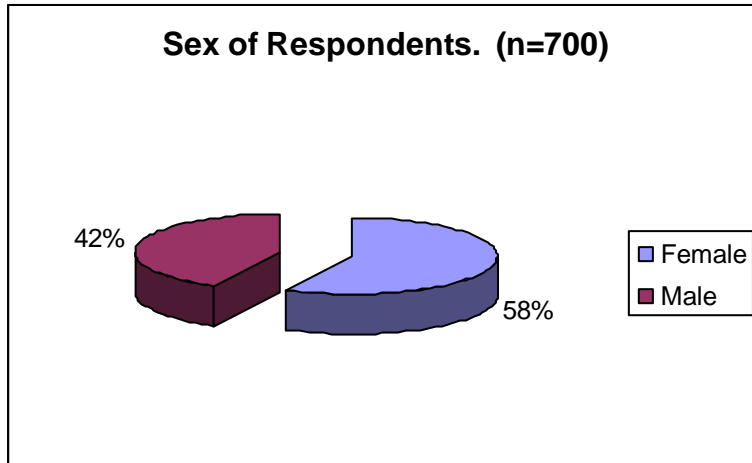


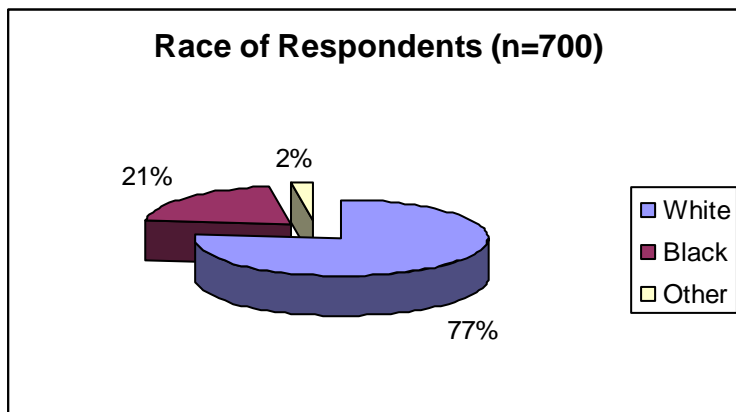
Figure 2. Educational Attainment of Respondents.



**Figure 3. Race of Respondents.**



**Figure 4. Sex of Respondents.**



### *Other Characteristics of the Sample*

- **77.1% of the respondents were native South Carolinians.**
- **Age of respondents ranged from 18 to 91, with a mean of 46.42 years.**
- **The majority of the respondents (63.8%) were married at the time of the survey.**
- **Over three-fourths (77.7%) of the respondents had children.**
- **Mean estimate of how far respondents live from an animal agriculture operation: 4.93 miles.**
- **Mean estimate of how much of South Carolina's economy is derived from farming: 42.87%.**
- **Slightly under one-fifth of the respondents (17.3%) said they were members of at least one<sup>3</sup> farming or environmental group. Of these respondents, membership included:**
  - **Farm Groups: 54.5%.**
  - **Environmental Groups: 20.6%.**
  - **Church or Religious (did not differentiate farm/environmental): 19.8%**

<sup>3</sup> Respondents could list up to 4 organizations.

***Brief Discussion of the Sample.*** As previously indicated, the sample was drawn in order to ensure that the more rural counties were included, given the purposes of the study. As noted in Figure 1, 46% of the respondents said that they currently live in a small town, and 8.6% indicated that they live in a large town or city. The Census definition of urban population includes “...places of 2,500 outside Urbanized areas.” (South Carolina Statistical Abstract '97, p. 319). Thus, some small towns in South Carolina are urban.

If one were to combine the responses “Large Town/City” and “Small Town” to reclass together as one variable, “Urban,” the figure would be 54.6% of the sample. If one were to combine the responses for “Farm” and “Rural Nonfarm” in the survey to create the category “Rural,” the figure would be 45.4% rural. According to the most recent Census report, the population in South Carolina is 54.6% urban and 45.4% rural (South Carolina Statistical Abstract' 97, p 348). This survey accomplished the goal of ensuring representation of the state’s more rural counties. Given the error margin of the survey, it is safe to say that both the more rural and the more urban residents were adequately represented in this survey.<sup>4</sup>

That there seemed to be a shift from more urban and farm to more rural nonfarm residences among the respondents cannot be addressed adequately in this study. It is quite possible, however, that the shift is at least a function of the aging of the farm population (retiring, moving to rural nonfarm residences) and the trend toward seeking small towns and rural nonfarm residences among younger and middle-aged people (see, e.g., Dubbink, 1984; Wimberly, 1987; Johnston & Beale, 1994).

That women were slightly oversampled is typical of telephone surveys. Women tend to answer the phones more at home, and tend to agree to participate in a survey more than men do. Whites were slightly oversampled in this survey (78.7% in this sample versus 69.0% in the population). This too is probably a function of greater comfort with telephone surveys.

The educational profile of the respondents closely resembles the educational attainments of adults in South Carolina, with a slight underrepresentation of less educated adults and a slight overrepresentation of more educated adults.<sup>5</sup>

---

<sup>4</sup> The most important point here is that there was at least adequate representation of people most likely to be affected by animal agriculture. Problems with how the Census defines “rural” and “urban” and how critiques of surveys envision rural versus urban places are not really addressable in this report. It is recognized that respondents self categorized.

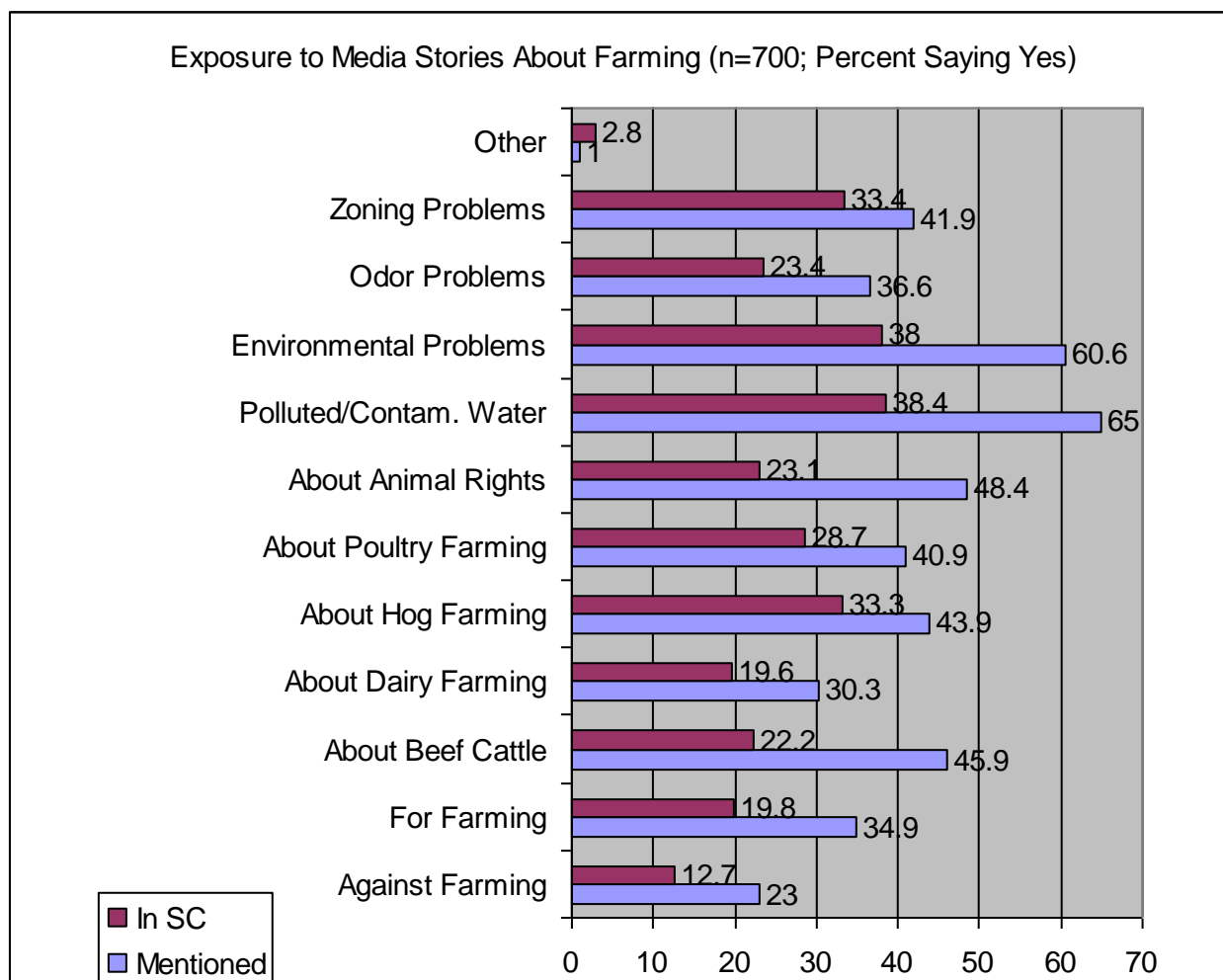
<sup>5</sup> This pattern is not unusual in survey research. Less educated people tend to be less inclined to participate in surveys while more educated people tend to be more inclined. It should be noted that the bi-modal split between High School Diploma and Some College/Technical Training in this survey (53.5% of the respondents) is similar to the Census figures for adults in South Carolina (48.5%).

## FINDINGS: GENERAL DESCRIPTIVES

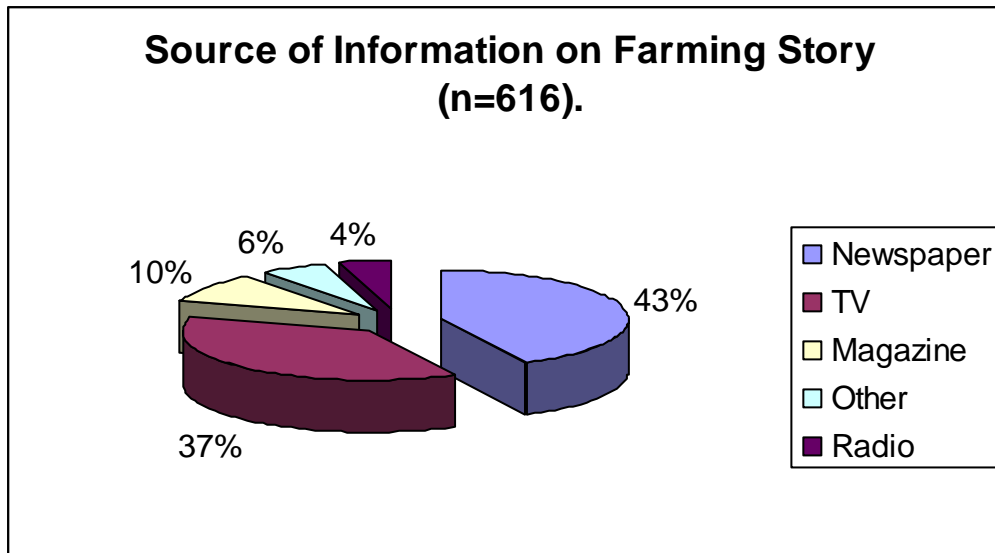
### Exposure to Media Stories

Figure 5 shows whether respondents had been recently exposed to stories about agriculture, in other states (“mentioned”) or specifically in South Carolina. Figure 6 shows the primary sources of information about these stories.

Figure 5. Recent Exposure to Stories About Farming.



**Figure 6. Source of Information on Farming Story.**



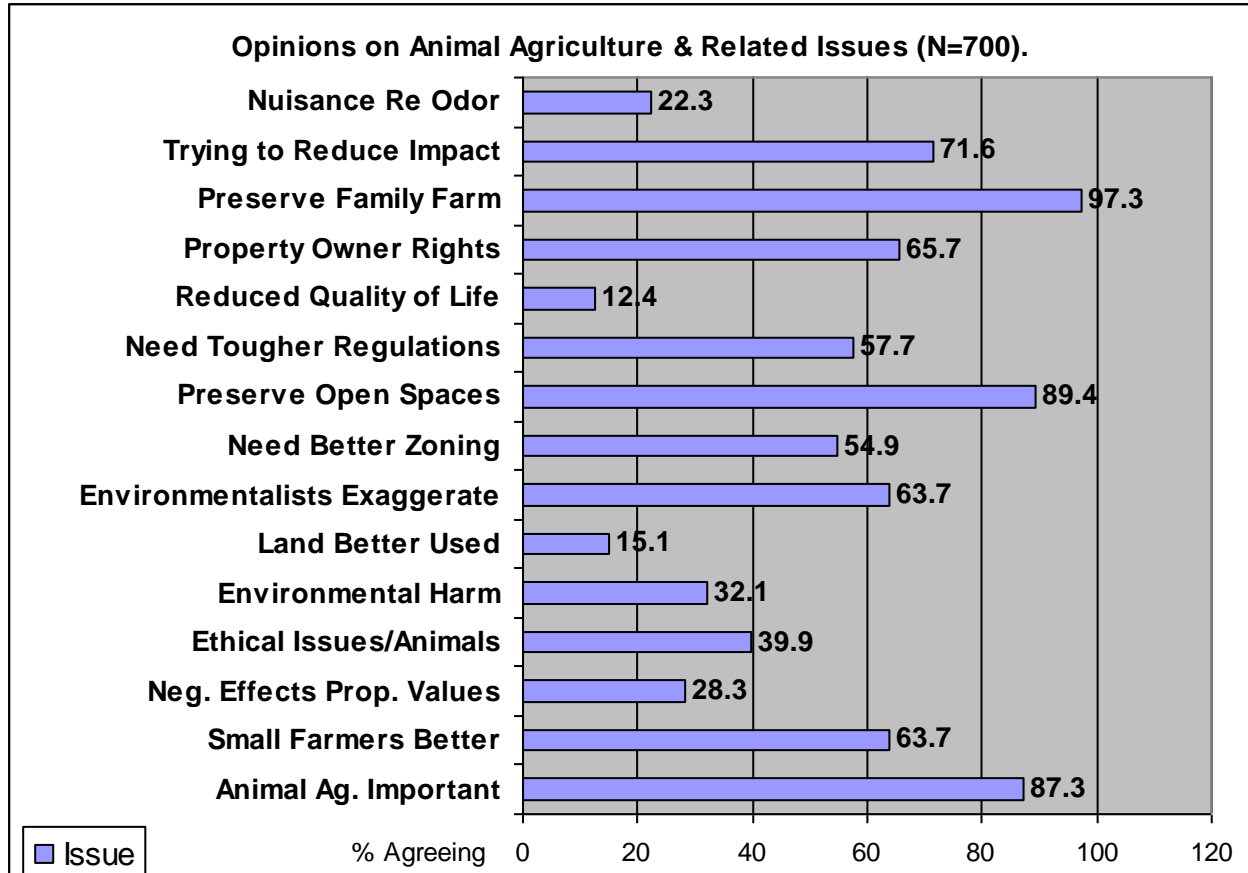
### **Opinions About Animal Agriculture**

Respondents were asked questions pertaining to animal agriculture (see list below). A chart (Figure 7) depicts the percentage of respondents agreeing with each statement.

#### **Statements read to respondents**

- “Animal agriculture is a real nuisance because of the odor.”
- “People involved with animal agriculture are working hard to reduce their operations’ impact on the environment.”
- “It is important to this country that family farms be preserved.”
- “Property owners have the right to do with their property what they wish.”
- “Animal agriculture has reduced the quality of life for me.”
- “We need tougher environmental regulations around animal operations.”
- “The preservation of open spaces is important to me.”
- “We need better zoning to separate animal operations and residential areas.”
- “Environmentalists exaggerate problems associated with animal agriculture.”
- “Land used for animal operations could be used for better purposes, such as residential, manufacturing or business.”
- “Animal agriculture causes environmental harm, for example, water and soil pollution.”
- “Animal agriculture raises serious ethical questions about the treatment of animals.”
- “Animal agriculture has negative effects on property values.”
- “Small farmers who have livestock do a much better job of protecting the environment than do the large or corporate operators.”
- “Animal agriculture is important to the economy in this county.”

Figure 7. Agreement on Statements About Animal Agriculture.



***Summary of Opinions About Animal Agriculture***

- Respondents usually tended to Agree or Disagree, rather than say “Don’t Know/NoOpinion.”
- Most respondents agreed that: family farm and open space preservation were important; and that animal agriculture is economically important in their respective counties.
- Well over one-half agreed that: operators are trying to reduce animal agriculture’s environmental impact; environmentalists exaggerate animal agriculture’s impact on the environment; small operators are doing a better job of protecting the environment; property owners have the right to do as they see fit with their property; tougher environmental regulations are needed regarding animal agriculture; and, better zoning is needed to separate animal agriculture operations from residential and other activities
- About one-third of the respondents agreed that animal agriculture causes environmental harm, while only 15.1% said the land could be used for better purposes.
- Only 12.4% agreed that animal agriculture had reduced their quality of life.
- Over one-third (39.9%) of the respondents agreed that animal agriculture raises serious ethical concerns regarding the treatment of animals.

## The Odor Issue

Respondents were asked if they ever had been bothered by the odor of animal agriculture. Of the 700 respondents, almost three-fourths (72.4%) said no (Figure 8). Of those who had been bothered by the odor, 44.0% identified the source of the odor as coming from hog operations, 26.9% from poultry operations, and 23.8% said the odor came from cattle operations. A few of the respondents (5.2%) said the source was “other” (Figure 9).

Figure 8. Ever Experienced Being Bothered By Animal Agriculture Odor.

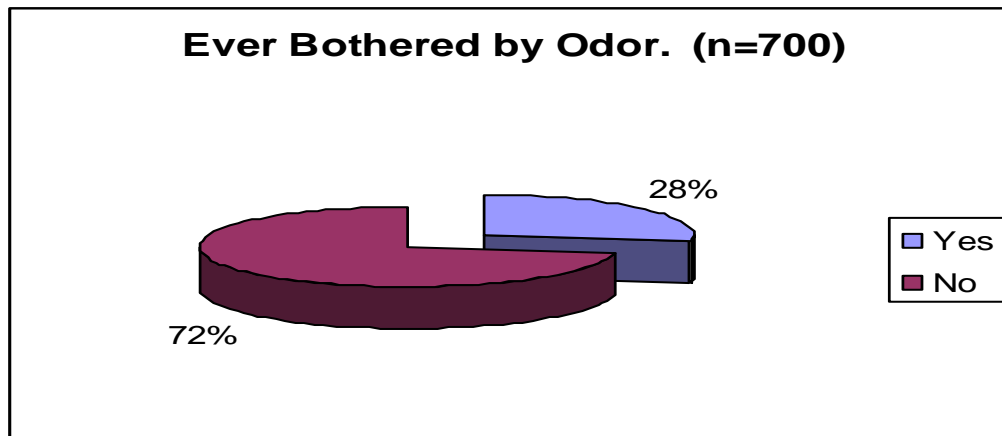
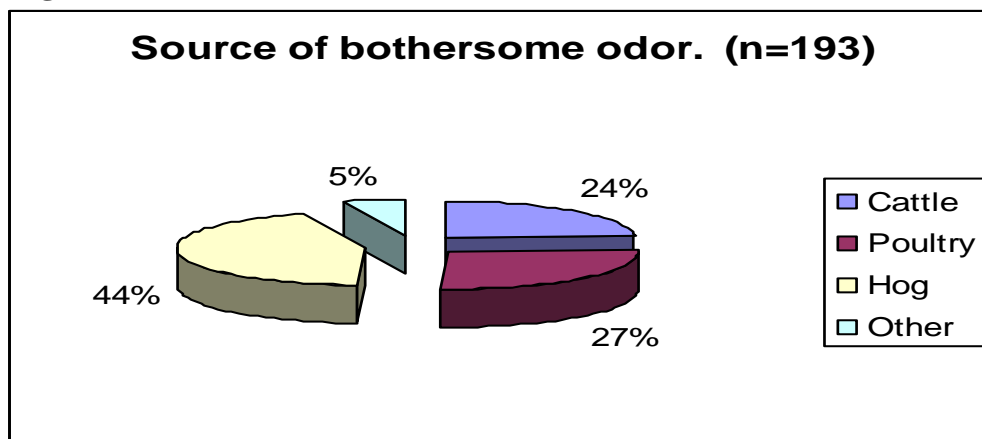


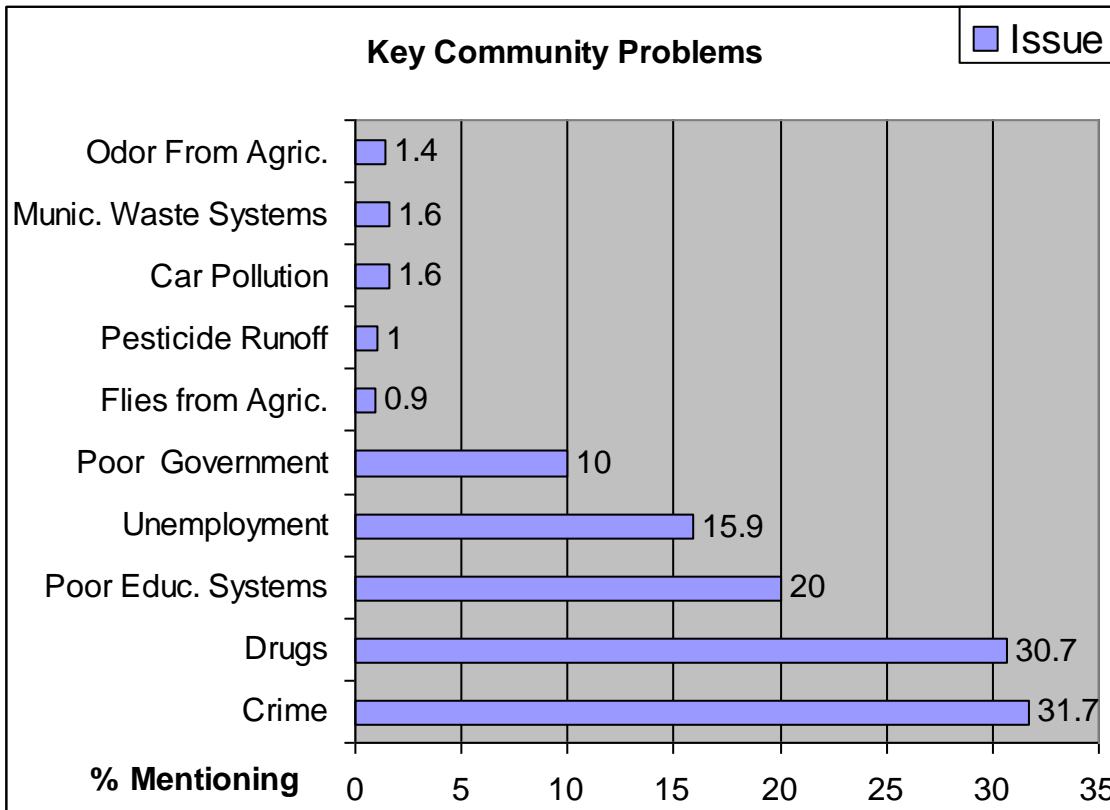
Figure 9. Source of Bothersome Odor.



## Key Community Problems

Respondents were asked to identify up to three main problems facing their communities. Figure 10 depicts the five most and least frequently mentioned problems. It should be noted that “other” was anticipated in this survey. Not precoded for the computer but mentioned by some respondents were problems such as dogs running loose, family breakdown, race relations, and water drainage problems. Overall, the respondents seemed very concerned about social problems in their communities. But, environmental issues did not appear to be high priorities.

**Figure 10. Key Community Problems (n=700).**

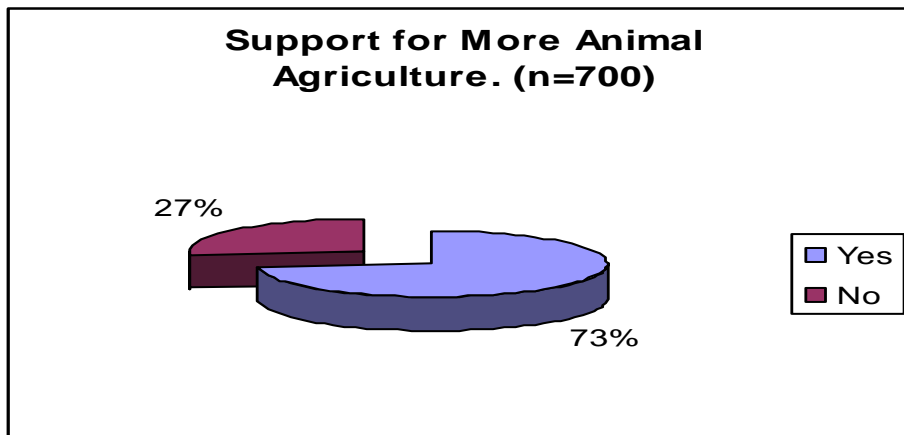


Percents exceed 100 due to multiple responses.

**Support for Additional Animal Agriculture**

Respondents were asked if they would support additional animal agriculture in their respective counties. Nearly three-fourths (73.3%) of the respondents said yes (Figure 11).

**Figure 11. Support for Additional Animal Agriculture (n=700).**

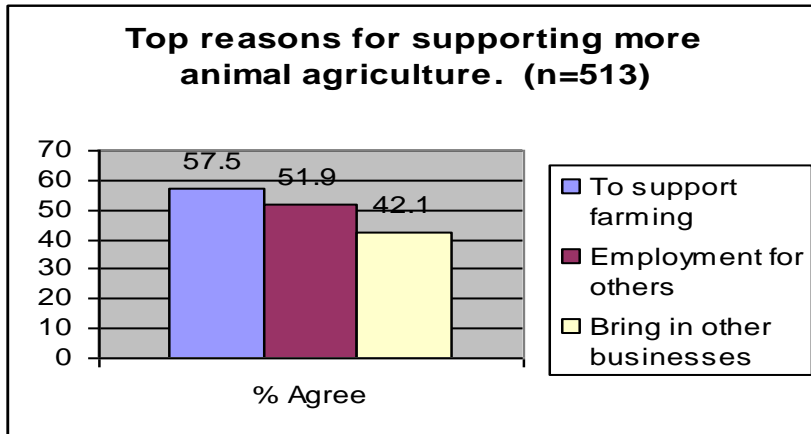


Respondents then were asked to explain why they would or would not support additional agriculture. Interviewers coded in the first three responses provided. Of the 513

respondents who said that they would support additional animal agriculture, only 3.1% provided no reasons.

- Main reasons for supporting additional animal agriculture (Figure 12) were: to support farming, to provide employment for others, and to bring in other businesses.
- More open-ended responses for support included the idea that it's “good for the children,” that it “provides food,” and “I do not like city life.”

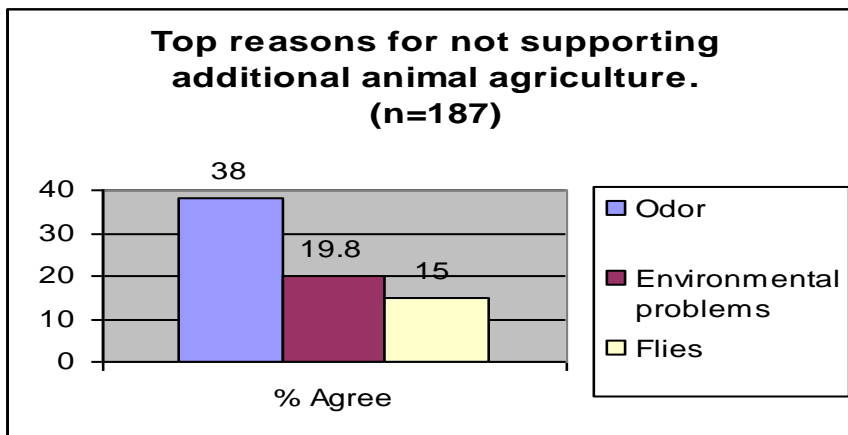
Figure 12. Reasons to Support More Animal Agriculture.



Of those saying they would not support additional animal agriculture, 25.1% gave no reason.

- The main reasons for not supporting additional animal agriculture were odor, environmental problems, and flies (Figure 13).
- More open-ended responses included the idea that there already was enough animal agriculture, that the county is too populated, and that the county is too small.

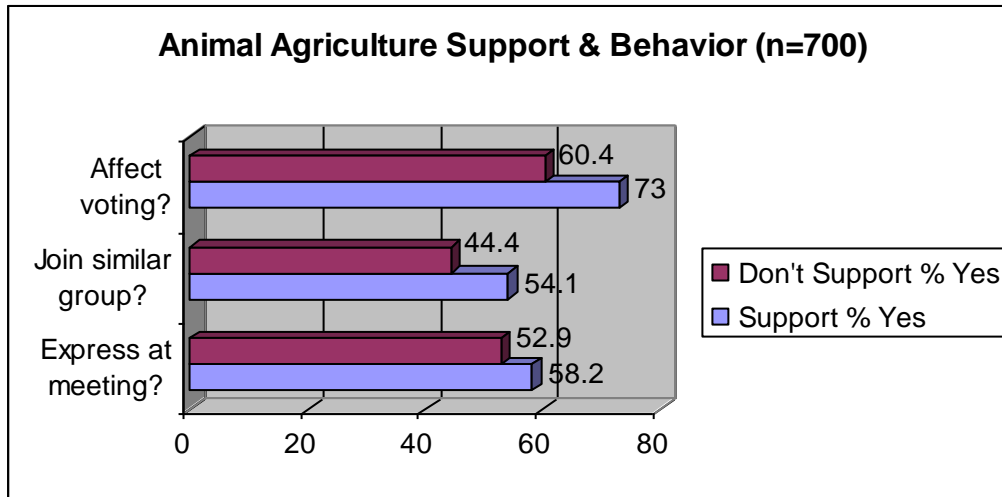
Figure 13. Reasons for Not Supporting Additional Animal Agriculture (n=187).



Respondents then were asked if their decision about supporting or not supporting additional animal agriculture was strong enough that it could affect their voting, whether they would join a group with similar opinions, and whether they would express their opinions at a public meeting. The responses are displayed in Figure 14.

- Those who would support additional animal agriculture are more likely to translate their support into some kind of action.
- Those who would support additional animal agriculture were significantly more likely than those who would not to vote their support, and to join other groups with similar views.

**Figure 14. Support/Non-Support of Animal Agriculture and Behavior.**

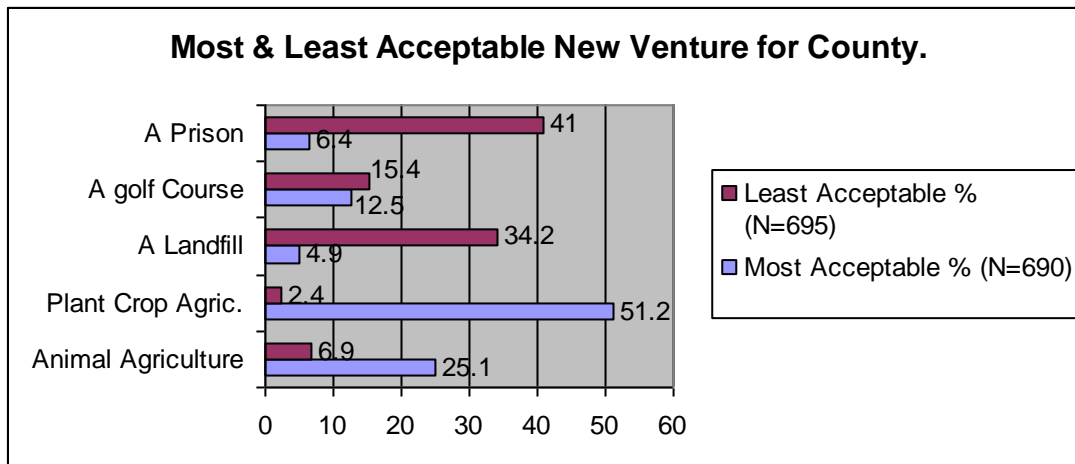


**Most and Least Acceptable New Venture for the County**

Respondents were asked to “vote” for the most and least acceptable new venture for their respective counties. The choices were animal agriculture, plant crop agriculture; a landfill; a golf course, and, a prison. The results are depicted in Figure 15, below.

- The respondents selected plant crop agriculture as most acceptable (51.2%), with animal agriculture (25.1%) coming in second place.
- The least acceptable ventures were a prison (41.0%) and a landfill (34.2%).

**Figure 15. The Most and Least Acceptable New Ventures for the County.**

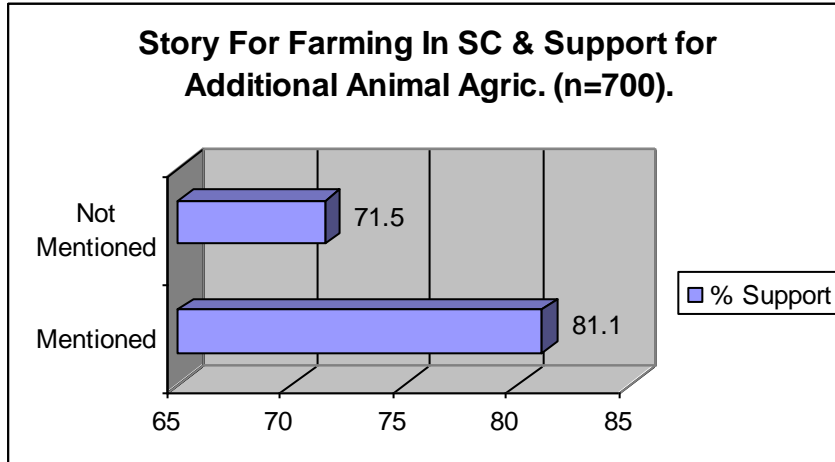


## FINDINGS: SIGNIFICANT DIFFERENCES AND CORRELATIONS<sup>6</sup>

### Media Exposure and Opinions, Support for Additional Animal Agriculture

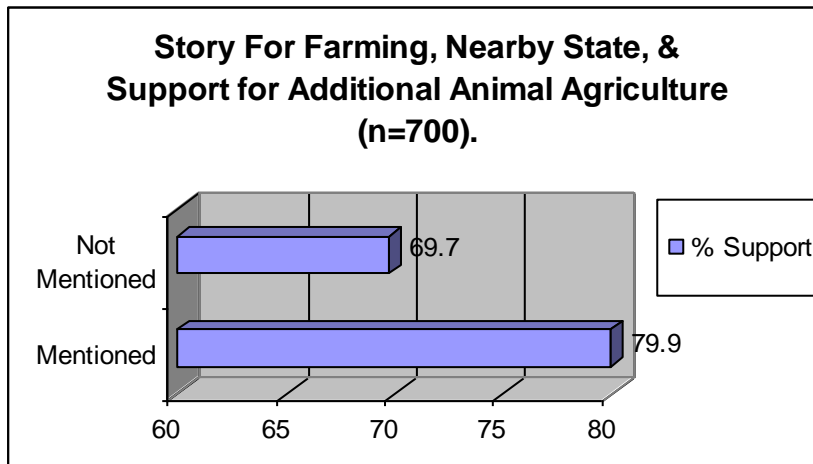
- Those who recalled a story in support of farming in South Carolina also supported animal agriculture in their counties (81.1%). There was less support among those who did not recall hearing such a story (71.5%; Figure 16, below).

Figure 16. Hearing a Story For Farming In South Carolina, and Supporting Animal Agriculture.



- Those hearing a story for farming in a nearby state were significantly more likely to say that they would support additional animal agriculture (Figure 17).

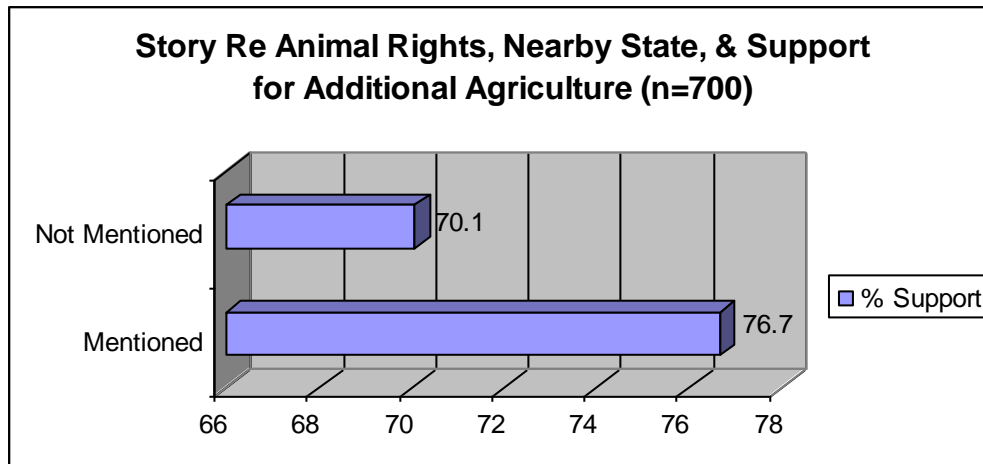
Figure 17. Favorable Farming Story, Nearby State, and Support for Animal Agriculture.



The only other significant relationship between media stories and support for additional animal agriculture occurred with stories about animal rights in a nearby state. As depicted in Figure 18, 76.7% of those who recalled such a story also supported additional animal agriculture, while 70.1% of those who did not mention such a story did.

<sup>6</sup> Write to Dr. Vander Mey for exact figures.

**Figure 18. Story About Animal Rights, Nearby State, and Support for Animal Agriculture.**



In terms of mentioning a particular type of story related to animal agriculture and any significant relationship with a particular opinion statement, there were few statistically significant findings. These were:

- Those who had heard a story about odor problems in a nearby state were more likely to agree that animal agriculture is a nuisance because of odor;
- Those who recalled hearing a story about polluted water in a nearby state were more likely to agree that animal agriculture causes environmental harm;
- Those who recalled hearing a story about animal treatment – in nearby states and in South Carolina – were more likely to agree that animal agriculture raises serious ethical concerns regarding the treatment of animals.

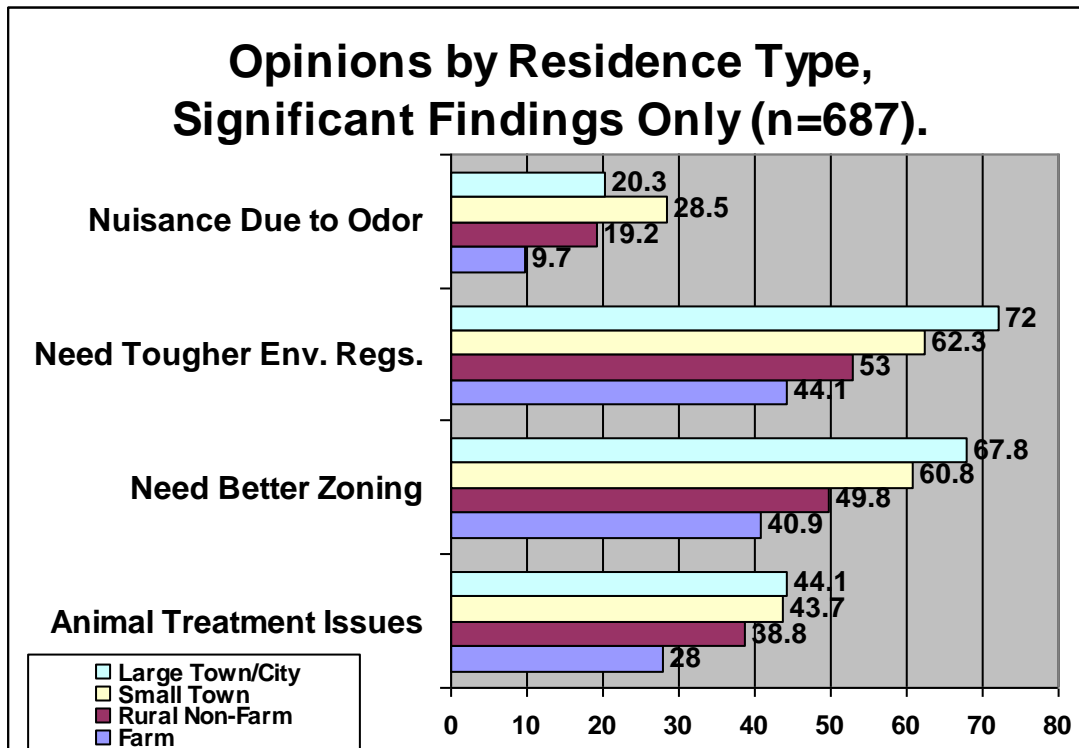
#### **Residence Type, Opinions About and Support for Animal Agriculture**

•It should be noted that in this sample, significantly more Blacks (71.2%) currently resided in small towns or large towns/cities, while more Whites (50.1%) lived on farms or in rural non-farm settings.

Statistical tests were conducted to see if any relationship existed between residence type (i.e., farm, rural non-farm, small town, large town/city) and attitudes about and support for animal agriculture.

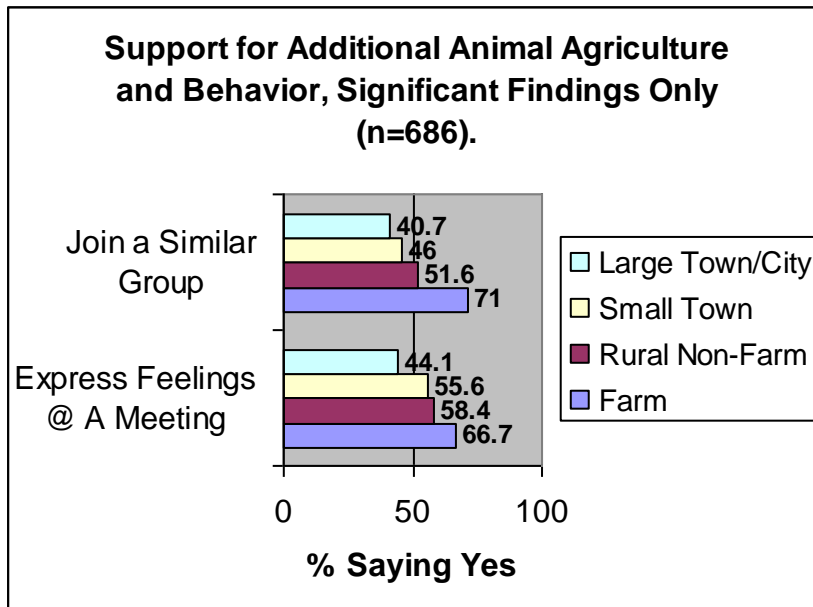
- There was no significant relationship between residence type and support for additional animal agriculture.
- There were relatively few significant findings overall (Figure 19).
- People residing in a large town/city were most likely to agree that animal agricultural raises serious ethical issues about the treatment of animals, and that better zoning and tougher environmental regulations are needed.
- Small town residents were most likely to agree that animal agriculture is a real nuisance because of odor.

Figure 19. Opinions by Residence Type.



- Farm residents were most likely to agree that their support of animal agriculture would be reflected in their voting and in expressing their views at public meetings (Figure 20).

Figure 20. Support for Additional Animal Agriculture and Behavior, By Residence Type.



**Rural and Urban Views, Significant Findings Only**

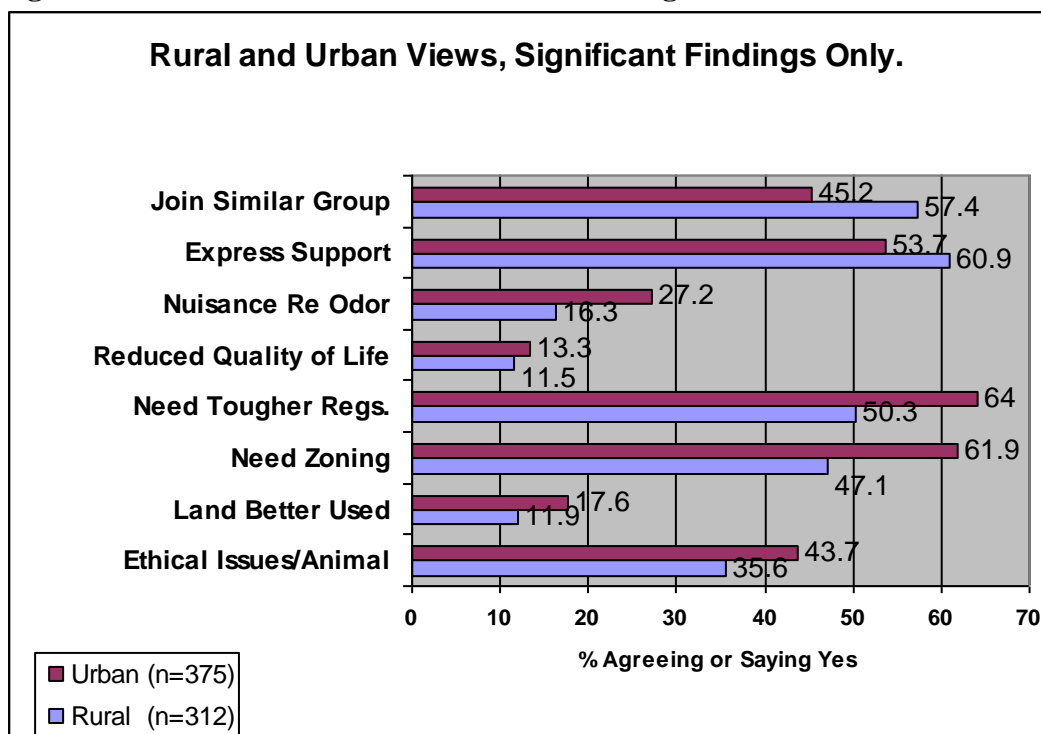
•For purposes of analysis, the residence categories of “farm” and “rural, non-farm” were combined to create the category “rural.”

- Residence types “small town” and “large town/city” were combined to create the category “urban.”
- In this sample, using this categorization, 45.4% of the respondents were “rural” and 54.6% were “urban.” (See previous discussion of the sample, page 3.)

Figure 21 depicts only the findings that were significant by the rural-urban classification.

- Rural residents are more likely to express their support of animal agriculture at public meetings and to join groups with similar views about additional animal agriculture.
- Urban residents are more likely to agree that animal agriculture is a nuisance because of odor, that it raises ethical issues, that it has reduced their quality of life, that the land could be better used, and that zoning and tougher environmental regulations are needed.

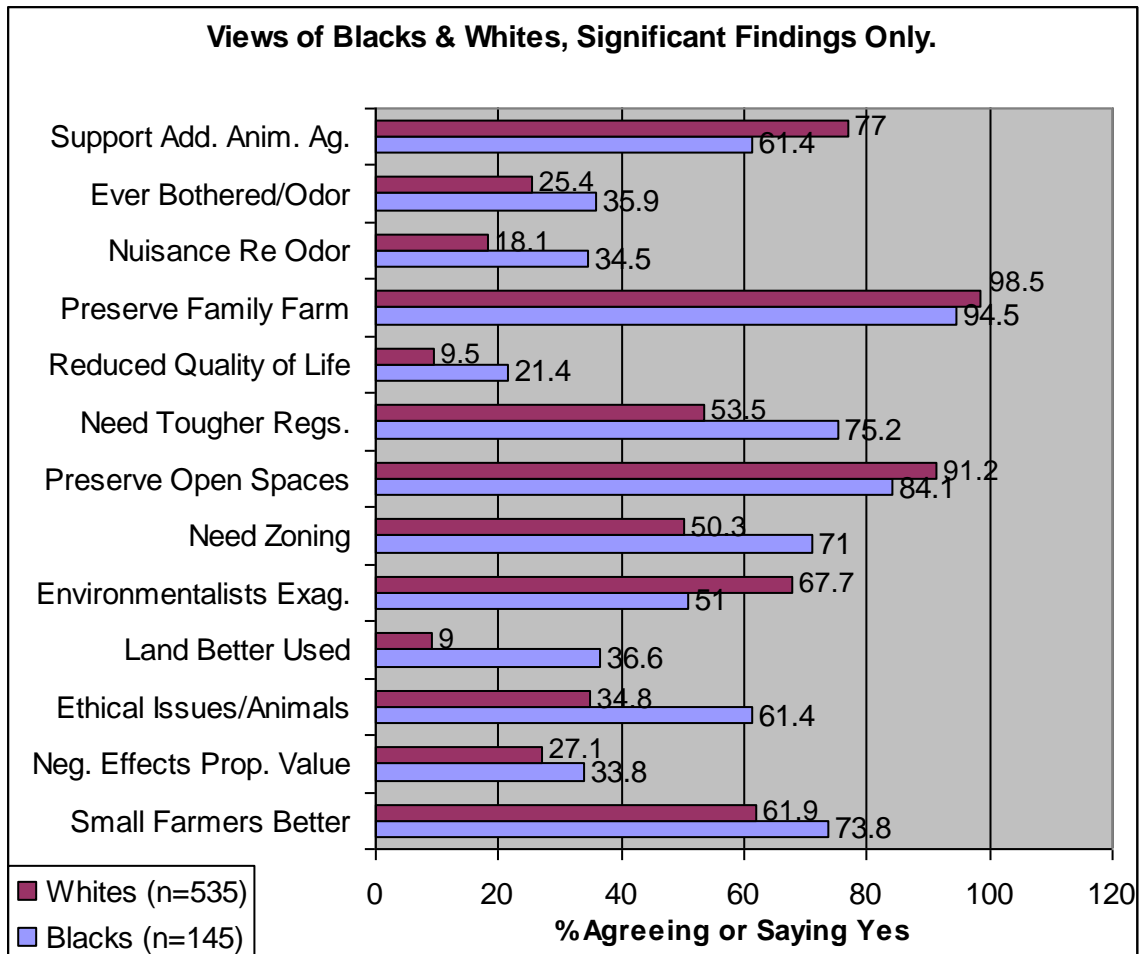
Figure 21. Rural and Urban Views on Animal Agriculture.



### Views of Blacks and Whites, Significant Findings Only

- There were a number of significant differences in opinion by race (Figure 22).
- Blacks were more likely to agree that animal agriculture is a real nuisance because of odor, that they have been bothered by the odor, that tougher regulations and zoning are needed, that animal agriculture negatively affects property values, that animal agriculture has reduced their quality of life, and that animal agriculture raises serious ethical concerns.
- Whites were more likely to agree that they would support additional animal agriculture, that preservation of open spaces and the family farm are important, and that environmentalists exaggerate the problems associated with animal agriculture.

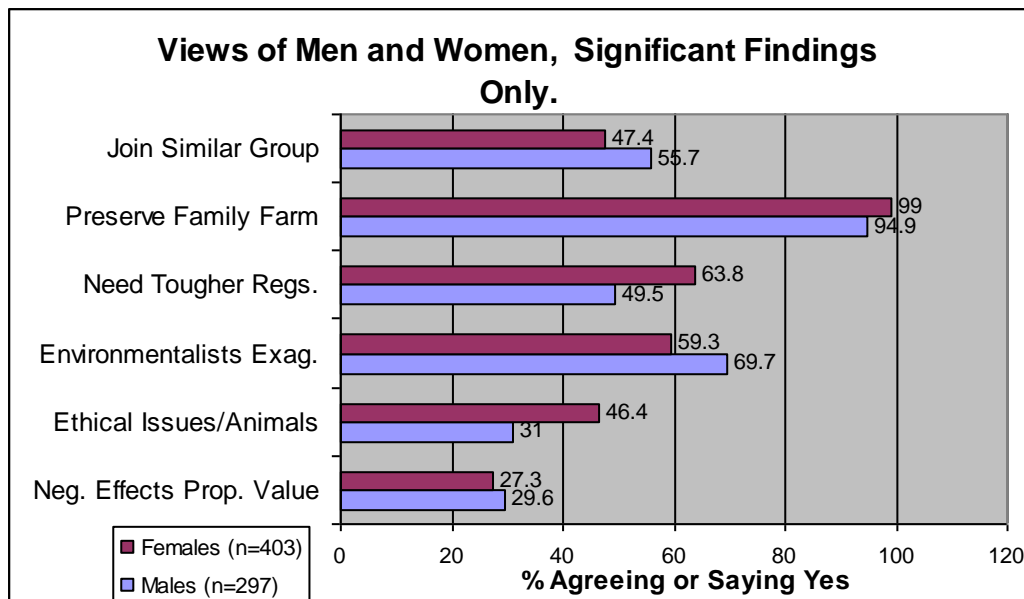
**Figure 22. Views of Blacks and Whites, Significant Findings Only.**



**Significant Findings by Sex**

- **There were few statistically significant differences by sex (Figure 23).**
- **More women agreed about the importance of preserving the family farm, that tougher environmental regulations are needed and that animal agriculture raises ethical concerns.**
- **More men agreed that they would join a group with similar views about additional animal agriculture, that environmentalists exaggerate, and that animal agriculture has negative effects on property values.**

**Figure 23. Views by Sex, Significant Findings Only.**



**Significant Correlations by Selected Variables**

- **Very few respondents indicated what percent of their income was derived from farming (n=74). Among those who did so, there was only one significant correlation. This was between percent farming income and agreeing that animal agriculture has reduced their quality of life. That is, the greater the percent income derived from farming, the more likely the respondents were to agree that agriculture had reduced their quality of life.**
- **The greater the distance from animal agriculture the more likely respondents were to agree that: zoning is needed; tougher regulations are needed; and animal agriculture is a real nuisance because of the odor.**
- **The greater the distance from animal agriculture, the less likely respondents were to support additional animal agriculture.**
- **The higher the level of education, the less likely respondents were to agree that: small operators do a better job of protecting the environment; animal agriculture raises serious ethical concerns regarding the treatment of animals; that land being used for animal agriculture could be better used for other purposes; their quality of life had been reduced by animal agriculture; property owners have the right to do what they want with their property; and, animal agriculture is a real nuisance because of odor.**
- **The older the respondent, they more likely there were to agree that: property owners have the right to do with their property as they wish; tougher regulations are needed around animal agriculture; the family farm should be preserved; and, people are working hard to reduce the environmental impacts of animal agriculture.**

## **CONCLUSIONS AND IMPLICATIONS OF THE CURRENT STUDY**

**Based upon this study, it appears that animal agriculture has support in South Carolina. This support is strongest among Whites, those who haven't been bothered by the odor of animal agriculture, and those living closer to animal operations.**

**At the same time that there is support for animal agriculture and optimism that people are doing their best to reduced animal agriculture's environmental impacts, there are those who think more zoning and tougher environmental regulations are needed. In addition, a relatively large minority of the respondents agreed that animal agriculture raises serious ethical concerns about the treatment of animals. Further, when choosing between five alternatives as new ventures for their counties, about twice as many people voted for plant crop agriculture as voted for animal agriculture.**

**Newspaper and television were the primary sources of stories about animal agriculture among the respondents in this sample. Overall, however, it appears that while exposure to stories was related to a few opinions (e.g., odor nuisance, environmental harm, animal treatment), the exposure was relatively unrelated to support for additional animal agriculture.**

**This study is limited to a random sample of 700 adult South Carolinians. It entailed an oversampling of the more rural counties in the state. The error margin is plus or minus four percentage points. Within these limitations, the findings suggest that while there is support for family farming and for animal agriculture in particular in the state, the opinions regarding such issues as zoning, environmental regulations, and the ethical treatment of animals are sufficient enough to warrant further exploration.**

## REFERENCES

- AIF. Animal Industry Foundation. "How to support AIF." <http://www.aif.org/>
- Animal Rights Resource Site. <http://www.envirolink.org/arrs/index.html>
- Babbie, E. 1992. The Practice of Social Research. Sixth edition. Belmont, CA: Wadsworth Publishing Company.
- Barth, C. L. and S. W. Melvin. 1984. "Odor." Chapter XII in J. M. Sweeten and F. J. Humenik, eds., Agriculture and the Environment. St. Joseph, MI: American Society of Agricultural Engineers.
- Buttel, F. H., O. F. Larson and G. W. Gillespie. 1990. The Sociology of Agriculture. Westport, Conn: Greenwood Press, Inc.
- Christensen, L. A. and K. R. Krause. 1993. "Environmental concerns associated with livestock, dairy, and poultry production." Issues for the 1990s: Environment. US Dept. of Agriculture. Economic Research Service. Agriculture Information Bulletin Number 664-64. November.
- Curtis, S. E. 1987. "Public mood and how we respond." Journal of Dairy Science. 70: 2708-2710.
- Danbom, D. B. 1997. "Past visions of American agriculture." Pp. 3-16 in W. Lockeretz, ed., Visions of American Agriculture. Ames: Iowa State University Press.
- Doering, O. 1995. "Public perceptions and policy imperatives: Animal agriculture and the environment." ADSA Foundation Lecture. Journal of Dairy Science. 78: 469-475.
- Dowd, A. R. 1994. "Environmentalists are on the run." Fortune. September 19:91-92+.
- Dubbink, D. 1984. "I'll have my town medium rural, please." American Planning Association Journal. 50: 406.
- Furuseth, O. J. 1987. "Public attitudes toward local farmland protection programs." Growth & Change. 18: 49-61.
- Harris, C. K., J. Gilbert and J. McAllister. 1986. "The changing structure of farmland ownership in the South." Pp. 301-344 in J. J. Molnar, ed., Agricultural Change: Consequences for Southern Farms and Rural Communities. Boulder, CO: Westview Press.
- Hoban, T. J. Molnar, M. McMillan and J. D. Parrish. 1998. "Industrialization of agriculture: Case study lessons for the Natural Resource Conservation Service." Technical Report. USDA Natural Resources Conservation Service, Science and Technology Consortium, Social Sciences Institute. Release 6.0.4.
- Harmon, B. G. "FASFAS Issues Teams." <http://www.arpas.uiuc.edu/FASFAS/issueteam.html>

- Johnston, K. M. and C. L. Beale. 1994. "The recent revival of widespread population growth in nonmetropolitan areas of the United States." Rural Sociology. 59: 655-67.
- Leonard, W. M. II. 1976. Basic Social Statistics. St. Paul: West Publishing Company.
- Molnar, J. J. and P. A. Duffy. 1988. "Public perceptions of how farmers treat the soil." Journal of Soil and Water Conservation. 43: 182-185.
- Molnar, J. J. and L. S. Wu. 1988. "Animal waste disposal becomes a public issue." Alabama Agricultural Research Station. Highlights of Agricultural Research. 35: 6.
- Moses, L. 1996. "Media's perception makes it a reality." Meeting Report. American Vegetable Grower. March: 9.
- News & Observer, The. 1996. "Activists push for strict rules on livestock farms." The Associated Press. Copyright by The News and Observer Publishing Company. Raleigh, North Carolina. [http://www.nando.net/newsroom/nao/nc/051796/nc2\\_11851.html](http://www.nando.net/newsroom/nao/nc/051796/nc2_11851.html)
- PETA. "Veal: A cruel meal." People for the Ethical Treatment of Animals. <http://www.livelinks.com/sumeria/anim/veal.html>
- Phillips, J. and D. Deterling. 1998. "Animal ag under ATTACK!" May. <http://progressivefarmer.com/indepth/0598/animalag/html>
- R. D. Reynells and B. R. Eastwood, eds., Animal Welfare Issues Compendium: A Collection of 14 Discussion Papers. Washington, DC: US Department of Agriculture, Cooperative State Research, Education and Extension Service, Plant and Animal Production, Protection and Processing. September.
- South Carolina Agricultural Statistical Service. 1998. "South Carolina farm numbers unchanged." February 12. Columbia, SC. Press release. Netscape.
- South Carolina State Budget and Control Board. 1997. South Carolina Statistical Abstract 1997. Office of Research and Statistics, Rembert C. Dennis Building, Columbia, South Carolina.
- Thompson, P. B. 1997. "Agrarian values: Their future place in U.S. agriculture." Pp. 17-30 in W. Lockeretz, ed., Visions of American Agriculture. Ames: Iowa State University Press.
- Wimberley, R. C. 1987. "Dimensions of US agristructure: 1969-1982." Rural Sociology. 52: 445-461.
- Zinsmeister, K. 1993. "The environmentalist assault on agriculture." The Public Interest. 1: 90-98.