



AgEcon SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

EDUCATIONAL FARM TOUR INCREASES CONSUMER CONFIDENCE IN MODERN FOOD PRODUCTION

Sub theme: Knowledge & Information

Eric Richer, Patrice Powers-Barker, Melissa Welker, Jill Stechschulte and Amy Stone

Ohio State University, Toledo, Ohio, USA.

Abstract:

In 2015, an educational farm tour was held in Ohio, USA with 3,009 participants to promote consumer confidence in modern food production. Exit surveys (n=578) indicated that first-time visitors' (60% of those surveyed) level of trust in modern food production had a mean of 3.68 before and 4.44 after the tour with an increase of .76 (5-point scale; 1 = very low, 5 = very high). Transparency on the farm was a key factor in their increased trust. This study encourages agricultural communities that well planned educational farm tours can have meaningful impact on consumer confidence in modern food production.

Keywords: *educational farm tour, local foods, consumer confidence in agriculture, modern food production, transparency in food production*

Introduction

“Serious gaps in communications and understanding of the food system exist among the public, the media, and food and agricultural stakeholders” (Thompson, Radhakrishna, Maretzki, & Inciong, 2006). The paradox of modern agriculture is that most Americans know very little about how food is produced yet, at the same time, there is increased consumer interest in local foods (Lang, 2013). In the United States of America there has been an upsurge in farmers’ markets, Community Supported Agriculture (CSA), other direct-to-consumer marketing of farm products, farm-to-school programs and local foods featured at restaurants and harvest dinners (Timmons, Quingbin, & Lass, 2008; Wise et al., 2013). There has also been an increase in studies on consumer perceptions, attitudes and motivation for purchasing local foods (Wise et al., 2013; Thilmany, 2015). “Consumers question food practices and demand greater transparency in the supply chain” (Feldmann & Hamm, 2015). Some of the current public concerns include: animal welfare, local economy, environmental impact (Thilmany, Deselnicu, & Costranigo, 2013), food safety (Perez & Howard, 2007), sustainability, social responsibility (Wise et al., 2013), farm size (Whittington & Warner, 2006) and “emerging technologies, including but not limited to genetically modified food

crops” (Lang, 2013). One study by The Center for Food Integrity (2015) shows that consumers expect food manufacturers to be most responsible for transparency in major aspects of food production, compared to those who serve other roles in the food system. In the area of environmental impact, consumers expected food manufacturers, as well as farmers, to be most responsible for transparency.

The state of Ohio, USA has many opportunities for urban and rural interactions (Whittington & Warner, 2006). Fulton County, a rural county in Northwest Ohio is located in the Western Lake Erie Basin with water ultimately draining into Lake Erie at the urban center of Toledo, Ohio. Algal blooms in Lake Erie have raised many public concerns, including but not limited to production agriculture and modern farming practices. Michael Martin (2016) posed the question: “How do Extension professionals work with people who have polarized agricultural values while respecting those values, not disrespecting the values of any group, and providing unbiased information?”. In an effort to bridge the disconnect between consumers and their understanding and trust of the food system, a Northwest Ohio team of Cooperative Extension educators from multiple program areas hosted a Breakfast on the Farm (BOTF) event to engage and educate the general public about modern farming, local foods and animal management practices. In addition, the public had the opportunity to meet the farm families who work hard to produce a safe, wholesome food supply for Ohio communities and the world.

The purpose of the study was to discover whether an educational farm tour would increase consumer confidence in environmental stewardship, animal care, food safety and modern food production. Specifically, we wanted to learn whether an educational farm tour would attract people from the non-farming community and/or those with concerns about modern farming practices. We also hoped to learn whether the farm tour would increase attendees’ trust in five key areas including the ways farmers care for the environment, protect water quality, care for food-producing animals, safe-guard milk and overall follow appropriate modern food production practices.

Study Description

Collaborative Community Effort

The Fulton County Ohio Breakfast on the Farm (BOTF) event was modeled after the work of Michigan State University <http://www.breakfastonthefarm.com>. Partners on the Steering Committee for the Ohio event included Ohio State University (OSU) Extension, County Soil and Water Conservation District (SWCD), Ohio Farm Bureau, Board of Fulton County Commissioners, agency advisory committee members, local farmers and businesses. In addition to 30 people on the Steering Committee, over 300 volunteers and over 60 sponsors helped support the one-day event.

Host Farm

Sandland Farms Inc., of Swanton, Ohio, is a working dairy farm owned and operated for several generations by the Brehm family. The host farm family shared their farming practices related to animal care, housing and nutrition; milk handling and food safety; and stewardship of the land including water quality protection, manure management and soil health. Research has suggested that farm tours can be an effective way to build community relations especially when representatives of the farm are friendly and active in the community (Whittington & Warner, 2006).

Preparation and Planning

Key elements, noted for planning a successful farm tour have included: beginning the planning process early, having teams and members understand their responsibilities and careful logistical planning for the tour (Maddy, Gerber, & Hillger, 2015). Planning for the June BOTF event began the previous October and included 9 monthly planning meetings of the Steering Committee. Fifteen sub-committees were created. The group worked cooperatively to plan volunteer training at the farm to cover bio-security, safe food handling, speaking with the public and staffing the educational stations. In-kind and monetary sponsorships helped cover the cost of promotional materials, breakfast food and rented event supplies. The farm tour marketing included press releases, urban and rural direct mailings, television, radio and social media across Northwest Ohio. A website and Facebook page were used to interact with and educate the public about modern dairy farming in Fulton County, Ohio before, during and after the day.

Event

Breakfast on the Farm, a free, family friendly event welcomed both rural and urban visitors

and consisted of breakfast, farm tour with over seventeen educational stations including a wagon tour as well as the opportunity to converse with local farmers and the host farm family. Key elected officials, from county commissioners to area legislators greeted attendees and volunteered at stations during the event. OSU Extension educators and field specialists, agency technicians (SWCD, United States Department of Agriculture), farm vendors and other agricultural professionals led the 17 educational stations contained in the self-guided farm tour. Local commodity associations and community partners staffed a large information tent. Youth station activities included cow milking, combine/tractor simulator, play pools filled with different grains and making Nitrogen-Phosphorus-Potassium (NPK) bracelets. In order to help consumers make the connection between modern farm production and their meals, food processors collaborated to serve locally produced food. For example, one breakfast option was yogurt processed from milk produced at Sandland Farms Inc.

Questions for Attendees

In order to discover whether an educational farm tour would increase consumer confidence in agricultural producers' environmental stewardship, animal care, and food safety practices as well as in modern food production overall, we asked four research questions:

RQ₁: Will the farm tour attract attendees who are unfamiliar with farming operations and who have concerns about modern farming practices?

RQ₂: Will attendees' trust in modern farming practices increase after attending the farm tour?

RQ₃: Will changes in level of trust be greater for first time attendees to a farm tour and/or those who have concerns about modern farming practices?

RQ₄: What elements within the farm tour contribute to participants' changes in trust for modern farming practices?

Methods

In order to assess the impact of the educational farm tour, adult participants over the age of 18 years old were asked to voluntarily complete a paper survey on-site as they exited the farm. OSU Extension staff and volunteers facilitated the distribution and collection of

surveys with the goal of receiving at least one survey per household. The survey included questions on basic demographics, attendance at prior farm tours, reasons for attending the event, levels of trust in modern agriculture practices, and elements of the farm visit that may have contributed to increases in levels of trust. Survey respondents completed a retrospective pre-and post-tour survey on their level of consumer trust in modern agriculture practices. Respondents used a Likert scale from 1-5 to indicate the importance of key elements of the farm visit that contributed to their increased trust, such as transparency, handling of cows treated with antibiotics, how animals are housed, how the environment is protected, and reading of educational signs.

Results and Discussion

Three thousand nine participants including 1,605 adults and 1,404 youth were in attendance for the event on June 13, 2015. The survey was completed by 578 adults with a 36% return rate for the adults in attendance. Survey responses showed participants represented 13 states and 20 Ohio counties.

Findings that addressed our first research question show that the farm tour was successful in attracting individuals and families who were unfamiliar with farming operations and who had concerns about modern farming practices. Frequencies computed on the relevant demographic variables indicated that for 60% of respondents this was their first visit (first-timers) to a working dairy farm in the past 20 years (Figure 1). For 90.2% it was their first time attending an educational farm tour like Breakfast on the Farm. For 69.3% of respondents this was the first time they had ever met a dairy farmer in person. Similarly, when asked to select reasons for attending the Breakfast on the Farm event, 87% percent of the respondents wanted to support agriculture, 28.7% had concerns about food production methods, 26.3% had concerns about environmental impacts of farming and 24.9% had concerns about animal welfare. Respondents had the option to check all the reasons that applied to them. Together, these findings indicate that the farm tour was successful in attracting community members who were first time visitors (60%) or had concerns about modern agricultural practices.

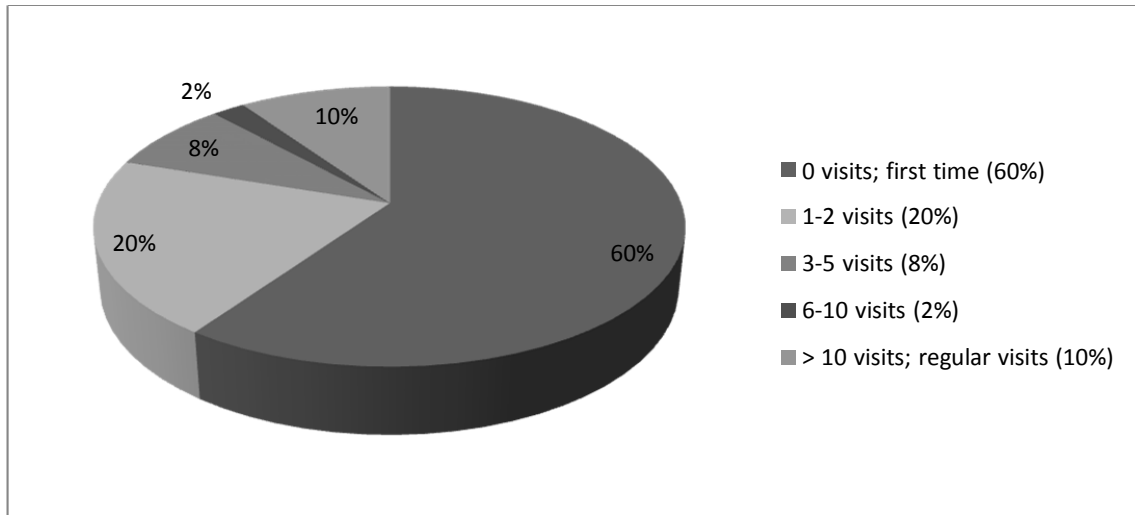


Figure 1. Visits to a dairy farm in the past 20 years.

Findings that addressed our second research question show that attending the farm tour increased trust in modern farming practices. Table 1 shows the average increase in trust in five key areas of modern farming operations for all participants versus first time visitors. Paired samples t-tests computed to compare participants' reported trust at the start and end of the farm tour show statistically significant increases in levels of trust for both respondent groups that dairy farmers will use best management practices to caring for the environment, protect water quality, care for food-producing animals, safe-guard milk and generally produce food with sound, yet modern production practices.

Table 1. Change in level of trust in five key areas for all respondents'.

Group	Difference between post-tour and pre-tour means ^a					N ^b
	Caring for Environment	Protecting water quality	Caring for Animals	Safe-guarding milk	Overall modern food production	
ALL respondents	0.525	0.574	0.532	0.509	0.628	523
First time visitors	0.579	0.683	0.645	0.607	0.766	309

^aAll mean differences significant $P < .0001$; 5-pt scale: 1 = very low trust; 5 = very high trust

^bN = Minimum number of respondents for the question

Respondents were asked what they felt their level of trust was on topics before and after the tour on a 5-point scale from 1 being very low to 5 being very high trust. Indicated increases in trust were computed by comparing pre-tour to post-tour ratings

of trust. As seen in the different scores in Table 2, First-time visitors' level of trust that dairy farmers will do the right thing with regard to caring for the environment had a mean of 4.06 before and 4.64 after resulting in an increase in trust of 0.579. First-time visitors' level of trust that dairy farmers will do the right thing with regard to protecting water quality for before, after and change, respectively, was 3.92, 4.60 and 0.683. First-time visitors' level of trust that dairy farmers will do the right thing with regard to caring for food producing animals for before, after and change, respectively, was 4.00, 4.64 and 0.645. First-time visitors' level of trust that dairy farmers will do the right thing with regard to safe-guarding milk for before, after and change, respectively, was 4.11, 4.71 and 0.607. First-time visitors' level of trust in modern food production for before, after and change, respectively, was 3.68, 4.44 and 0.766.

Table 2. Change in levels of trust in key areas and reasons for attending.

Reason for attending	Difference between post-tour and pre-tour means ^a					N ^b
	Caring for Environment	Protecting water quality	Caring for Animals	Safe-guarding milk	Overall modern food production	
To support agriculture	0.518	0.566	0.530	0.511	0.607	503
First-timers	0.579	0.683	0.645	0.607	0.766	303
Concern about environmental impact	0.729	0.804	0.732	0.662	0.918	140
Concern about food production methods	0.684	0.779	0.725	0.662	0.875	152
Concern for animal welfare	0.720	0.744	0.767	0.692	0.800	132

^aAll mean differences significant $P < .0001$; 5-pt scale: 1 = very low trust; 5 = very high trust

^bN = Minimum number of respondents selecting this reason for attending farm tour

Findings that addressed the third research question indicated that changes in level of trust were significantly greater among first-timers and attendees with concerns about modern farming practices. Paired samples t-tests compared reported trust at the start and end of the farm tour in five key areas showed that the increase in trust was greater for first-timers and/or concerned attendees. The environmental impact subgroup's level of trust that dairy farmers will do the right thing with regard to caring for the environment increased 0.729 verses those who attended to support agriculture which had an increase of 0.518. Furthermore, with regard

to protecting water quality, the environmental impact subgroup had an increased level of trust of .804 versus the increased level of trust of 0.566 for those who attended to support agriculture. The animal welfare subgroup’s level of trust that dairy farmers will do the right thing with regard to caring for food-producing animals increased 0.767 verses those who attended to support agriculture which had an increase of 0.530. The graphical data clearly shows that those who indicated concerns about the environment, animal welfare and food production methods had a greater increase in trust compared to those who attended to support agriculture. (Figure 2).

- Those who attended because of concern for the environment showed the greatest increase in trust that dairy farmers will do the right thing with regard to *caring for the environment* and *water quality* compared to those who attended for other reasons.
- Those who attended because of concern for animal welfare showed the greatest increase in trust that dairy farmers will do the right thing with regard to *caring for food-producing animals* compared to those who attended for other reasons.

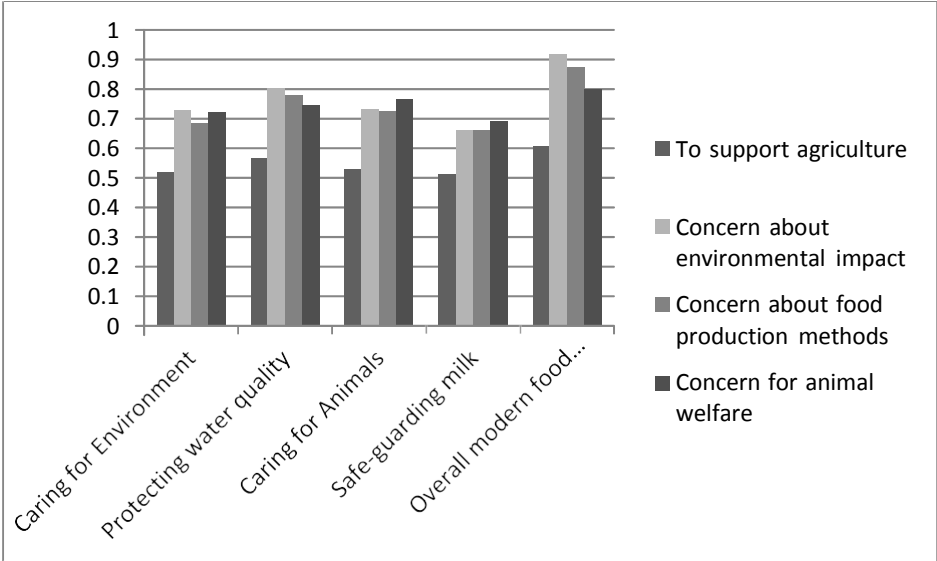


Figure 2: Change in levels of trust in key areas and reasons for attending.

To address the final research question, respondents’ ratings of the importance of various factors that influenced their increased trust were examined. Over 81% of respondents indicated that the “openness of the tour” was very important or a major factor in their increased trust. In addition, 72% of respondents indicated “reading the educational signs and displays” was very important or a major factor in their increased trust.

Conclusion

Research suggests that there has been a loss in consumer trust and understanding in modern food production. The purpose of the study was to determine whether an educational farm tour would increase consumer confidence in environmental stewardship, animal care, food safety and overall modern food production among all attendees, first time visitors to a farm and those who have concerns about modern food production.

As a result of this community collaborative effort, an educational farm tour was offered at Sandland Farms Inc. in Northwest Ohio to over 3,000 attendees. The farm tour was successful at attracting first timers to a farm and those who had concerns about modern food production practices. It appears that the farm tour was successful in addressing attendees' levels of trust about key modern food production practices of caring for the environment, protecting water quality, caring for animals, safe-guarding milk and overall modern food production as a result of participation in this event.

Finally, Extension educators, community partner and farmers have an opportunity to positively influence consumer confidence in modern food production by coordinating and teaching at on-farm educational farm tours. Research from this study suggests that the most effective tours emphasize transparency, openness, a variety of educational stations including self-guided opportunities that attendees can study on their own.

References

The Center for Food Integrity (2015) A clear view of transparency: And how it builds consumer trust. Available at <http://www.foodintegrity.org/research/consumer-trust-research/current-research/download-current-research-2/>

Feldmann, C. & U. Hamm (2015). Consumers' perceptions and preferences for local food: A review. *Food Quality and Preference*. (40)152-164.

Lang, J. (2013). Elements of public trust in the American food system: Experts, organizations, and genetically modified food. *Food Policy*, (41) 145-154.

Maddy, B., C. Gerber, & D. Hillger (2015). Planning and conducting field demonstration tours. *Journal of Extension* [On-line], 53 (5) Article 5TOT10. Available at <http://www.joe.org/joe/2015october/tt10.php>

Martin, M. (2016). The polarization of agriculture: The evolving context of extension work. *Journal of Extension* [On-line], 54 (2) Article 2COM1. Available at <http://www.joe.org/joe/2016april/comm1.php>

Perez, J., & P. Howard, (2007). Consumer interest in food systems topics: Implications for educators. *Journal of Extension* [On-line], 45 (4) Article 4FEA6. Available at <http://www.joe.org/joe/2007august/a6.php>

Thilmany, D. (2015). What do we mean by 'local foods'? *Choices*, 30(1). Retrieved from http://www.choicesmagazine.org/magazine/pdf/cmsarticle_412.pdf

Thilmany, D., O. Deselnicu, & M. Costanigro (2013). How consumers respond to corporate social responsibility initiatives: A cluster analysis of dairy consumers. *Journal of the Food Distribution Research* (44)1.

Thompson, J., R. Radhakrishna, A. Maretzki, & L. Inciong (2006). Strengthening community engagement toward sustainable local food systems. *Journal of Extension* [On-line], 44(4) Article 4FEA2. Available at: <http://www.joe.org/joe/2006august/a2.php>

Timmons, D., W. Qingbin, & D. Lass (2008). Local foods: Estimating capacity. *Journal of Extension* [On-line], 46(5) Article 5FEA7. Available at: <http://www.joe.org/joe/2008october/a7.php>

Whittington, M. & K. Warner (2006). Large-scale dairies and their neighbors: A case study of the perceived risk in two counties. *Journal of Extension*[On-line], 44(1) Article 1FEA4. Available at <http://www.joe.org/joe/2006february/a4.php>

Wise, D., C. Sneed, M. Velandia, A. Berry, A. Rhea, & A. Fairhurst (2013). An integrated approach to supplying the local table: Perceptions of consumers, producers, and restaurant. *Journal of Extension* [On-line], 51 (5) Article 5FEA3. Available at <http://www.joe.org/joe/2013october/a3.php>

Biographical Notes:

Eric Richer is an Agricultural Extension Educator for Ohio State University Extension in Wauseon, Ohio, USA. His research specialties are nutrient management in crop production, water quality and consumer confidence in modern agricultural production.

Patrice Powers-Barker is an Extension Educator in Family and Consumer Sciences for Ohio State University in Toledo, Ohio, USA. Her specialization is in family nutrition and wellness, parenting and local foods.

Melissa Welker is an Extension Educator in Family and Consumer Sciences for Ohio State University in Wauseon, Ohio, USA. Her specialization is in family nutrition and wellness and personal financial management.

Jill Stechschulte is an Extension Educator in 4-H Youth Development for Ohio State University in Wauseon, Ohio, USA. Her specialization is in agricultural youth development, youth financial management and volunteerism.

Amy Stone is an Agricultural Extension Educator for Ohio State University Extension in Toledo, Ohio, USA. Her specialization is management of invasive species, horticulture and natural resources.

Acknowledgments

The authors would like to thank Sandland Farms Inc., the Brehm Family, Ted Ferris, Michigan State University, Department of Dairy Science and Cynthia Torppa, Northwest Regional Director, Ohio State University Extension for all their support and contribution to reviewing this journal article.