

Adoption of Conservation Practices: The Case of Manure Testing



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Manure testing is one of the required practices for a comprehensive nutrient management plan and this information can be used to improve water quality.

Objectives



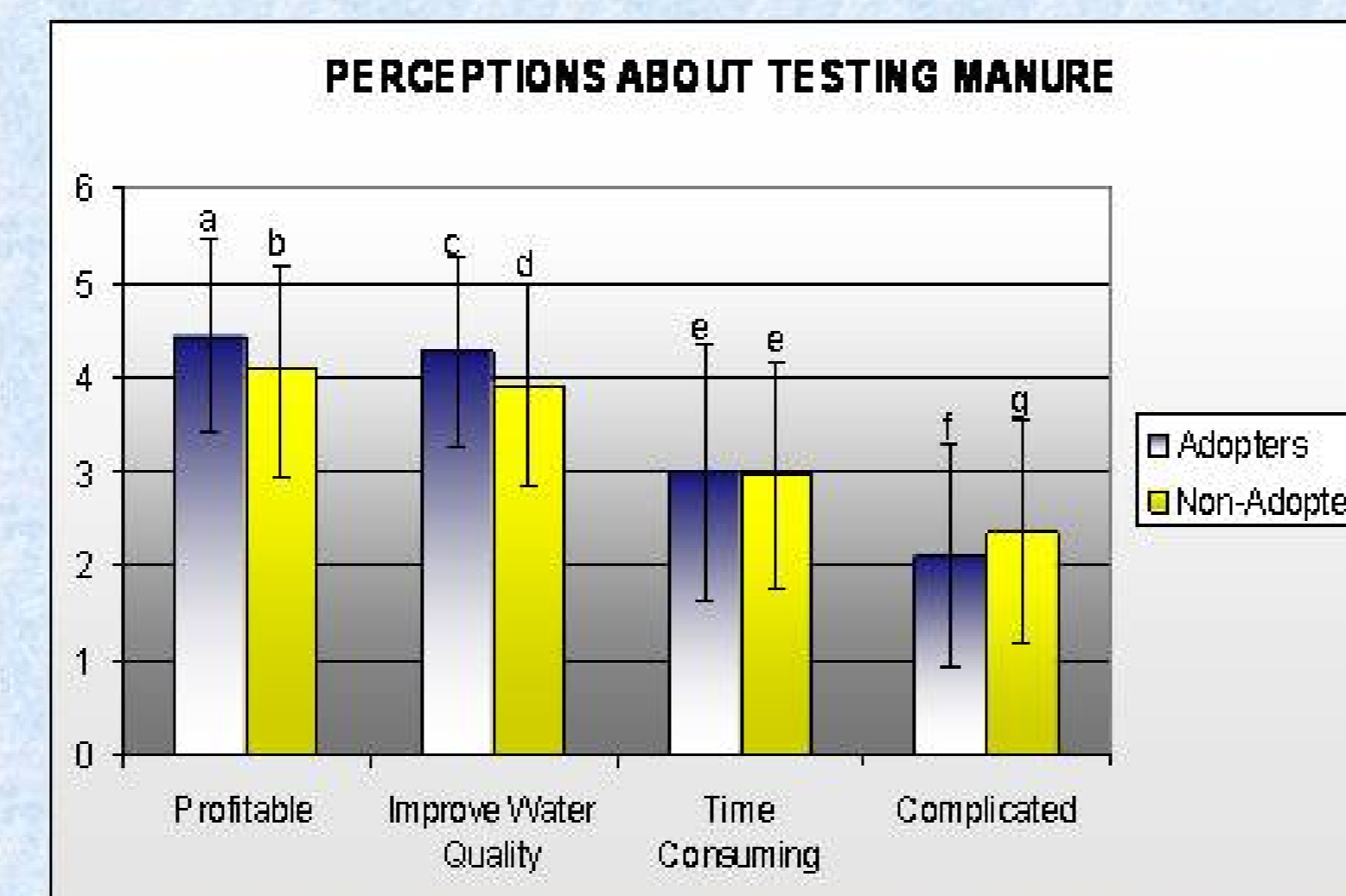
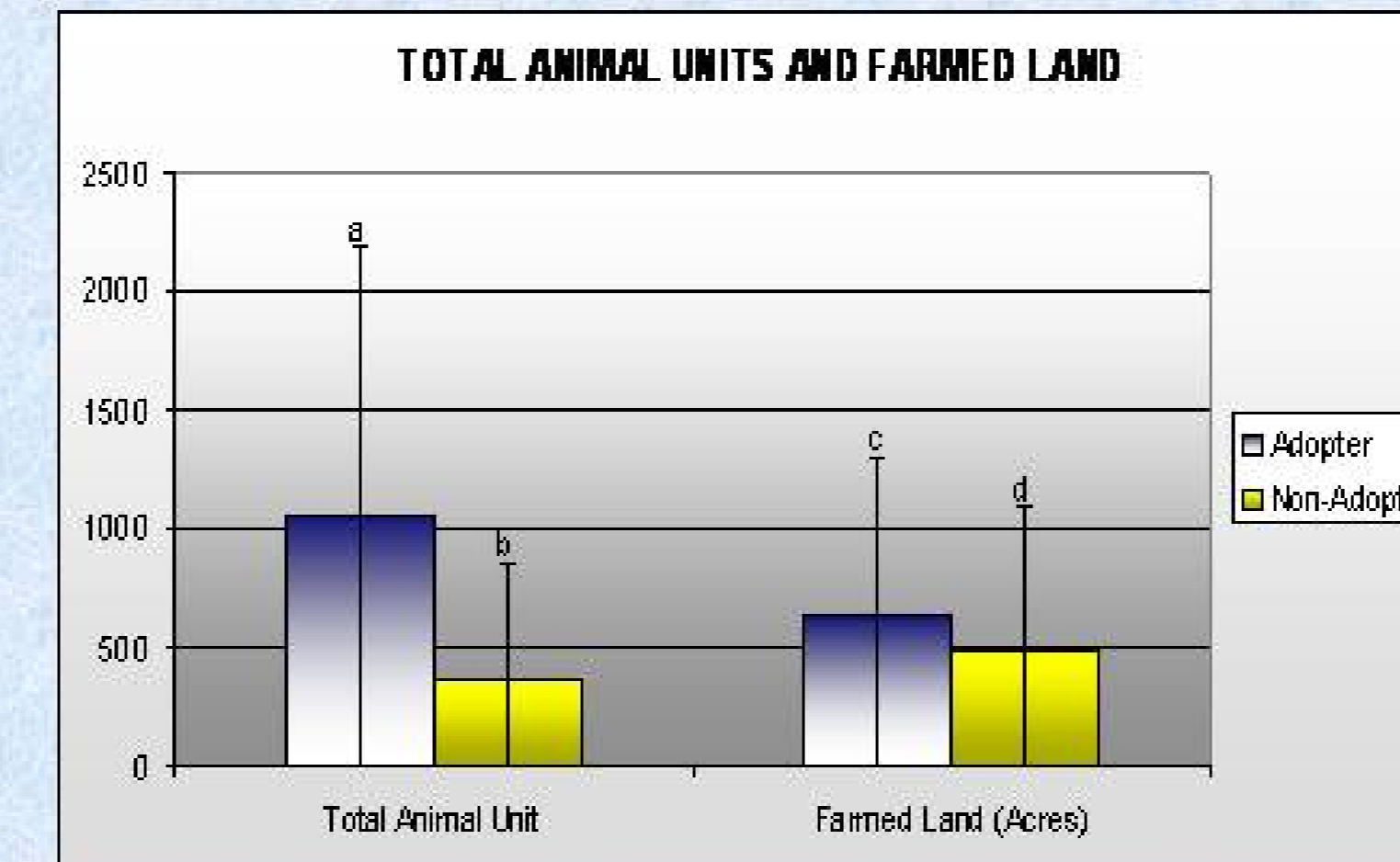
- To examine social and economic factors that impact the adoption of manure testing.
- To use these results to provide guidance for extension and policy in order to increase manure testing rates and improve water quality.

Methods

- A mail survey was conducted, following Dillman, among 3,014 randomly selected livestock producers in Missouri and Iowa in Spring 2006.
- The final survey was sent out with a cover letter, a return envelope and also a form to participate in a \$200 gift certificate drawing, followed by a postcard reminder and another survey packet.
- The effective response rate was 37.4 percent
- A probit regression was conducted to determine how the probability of adoption of manure testing was influenced by factors relating to the farm and the farmer.

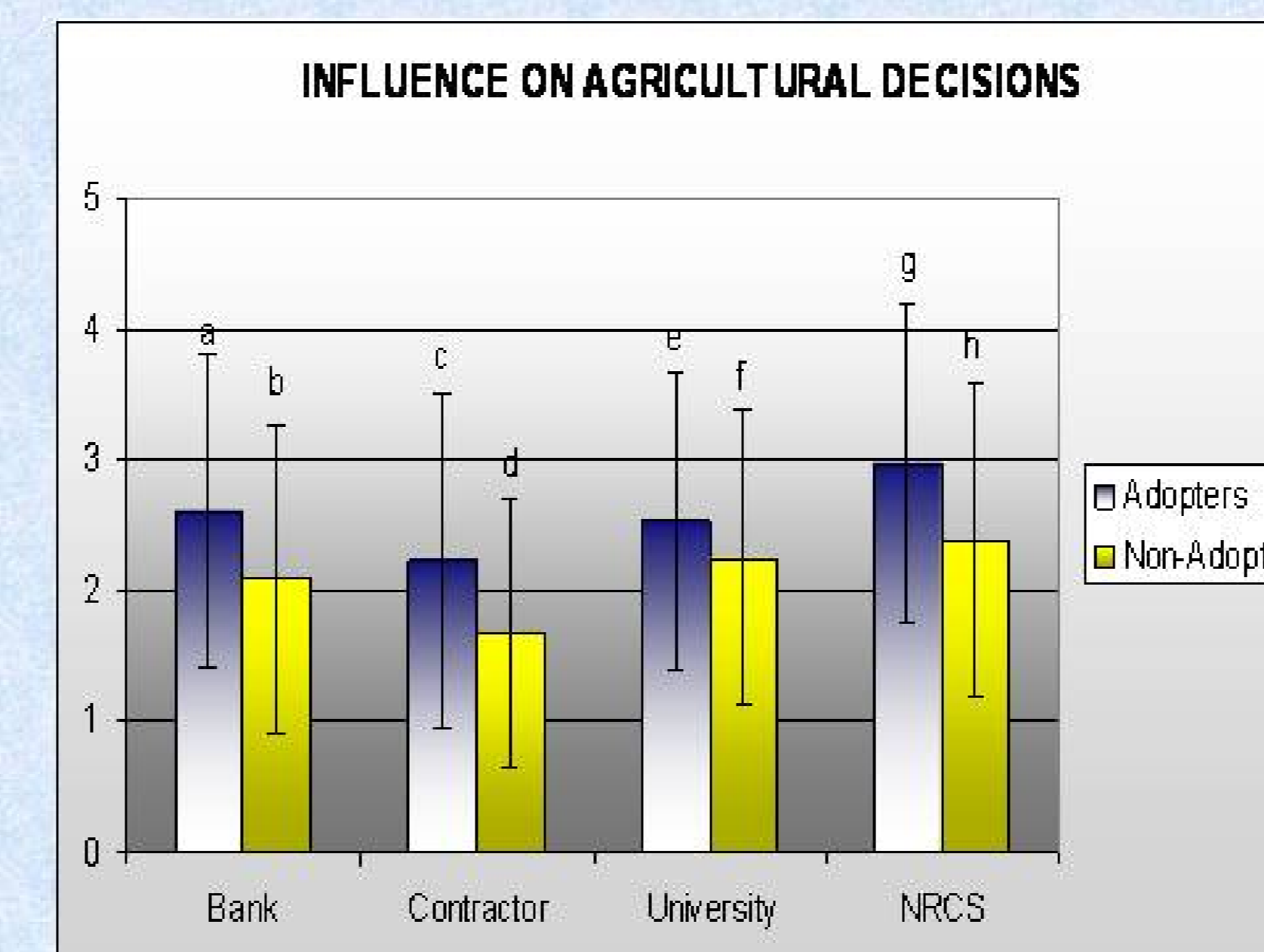
Results and Implications

- On average, adopters have more animal units and more farmed land. (Standard deviations are indicated by error bars. Letters that differ for the same question indicate means that are different from each other at $\alpha=0.05$.)



- Adopters are more likely to agree that manure testing is profitable and less likely to think that it is complicated than non-adopters. (Rating from 1, strongly disagree, to 5, strongly agree.)

- Private and public organizations have more influence on agricultural decisions of adopters than those of non-adopters. In general, though, no group has much influence. (Rating from 1, none, to 5, very much.)



Adoption Rate by Livestock Type and Gross Farm Sales (inc. crops)

	Dairy n=178	Beef Cattle n=182	Beef Cow n=129	Swine n=241	Broiler n=62	Turkey n=98
\$10,000 - \$99,999	8.11%	12.50%	4.26%	36.36%	0.00%	16.13%
\$100,000 - \$249,999	16.07%	4.08%	5.00%	52.50%	48.00%	37.21%
\$250,000 - \$499,999	34.15%	15.63%	7.14%	54.76%	46.67%	55.56%
\$500,000 +	70.37%	24.32%	0.00%	63.41%	33.33%	71.43%

The probit regression results show that **when** all other factors are held **constant**:

- Concentrated animal feeding operations (CAFOs) are more likely to test manure than non-CAFOs (AFOs and non-AFOs).
- The more unsure farmers are of how the crops will respond to manure as compared to commercial fertilizer, the less likely they are to test manure.
- Farmers with off-farm income between \$50,000 and \$99,999 are more likely to test than farmers whose off-farm income is between \$10,000 and \$24,999.
- Farmers with liquid manure management systems are more likely to test manure than farmers with solid or combined solid and liquid manure management systems.
- Farmers' responses to questions regarding concern about water quality, or whether manure testing improves water quality were not significant predictors of adoption.
- Livestock operations with higher gross farm sales have higher adoption rates

To increase the rate of manure testing, the survey results suggest that:

- More information about how crops respond to manure and the profitability of testing manure is needed by farmers. This may require additional studies to fill in gaps in our knowledge base.
- Policies to assist smaller livestock operations need to be developed.

Reference:

Dillman, D. A. *Mail and Internet Surveys: The Tailored Design Method*. 2nd ed. New York: John Wiley & Sons, Inc, 2000.



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