Agricultural Resource Management Survey and National Animal Health Monitoring
System Data Analysis:
Cow-Calf Case Study

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The USDA-National Animal Health Monitoring System (NAHMS) collects farm level animal health and management information through nationwide studies. The USDA-Economic Research Service (ERS) collects farm-level financial and economic information through the Agricultural Resource Management Survey (ARMS).

**Objective**

Determine if reliable and relevant conclusions can be made about U.S. cow-calf producers' production practices and their associated economic benefits using survey data from NAHMS and ARMS.

**Materials and Methods**

This analysis presents complementary animal health estimates from the NAHMS 2007-08 Beef study and economic and demographic estimates from the ARMS 2008 Cattle and Calves Costs and Returns data. Results presented will focus on the size of operation, measured by the number of beef cows in an operation's inventory on October 1, 2007 (NAHMS) or December 31, 2007 (ARMS). The size categories presented are 20-49, 50-99, 100-199, 200-499, and 500+ beef cows.

This analysis will not reveal evidence to determine causal relationships; rather, it will examine trends, patterns, and associations between producers’ production practices and the potentially associated economic benefits.

**Results**

**Beef Quality Assurance Program** (Figure 1)

- The percentage of operations that received the Beef Quality Assurance Program (Beef QA) is associated with the percentage of farm income from government payments.

**Operator and Operation Characteristics** (ARMS)

- The percentage of operations in which the operator planned to exit the market within 5 years decreased as operation size increased.
- Operations with 500 or more beef cows received the smallest percentage of farm income from government payments.

**Disease Risk and Production Practices** (NAHMS)

- The percentage of operations that cleaned or disinfected needles between cows decreased as operation size increased, suggesting that larger operations are more likely to adopt industry developed standards for production practices to increase overall product quality.
- New animals accounted for a higher average percentage of inventory on smaller operations than on larger operations, suggesting that smaller operations may be facing an increased disease risk while building their herd.
- The percentage of operations that quarantined all new cattle increased as operation size increased, suggesting that smaller operations than on larger operations, suggesting that smaller operations may be facing an increased disease risk while building their herd.
- The percentage of operations that utilized semen evaluation and more familiar with the results of the National Beef Quality Audit, possibly indicating a heavier focus on improving product quality.

**Future Research**

Future research could examine the production-practice decisions of higher and lower economic performers, differences across regions, and differences between production groups that use specific production practices that promote biosecurity, disease risk reduction, and animal health. Moreover, the investigation of the cost of disease control measures may reveal differences across operations of different size.

**Acknowledgments and Contact Information**

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- Several reviewers of this research poster.

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**Conclusion**

This analysis illustrates the benefits in using both the NAHMS and ARMS data sets and highlights the focus, strategies, and economic returns for operations of different size. Future NAHMS and ARMS studies in the same or subsequent years would provide valid, detailed data to compare using this type of analytical approach, and valuable efforts to collating farm level information, and reduce overall response burden.

**Larger operations are more likely to:**

- Focus on efficiency
- Protect their herd through quarantine biosecurity practices
- Implement industry standards that promote product quality
- Receive higher proportions of net farm income when compared to gross cash farm income (200 beef cows or more)
- Rely less on government payments (500+ beef cows)
- Have principal operators that use their college or graduate school education to supplement income with off-farm opportunities
- State their primary occupation as farming, and plan on staying dedicated to the industry for 5 years or more

**Smaller operations are more likely to:**

- May face an increased disease risk to build their herd
- Protect their herd by cleaning needles between cows during handling
- Delay implementing industry developed standards that promote product quality, possibly due to costs
- Have principal operators with a primary occupation as work other than farming/ranching
- Smaller operations receive higher proportions of net farm income when compared to gross cash farm income (20-49 beef cows)
- Exit the market in 5 years, suggesting returns are not enough to continue operating or that some are moving towards retirement

**Figure 1:** Beef Quality Assurance Program (NAHMS)

**Figure 2:** Disease Risk and Production Practices (NAHMS)

**Figure 3:** Operator and Operation Characteristics (ARMS)

**Future Research**

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