

On-Farm Management Practices and Other Methods of Infection Control

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PACCARB

Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria



United States Department of Agriculture

On-farm Management Practices and Other Methods of Infection Control



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Veterinary Services
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Overview

- Description of the National Animal Health Monitoring System (NAHMS)
- On-farm management practices with the potential to result in less disease, which may result in less antimicrobial use
- Hospital infection control

National Studies



– Animal population

– Operations

USDA
United States Department of Agriculture
Animal and Plant Health Inspection
Veterinary Services
National Animal Health Monitoring System
February 2014

Swine 2012

Reference of Management Practices on Small-enterprise Swine Operations in the United States, 2012

NAIMS Dairy 2014 Study
In January 2014, the USDA's National Animal Health Monitoring System (NAIMS) conducted a study on the dairy industry in the United States. The study was the first of its kind to provide an in-depth look at the dairy industry and provide insight into the industry's future.

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APHIS
Veterinary Services
National Animal Health Monitoring System
October 2014

National Animal Health Monitoring System to Study Ranches

Part I: Study Design and Methodology

Layers 2013
Part III: Trends in Health and Management Practices on Table-Egg Farms in the United States, 1999–2013



National Study Rotation Plan

Year	Commodity
1990, 1995, 2000, 2006, 2012	Swine
1992, 1996, 2002, 2007, 2011, 2014	Dairy
1993, 1997, 2007-08, 2017-18	Beef cow/calf
1998, 2005, 2015	Equine
1994, 1999, 2011	Beef feedlot
1996, 2001, 2011	Sheep
1997, 2003, 2010	Aquaculture
1999, 2004, 2010, 2013	Poultry
2009	Goats
2014	Cervids, Bison

NAHMS Antimicrobial Use Data Collection

- Antimicrobial use in feed/water
 - Percentage of operations using specific products
 - Percent of animals receiving specific products
 - Indication/reason for use
 - Duration of use
- Antimicrobial use by injection
 - Primary product/class used for a given indication
 - Percent of animals treated for a given disease condition (e.g., respiratory, digestive, lameness)
 - In some cases, information is collection on percentage of retreatments needed
 - Percent of animals mass treated (metaphylaxis)

Reporting Results

- Several types of publications result from each NAHMS study:
 - Descriptive reports
 - Trend reports
 - Information sheets
 - Peer-reviewed manuscripts
 - Press releases
- Trade magazines often summarize results from NAHMS studies
- NAHMS results are often used by USDA Cooperative Extension educators at land grant universities and colleges for producer education purposes

Percentage of farms in which the following precautions were required for employees and company or contract crews who worked in the layer houses, by study:

Precaution required	Percent Farms			
	Study			
	Layers 1999		Layers 2013	
	Percent	Std. error	Percent	Std. error
Employees				
Different personnel for different houses ¹	19.2	(5.1)	26.6	(2.8)
Shower	3.9	(1.4)	8.6	(3.3)
Hand sanitizer	NA		51.9	(4.0)
Footbaths	24.5	(5.4)	79.3	(4.5)
Change boots or use shoe covers	NA		35.3	(4.0)
Change clothes/coveralls	17.6	(3.7)	34.5	(3.9)
Not be around other poultry for at least 24 hr (e.g., other farms, markets, slaughter plants) before coming on this farm	85.2	(3.2)	85.9	(4.2)
Cannot own their own poultry or birds	75.7	(4.5)	94.2	(3.5)

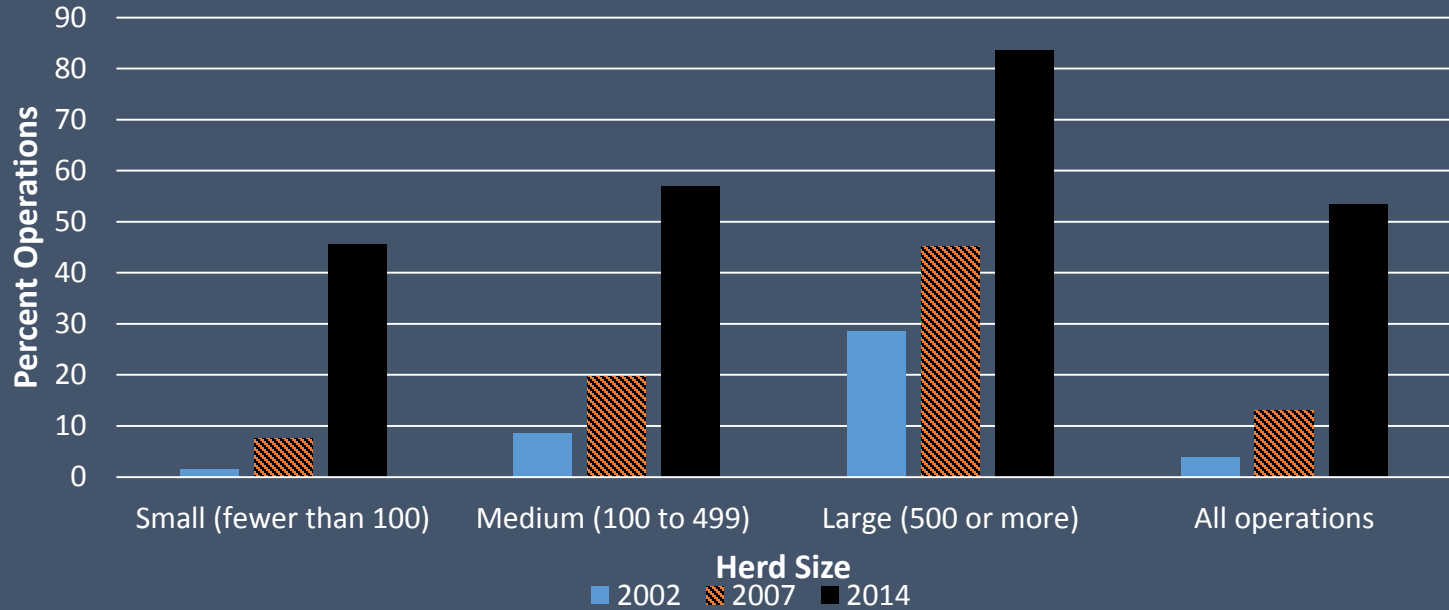
For sites with a nursery phase, percentage of sites by pig-flow management style and by study:

Management style	Percent Sites					
	Study					
	Swine 2000		Swine 2006		Swine 2012 ¹	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	32.3	(2.3)	25.0	(1.7)	15.4	(2.9)
All swine removed without cleaning and disinfecting	3.9	(1.2)	3.6	(0.8)	1.8	(0.4)
All-in/all-out by room ²	24.4	(1.6)	30.5	(1.6)	31.7	(3.4)
All-in/all-out by building ²	32.3	(2.1)	29.8	(1.6)	41.2	(3.7)
All-in/all-out by site ²	3.5	(0.7)	7.1	(1.0)	9.6	(3.0)
Not applicable (no housing)	3.6	(1.1)	4.0	(0.7)	0.3	(0.1)
Total	100.0		100.0		100.0	

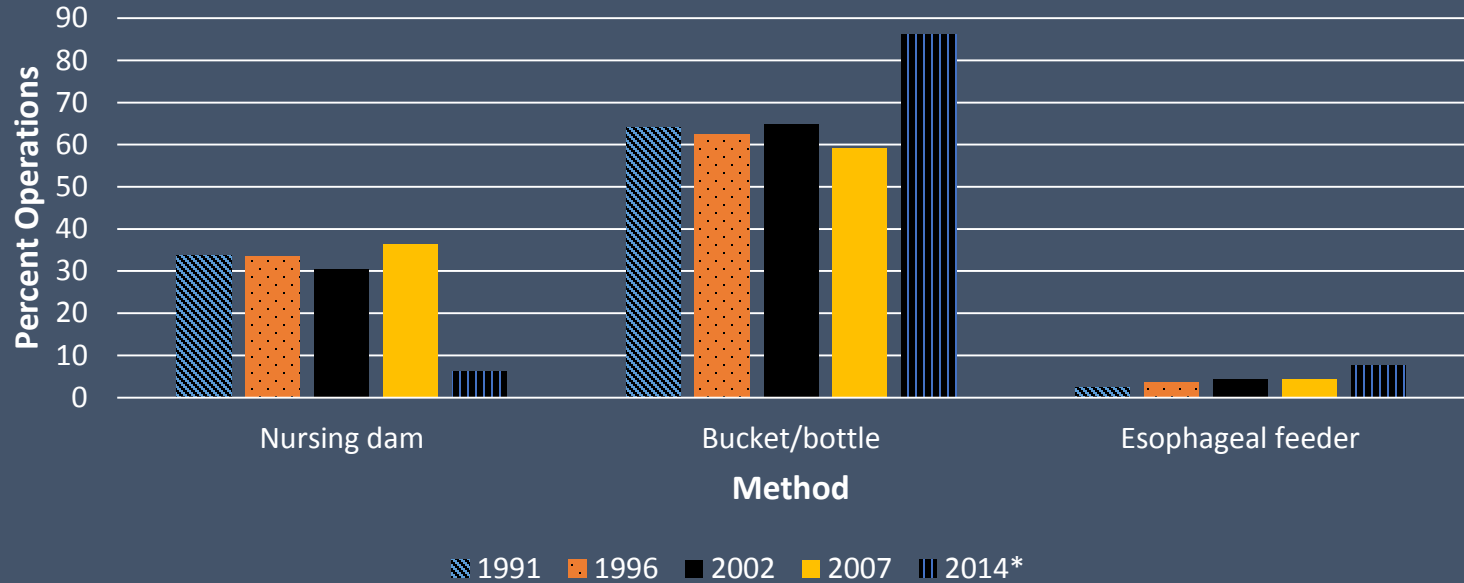
¹In 2012, the question referred to the period from December 1, 2011, through May 31, 2012.

²In 2006 and 2012 this response included the phrase "with (room, building, site) cleaned and disinfected."

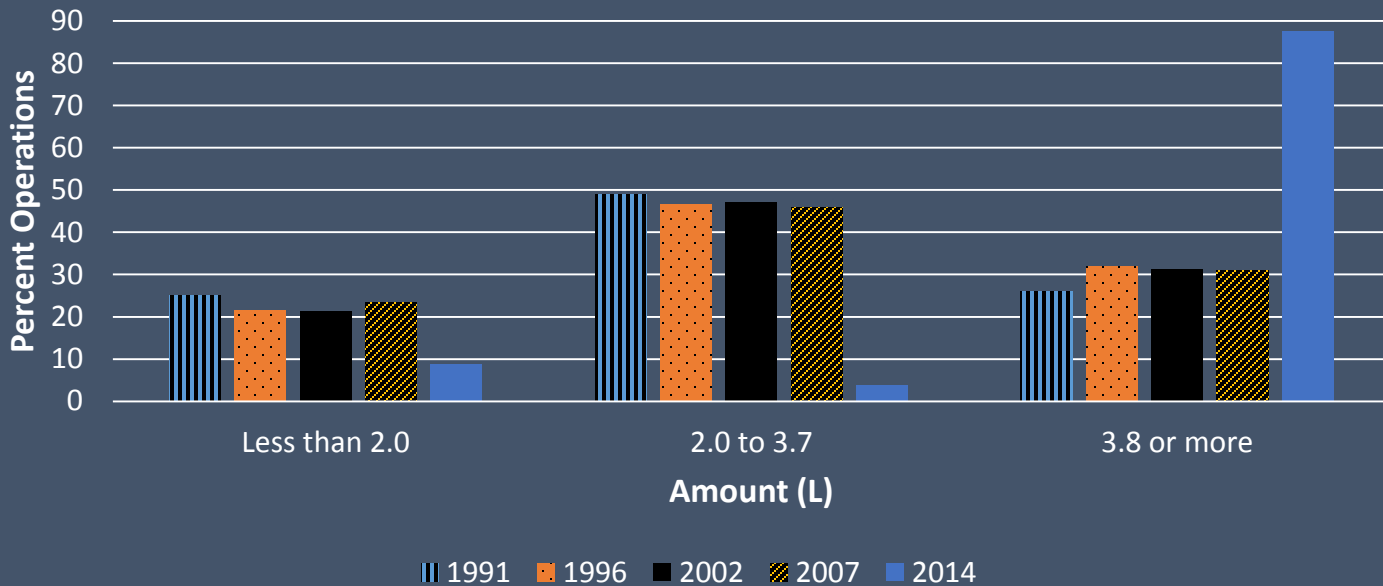
Colostrum Quality Evaluation



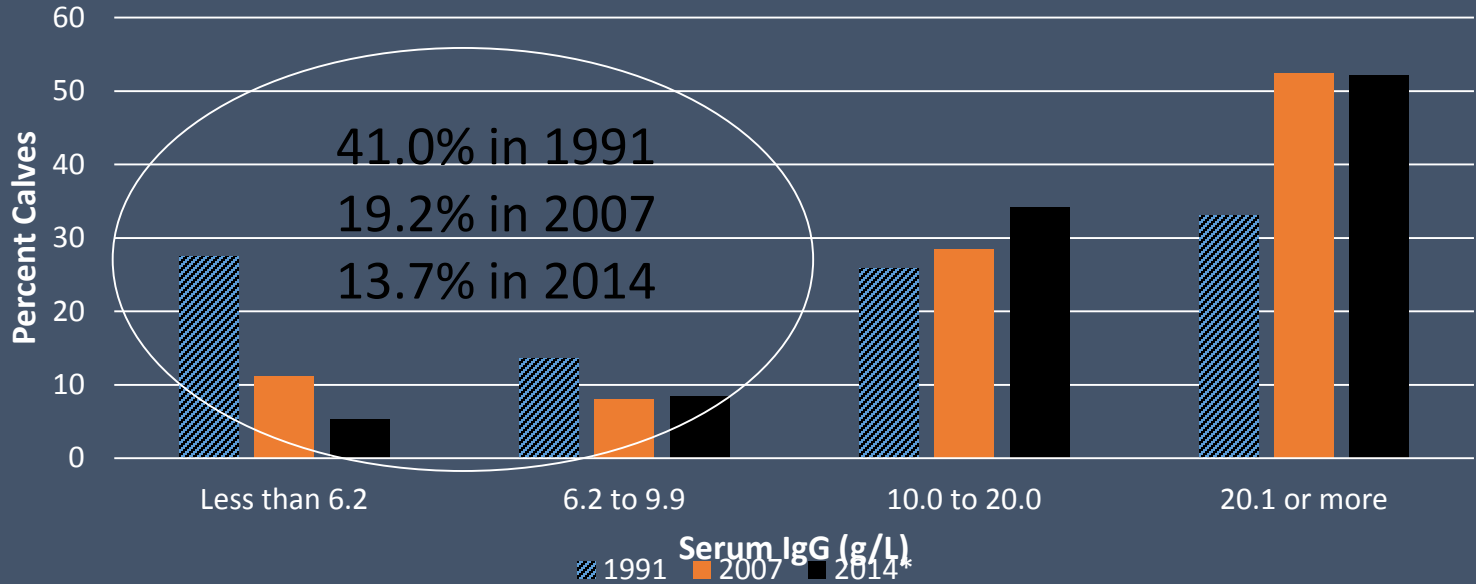
Colostrum Feeding Method



Colostrum Fed in First 24 hours



Serum IgG levels (passive transfer)



Summary

- USDA NAHMS program has been collecting and reporting on management practices used on U.S. livestock operations since the early 1990s
- Livestock and poultry producers have used this information to change management practices that has reduced the need to use antibiotics

Principles of Infection Control in Veterinary Hospitals

- Hand washing and hygiene
- Proper and appropriate use of personal protective equipment (PPE)
- Identifying potentially infectious patients and placing in isolation
- Following protocols for patients placed in isolation
- Barrier nursing



Resource Materials

- Reports posted at:

<http://www.aphis.usda.gov/nahms>

- Hard copies available by request or to join mailing list:

NAHMS

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