



From Farm to Table — Food System Biosecurity for Animal Agriculture

Identifying Risks, Challenges and Solutions

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hosted by **NIAA** National Institute for
Animal Agriculture



Assessment of the Economic Impacts of PEDv

Swine Committee Meeting

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April 5, 2016

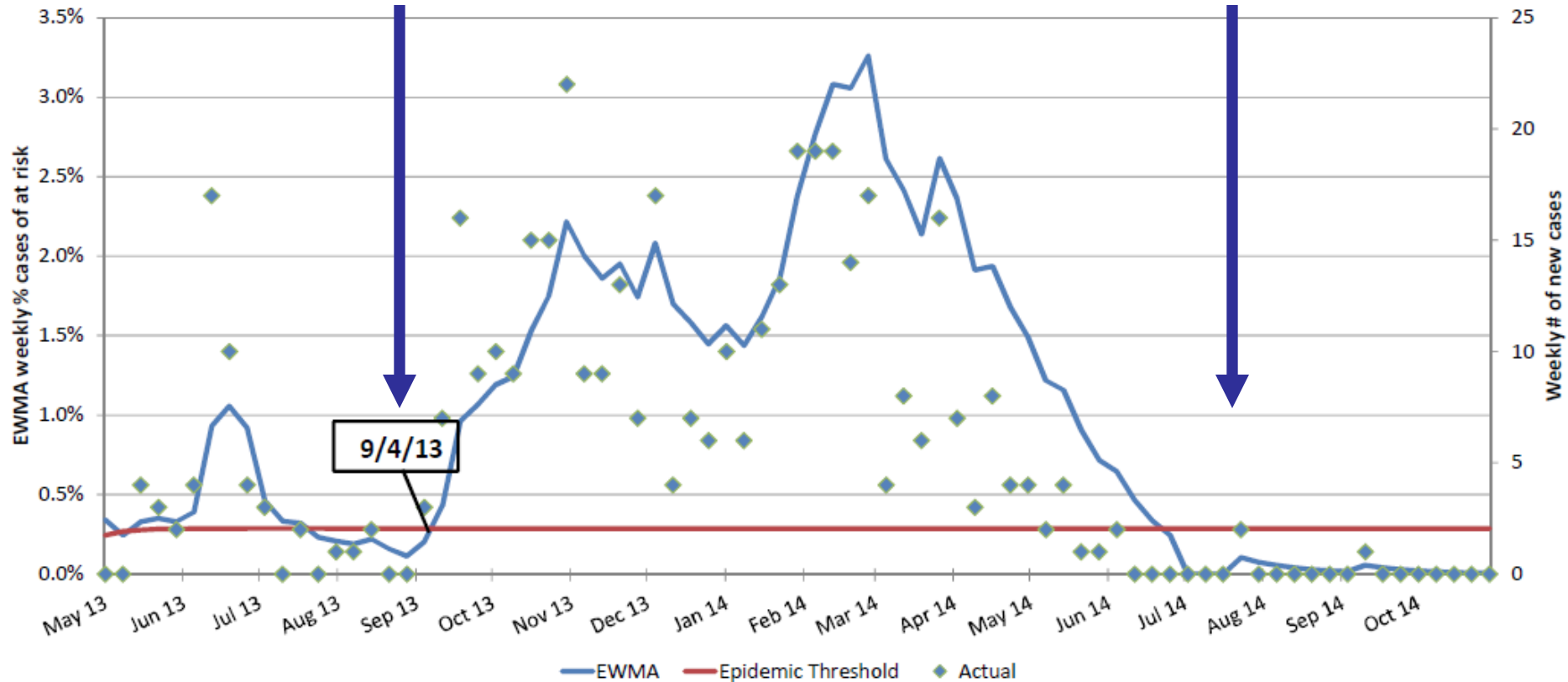
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Year with PEDV

(Sep 2013-Aug 2014)

Swine Health Monitoring Project: PEDV Incidence Analysis



This figure presents the PEDV exponentially-weighted moving average (EWMA) epidemic monitor (left vertical axis) with preliminary epidemic threshold based on 2013/2014 seasonal incidence. This figure also monitors the actual weekly number of incident cases of PED (right vertical axis).

Source: University of Minnesota, Swine Disease Eradication Center

Inventories, slaughter, weights, and pork production during the year with PEDV

Year before
PEDV

Year with
PEDV



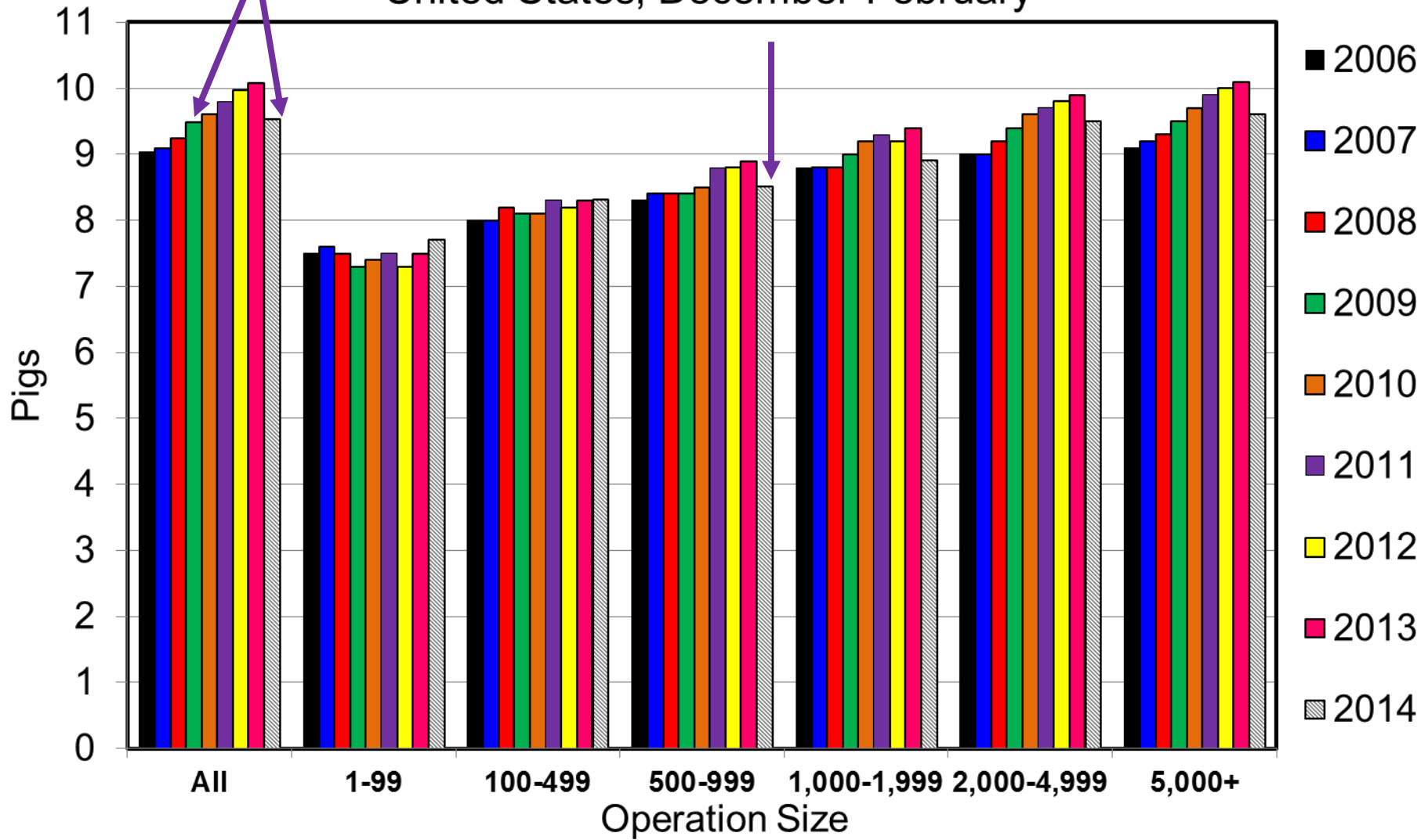
United States	Sept 2012 – Aug 2013	Sept 2013 – Aug 2014	Change	% Change
Sows farrowing, head	11,372,000	11,344,000	-28,000	-0.25%
Pigs saved per litter	10.22	9.91	-0.31	-3.03%
Pig crop, head	116,201,000	112,476,000	-3,725,000	-3.21%

Data Source: USDA/NASS



Pigs per Litter by Size of Operation

United States, December-February



Data Source: USDA/NASS



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Year before
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Pig crop, head	116,201,000	112,476,000	-3,725,000	-3.21%
	Jan 2013 – Dec 2013	Jan 2014 – Dec 2014	Change	% Change
Hog slaughter, head	112,076,700	106,875,700	-5,201,000	-4.64%
Carcass weight, pounds	206.89	213.74	6.85	3.31%
Pork production, pounds	23,187,100,000	22,843,300,000	-343,800,000	-1.48%

Data Source: USDA/NASS



Forecasted and Estimated Costs and Returns in a Representative Farrow-to-Finish Operation

		Scenario						
	2014							
	Forecast							
	made							
	Sept							
	2013							
Productivity impact								
Finished pigs sold/female/year	20.48							
Economic impact								
Average total revenue, \$/head	\$160.95							
Average total costs, \$/head	\$146.73							
Net return, \$/head	\$14.22							
Return on investment, %/head	9.66%							

Schulz, L.L. and G.T. Tonsor. 2015. "Assessment of the Economic Impacts of Porcine Epidemic Diarrhea Virus in the United States." *Journal of Animal Science*. Available at <https://www.animalsciencepublications.org/publications/jas/abstracts/0/0/jas.2015-9136>



Forecasted and Estimated Costs and Returns in a Representative Farrow-to-Finish Operation

		Scenario						
	2014	2014						
	Forecast	Estimate with						
	made	forecasted						
	Sept	finished pigs						
	2013	sold/female/year	Difference					
Productivity impact								
Finished pigs sold/female/year	20.48	20.48	0.00					
Economic impact								
Average total revenue, \$/head	\$160.95	\$204.52	\$43.56					
Average total costs, \$/head	\$146.73	\$150.16	\$3.43					
Net return, \$/head	\$14.22	\$54.36	\$40.14					
Return on investment, %/head	9.66%	35.90%	26.24%					

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Forecasted and Estimated Costs and Returns in a Representative Farrow-to-Finish Operation across Varying Levels of Finished Pigs Sold per Female in 2014

		Scenario						
	2014	2014						
	Forecast	Estimate with						
	made	forecasted		2014 Estimates – Heterogeneity of Impacts				
	Sept	finished pigs		Finished pigs sold per mated female per year				
	2013	sold/female/year	Difference	-43%	-33%	-23%	-13%	-3%
Productivity impact								
Finished pigs sold/female/year	20.48	20.48	0.00	11.67	13.72	15.77	17.82	19.87
Economic impact								
Average total revenue, \$/head	\$160.95	\$204.52	\$43.56	\$204.52	\$204.52	\$204.52	\$204.52	\$204.52
Average total costs, \$/head	\$146.73	\$150.16	\$3.43	\$186.61	\$173.96	\$164.59	\$157.38	\$151.65
Net return, \$/head	\$14.22	\$54.36	\$40.14	\$17.91	\$30.56	\$39.93	\$47.14	\$52.87
Return on investment, %/head	9.66%	35.90%	26.24%	9.40%	17.34%	24.00%	29.68%	34.57%

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How can prices increase so much?

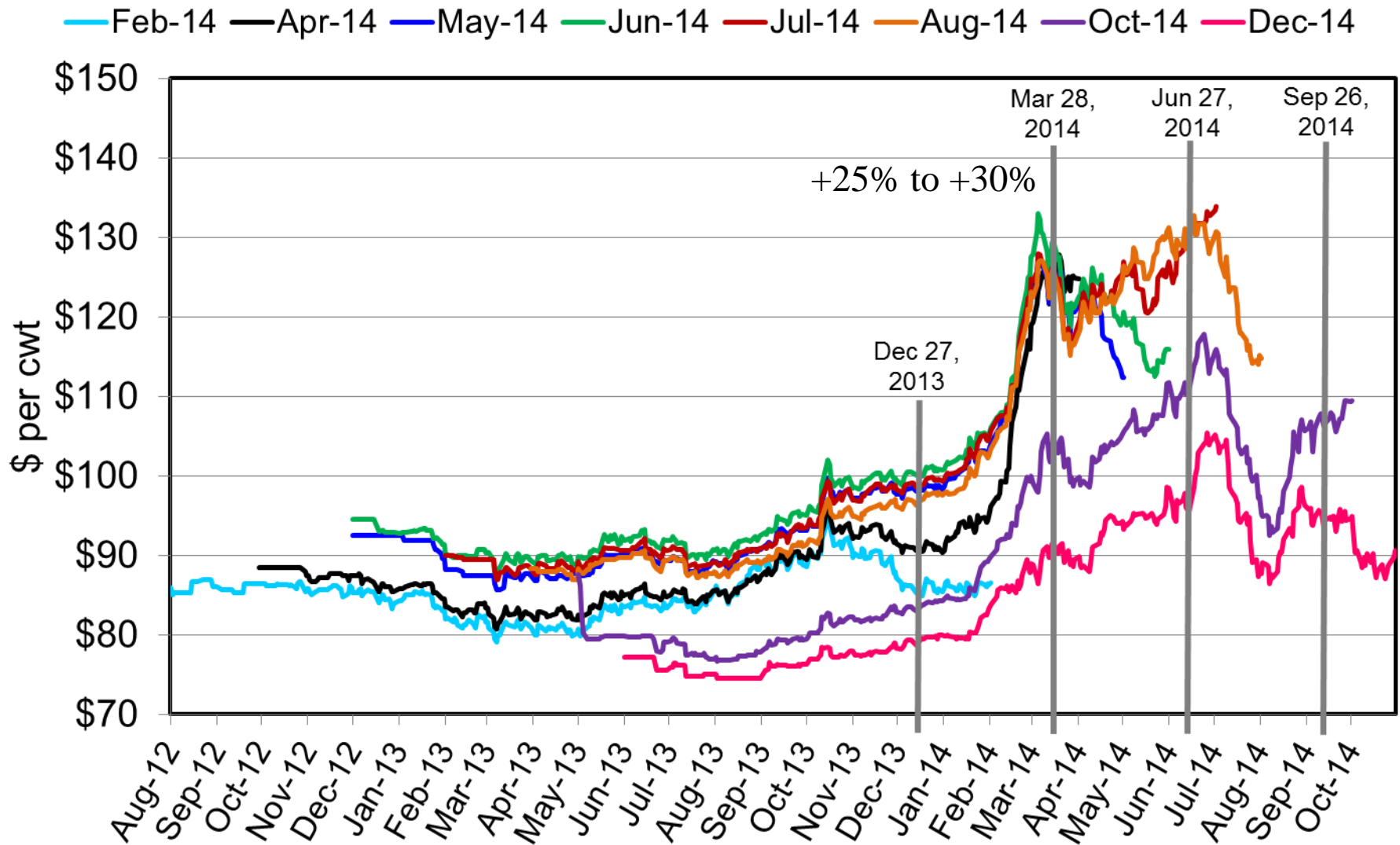
Uncertainty on extent of supply impact

+ Realized lack of adverse demand (both domestic and export) response

= ~ +25-30% increase in prices



CME Lean Hog Futures Prices



Data Source: Barchart.com



Additional Key Points

- No adverse demand impact is key
 - Recall H1N1
- 2014 pork demand was up 7.4%
 - Pork price +10.3% & per capita cons. -0.8%
- Packers, processors, distributors, and retailers harmed by reduced volume throughput

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Longer-Term Implications

- Increased expansion:
 - Lower costs and greater retail consumption
- Economics of PEDV (& other) vaccines should be considered explicitly
- Stricter biosecurity measures implemented
 - *Value extends well beyond PEDV going forward*
- In the future, the industry needs to be prepared to handle adverse response from consumers.
 - **PEDv in 2013-14 may well be the exception!**



More information available at:



This presentation will be available in PDF format at:
<http://www.agmanager.info/about/contributors/individual/tonsor.asp>

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