



Gestation Housing Systems and Sow and Litter Performance

A Review of Management and Housing Concepts and Potential Advantages and Disadvantages

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Research Comments

- “the public needs knowledgeable research and analysis to serve as a basis for public policy and individual choice.”
- “we have to carefully develop methods to evaluate animal welfare in situations where the housing system enhances health, production and food safety while restricting animal movement.”
- “we need approaches that will allow the added cost of enhancing welfare to be recovered by the producer.”

Armstrong, J.D., Pajor, E.A., “Changes in Animal Welfare Needed to Maintain Social Sustainability.”

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Research Comments

- “We need to look for ways to enhance animal welfare in an economically sustainable fashion
- there is a complex interplay of animal welfare, product safety and quality, production efficiency and overall profitability
- animal welfare is an important and very complicated issue that will require interdisciplinary research to provide the knowledge necessary to produce sound guidelines and personal choice for the public”

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The European Case

- Sweden banned stalls in 1988
- U.K. banned stalls in 1999
- Finland will ban stalls by 2006
- Netherlands will ban stalls by 2008
- Rest of E.U. (2001 Amended Pigs Directive)
 - existing tethers phased out by 2006
 - all stalls banned by 2013

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The Florida Case

- Amendment 10 to the Florida Constitution
Animal Cruelty Amendment: Limiting Cruel and Inhumane Confinement of Pigs During Pregnancy

“It shall be unlawful for any person to confine a pig during pregnancy in an enclosure, or to tether a pig during pregnancy, on a farm in such a way that she is prevented from turning around freely.”

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The Florida Case

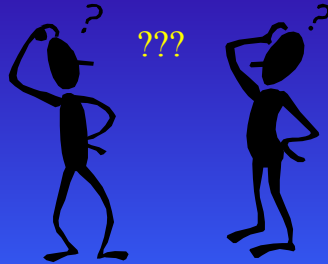
Is this really about animal rights ?

“It will prevent large-scale hog operations from moving into Florida and it will protect the small-scale farms,” Wayne Pacelle spokesman for the Humane Society of the United States.

This citizen-sponsored ballot initiative was led by Floridians for Humane Farms and the HSUS

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The Iowa Case



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The Impact of Gestation Housing on Sow and Litter Performance

A Progress Report* from the Lauren Christian Swine Research and Demonstration Farm

* 18 months of a 3 year study

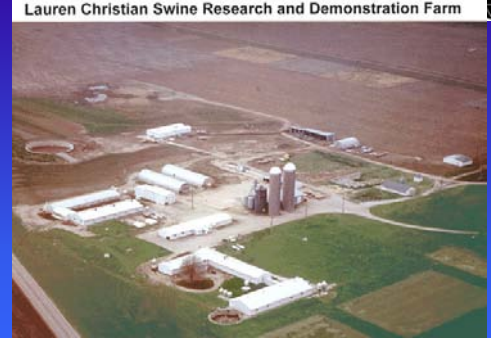
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A Description of the Project

- A Comparison of Alternative Sow Gestation Housing Systems
- To investigate the environmental impact of gestation housing systems on reproductive performance and behavior
- M. Honeyman, J. Mabry, D. Hummel

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Lauren Christian Swine Research and Demonstration Farm



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L.C. Farm Facilities

<ul style="list-style-type: none"> • Crated Gestation <ul style="list-style-type: none"> - 40' x 100' - 120 crates - 22" x 7" crates - 4 gilt/ cull pens 	<ul style="list-style-type: none"> • Curtain Front Gestation <ul style="list-style-type: none"> - 30' x 130' - 4 pens - non-bedded group housed - partial slat - 3 pens w/ feeding stalls - 1 pen w/ electronic feeder
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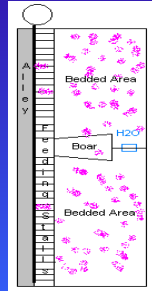
Crated Gestation



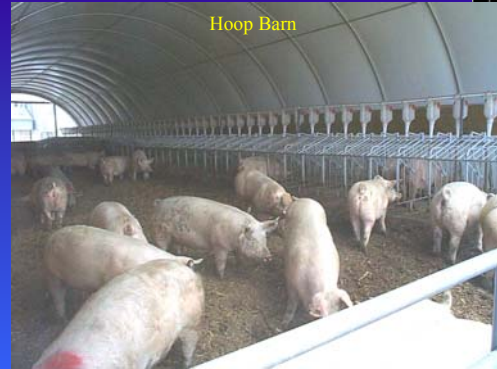
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L.C. Farm Facilities

- Two 30'x108' hoops
 - two 35 hd pens / hoop
 - ~ 27 sq ft / sow
 - single boar pen
 - individual feeding stalls
 - concrete floor
 - cornstalk bedding



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Hoop Barn

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Breeding Barn

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L.C. Farm Management

- All sows individually fed corn-soy diet
 - 4.5 lbs/day; 6 lbs/day last trimester
 - hoops fed +25% in winter
- All sows bred in crated confinement
 - bred sows moved to gestation by day 9 post-wean
- All P1 gilts gestated in crates
- Open sows “held” to fit in group (= +NPSD)
- 1/2 Y x 1/4 L x 1/4 H; Duroc sires

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L.C. Farm - A Progress Report

[Representing sows remaining intact with assigned gestation treatment]

BREEDING PERFORMANCE	HOOP	CRATED
Total number of services	234	294
Repeat services, %	11.5	13.6
Wean – 1 st service interval, days	7.5	9.6
Bred by 7 days, %	92.5	88.1

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L.C. Farm - A Progress Report

[Representing sows remaining intact with assigned gestation treatment]

FARROWING PERFORMANCE	HOOP	CRATED
Farrowing rate, %	88.1	85.4
Farrowing interval, days	148	158
Total pigs born / litter	13.0	12.1
Pigs born alive / litter	11.6	10.6
Birth wt / liveborn pig	3.4	3.6
Stillborn, %	8.5	10.8
Mummies, %	2.3	1.7

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L.C. Farm - A Progress Report

[Representing sows remaining intact with assigned gestation treatment]

<u>WEANING PERFORMANCE</u>	<u>HOOP</u>	<u>CRATED</u>
Pigs weaned / sow	9.7	9.3
Pre-wean mortality, %	14.2	13.5
Adj. 21 day litter wt	150	149
Litters farr / mated female / yr	2.34	2.22
Pigs wnd / mated female / yr	22.7	20.7
Pigs weaned / lifetime female	32	31

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L.C. Farm - A Progress Report

[Representing sows remaining intact with assigned gestation treatment]

<u>POPULATION STATISTICS</u>	<u>HOOP</u>	<u>CRATED</u>
Culling rate, %	5.5	11.1
Death rate	1.1	5.1
Replacement rate	13.3	17.0
Ave. parity	4.7	4.1
Ave. non-productive sow days*	29.6	37.4

* (days not pregnant or nursing – not reflective of true performance, due to effect of "holding w/ in assigned gestation treatment group")

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L.C. Farm - Contributing Factors ?

- Cornstalk consumption in hoops
 - increased fiber intake effect (Honeyman, et al; Reecey, et al)
- Heat detection capabilities
- Seasonal fluctuation
- Sow comfort/ space allowance/ group effect
- Management preferences

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Group Pens vs. Stalls Considerations

- Facility Investment
- Feeding System
- Performance Return
- Management Capabilities
- Feed Efficiencies
- Sow Longevity

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Types of Group Housing Systems

- Floor Feeding +/-
- Trickle Feeders +/-
- Individual Feeding Stalls +/-
- Free-Access Stalls +/-
- Electronic Sow feeders +/-

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Gestation Stalls: The Benefits

- Feed each sow exact ration
- Give special feeding to individual sows
- Cut feed wastage
- Easy examination of 'individuals' for health
- Vaccination program made easier
- Pregnancy testing made easier
- Reduce labor requirements
- Reduce fighting ☒ reduce stress ☒ reduce injuries

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Gestation Stalls: The Benefits



Gestation stalls improve sow health, feeding, management, and efficiency.

By these measures, they are humane and beneficial to the animals.

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Gestation System: Closing Thoughts



- Similar production numbers can be achieved between the systems
- There are *external interactions* that will effect welfare and performance
 - stockman attitude
 - environment
 - feeding system and nutrient level
 - genetics
- What are your management and marketing preferences ?

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NPB's Swine Welfare Indexing System



- A tool to assess the welfare of the animal and will be applicable to all types of operations including indoor and outdoor facilities using stalls, pens, pastures and other forms of housing.

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NPB's Swine Welfare Indexing System



- 4 measurements recognized in scientific literature
 - behavior
 - immune function
 - hormonal response
 - production

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Welfare Guideline Resources



- National Pork Board
 - Swine Care Handbook
- American Meat Institute
 - Animal Welfare Information Kit
- Animal Welfare Information Center
 - www.nal.usda.gov/awic/ (USDA ARS)
- Animal Welfare Institute
 - Approves farms for AWI criteria

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