# Effects of Bedded Gestation Housing on Litter Size and Culling: Preliminary Results

Peter J. Lammers
M.S. Honeyman
Iowa State University

# Background

- Majority of US swine gestation occurs in gestation crates
- Allows for individual control of a large number of animals
- Increasing interest in alternative systems

# Background

- Deep bedded hoop barns gaining popularity across Midwest
- Limited research in US comparing sow productivity in bedded group housing to gestation crates

# Questions to Consider

- Reproductive performance
  - Number born alive, stillborns, pre-wean mortality, pig weight, farrowing-to-conception interval
- Sow Longevity
  - Culling and sow mortality

# Gestation Comparison

Crated Gestation
(CRATE)

Hoop Gestation
(HOOP)

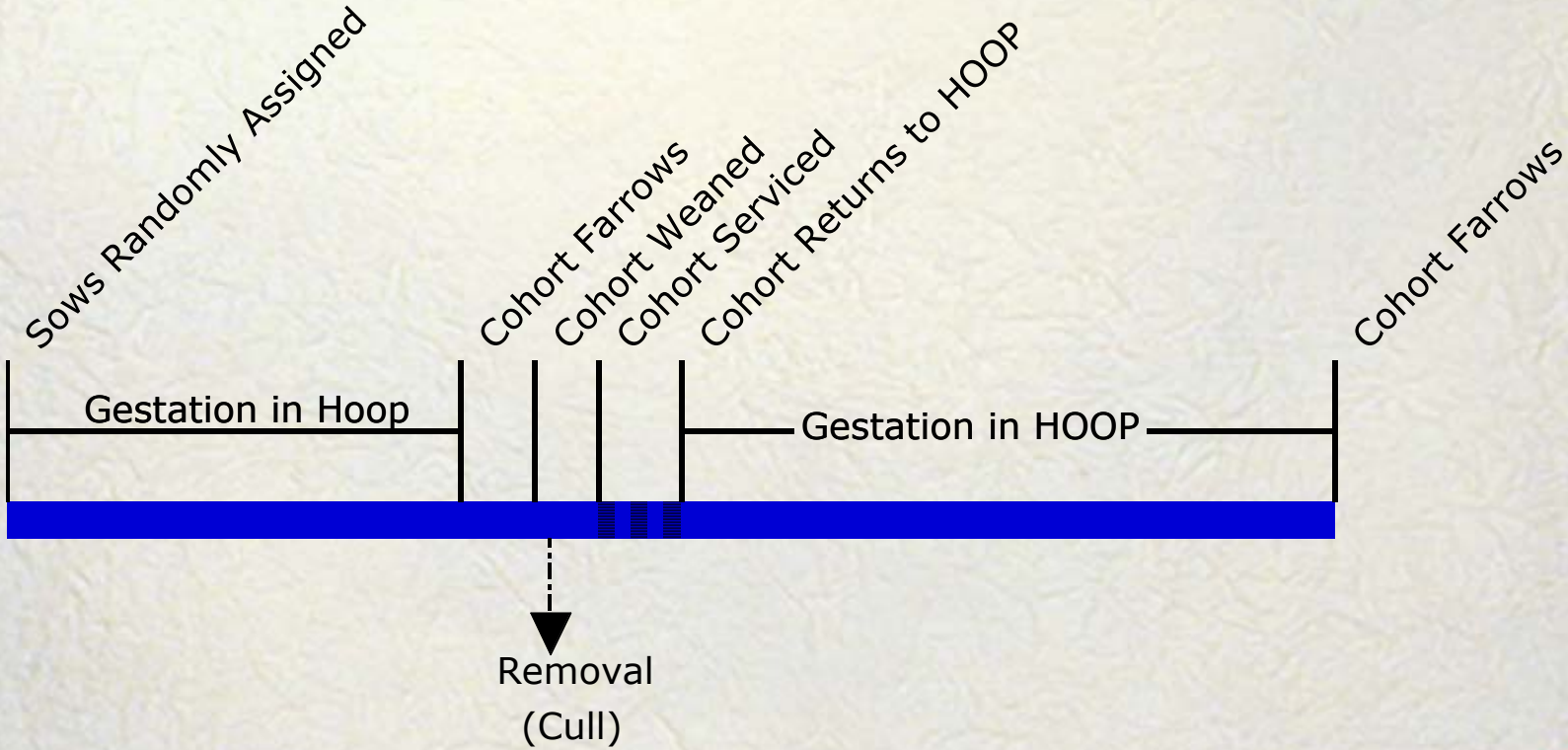
# Methods

- Sow genotype was 1/2 Yorkshire x 1/4 Hampshire x 1/4 Landrace
- Sows randomly assigned to gestation housing
- First parity gilts were gestated in crates and assigned to gestation housing after second breeding
- Litters from gilts excluded from analysis

# Methods

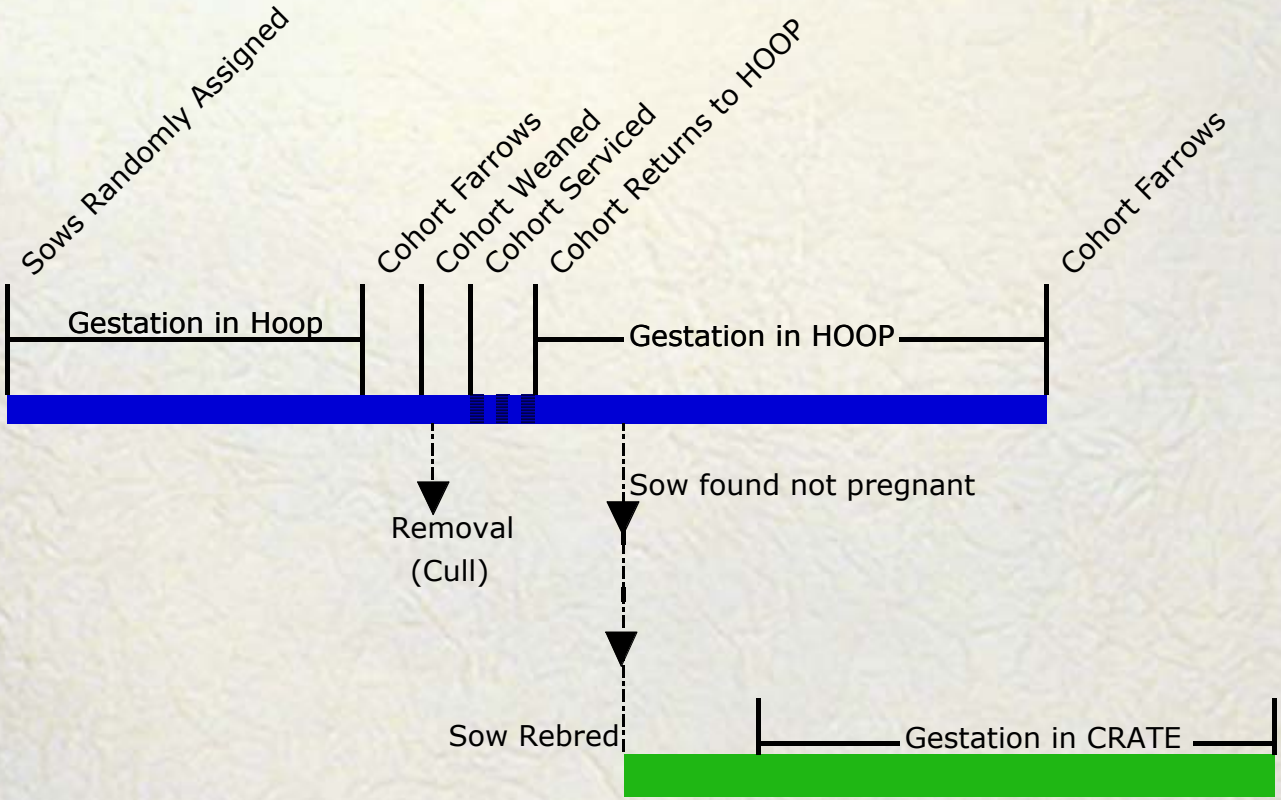
- Farrowing occurred every 2 weeks in conventional farrowing crates
- AI occurred in central breeding barn
- Sows were moved to gestation housing as a group within 12 days of weaning
- All sows fed 2.0/kg/day corn-soy and increased to 2.7kg/day during last trimester
- Sows in HOOP fed in stalls to minimize competition

# Typical Group Movement



# Sows were allowed to shift gestation housing between cohorts

For Example



# Analysis

- Project was Jan. 2001 to Jan. 2004
- Litters sorted by the gestation system prior to parturition--488 CRATE & 340 HOOP
- Wean-to-conception interval allocated to gestation system prior to parturition
- Sow culling allocated to gestation system prior to last parturition

## Farrowing Results

| Pigs/litter | Gestation Housing CRATE | HOOP |
|---|---|---|
| Number Born Alive | 10.1 | 10.8 |
| Stillborn | 1.5 | 1.4 |
| Mummies | 0.2 | 0.3 |
| Pig Weight Birth, kg/pig | 1.6 | 1.6 |

| Weaning Results | Gestation Housing | |
|---|---|---|
| | CRATE | HOOP |
| Pre-wean mortality, %/litter | 13 | 17 |
| Litter Age at Weaning, days | 19.1 | 19.6 |
| Number Weaned, pigs/litter | 8.8 | 9.0 |
| Pig Weight Weaned, kg/pig | 6.7 | 6.9 |

## Sow Longevity

| Percentage of total litters | Gestation Housing CRATE | HOOP |
|---|---|---|
| Conceptions within 3d of weaning | 6 | 9 |
| Conceptions within 7d of weaning | 61 | 63 |
| Sow Removal | 14 | 7 |

Reason for Removal

| Percentage of total removals | Gestation CRATE | Housing HOOP |
|---|---|---|
| Fertility | 47 | 50 |
| Other | 35 | 33 |
| Death | 18 | 17 |

# Questions left to answer

- If number born alive is more for HOOP, why?
- Open day allocation for sows that shifted
- Static versus dynamic cohorts
- System specific stress sources
- Trends or differences in removal reasons

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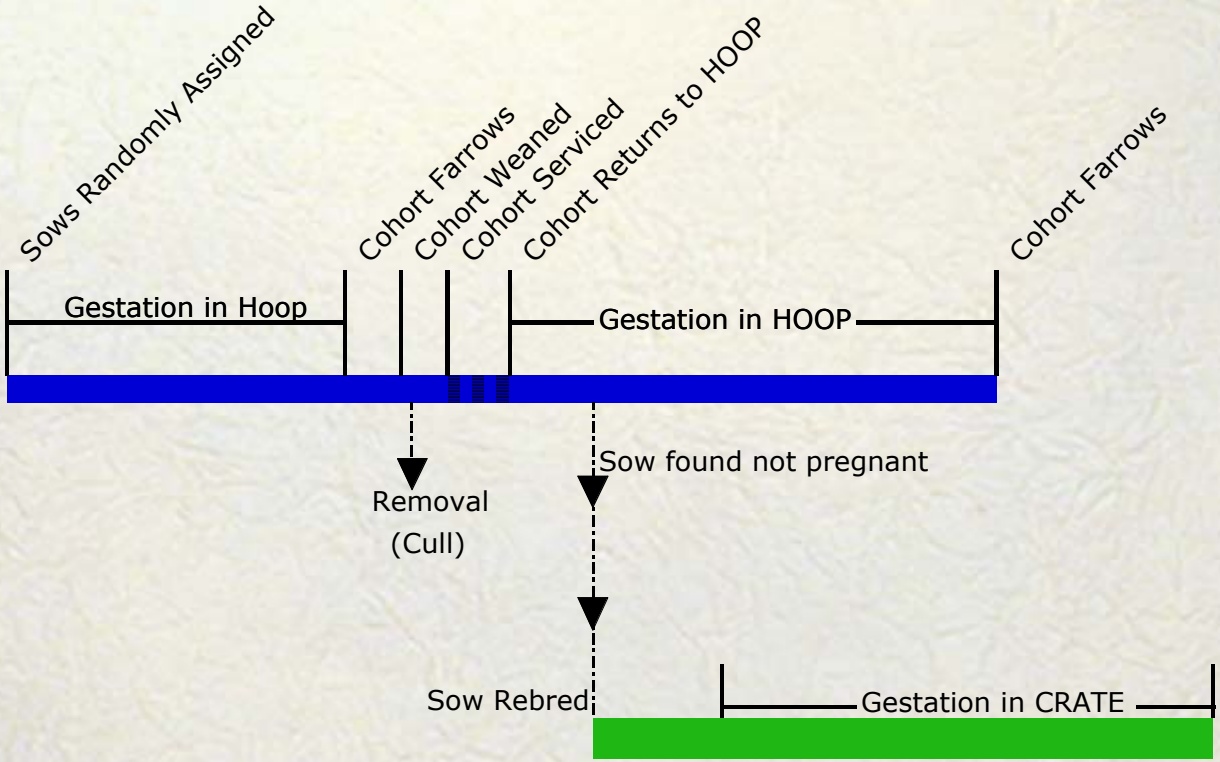

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# Questions left to answer

- Sow adaptation from group housing to farrowing crate-- imprinted or learned?
- Coupled gestation-farrowing systems
- Breed differences
- Husbandry techniques
- Bedding effects-- ingestion, rooting

- Stay Tuned!

# Conclusions

- 828 litters, over 3 year period
- Hoops tended to have >NBA, and lower sow removal rates than crates
- Similar distribution of reasons for culling
- Bedded group sow housing comparable to individual gestation crates
- Potentially improved productivity with increased experience

# Questions?

Correspondence should be addressed to

Peter Lammers
201 Kildee Hall
Ames, IA 50011
plammers@iastate.edu