

Sow Longevity – From the nucleus to  
the commercial barns and back.

Benny Mote

# Thank you Dr. Johnson!

- Undergrad advisor at UNL
  - Internship
  - Grad School
- Block and Bridle advisor
- Teacher
- Mentor

# Importance

- Females don't typically recover investment costs until parity 3
- Sows in parities 3-5 have larger litters?
- Older sows have a higher acquired immunity
  - Piglets from older sows are healthier and thus more productive
- Wean to 1<sup>st</sup> service more of a challenge with gilts

# Sow Longevity

- What is sow longevity/Sow Productive Life
  - How long a sow remains in the production herd.
    - Death
    - Cull
      - Voluntary
      - Involuntary

# Drivers for Sow Longevity

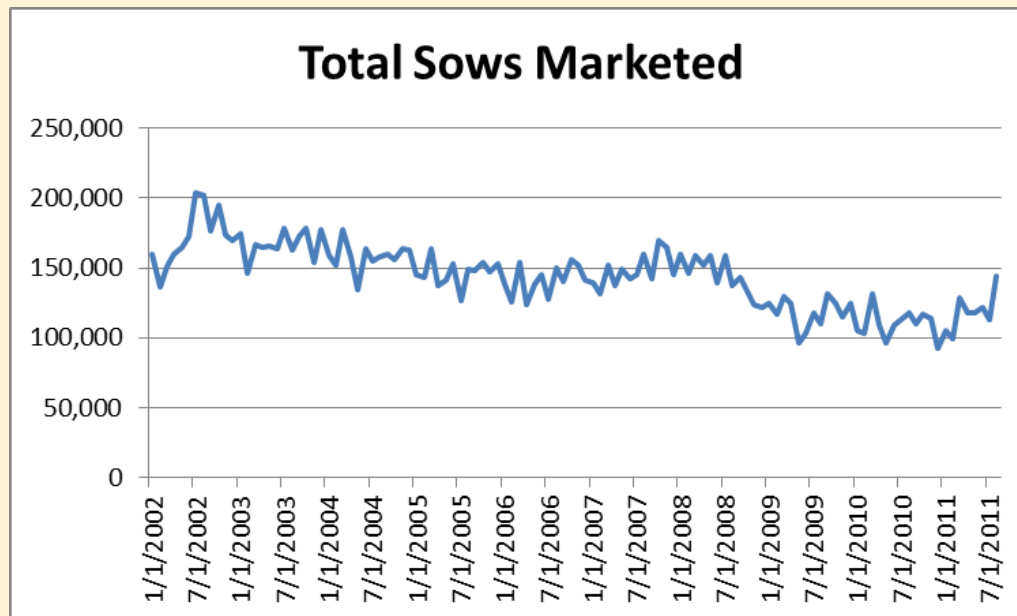
- Genetics
  - Reproduction
  - Feet & Leg Structure
  - Feed Intake
  - Growth
  - Backfat
- Management
- Herd Health

# What has changed in last 5 years

- Reproduction and Structure
  - Still primary reasons for removal
  - Greater than 0.5 more pigs per litter
  - Structure has improved but isn't perfect
- Feed intake
  - Feed Costs
  - DDGS
  - Toxins

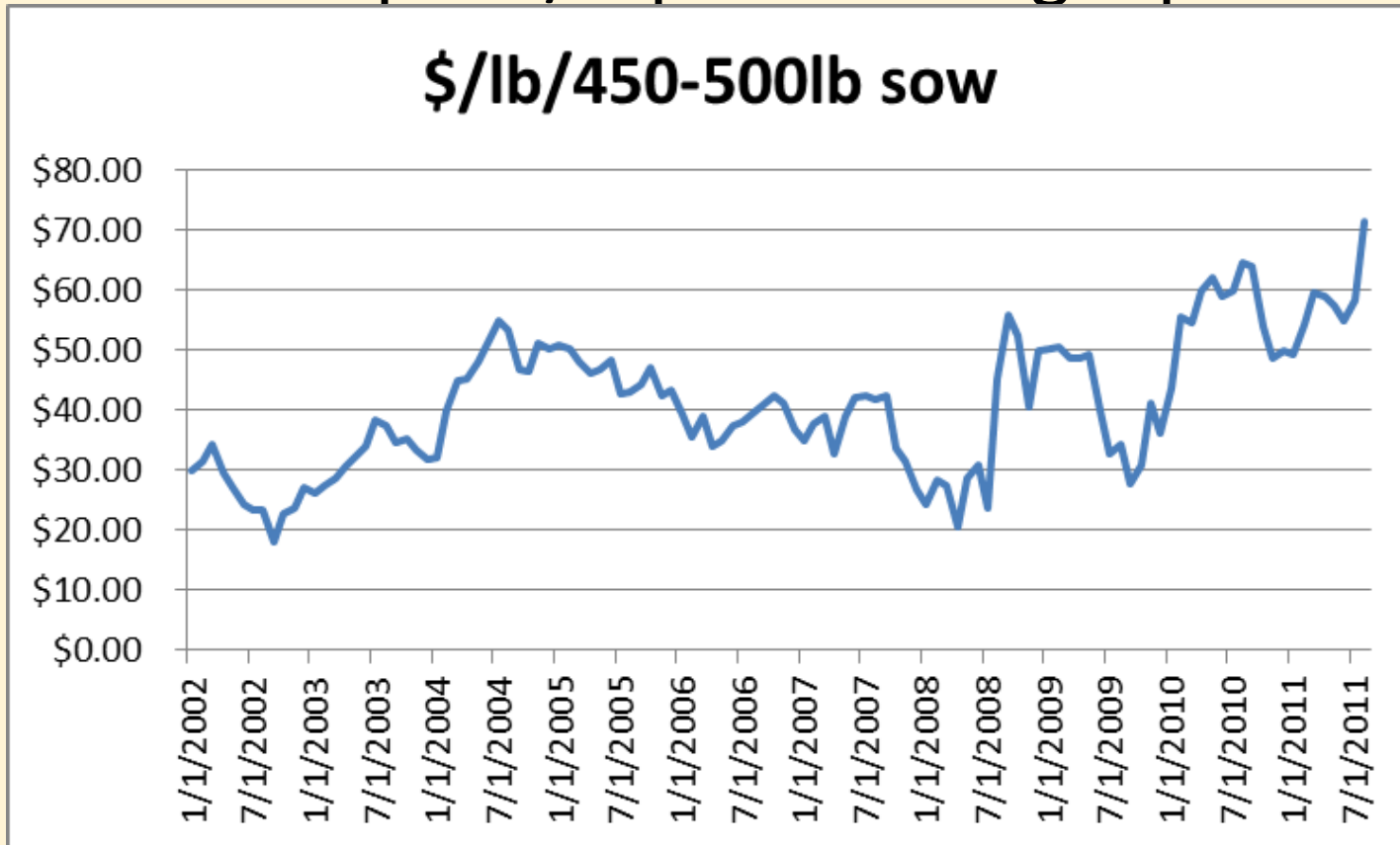
# Factors influencing culling

- Market condition of industry
- Supply/demand
- Source of replacement females
  - Own/purchase/royalty based plan



# Factors influencing culling

- Cull sow price/replacement gilt price



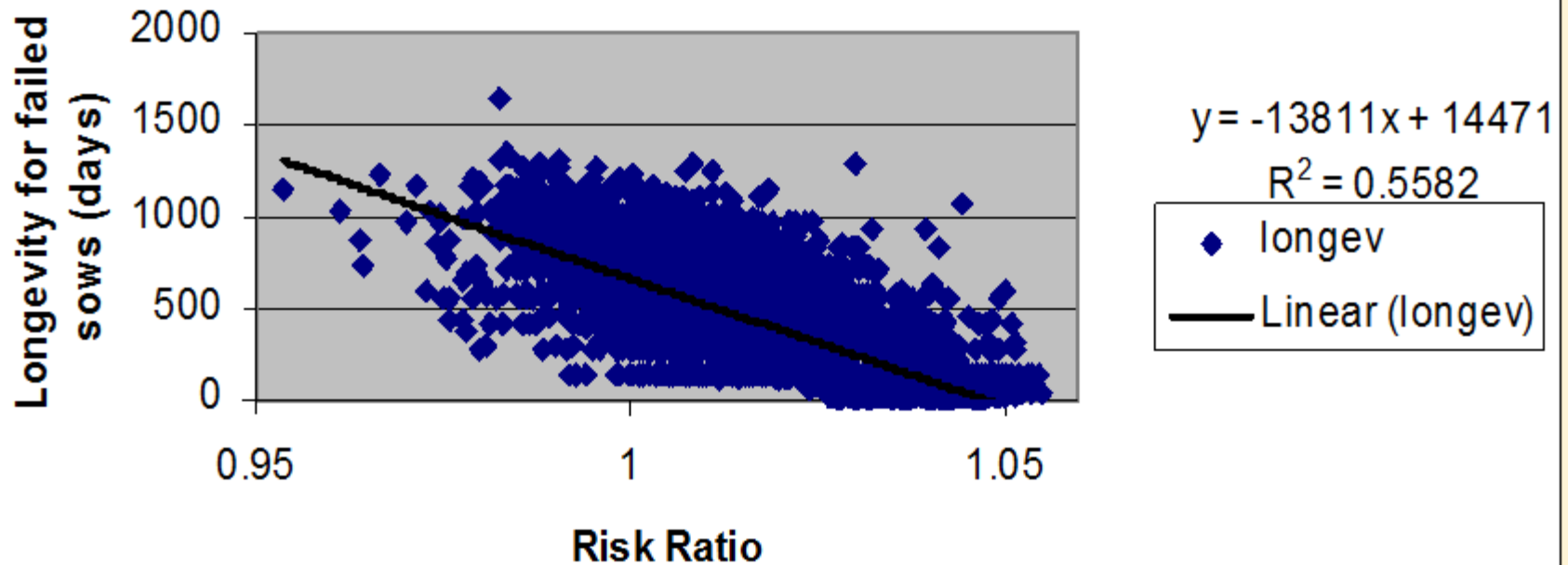


# How Important is SPL to Fast?

- 12% Maternal Index
- Value of extra parity (from P3 – P4) \$74.84
  - Increases profit by **23 cents** for every market hog sold in a farrow to finish operation
- Strong independent culling on structure

# Survival Analysis

Survival Kit Evaluation vs Actual Longevity  
LA sows



# Survival Analysis - Limitations

- Number of records/pedigreed animals
  - Single sire mating at multipliers
- Censored records
- Voluntary/involuntary culling
  - Management decisions

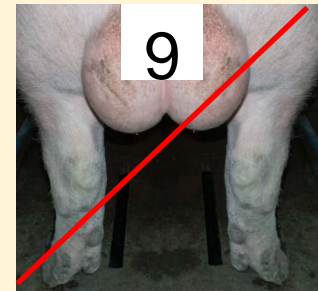
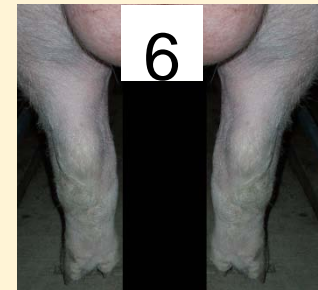
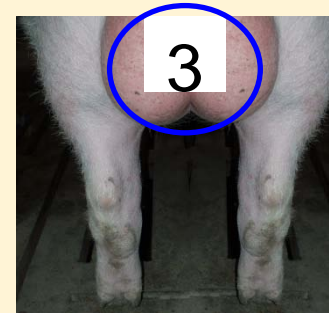
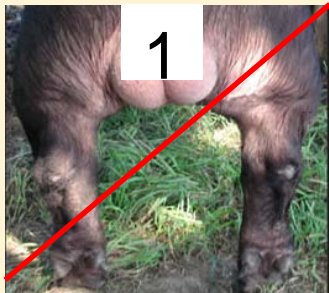
# Scoring/culling for structure

- Needed a scoring system that reflected phenotypic range seen
- Needed to have actual pictures of pigs representing the different scores
- System needed to be useful for all phases of industry
- Common terminology

# Scoring/culling for structure

- Need standard training for everyone
  - Many barn employees don't have animal background
- Selectors need to know what is and what is not acceptable
  - not all animals are perfect
  - form = function

# Rear View (legs turned in or out)



# Rear Legs: Side View



1

2

3

4

5

6

7

8

9

\*Note the stance of the animal to ensure it is the animal's natural stance and not just the way they are temporarily standing.

# Culling reasons

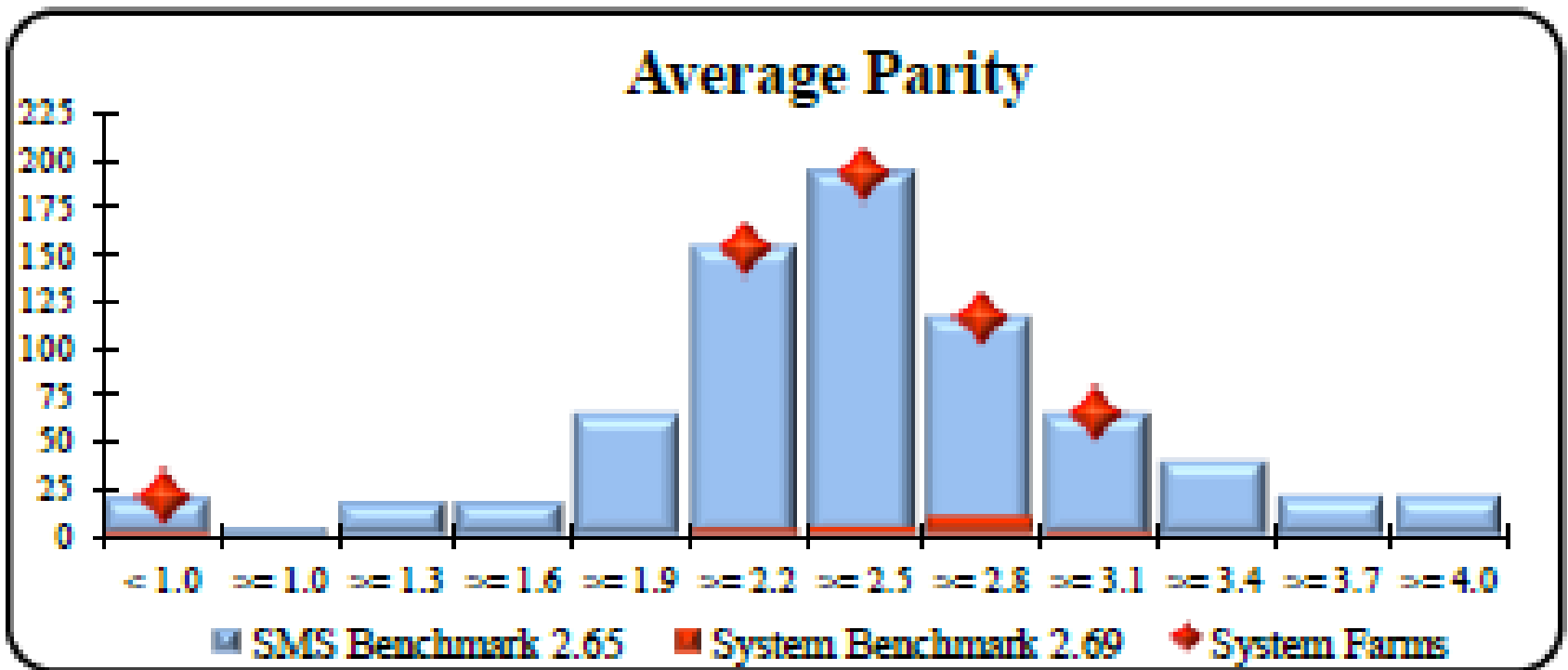
- Number of cull codes
- How well a farm wants to record reasons
  - 50% “other”
- How accurate are the reasons



# Data

- HyLife System
- 34,900 commercial sows
  - 1,000 – 6,000 head sow barns
  - Includes some batch farrowing barns
    - Dedicated P1 farm
- 1 year's worth of removal records
  - n = 16,174

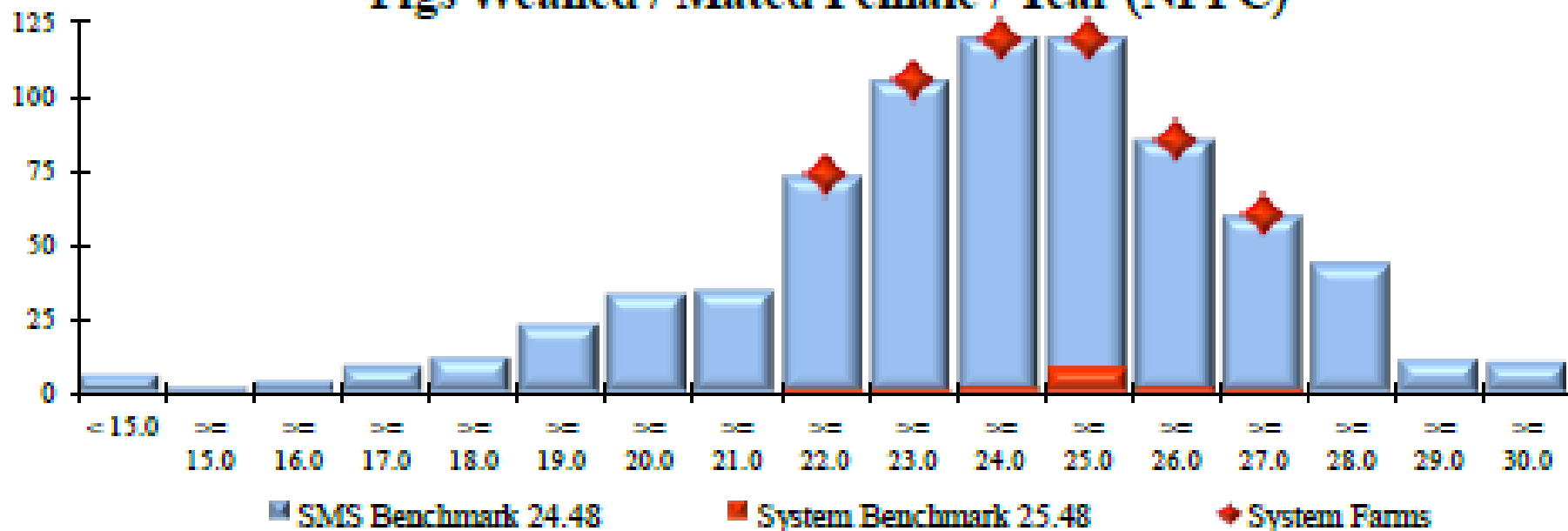
# Parity Structure



Data 10-29-2011

# Production

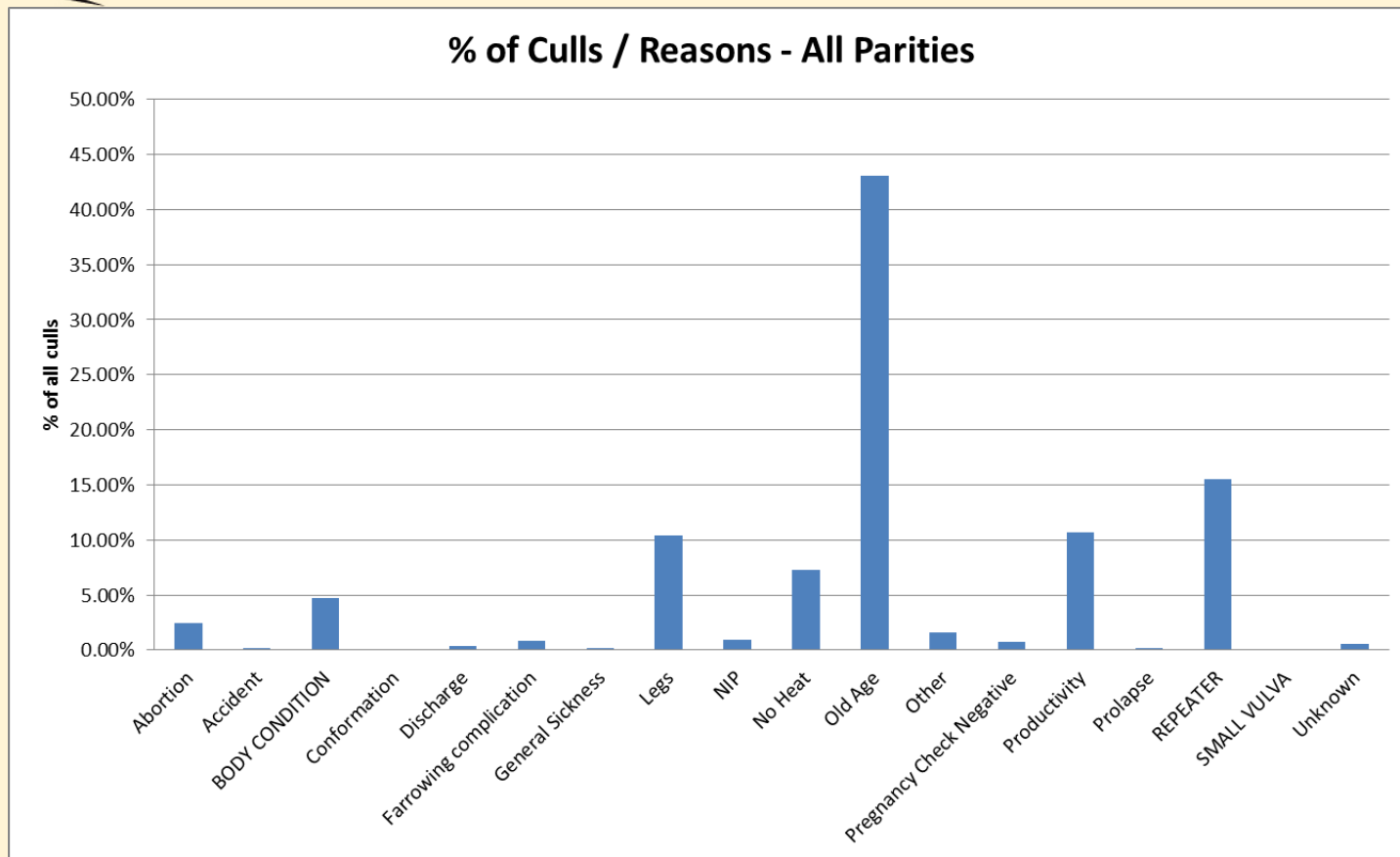
## Pigs Weaned / Mated Female / Year (NPPC)



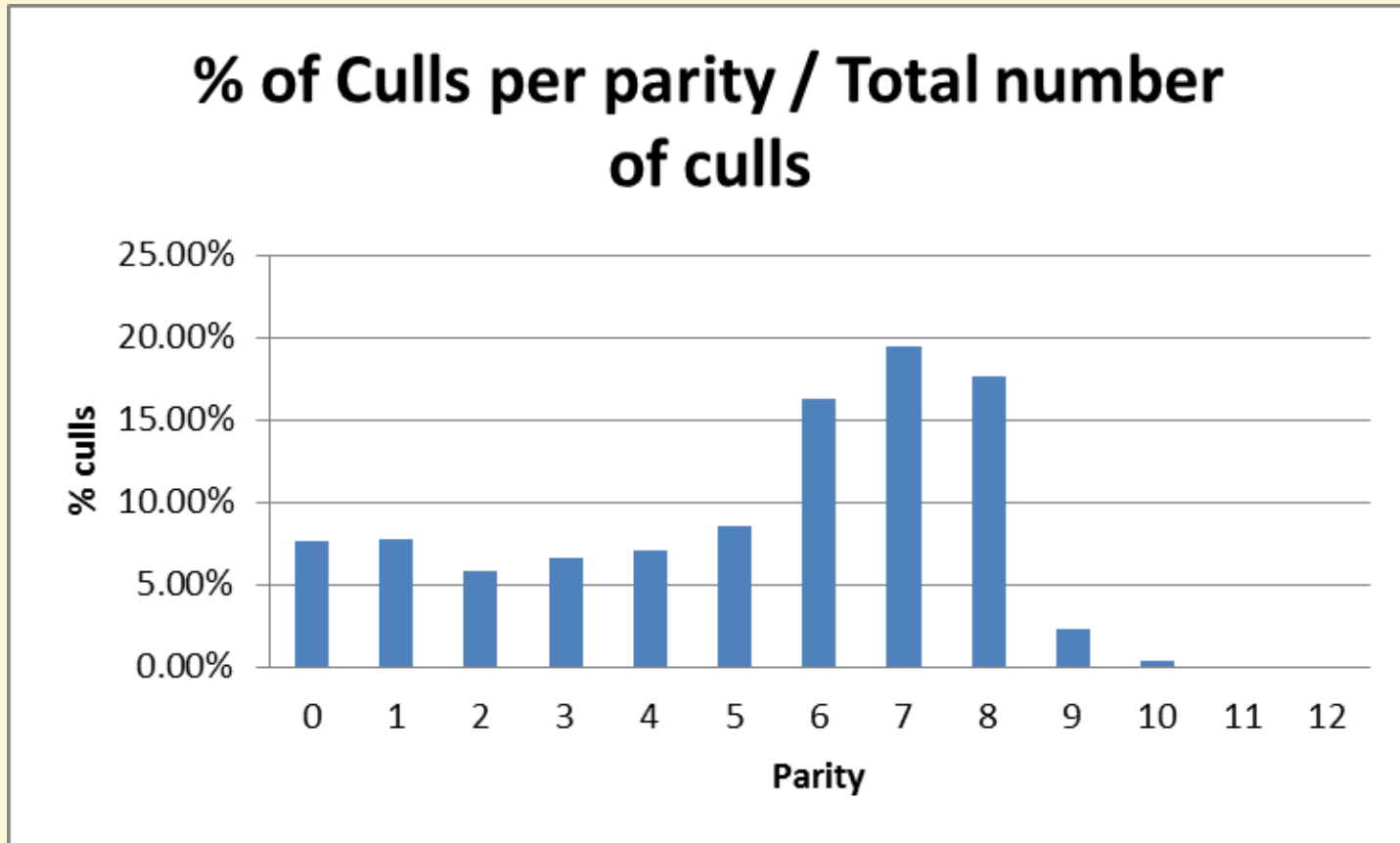
Data 10-29-2011



# Cull Reasons of System

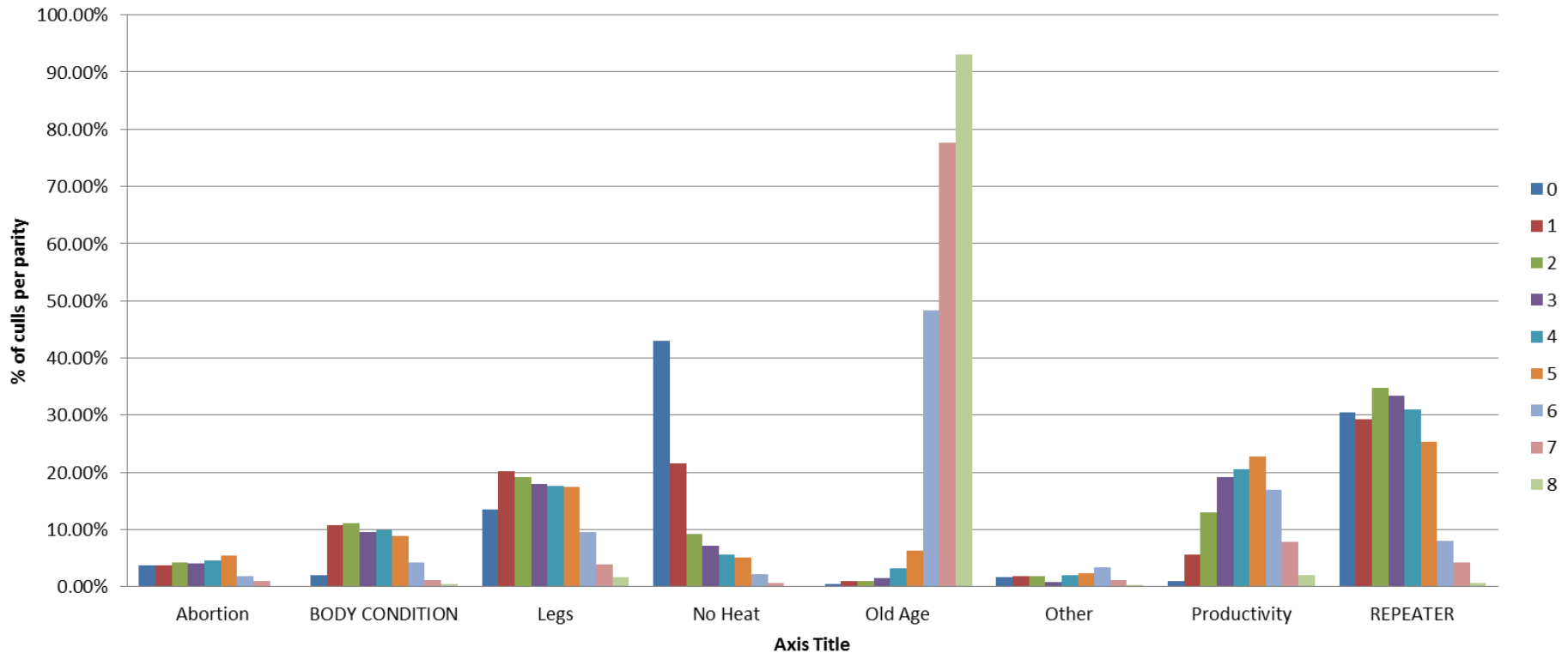


# Culls by parity

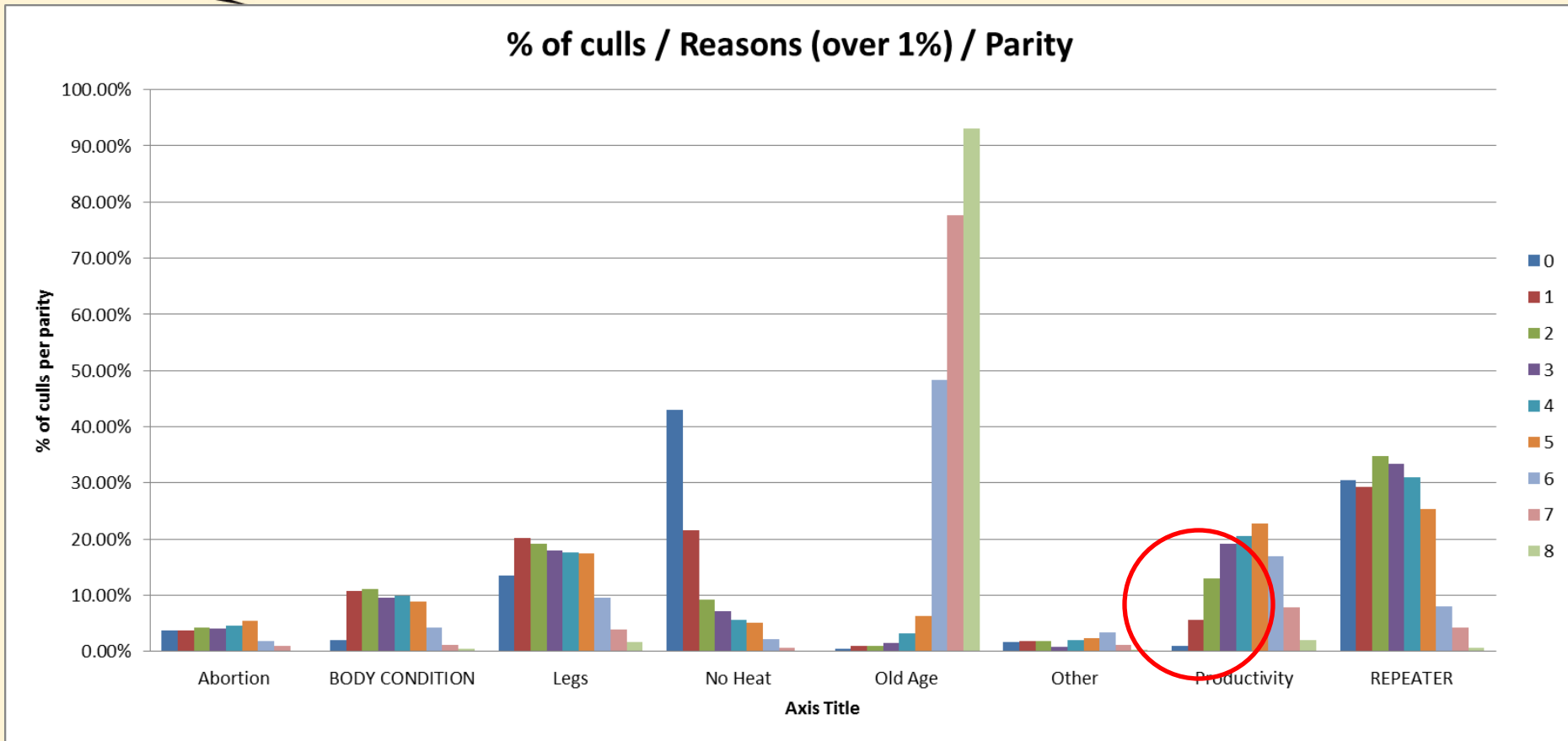


# Cull Reasons by Parity

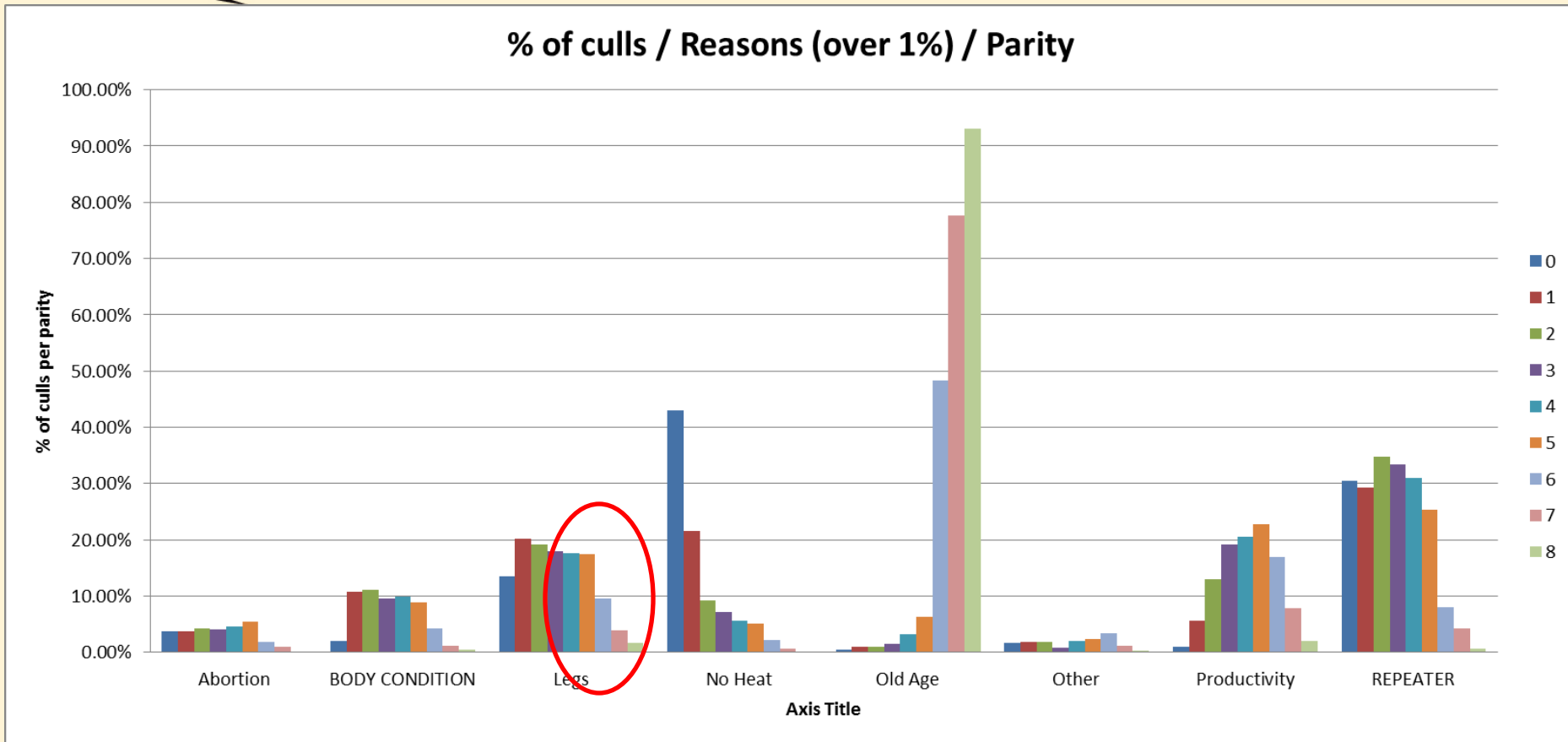
% of culls / Reasons (over 1%) / Parity



# Cull Reasons by Parity

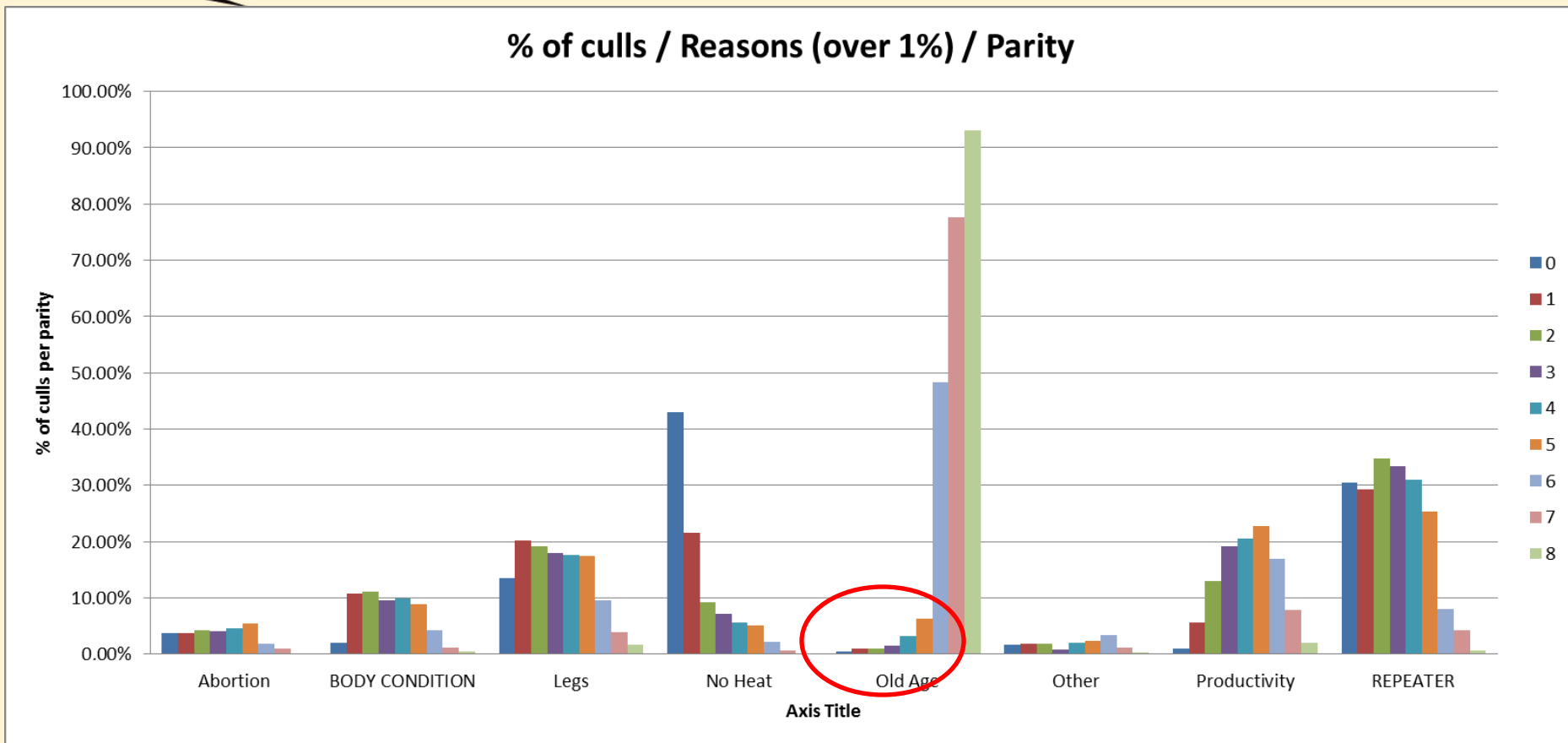


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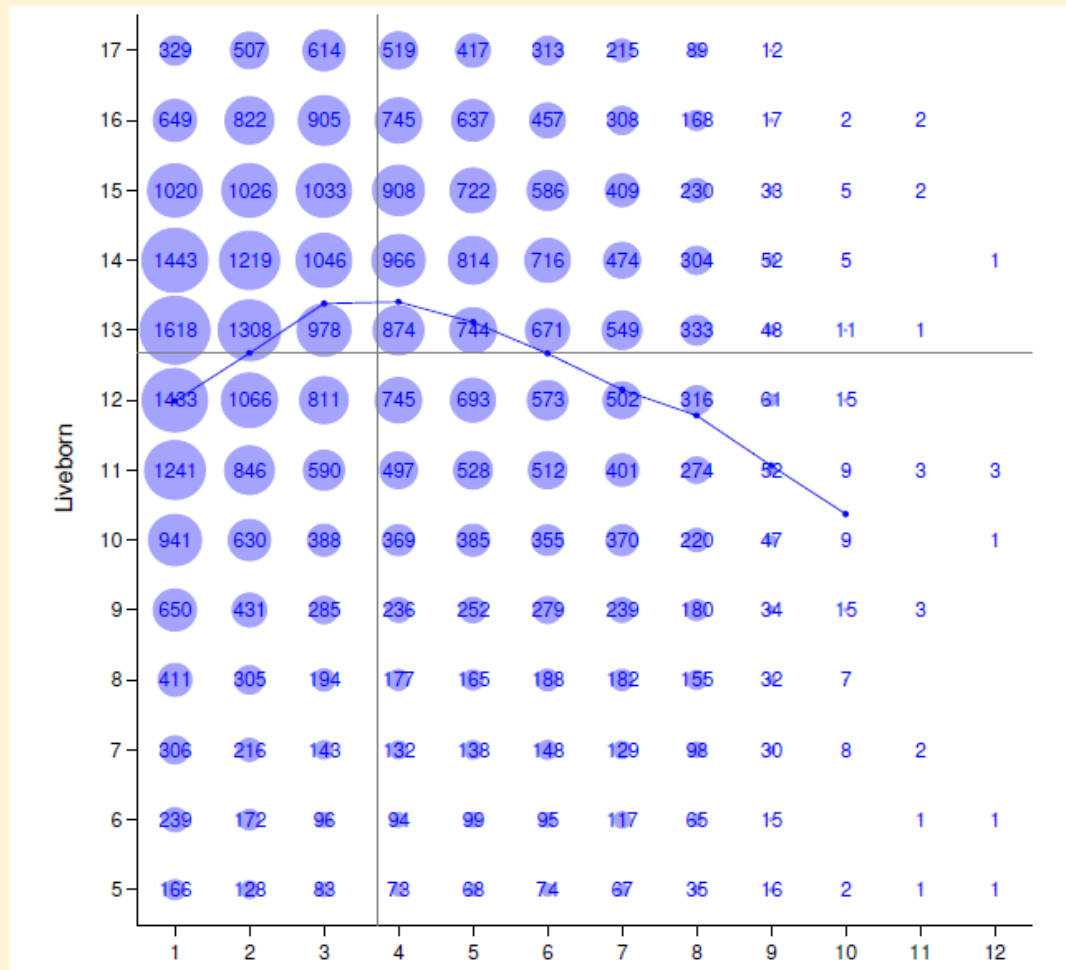




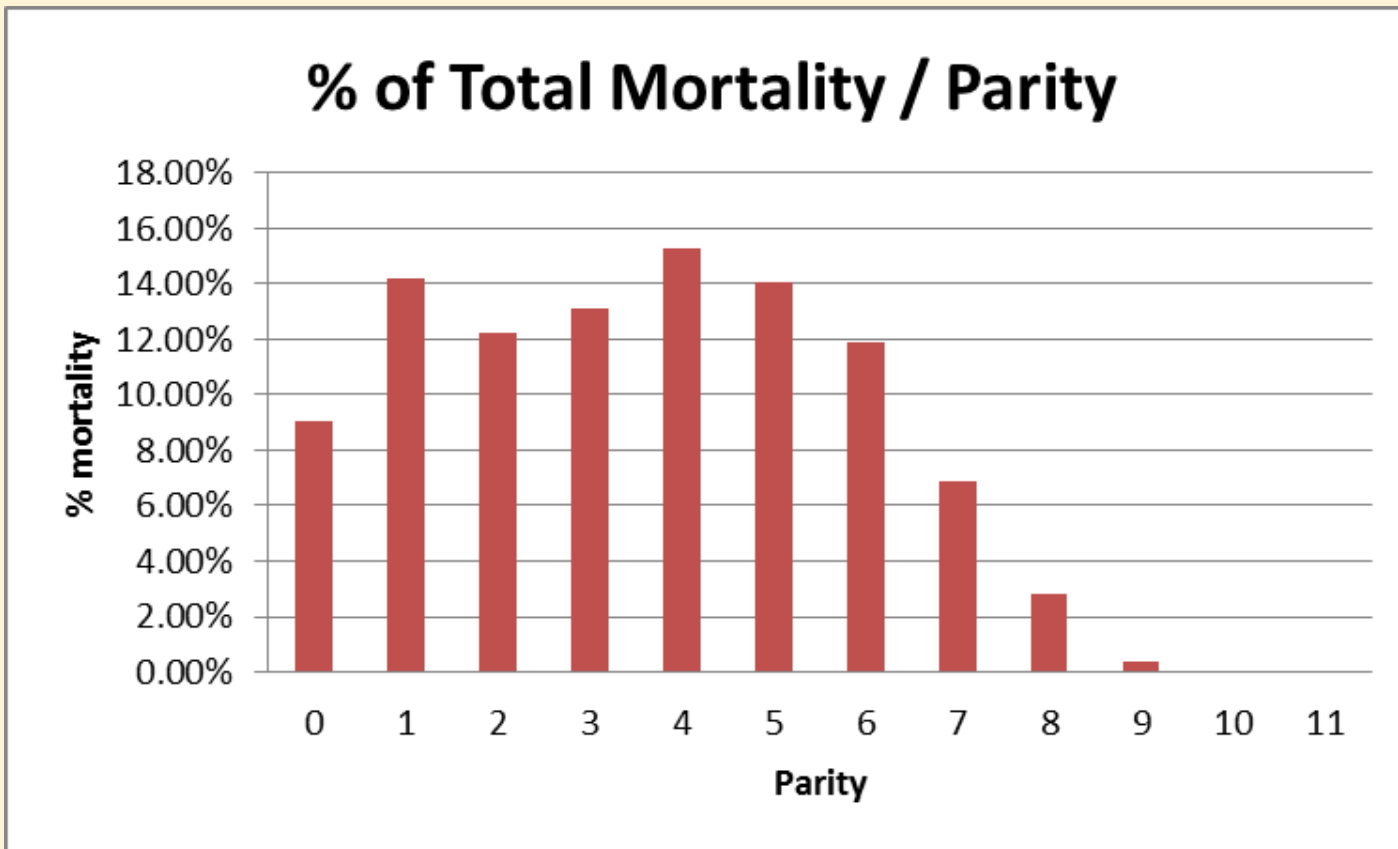
# Cull Reasons by Parity



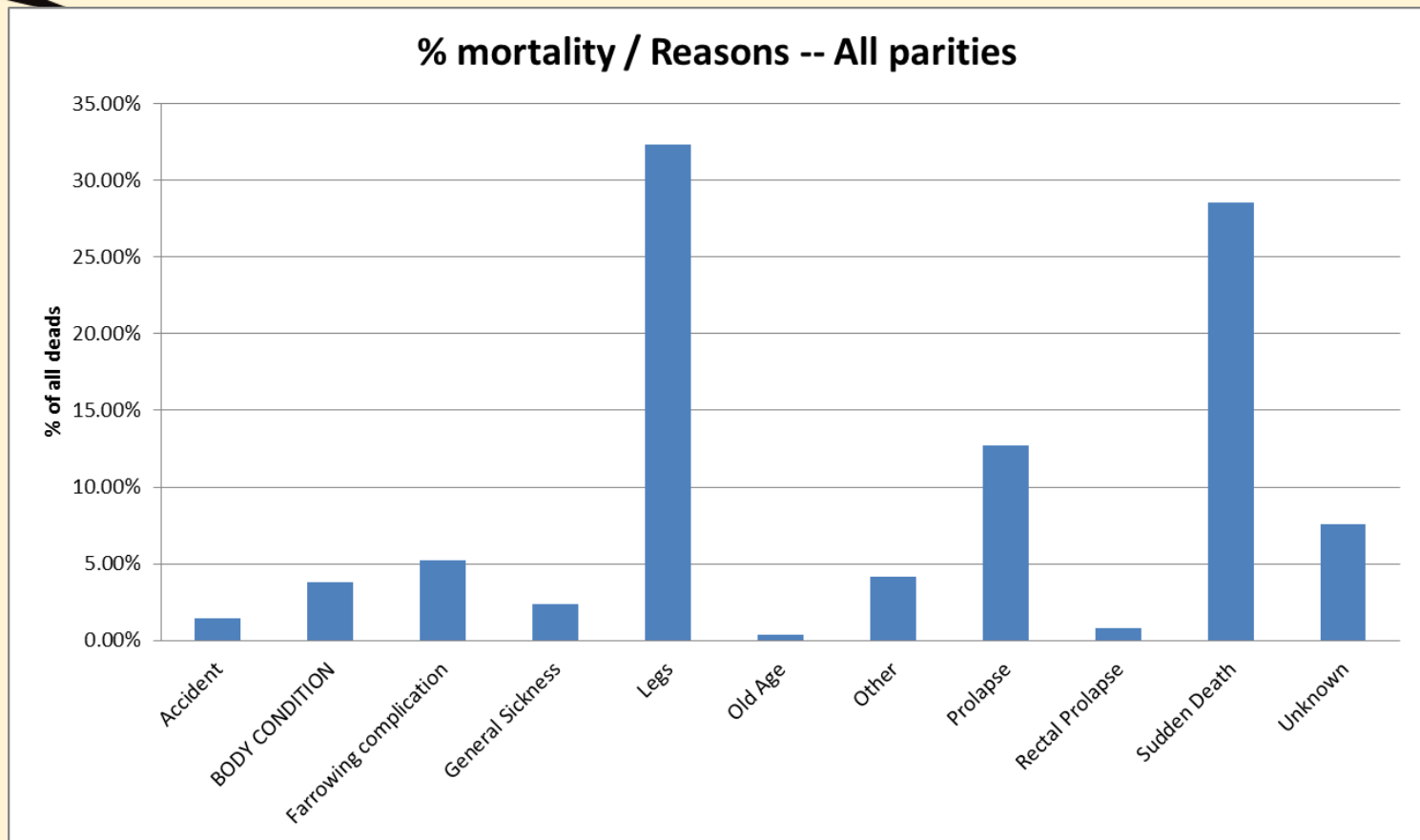
# Parity 3-5 most productive?



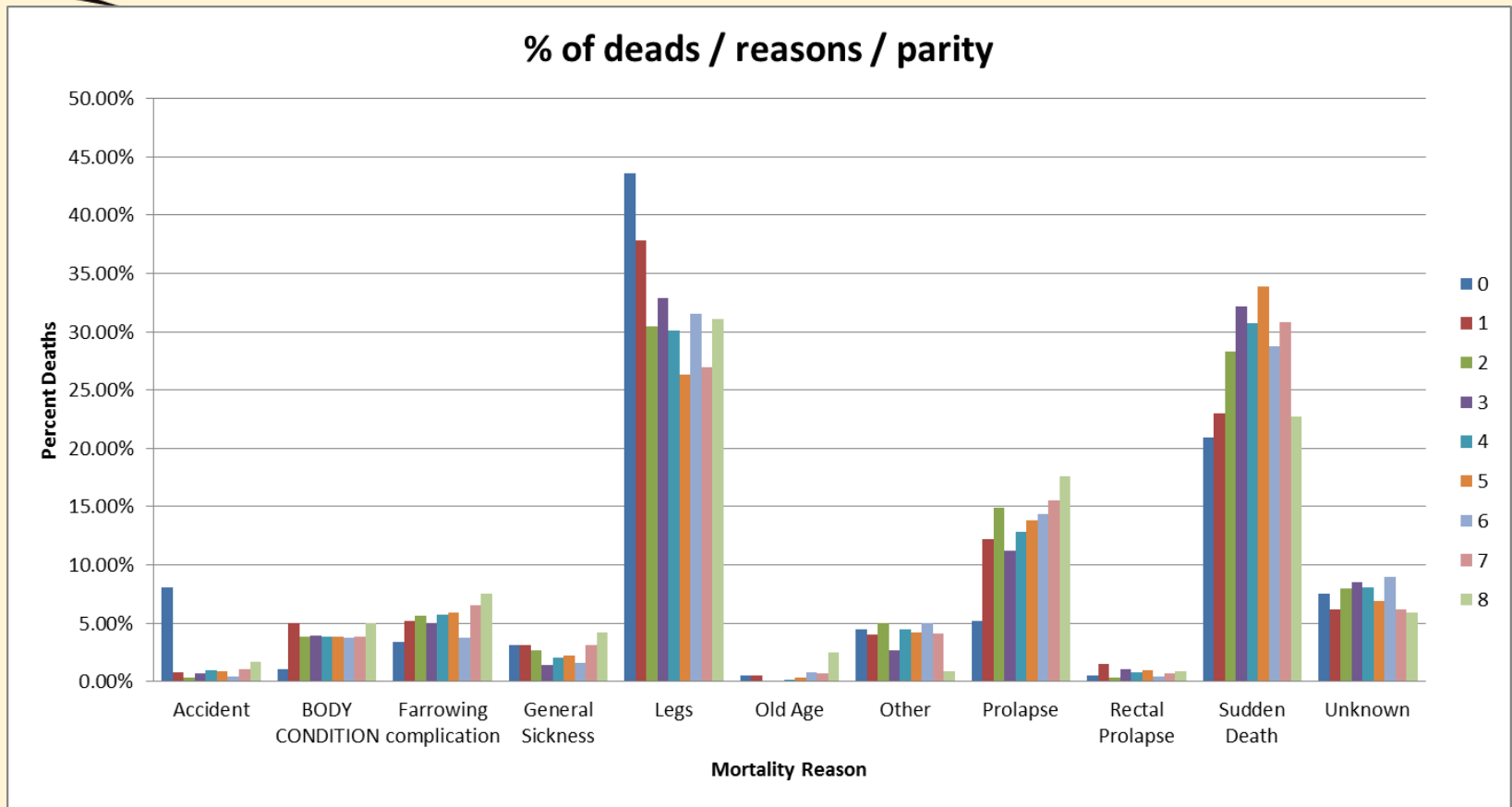
# Mortality/Parity



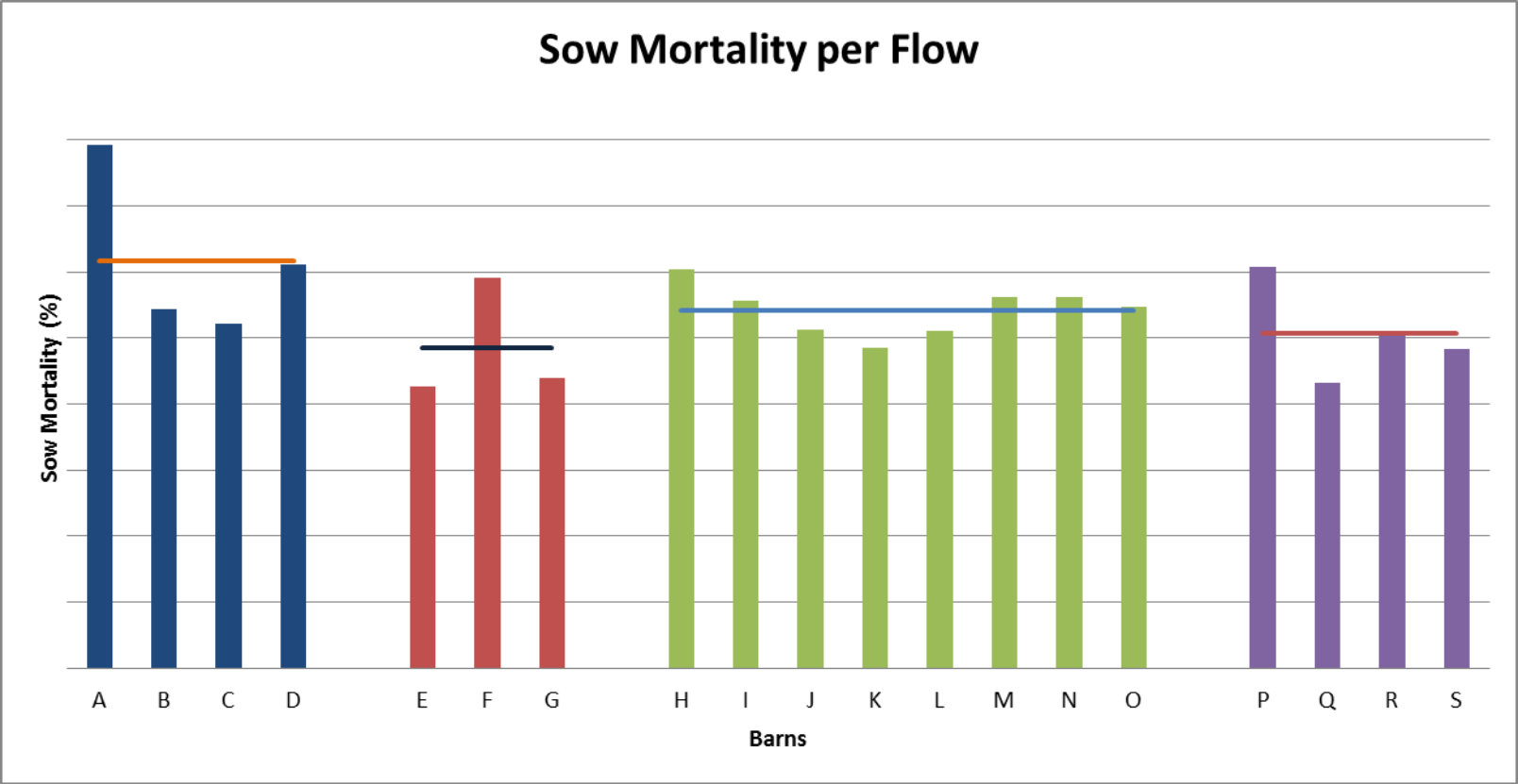
# Mortality/Euthanized



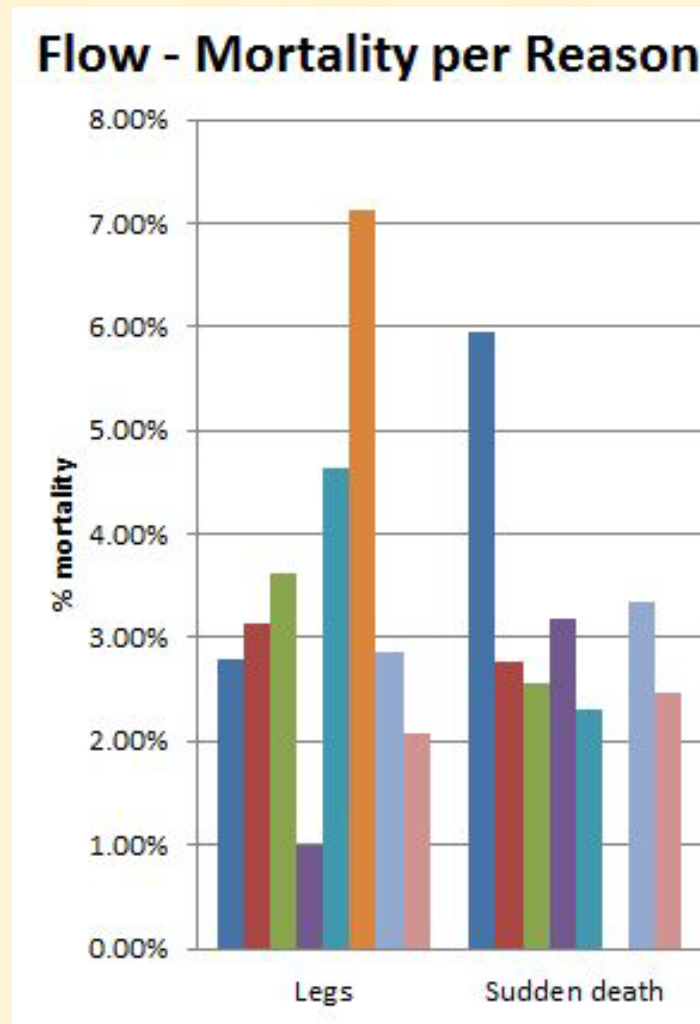
# Mortality/Euthanized by Parity



# Mortality by Multiplier Flow



# Mortality Reasons Within Flow



# Data Conclusions

- Need to standardize culling codes
- Need to train employees on how to classify culling reasons
- Large selector effect
- Even larger barn/management effect
- Old age as cull reason/excuse
- Reproduction and structure still high percentage of culls



# Challenges Ahead

- As reproduction increases, are we feeding the sows to meet their requirements?
- Training barn personnel as more employees have less animal backgrounds
- Glass ceiling. As genetics improve, management must evolve to get to next level of production