Sow Attrition

Proportion Surviving

Parity
When you are up to your neck in alligators, it's hard to remember the original objective was to drain the swamp...
Is the sow coping?

- Behavior: interactions with floor, air, other sows, inflammation, feed and water
- Pathology: injuries, inflammatory responses, fever
- Productivity: culling, NPD’s, litter size, litter survival and carcass composition
Why did the sow die?

• Because it couldn’t cope with challenges
• Because it wasn’t culled
• Because it farrowed
• Because it had reproductive priorities
• Because it has longevity risks
• Unpredictable
  – Sudden, eg prolapses
• Predictable
  – Chronic, eg lameness
  – Usually a combination of factors, eg heat, lameness and feed intake
Farrowing Crates

- Approximately 2.6% of sows died before leaving the farrowing crate
- Approximately 61% of the total mortality is in the periparturient period
- The daily risk of mortality is approximately seven times higher during this timeframe
Risk post farrowing

![Graph showing proportion of mortality over days after farrowing. The graph indicates a peak around 15 days after farrowing with a secondary peak around 135 days.](image)
Odds of removal vs one day off feed

![Bar chart showing the odds of removal vs feed intake for the day (Kg).](image-url)
Seasonality

[Graph showing seasonality with mortality rate (%) on the y-axis and months (J to D) on the x-axis.]
Muggy in Minnesota: State is setting summer records for heat and humidity
Neighbor to the north hoards its cool air as Minnesota swelters.
By John Reinan Star Tribune
JULY 14, 2018 — 6:25PM

“Overnight low temperatures since June 1 have averaged 62.1 degrees, the hottest nighttime temperatures ever. That’s two degrees higher than in 2012, which ranked second.”
Stillbirths
Live Long and Prosper
Other Risk factors

- Lameness. Sows that enter the farrowing crate lame had a 40% higher odds of dying.
- Acclimatizing to the farrowing crate, when controlling for gestation length, had no effect.
- Backfat. Sow condition scores were a better predictor of mortality than back fat.
- Obstetrical interventions and duration of farrowing, when controlling for stillbirths, did not have an effect.
## Hiding Behavior

<table>
<thead>
<tr>
<th>During movement to farrowing</th>
<th>During Feeding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lame</td>
</tr>
<tr>
<td><strong>During movement to farrowing</strong></td>
<td>lame</td>
</tr>
<tr>
<td></td>
<td>non-lame</td>
</tr>
<tr>
<td>total</td>
<td>24</td>
</tr>
</tbody>
</table>
Lameness effects

Decreased salvage value $4.28
Increased replacement costs $36.00
Decreased output $121.05
Decreased value of output $9.00
Total $170.34
Predictors of breeding group mortality rates

- Average parity sows
  - +0.9% per parity
- Gilt pool size at weaning
  - -0.3% per 1% of herd inventory
- Number of sows
  - -.04% per 1% of herd inventory
What major risk should sows avoid to avoid mortality?

– Pregnancy

• What one thing should sows do to avoid culling?
  – Get pregnant

• Do we know the accuracy of culling?
  – Is culling always successful?
Successful culls

- At planned productive age
- Without predictive productivity failure
- Without welfare concerns
- At full sale value
- At weaning
- With a replacement ready

- Less than 10% in most herds
Unsuccessful culls

- To avoid mortality/morbidity
  - lameness
- To avoid poor productivity
  - Prior reproductive history
  - Usually an underlying pathology
  - Often an inflammation, eg claws
- Culling in error
  - When replacements (and their progeny) don’t do better on average
Steps towards improving survivability

• Prioritize pathology over productivity in retention
• Improve conformation to reduce pathology
• Record problems and follow sows:
  – Lameness
  – Off-feed events
  – Treatments: antibiotics and anti-inflammatory
• Evaluate culling strategies