# The Economics of Early Culling

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# Sow Culling Rates on Irish Farms

| Year | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|
| Sow Culling Rate % | 46.2 | 42.9 | 41.6 | 43.8 | 46.4 | 46.3 |

*Teagasc PigSys National Herd Performance Report*

# How well do we manage sow culling?

- 1998: 42% sows culled before 4th parity
- 2001: 13% of gilts removed before one litter
- Culling younger sows
- Implications for loose dry sow housing?

# Culling Reasons

| Reason for Culling | % of Total Culls |
|---|---|
| Old Age | 31 |
| Reproductive Failure | 30 |
| Locomotor Problems | 11 |
| Poor Performance | 11 |
| Other | 17 |
| Total | 100 |

*Boyle et al., 1998*

# Culling Reasons continued…

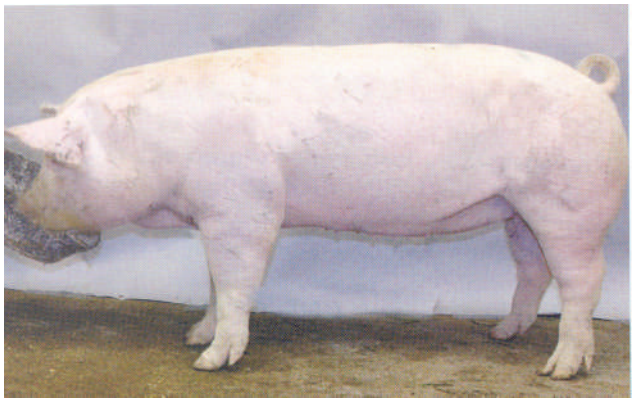
- Gilts & first litter sows
  - Reproductive Failure: 56%
  - Lameness: 20%
- Which comes first?

# Culling Age

- Maximum productivity at parities 3 to 5
- Early culling reduces opportunity of a sow to produce returns greater than her replacement cost
- Models:
  - Gilt replacement cost, sow cull value, production performance & costs, pig price, mortality
  - Must remain in herd for at least 3 parities

# Problems Associated with Culling Young Sows

- Cost of replacement gilt
- Rearing & acclimatisation cost
- Disease risk



- Poorer maternal production from young sows
- Poorer performance of pigs from first parity sows (reduced ADG, higher mortality)

*Stalder, SowBridge 2010*

# Why Cull After Six Litters?

- Replacements ready for entry to herd
- Naturally acquired immunity tends to fall off in sows at this age
- Rapid turnover to maximise genetic improvements
- Sow performance decreases:
  - Lower born alive, higher born dead, more uneven litters, reduced mothering ability

# Economics

- Replacement gilt must perform better than projected sow performance for next litter
- Accurate records (born alive, no. weaned)
- Compare average gilt litter with average for older sows
- If sow out-performed by herd and gilt average, replace her

# Annual Replacement Rate

| Parity | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Replacement Rate % | 233 | 118 | 79 | 59 | 47 | 39 | 34 |

- What are the financial implications?

# Replacement Cost per Sow

**Assumptions used:**

- 2.35 litters per sow per year
- Cull sow sale value €120
- Cost of purchased replacement gilt €230
- Cost of home reared replacement gilt €180

# Replacement Cost per Litter

| Parity | Purchased Gilts € | Difference € | Home Reared Gilts € | Difference € |
|---|---|---|---|---|
| 1 | 109 | | 59 | |
| 2 | 55 | 54 | 30 | 29 |
| 3 | 37 | 18 | 20 | 10 |
| 4 | 28 | 9 | 15 | 5 |
| 5 | 22 | 6 | 12 | 3 |
| 6 | 18 | 4 | 10 | 2 |
| 7 | 16 | 2 | 9 | 1 |

# Replacement Cost per Sow

- The longer in the herd, the cheaper to replace
- Replacements must remain in herd:
  - At least 3 parities (home reared)
  - At least 4 parities (purchased)
  - Guideline: 6 parities
- Other factors: born alive, no. weaned, quality of pig produced, mothering ability

# Summary

- Earlier culling = lost profit
- Reproductive failure/lameness: which first?
- Cull after 6 litters
- At least 3 parities (home reared) or 4 parities (purchased)
- Accurate records (on-farm systems)