

Gilts vs. Barrows – what are the economic implications and what are we leaving on the table?

Purpose

Conduct a research review characterizing the difference in barrow and gilt growth performance, carcass composition and meat quality.

34  PEER-REVIEWED STUDIES
16,000 PIGS

Collaborating Authors



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Live Animal Performance

Growth Performance¹

- Gilts compared to barrows:
 - 5.9% lower ADG
 - 11.4% lower ADFI
 - 4.3% better feed efficiency

Final Body Weight¹

- Gilts compared to barrows:
 - 2.3% lower market weight
 - Equivalent to 6.5 lbs lighter weight when barrows are marketed at 285 lbs

Final Body Weight Variability

- Data suggests higher gilt final weight variability compared to barrows, resulting in more light-weight discounted gilts

Sort Loss

- **1st cut:** higher percentage of barrows are marketed
- **Barn dump:** higher percentage of gilts are marketed
- **Example:** 1000-hd barn split, with 10% final body weight coefficient of variation:

On average, 10 more gilts weighing less than 230 lbs compared to barrows

Finisher Mortality

- Published data does not suggest differences in mortality between barrows and gilts, but a few papers report it
- Production staff often believe higher mortalities are observed with barrows

Estrous Development

- Selection for earlier maturing gilts in the breeding herd creates the possibility for development of estrus in market gilts
- If gilts begin to cycle, their ovaries and uterus are 5.5 and 13.9 times heavier than non-cycling gilts, which will be associated with less nutrients available for growth and lean deposition²



Comparison illustrating female reproductive tract of market weight gilts, pre-pubertal (left) and cycling (right)

Final report: TI-06444 (project 20PRGIMV-01-04)



How much lighter are your gilts compared to barrows, and how does this impact sorting losses?

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Carcass Composition and Meat Quality

Hot Carcass Weight

- Driven by final body weight differences
- No differences in carcass dressing yield observed between barrows and gilts
- When carcass dressing yield = 75%, gilts have 4.8 lbs lighter hot carcass weight¹

Carcass Composition¹

- Gilts compared to barrows:
 - 11.7% less backfat
 - 4.5% greater percent lean

Primal Weight And Yield

- Reflective of differences in hot carcass weight
- Data does not suggest differences between barrows and gilts at same hot carcass weight

Marbling (intramuscular fat)

- Key indicator for premium-priced export markets
 - Higher marbling is preferred
- Gilts compared to barrows:
 - 15.2% less marbling¹

Iodine Value

- IV is a measure of fat quality
 - Higher IV = softer fat and poorer bacon slicing yield
- Key indicator for premium-priced export markets
 - Lower IV is preferred
- Gilts compared to barrows:
 - 2-3 units higher IV¹

Color

- No meaningful differences in loin and ham color have been reported

Economic Implications

Live Animal Performance

Fixed Time:

With barrows finishing at 285 lbs, gilts will be:

-6.5 lbs. body weight
-\$3.66 of value

Fixed Weight:

With final barrow ADG and F/G of 1.90 and 2.85, respectively, growing gilts to same weight:

+\$2.96 associated cost

Producer Economics

 **-\$3.66**
GILT LOSS
BASED ON HCW

MAINLY DRIVEN BY BODY WEIGHT ASSUMING:

Lean carcass value = **\$75/cwt**

Yield = **75%**

Final diet cost = **\$285/ton**

Yardage = **\$0.12/day**

Carcass and Meat Quality

Gilts Compared to Barrows*

Trimmed loins = -1.06 lbs (\$0.80)
Butts = -0.42 lbs (\$0.32)
Picnics = -0.50 lbs (\$0.26)
Spareribs = -0.17 lbs (\$0.16)
Hams = -1.19 lbs (\$0.68)
Bellies = -0.77 lbs (\$1.07)
Other pieces = -0.74 lbs (\$0.51)

Cut losses = -4.85 lbs **-\$3.80**




** -10% Loins and Bellies Premium pass rate **(-\$1.32)**

Integrator Economics

TOTAL LOSSES IN VALUE PER GILT =

= -\$5.12



*Assuming market price = \$75/cwt, Gilts HCW = -2.2%, Premium price = +15% over base price

**Due to less marbling and higher IV



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¹Summary of 34 different peer-reviewed papers published since 2000 and representing almost 16,000 pigs

²Rodrigues et al. 2018. Animal. pp.1-6.

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