Comparison of Using Top 5% vs Average BV Breeding Stock

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National Genetic Swine Evaluation Program

- National Across Herd Genetic Evaluation Program for Purebreds in USA
- Allows customer to compare the genetic merit (BV) of animals at different farms
- Expresses BV in units of the trait
- Combines traits into indexes for multiple trait selection

Performance Indexes

- Maternal Line Index (MLI)
  - based on litter size, litter weight, days to market, FCR, Pounds of lean
  - expressed in $$/litter produced
- Terminal Sire Index (TSI)
  - based on days to market, FCR and Pounds of Lean
  - expressed in $$/10 pigs produced

Top 5% MLI vs Average MLI Purebred Breeding Stock

<table>
<thead>
<tr>
<th>Top 5% Y Avg. Y</th>
<th>Top 5% L Avg. L</th>
<th>Top 5% D Avg. D</th>
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<td>119.2</td>
<td>116.4</td>
<td>112.8</td>
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Economic Difference Between Top 5% and Average Merit

- **MLI ($$/litter)**
  - York: 119.2-110.4=+13.80
  - Land: 116.4-105.5=+10.90
  - Duroc: 112.8-104.8=+8.00

- **TSI ($$/10 progeny)**
  - York: (136.2-115)/10=+2.12 pig
  - Land: (132-116.4)/10=+1.56 pig
  - Duroc: (131-117.6)/10=+1.34 pig
Traditional Genetic Pyramid

- 200 York sows x York boars --> Yorkshire for GGP and GP
- 50 Land sows x Land boars --> Landrace boars
- 50 Duroc sows x Duroc boars --> Terminal boars
- 1200 York sows x Land boars --> LY parent stock
- 8500 LY sows x Duroc boars --> Market hogs

GGP Matings and Output

- 50 York sows x York boars --> York GGP
  - 110 Litters and 900 pigs
- 150 York sows x York boars --> York GP
  - 330 Litters and 3000 pigs
- 50 Land sows x Land boars --> Land GGP
  - 110 Litters and 900 pigs
- 50 Duroc sows x Duroc boars --> AI boars
  - 100 Litters and 800 pigs

GP and PS Matings and Output

- 1200 York sows x Land boars --> LY
  - 2640 Litters
  - 800 pigs
- 50 Land sows x Land boars --> Land GGP
  - 110 Litters and 900 pigs
- 50 Duroc sows x Duroc boars --> AI boars
  - 100 Litters and 800 pigs

Difference in GGP Performance

- GGP-Landrace
  - 110 litters x $10.90 = $1199
  - 900 pigs x $1.56 = $1404
- GGP-Duroc
  - 800 pigs x $1.34 = $1072
- GGP-York
  - 440 litters x $13.80 = $6072
  - 3900 pigs x $2.12 = $8268

Difference in GP and PS Performance

- GP-Yorks
  - 2640 litters x $13.80 = $36,432
  - 22,420 pigs x $1.84 = $41,253
- PS herds
  - 20,400 litters x $12.35 = $251,940
  - 200,000 pigs x $1.34 = $268,000

Total Performance Advantage Top 5% vs Avg BV

- GGP (650 litters + 5600 pigs)
  - $18,815
- GP (2640 litters + 22,420 pigs)
  - $77,685
- PS herds (20,400 litters + 200,000 pigs)
  - $519,940
- Total for 10,000 sow pyramid
  - $616,440 per year
Summary

- Customer can purchase excellent breeding stock (top 5%)
- Customer can purchase average breeding stock
- There will be little difference in price
- There will be a large difference in performance