



## Comparison of Using Top 5% vs Average BV Breeding Stock

Dr. John Mabry  
Iowa Pork Industry Center

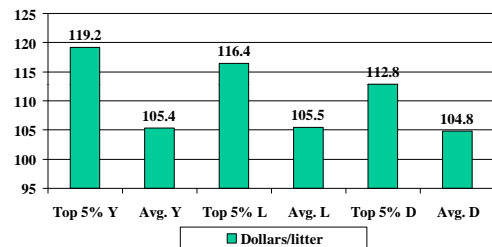
## National Genetic Swine Evaluation Program

- 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

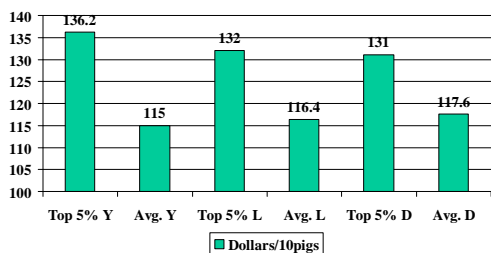
## Performance Indexes

- 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



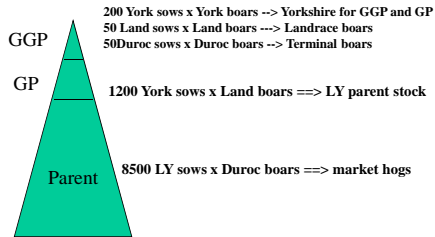
## Top 5% TSI vs Average TSI Purebred Breeding Stock



## Economic Difference Between Top 5% and Average Merit

- **MLI (\$\$/litter)**
- **TSI (\$\$/10 progeny)**
- York
  - $119.2 - 105.4 = +13.80$
  - $(136.2 - 115) / 10 = +2.12$  pig
- Land
  - $116.4 - 105.5 = +10.90$
  - $(132 - 116.4) / 10 = +1.56$  pig
- Duroc
  - $112.8 - 104.8 = +8.00$
  - $(131 - 117.6) / 10 = +1.34$  pig

## Traditional Genetic Pyramid



## 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  
 – 22,440 pigs
- 8500 LY sows x Duroc boars --> Market hogs  
 – 20,400 Litters  
 – 200,000 pigs

## Difference in GGP Performance

- GGP-Landrace  
 – 110 litters x \$10.90 = \$ 1199  
 – 900 pigs x \$ 1.56 = \$ 1404
- GGP-Duroc  
 – 100 litters x \$ 8.00 = \$ 800  
 – 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