Meat yield genetic evaluations

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Meat Technology Ireland

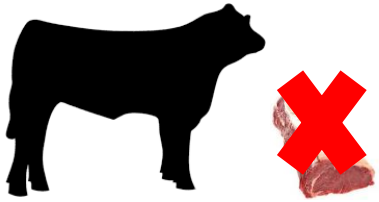
- 5 year research & innovation programme
  - Developed by industry and co-funded by **Enterprise Ireland** and beef and sheep **meat processing companies**
  - 6 strategic research pillars
    - **Genomic predictions**
    - Meat tenderness
    - Meat safety
    - Meat characterisation technologies
    - Meat and health
    - Market opportunities

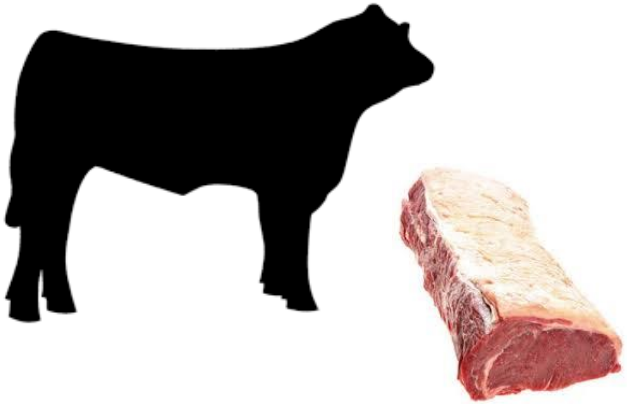
Background

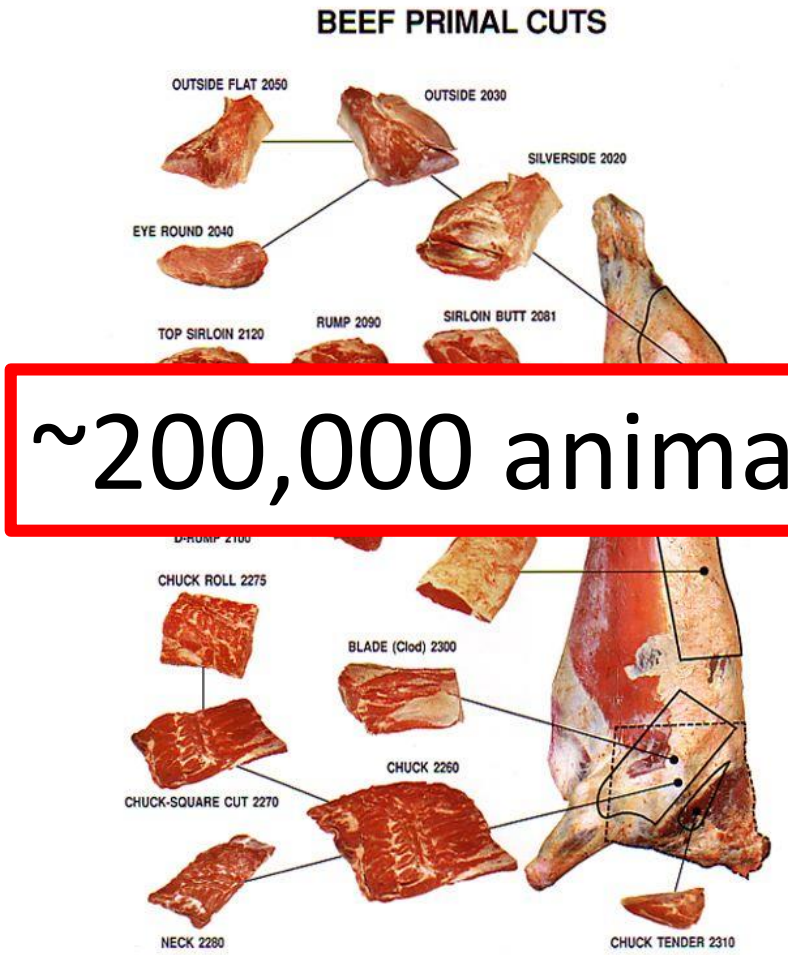
- Payment systems in factories based on estimates of carcass value
  - Many national genetic evaluations for carcass merit are based on such metrics (Pabiou *et al*., 2012)
  - Conroy *et al*. (2010) reported a correlation of **0.85** between this classification system and carcass meat proportion

- Due to the large resource demand to generate detailed cut data, few have embarked on this research

Breeding for primal cuts?







~200,000 animals

Breeding for primal cuts?

Heritabili

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60% of the variation in carcass weight is due to genetics!

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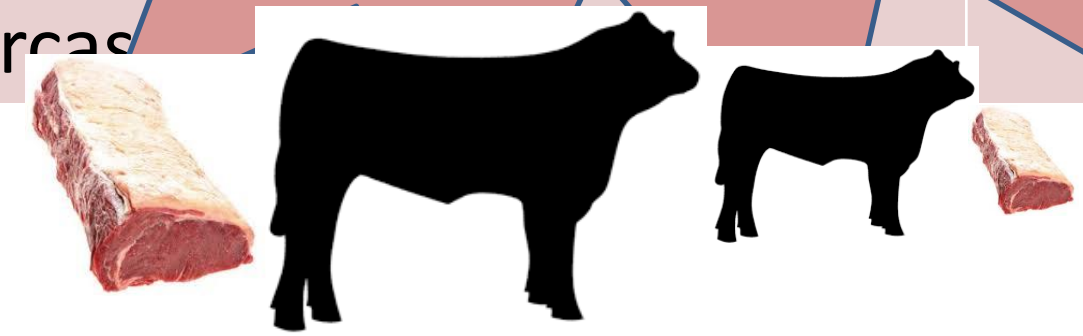
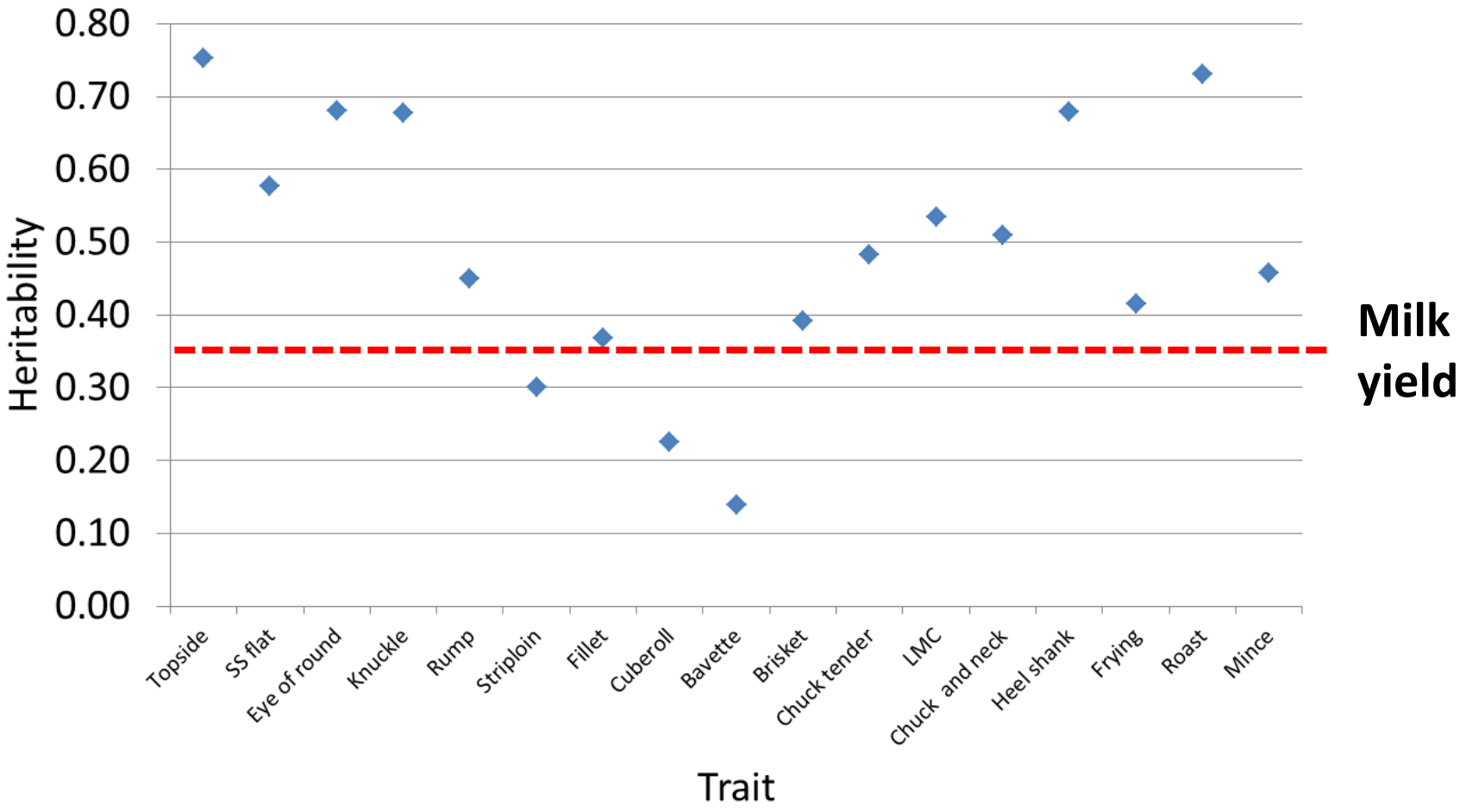


Heritability of retail cuts



Breeding for primal cuts?

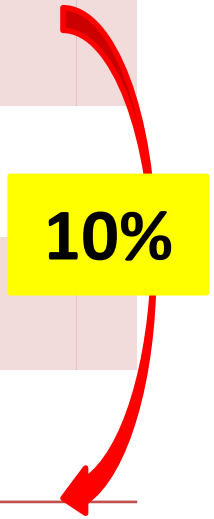
- Heritability of primal cuts ✓
- Variation present in the dataset ✓

Can we predict primal cut weight using genetics?

- Using primal cuts of ~200,000 animals
  - Stratify young animals into groups based on their genetic merit for the weight of primal cuts
  - Compare the predicted performance of animals with their actual data at slaughter

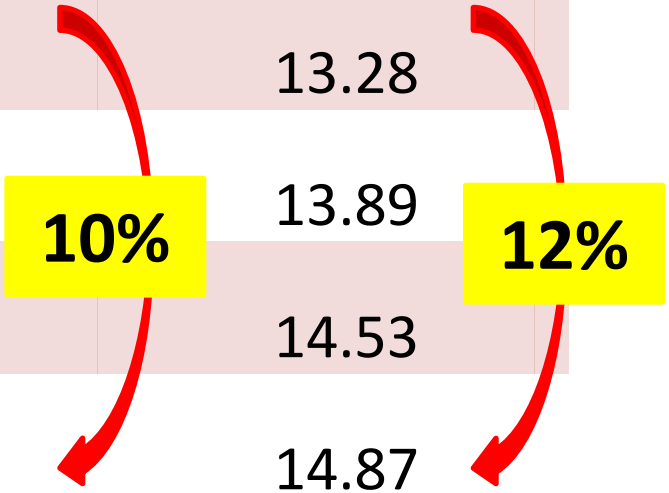
Predicted performance verus actual performance

Stratum	Rump
Very light	12.79
Light	13.36
Heavy	13.79
Very heavy	14.07



Predicted performance verus actual performance

Stratum	Rump	Striploin
Very light	12.79	13.28
Light	13.36	13.89
Heavy	13.79	14.53
Very heavy	14.07	14.87



Predicted performance verus actual performance

Stratum	Rump		Striploin		Fillet
Very light	12.79		13.28		6.12
Light	13.36	**10%**	13.89	**12%**	6.32
Heavy	13.79		14.53		6.46
Very heavy	14.07		14.87		6.56

7%

To conclude…

- Genetic variability in the weight of primal cuts exists
- Ability to increase primal cut weight without altering carcass weight
- Parental average measures of genetic merit can stratify carcasses on primal cut yields

Thank You

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