



BEEF
GENETICS
FORUM

Genotyping: Bulls now Heifers; what's happening and why?

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Why DNA Test?

- Genetic Conditions
 - AM, NH, CA, DD, IE, Hypo, etc
 - Society regulation
- Sires ... tested Free genetic conditions
- Often silent on females

Why DNA Test?

- Pedigree/Parentage
 - Regulation
 - Management
- Sires
- Heifers – New By-law for Angus
- Transfer
- AI, multi-sire mating, management efficiency

Why DNA Test?

- Genomics
 - More information on young animals
 - Progeny Equivalents
 - Better breeding decisions
 - Better buying decisions
- Traits difficult to record
- An eye on the future
- Insurance/Competition/Risk mitigation

Trait	Progeny Equivalents
Calving Ease Direct	7
Gestation Length	4
Birth Weight	5
200 Day Weight	9
400 Day Weight	7
600 Day Weight	6
Mature Cow Weight	6
Milk	13
Scrotal Size	7
Carcase Weight	3
Eye Muscle Area	3
Rump Fat	3
Intra Muscular Fat	2
Days to Calving	8
Retail Beef Yield	5
Rib Fat	8

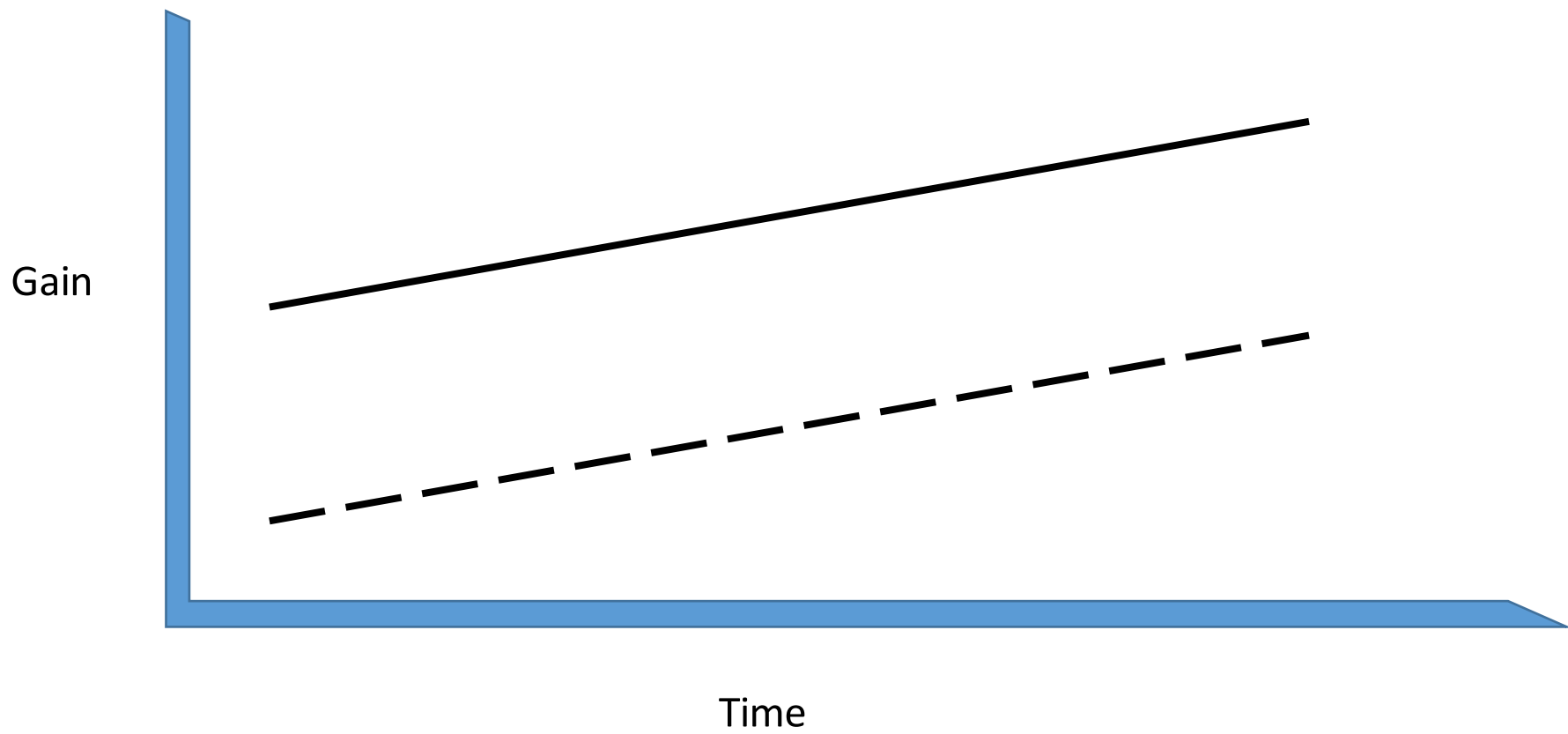
Investment, for who?

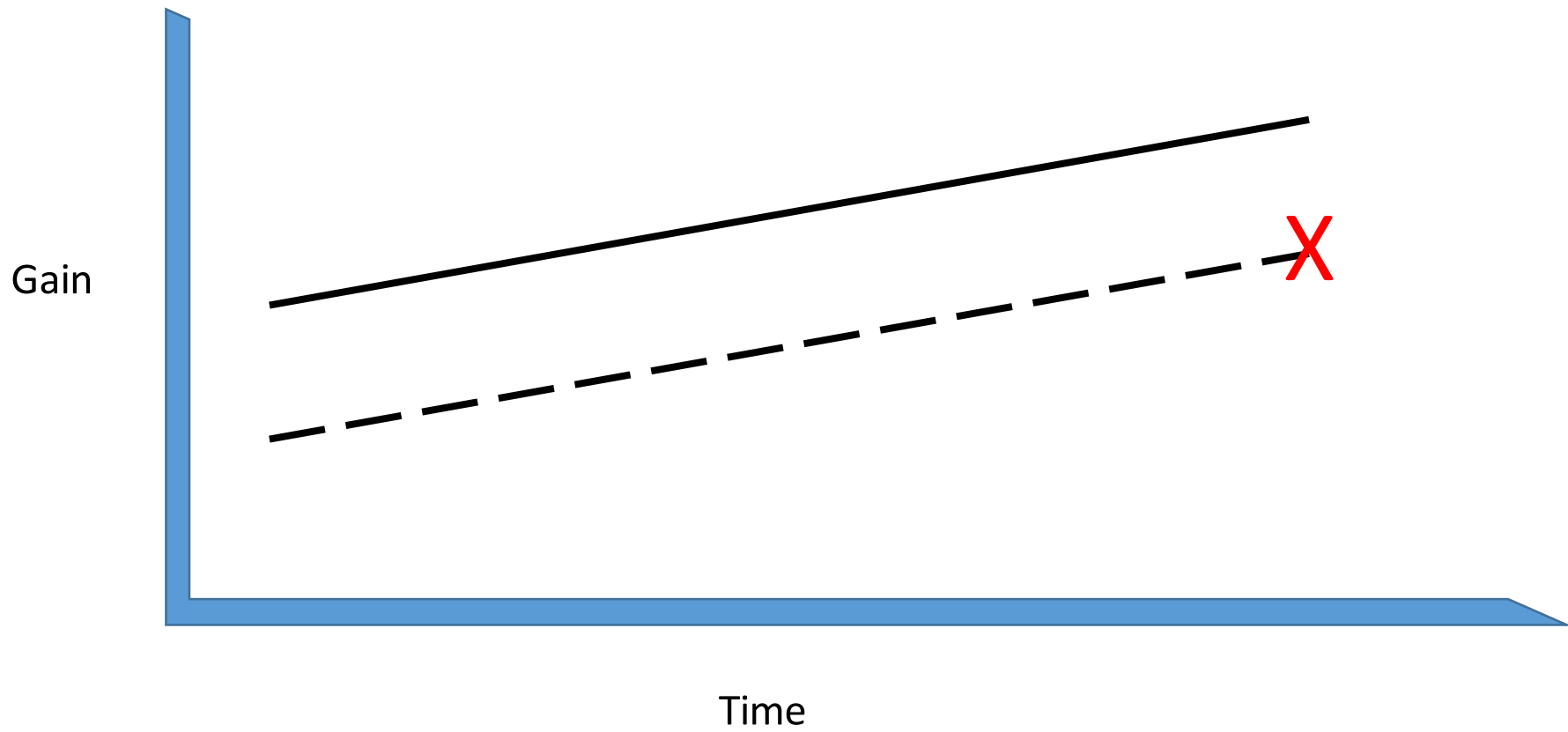
- Breeder

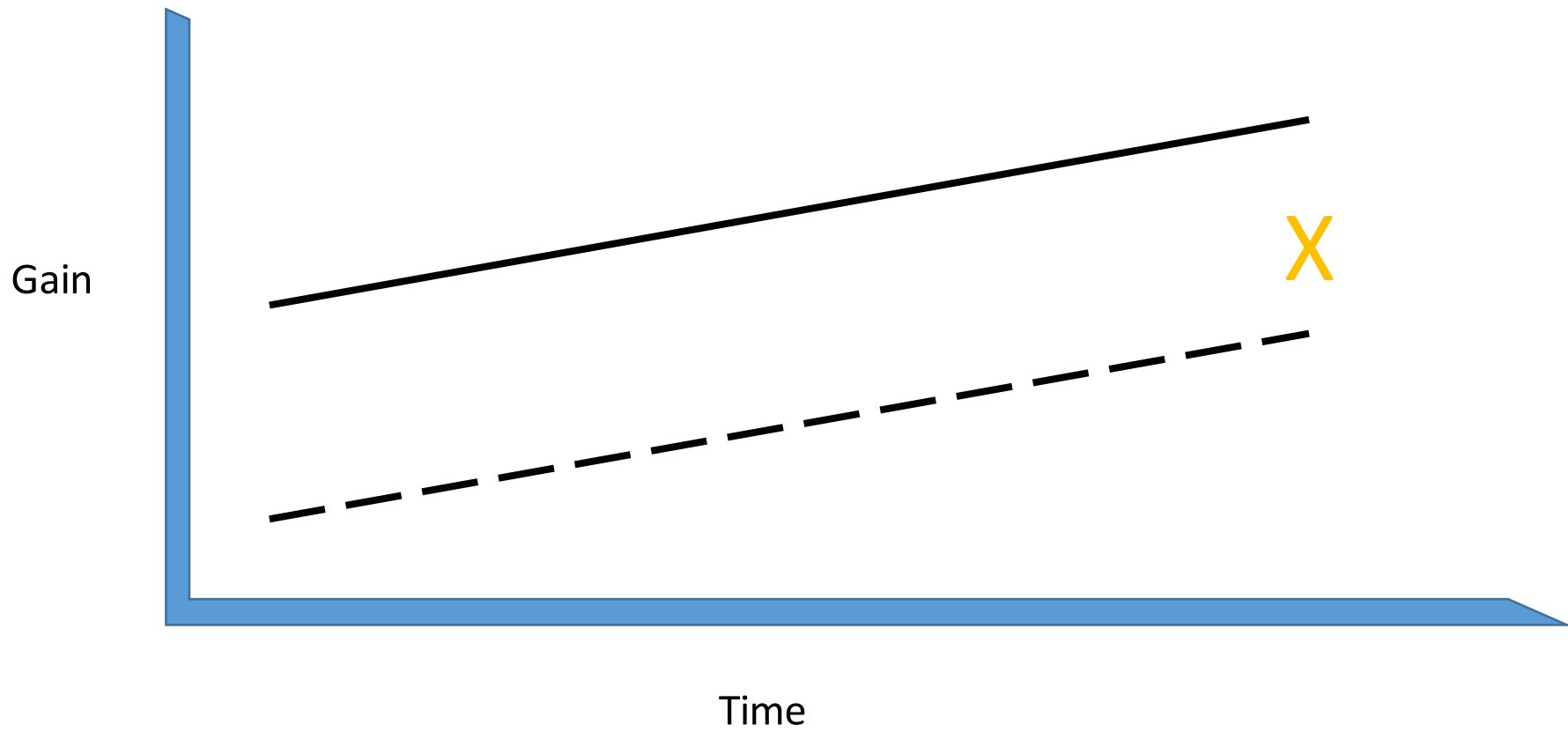
- Identify
 - Best
 - Worst
- Cull bottom 10%
- ET donors
- Don't sell best
- Inc. Accuracy
- Imp. genetic gain

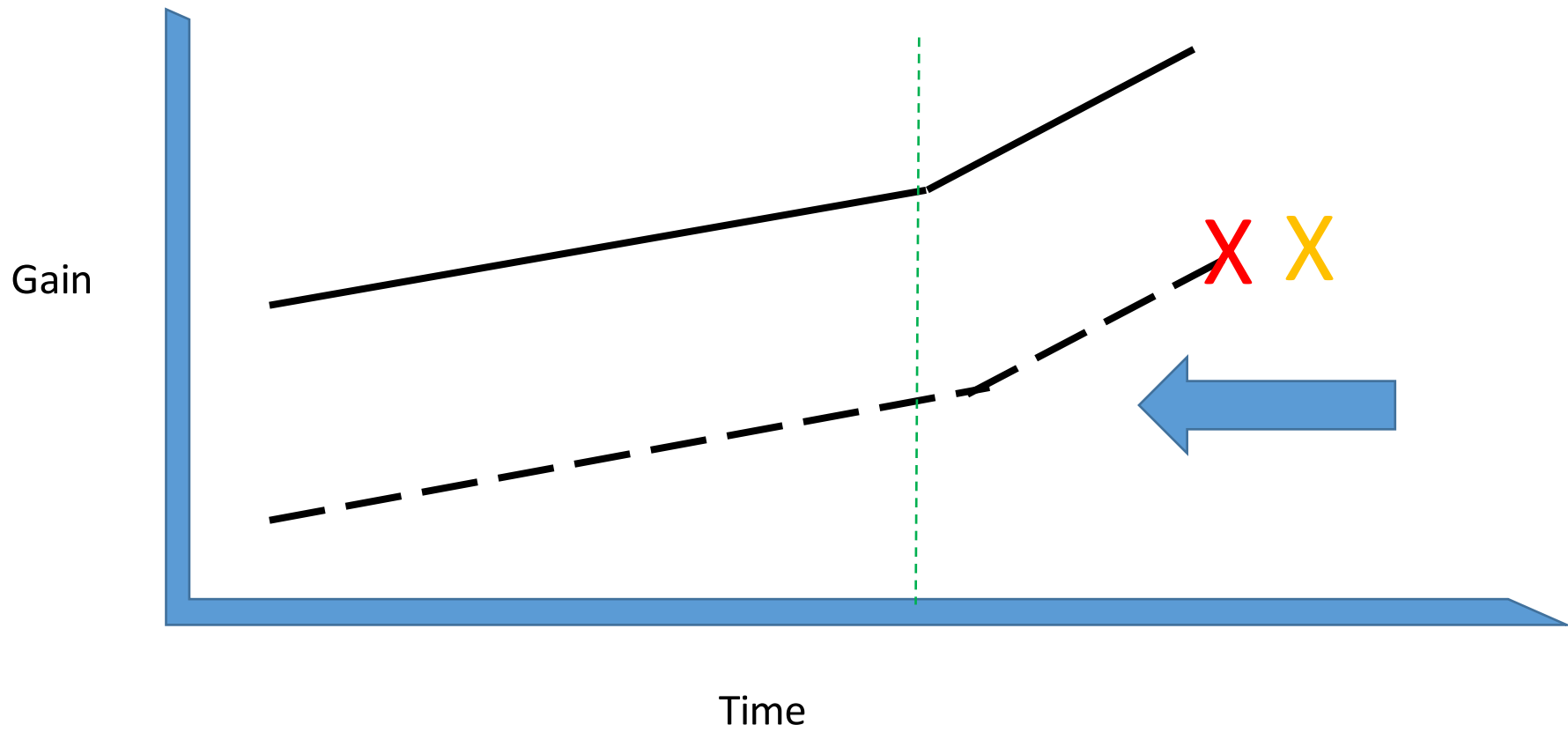
- Buyer

- Provide most accurate breeding values possible
- Bulls more likely to perform to BVs
- Pedigree assurance

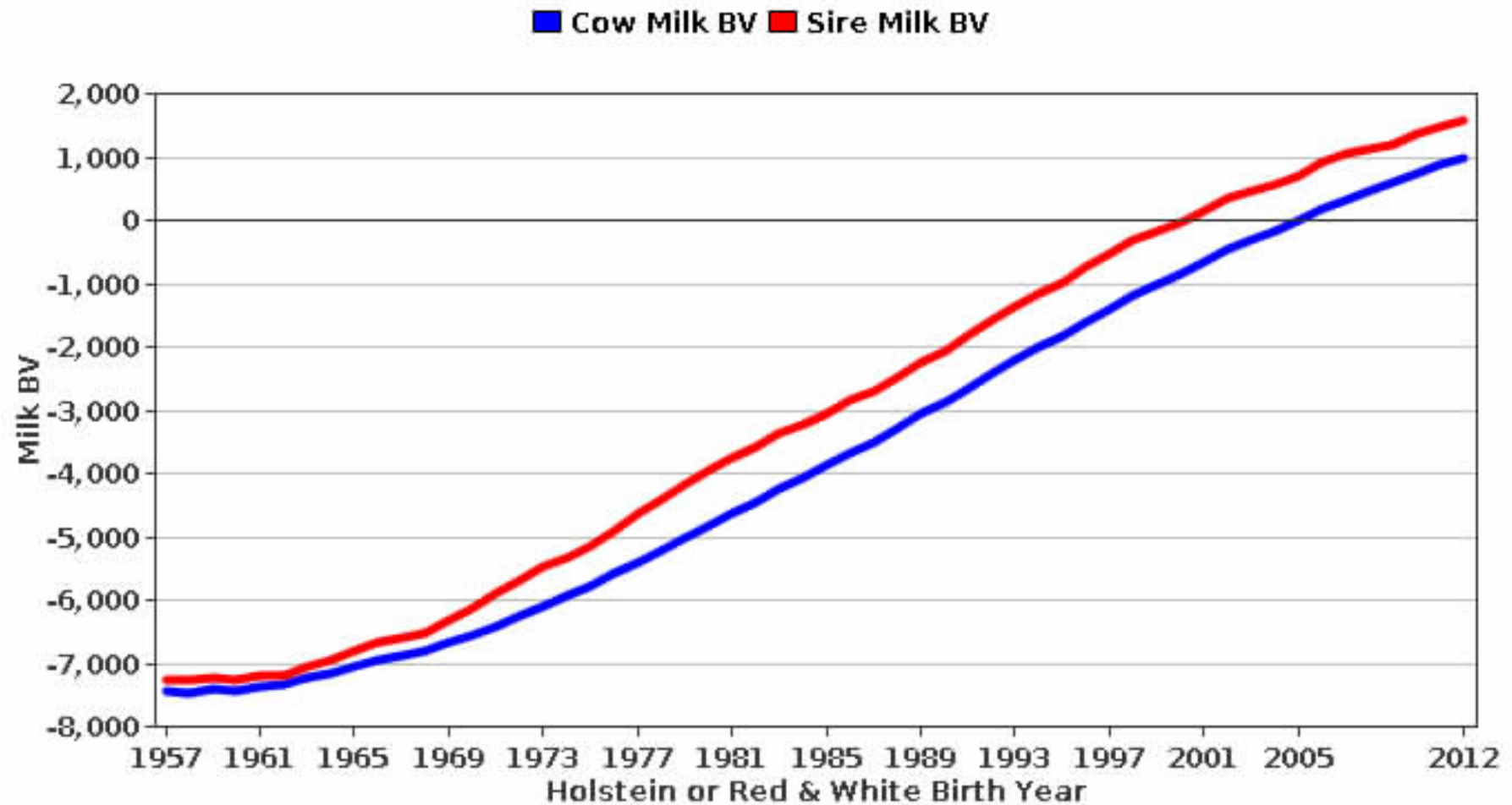




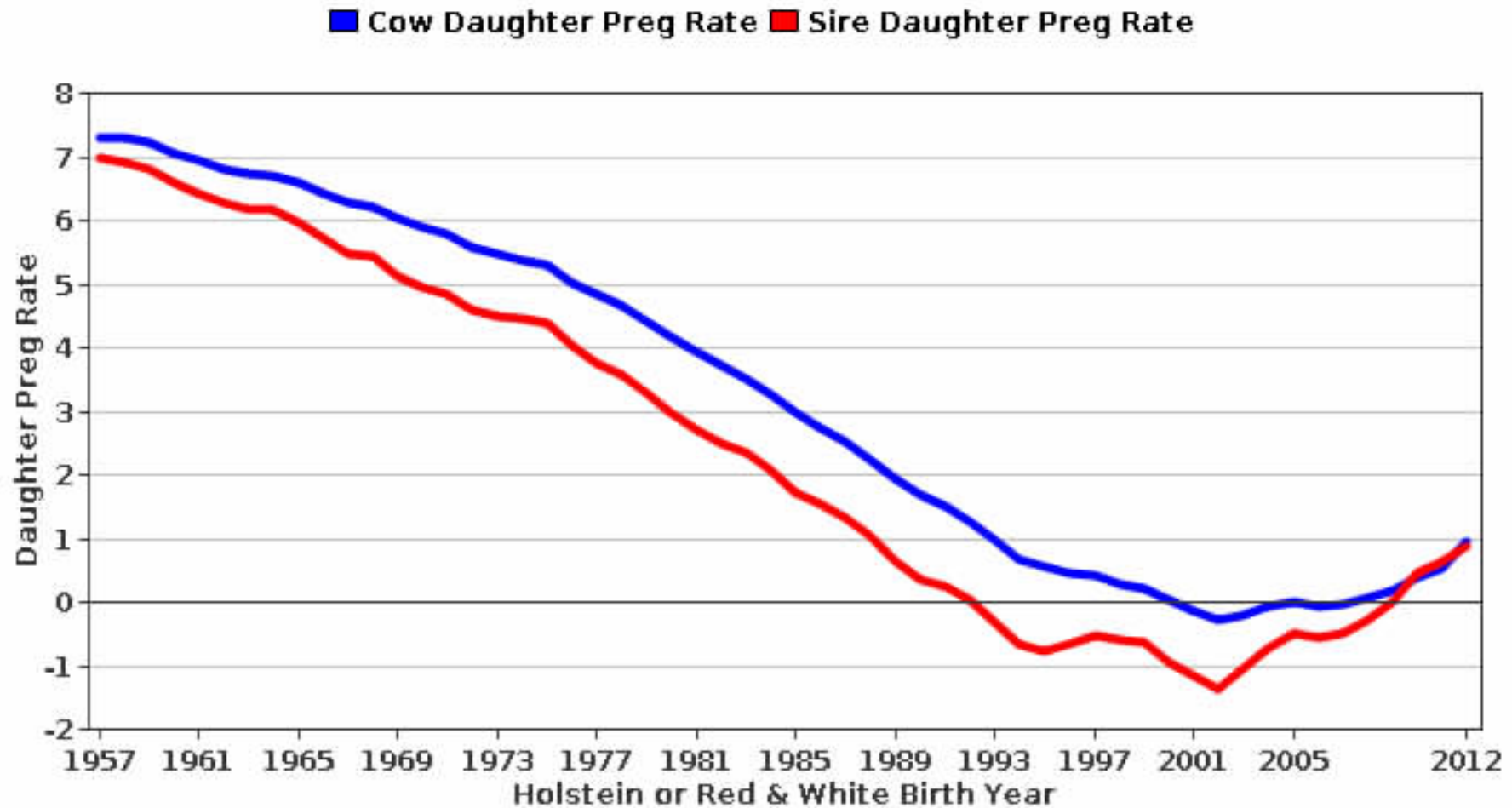




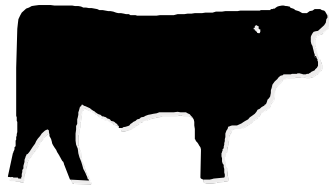
Dairy Genetic Trends



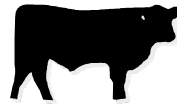
Dairy Genetic Trends



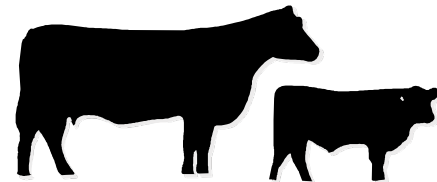
Bull
Purchase/
Selection



Progeny
Born



Progeny
Slaughtered



Daughters in Production



2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

2022

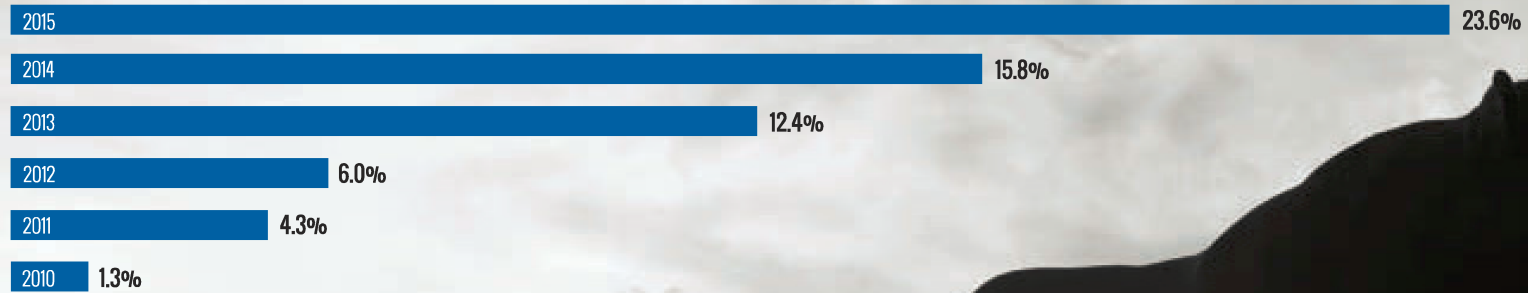
HD 50K GE-EBVs

Bulls
Traditional EBVs

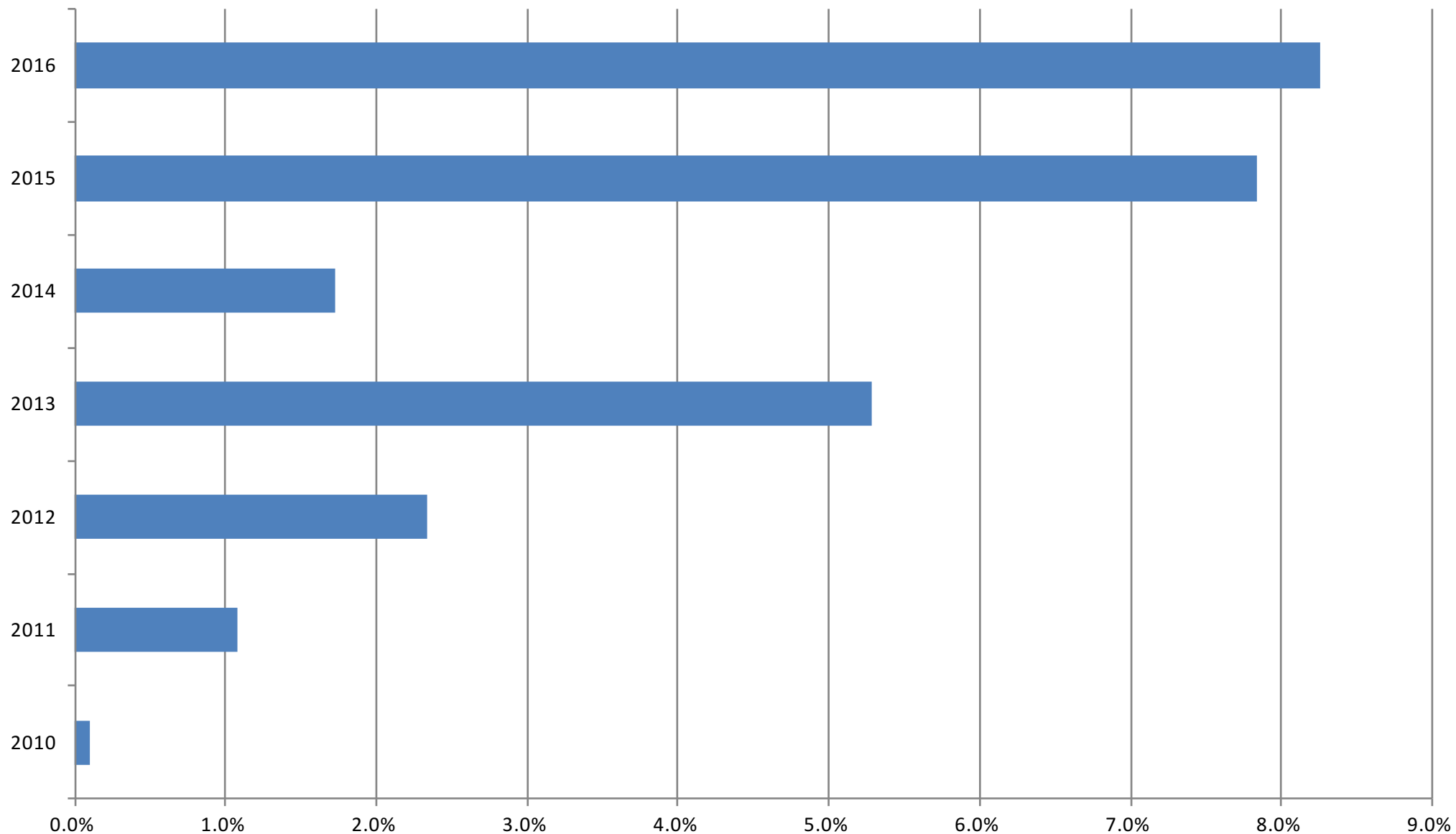
Females
Traditional EBVs

Growth in Genomic Testing

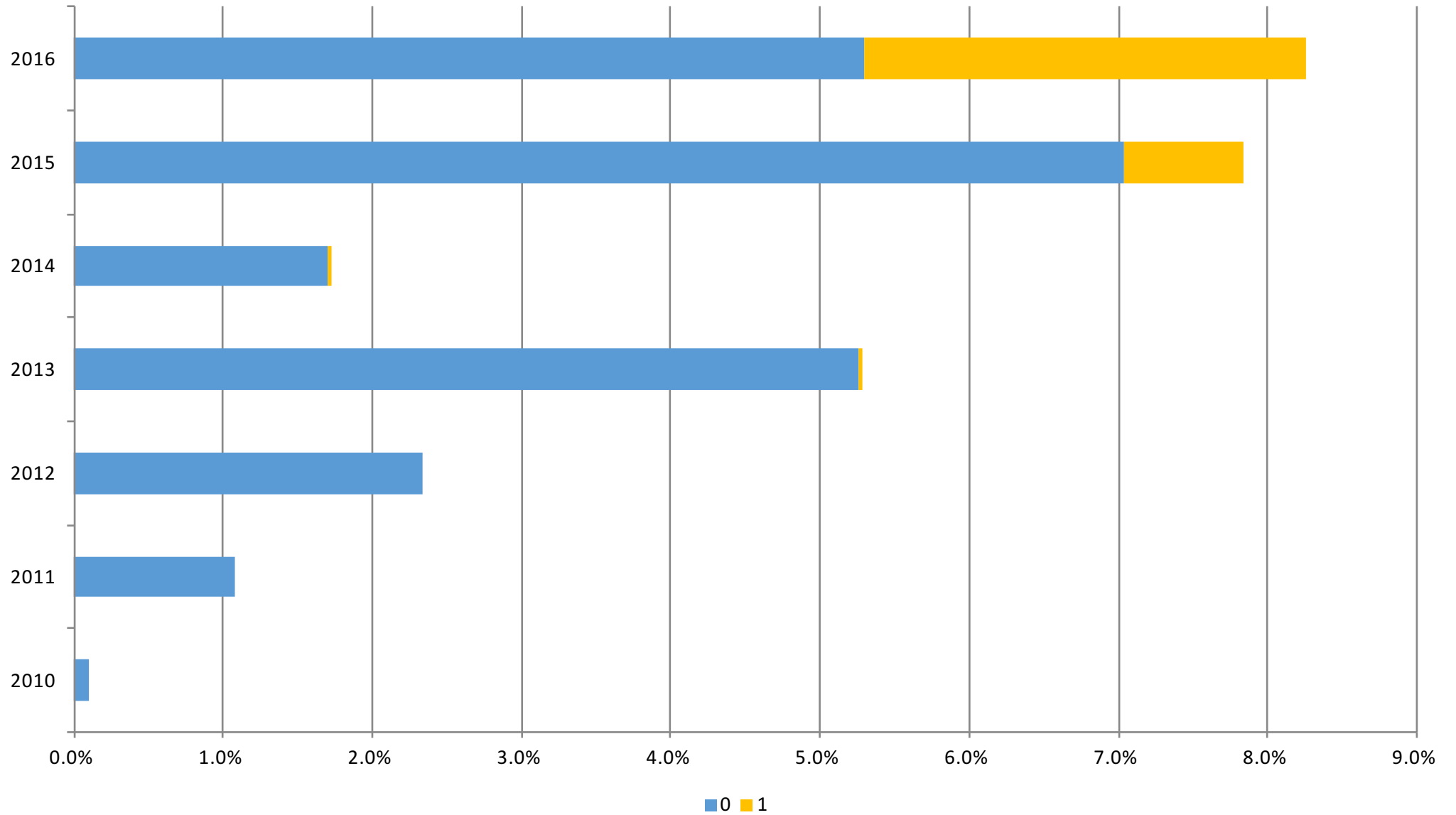
As a percentage of total Angus registrations



Genomic tests as % of registrations pa.



Genomic tests as % of registrations by gender

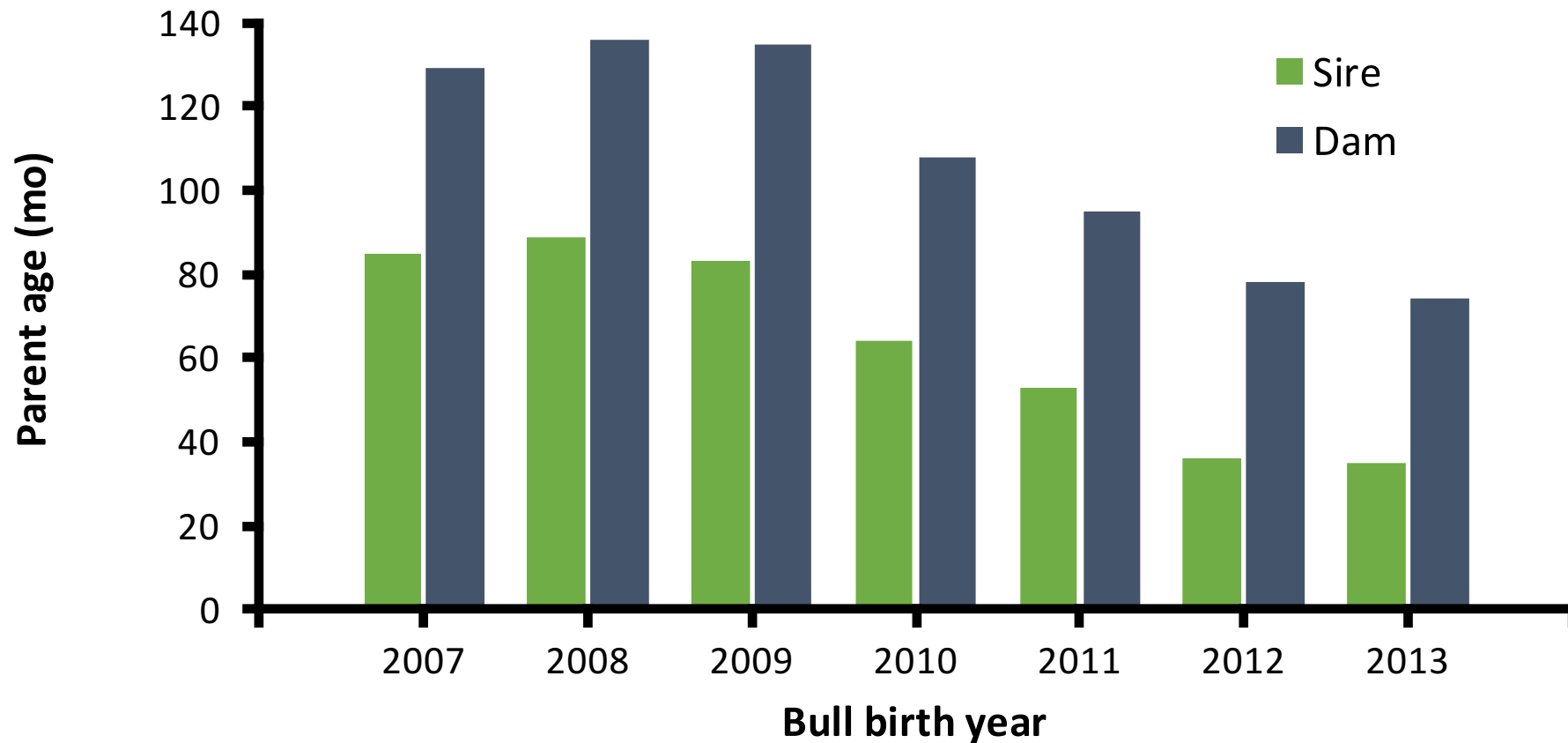


Impact of Genomics on average age of Dams

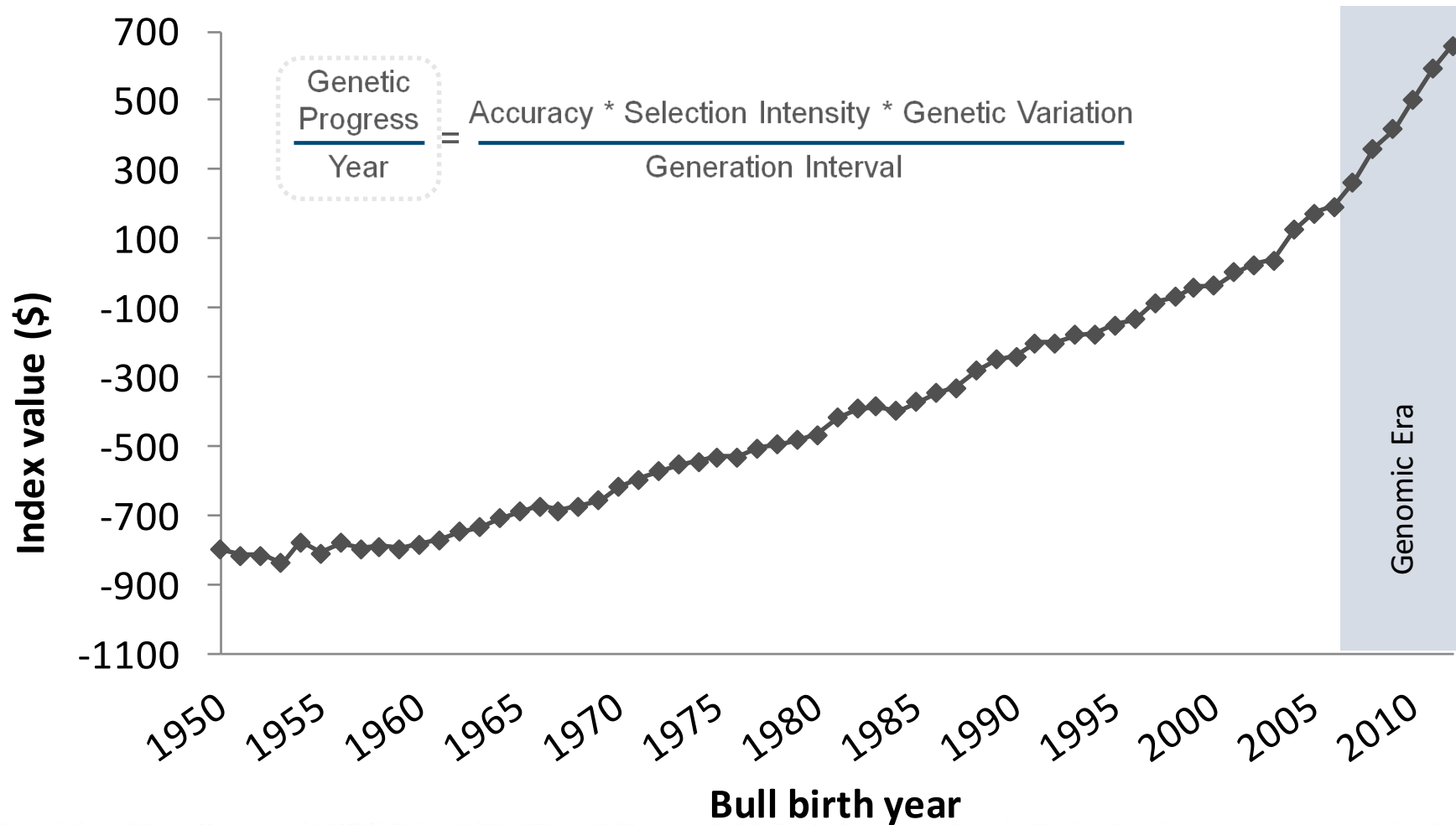
- Trend in USA has moved significantly towards testing very young stock; heifer calves
- Elite USA herds
 - Average age dams ~ 3
- Similar theme in the Dairy industry
 - Average age of parents of new AI Sires is half of what it was in 2010.
 - But they have 2x their genetic progress

Parent Ages for Marketed Holstein Bulls

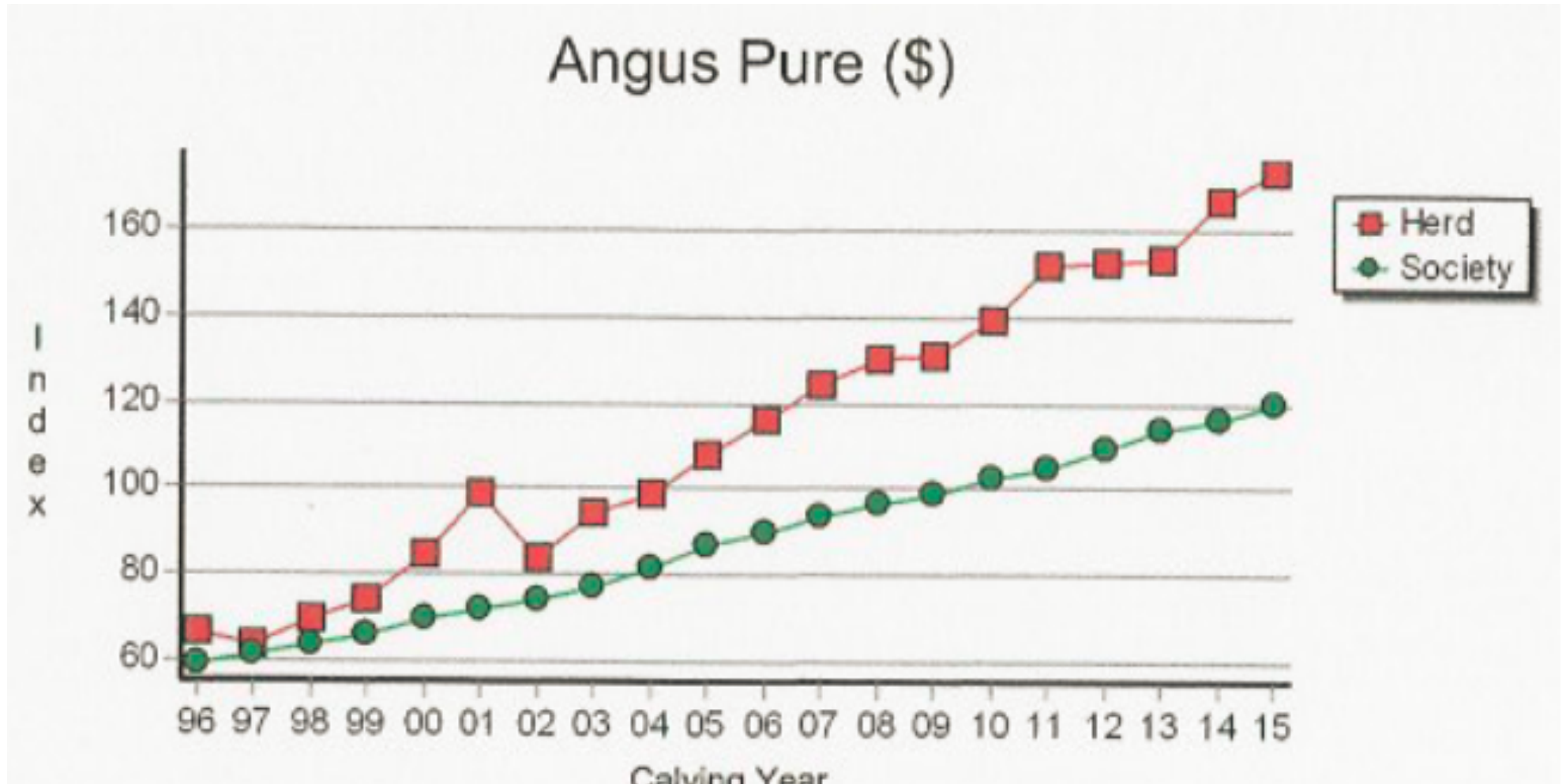
$$\frac{\text{Genetic Progress}}{\text{Year}} = \frac{\text{Accuracy} * \text{Selection Intensity} * \text{Genetic Variation}}{\text{Generation Interval}}$$



Genetic Progress for NM\$



Genetic Trends





@ZephyrDNA

zoetis

Thank You