

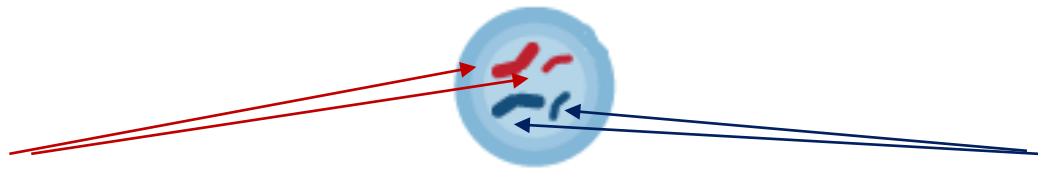
Breeding Realities: Why You Don't Always Get What You Expect

Donagh Berry
Teagasc, Moorepark

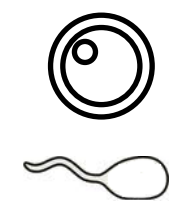
donagh.berry@teagasc.ie

ICBF Breeding & Genetics Conference, Dec 2024

Father

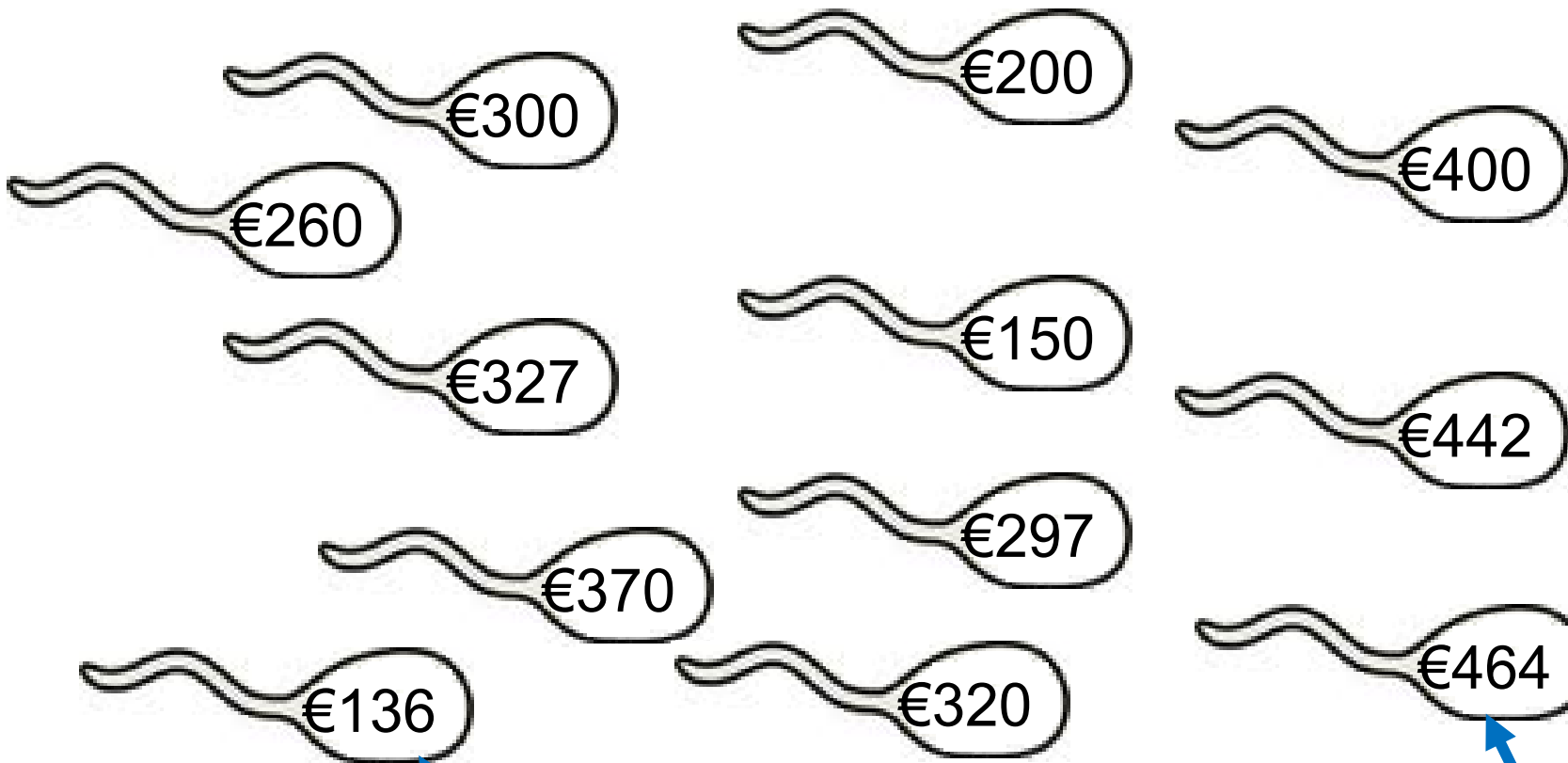


Mother



Variability in sperm of one dairy bull

Bull EBI of €300



**66% of sperm within
± €70 of the bull**

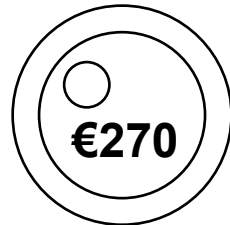
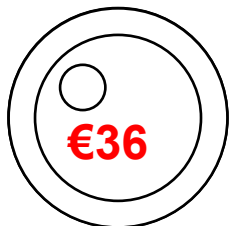
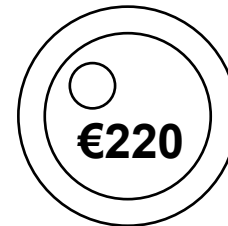
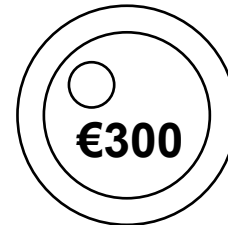
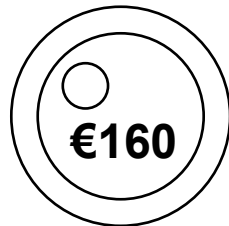
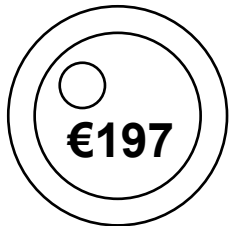
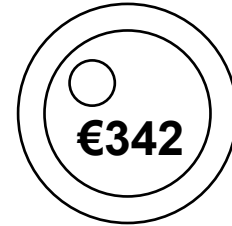
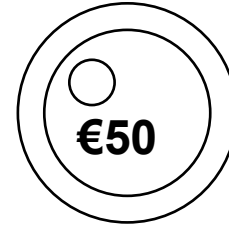
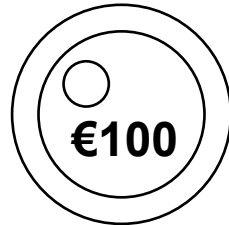
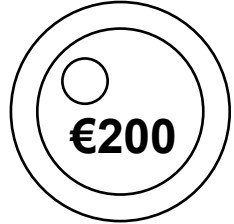
**Bull reliability is
irrelevant**

1% chance of ≤€136

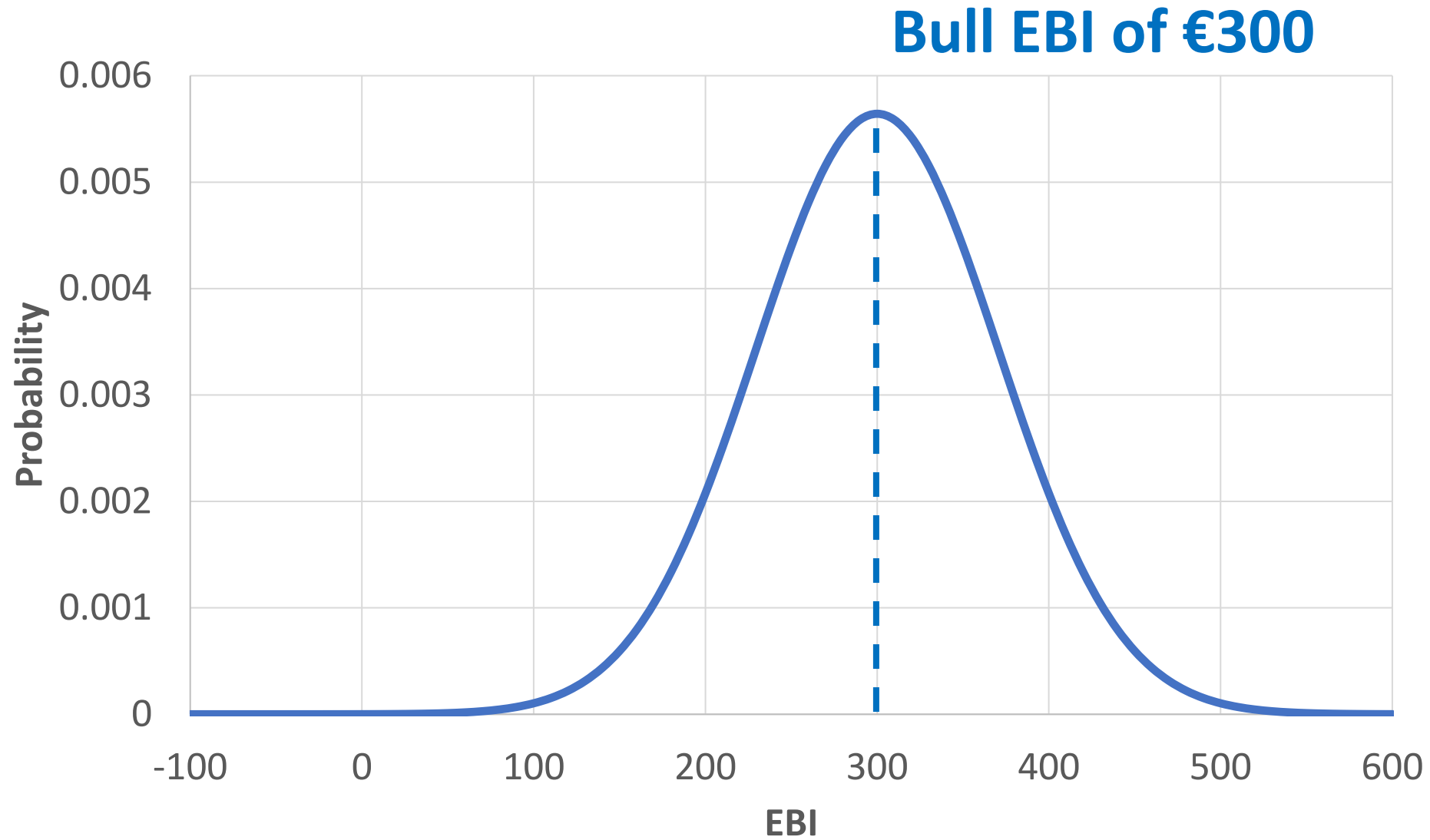
1% chance of ≥€464

Variability in eggs of one dairy female

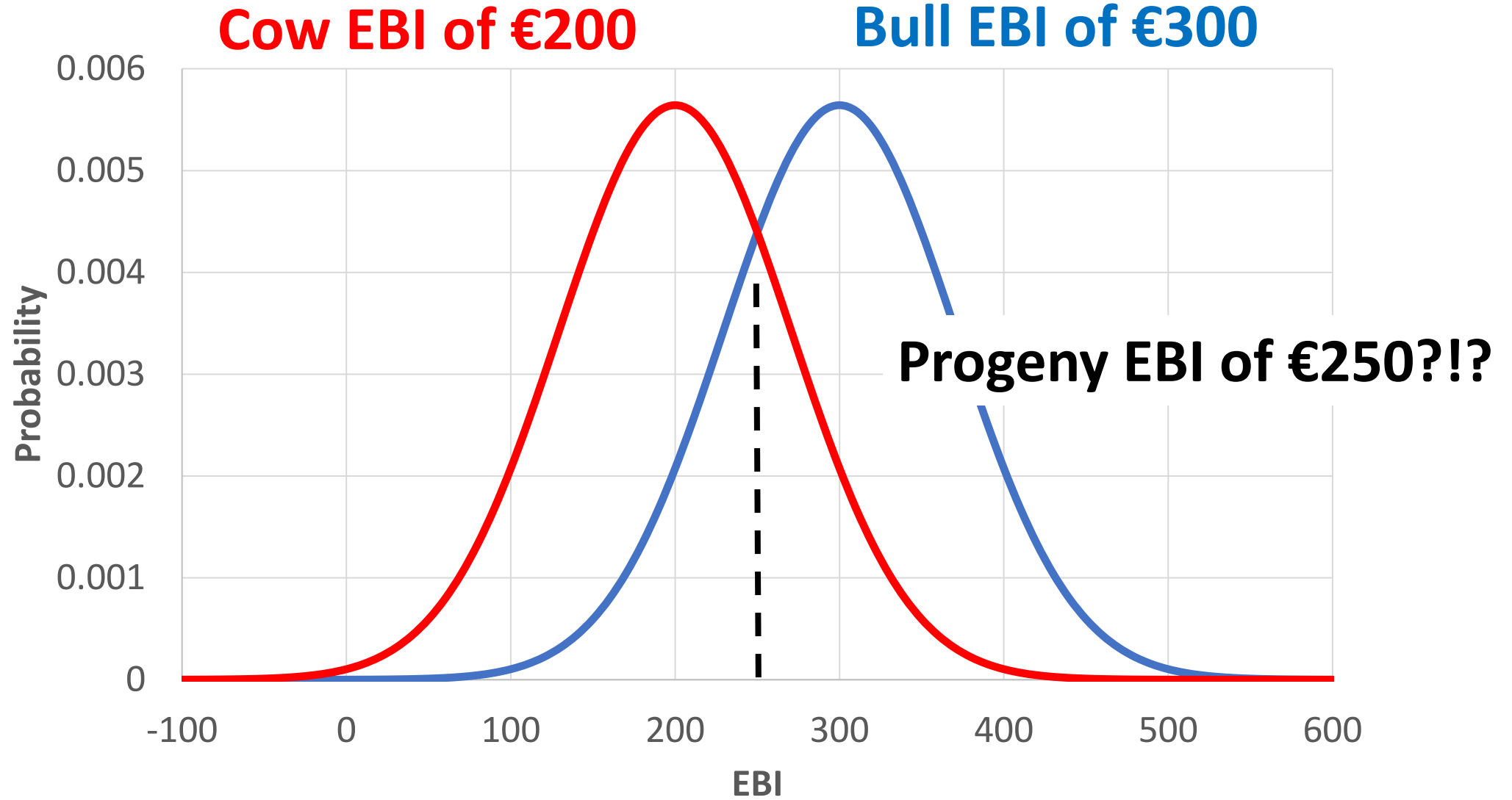
Cow EBI of €200



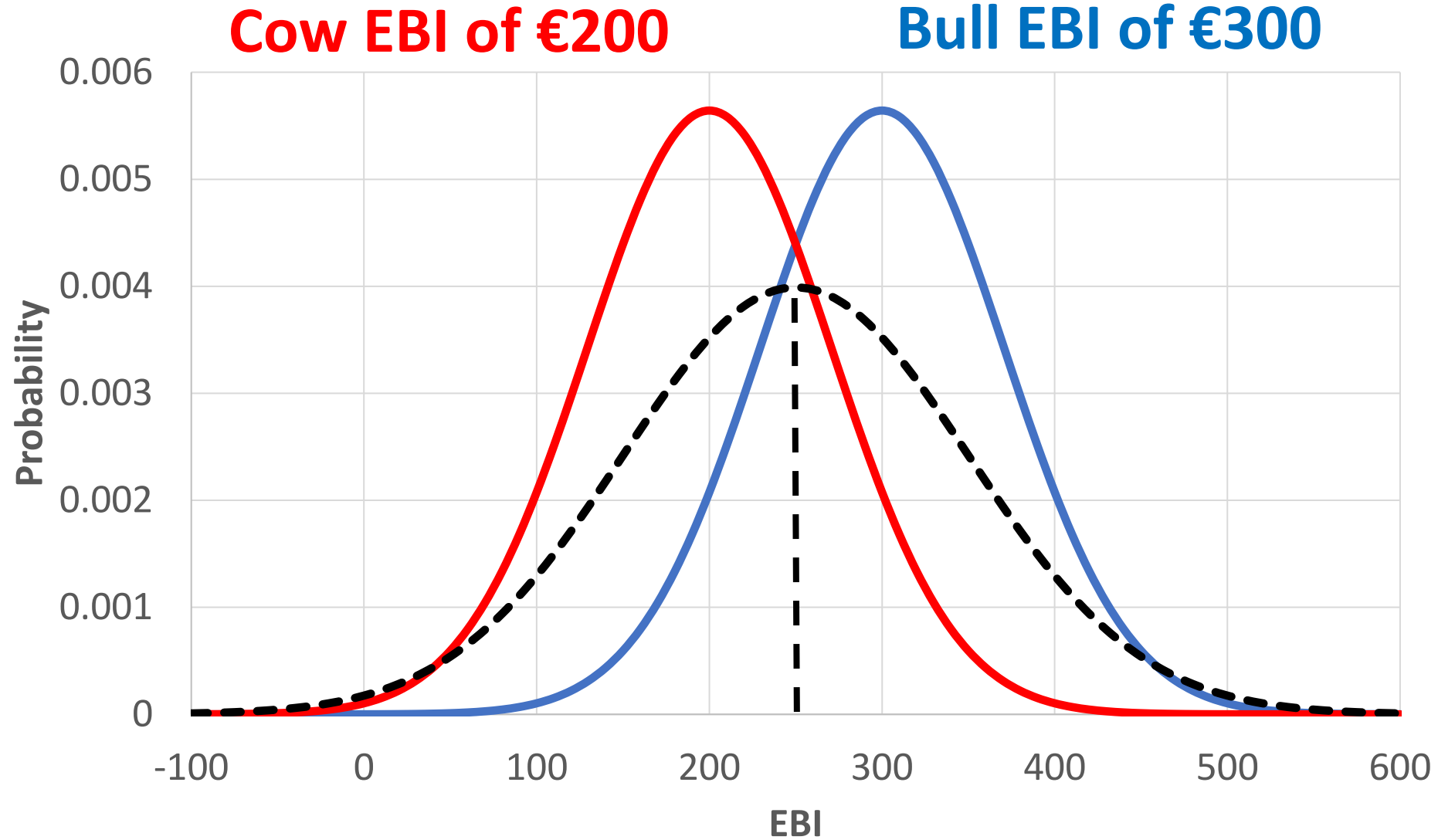
Variability in sperm of one dairy bull



Variability in parental EBI

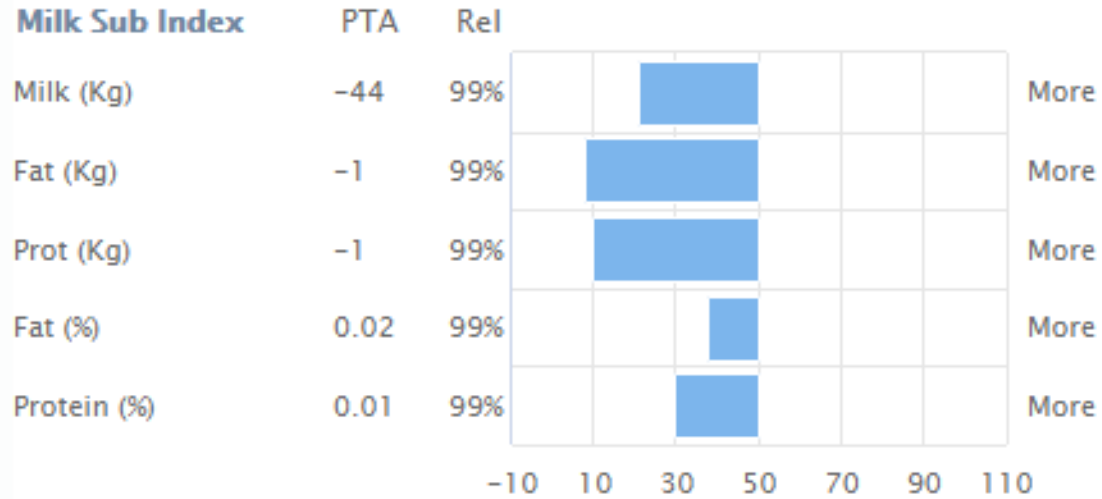


Variability in embryo – EBI

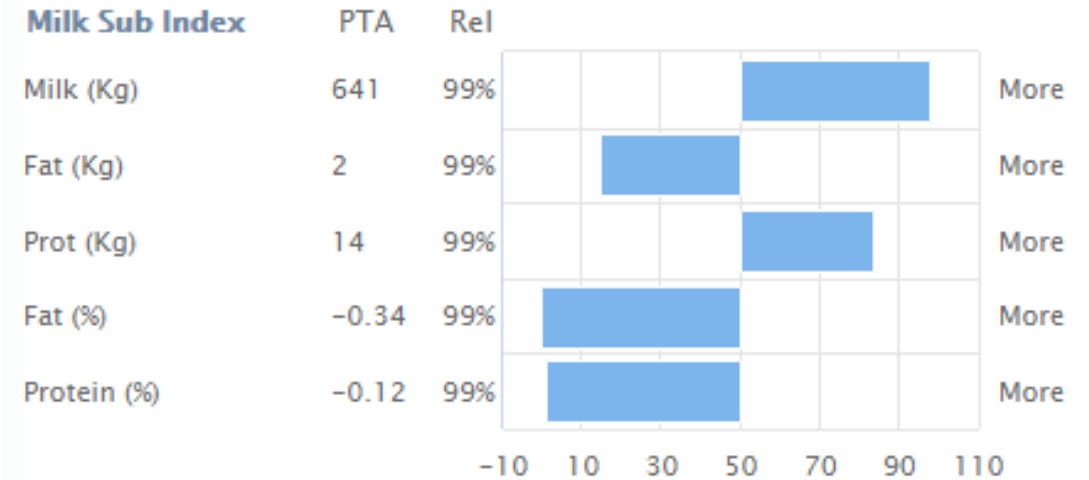


Two higher reliability full-brothers

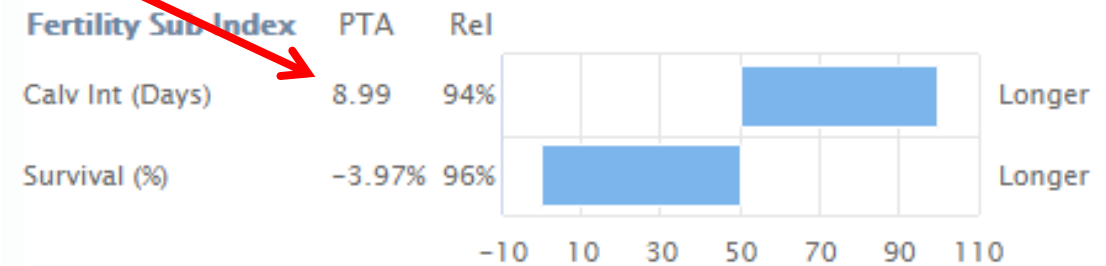
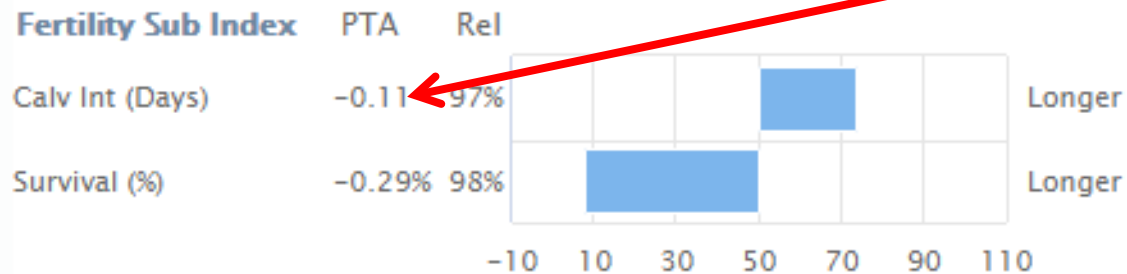
Etazon Slogan



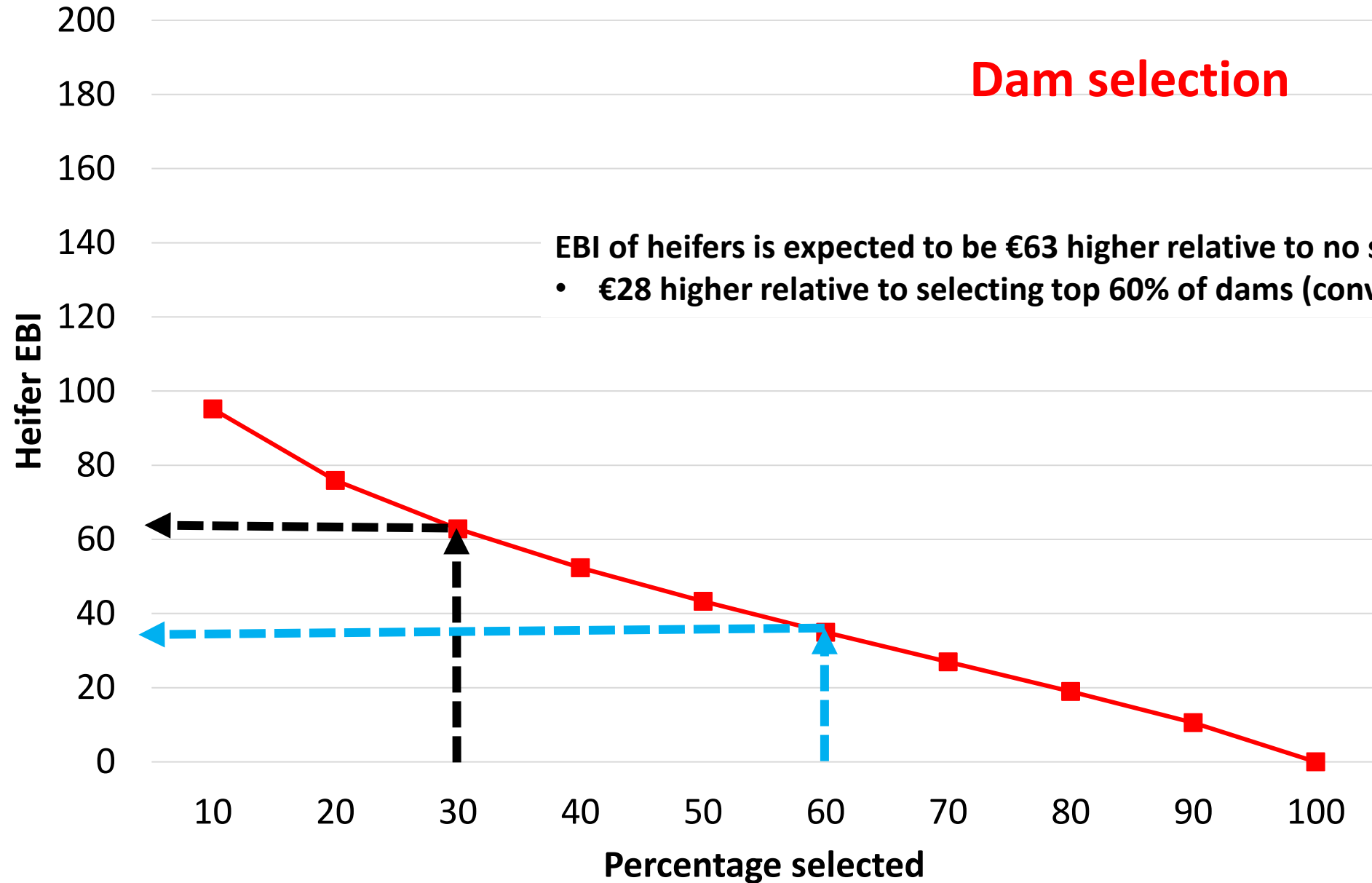
Etazon Addison



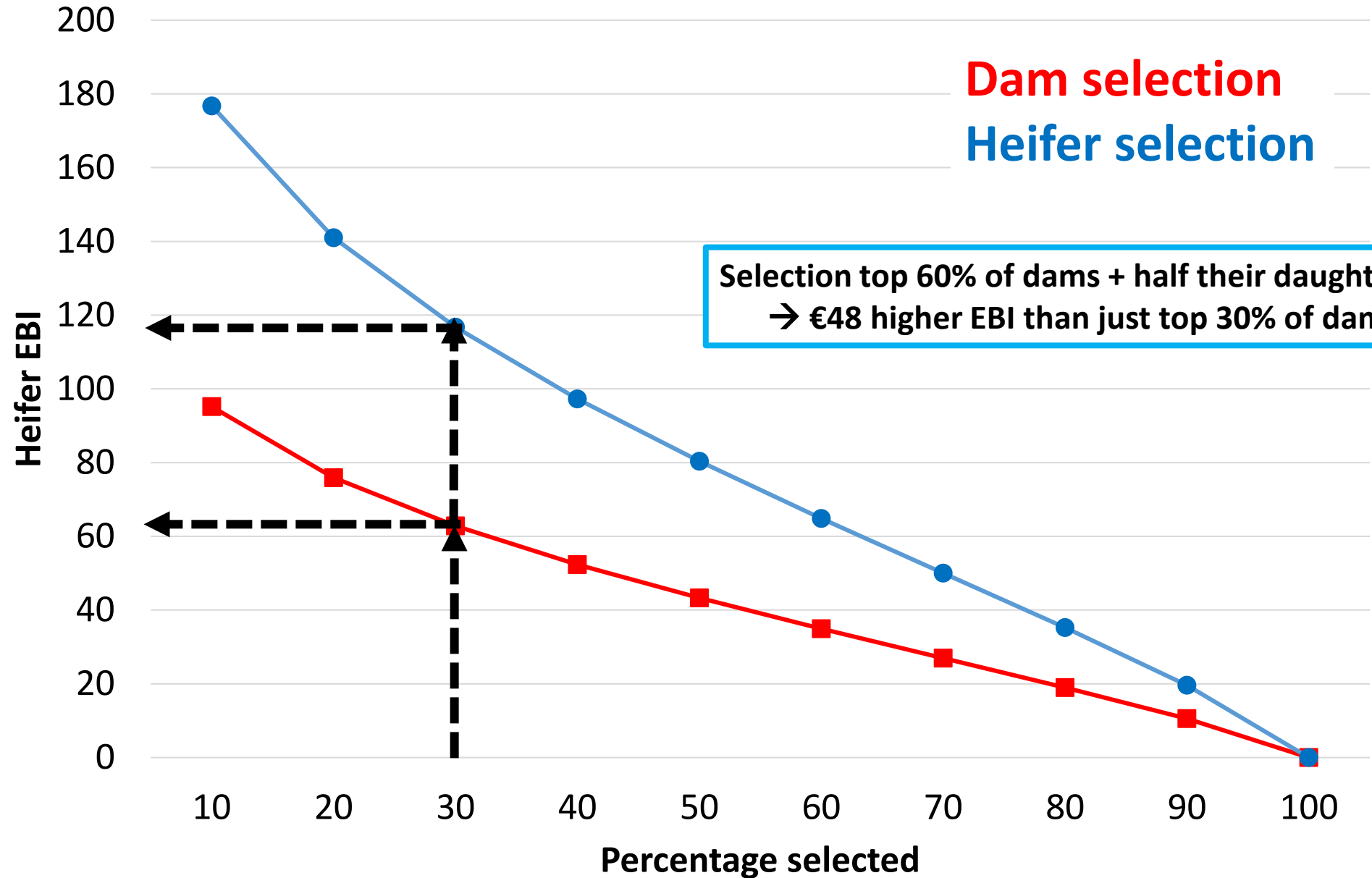
9 days difference in calving interval



Dam versus progeny selection

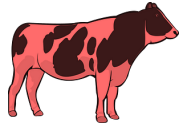


Dam versus progeny selection



On a side....

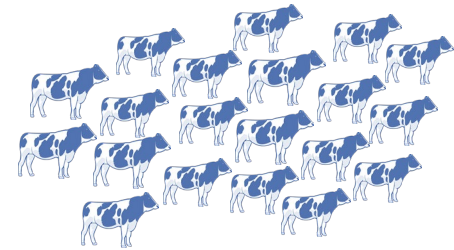
1 bull 90% reliability



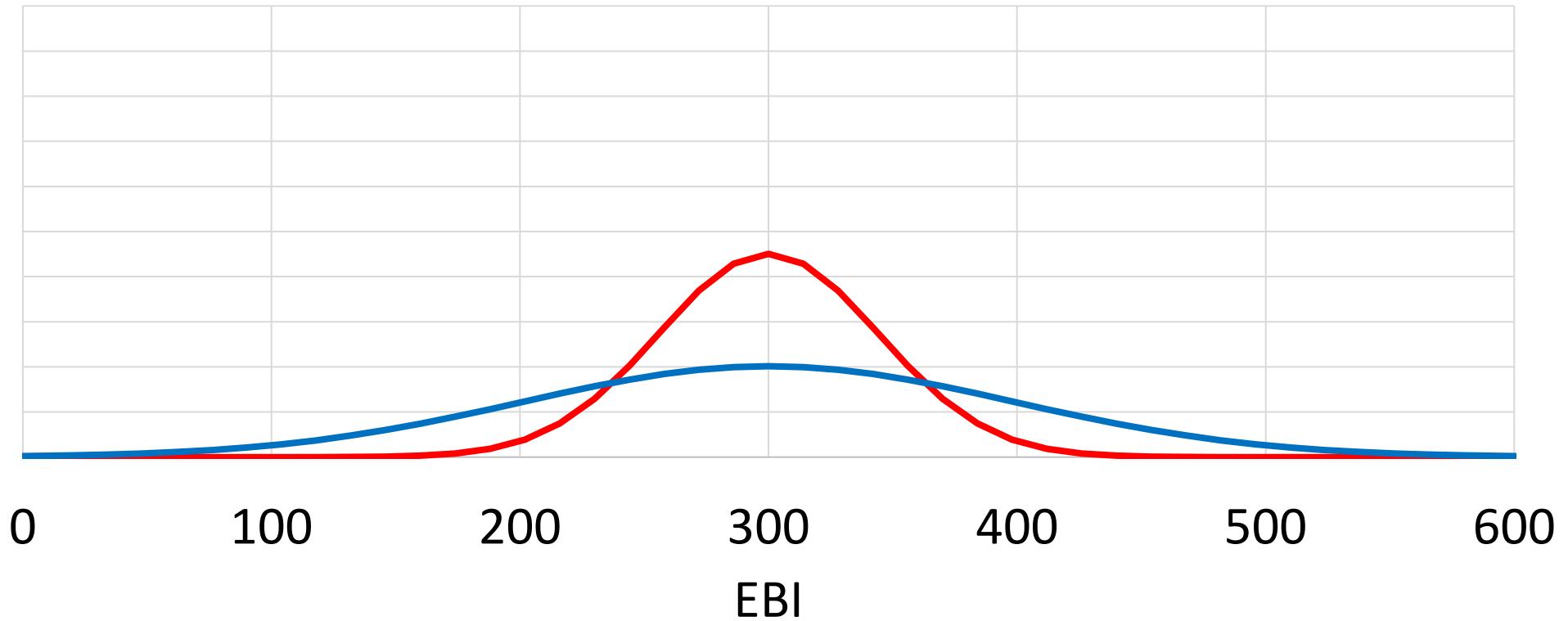
EBI±€86

V

20 unrelated bulls 50% reliability same EBI

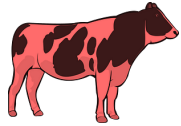


EBI±€193



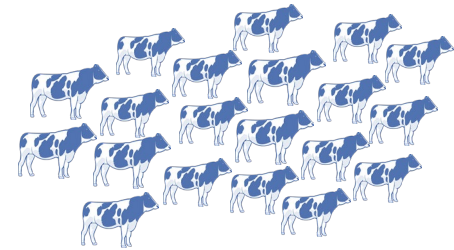
On a side....

1 bull 90% reliability



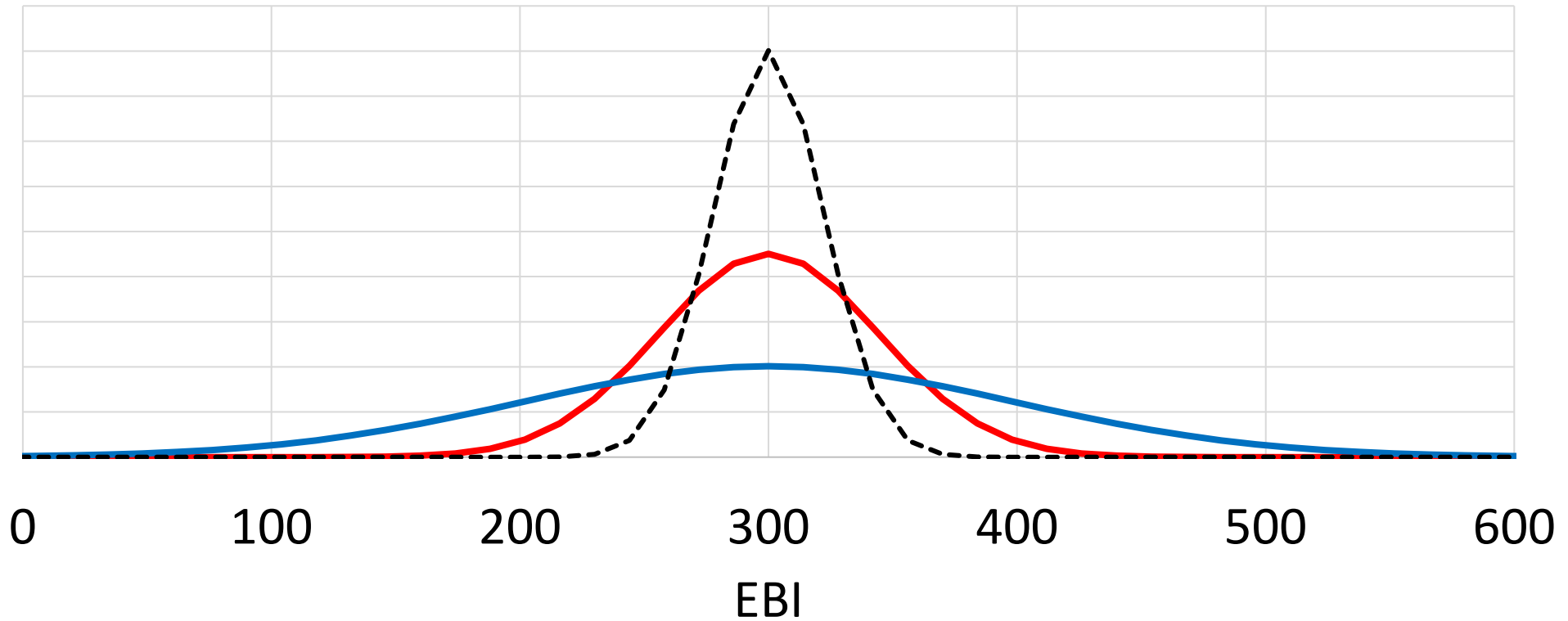
EBI±€86

20 unrelated bulls 50% reliability same EBI



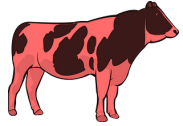
EBI±€193

V

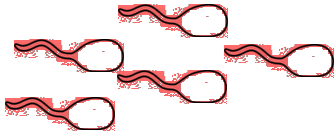


On a side....

1 bull 90% reliability

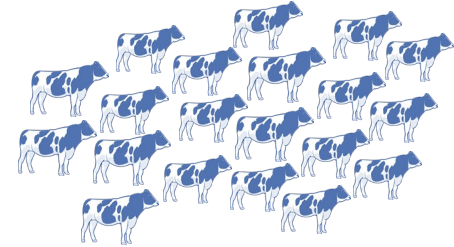


±€86

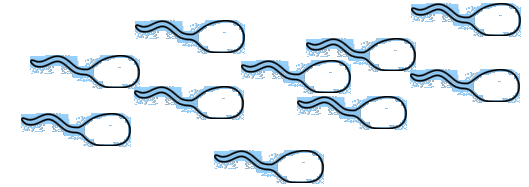


±€137

20 unrelated bulls 50% reliability same EBI

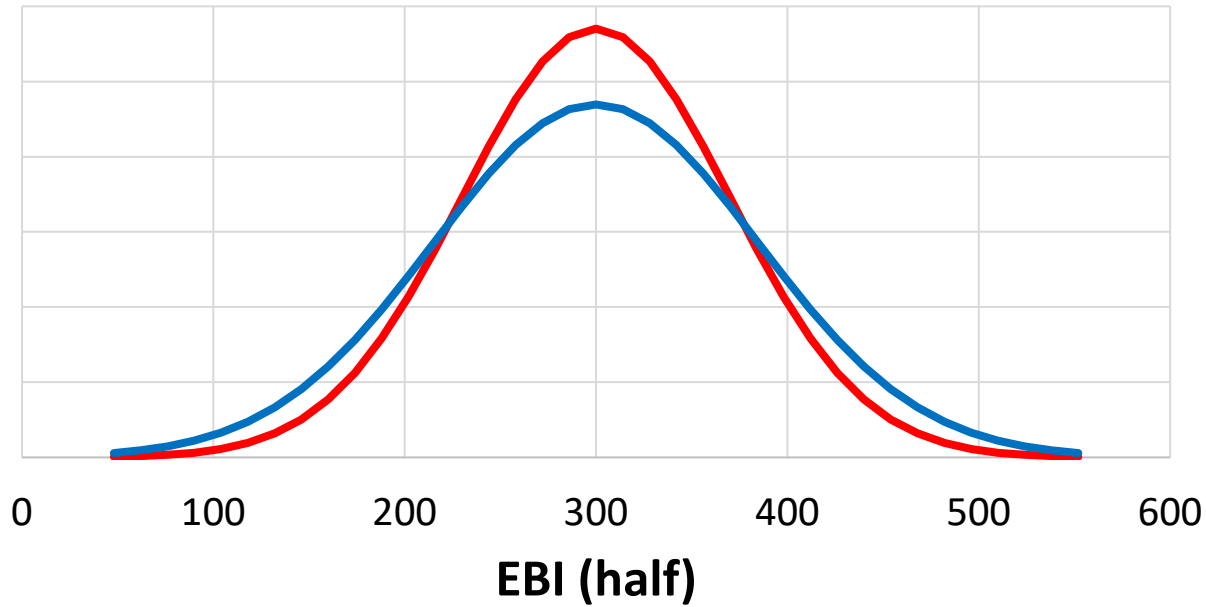


±€193



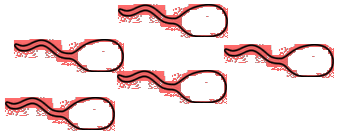
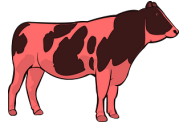
±€167

V

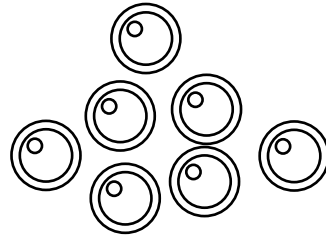


On a side....

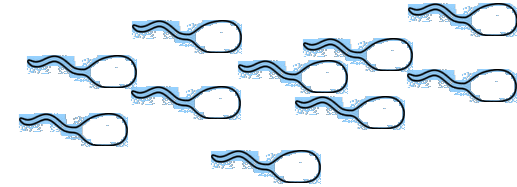
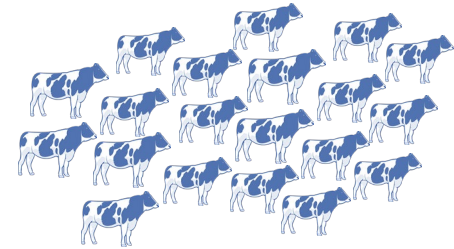
1 bull 90% reliability



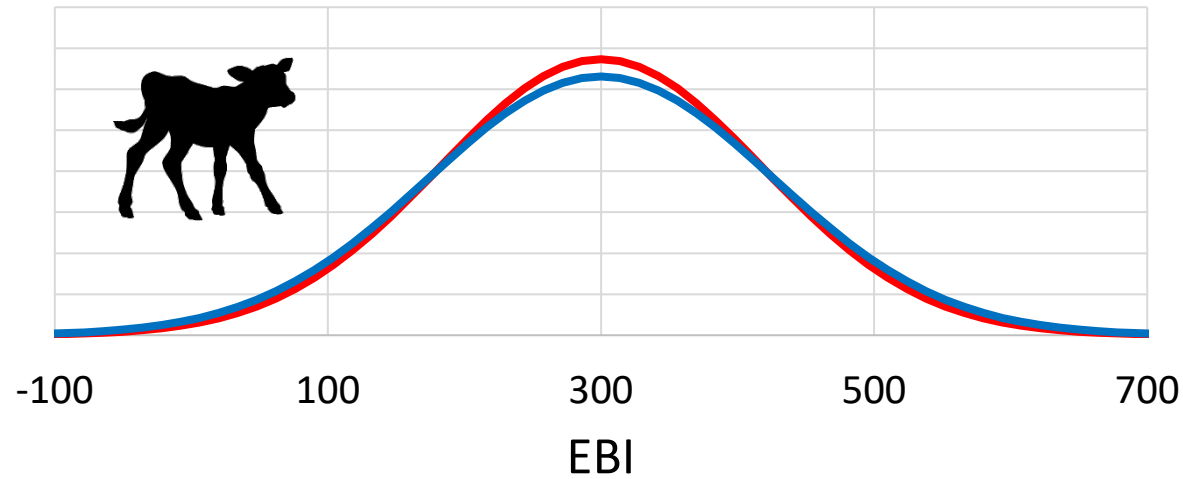
V



20 unrelated bulls 50% reliability same EBI



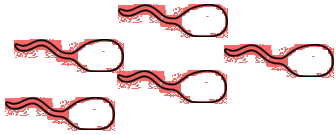
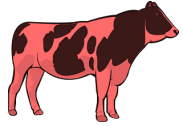
±€232



±€248

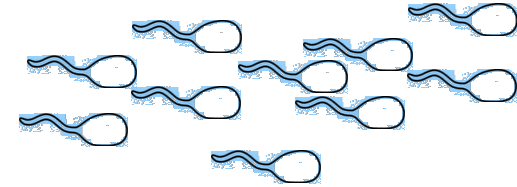
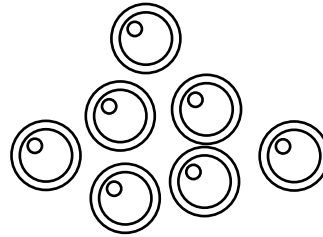
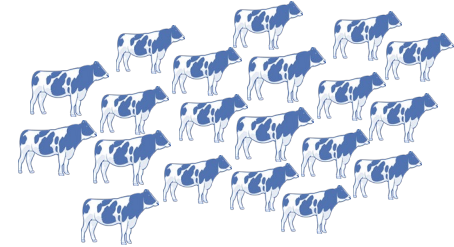
On a side....

1 bull 90% reliability



V

20 unrelated bulls 50% reliability same EBI



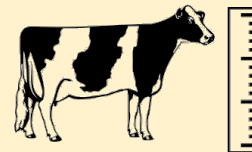
7% more variability



0.3% more variability



4% more variability



5% more variability

Take home message

- Genotyping looks directly at the DNA of an animal
- DNA is randomly inherited
- EBI of parents is a useful predictor of calf EBI
- Genotyping the calf captures what DNA was actually inherited