

EAAP - September 2024

Success with better calves starts well before birth

Marco Winters

Head of Animal Genetics

Remember.....



And Genetic improvement is;

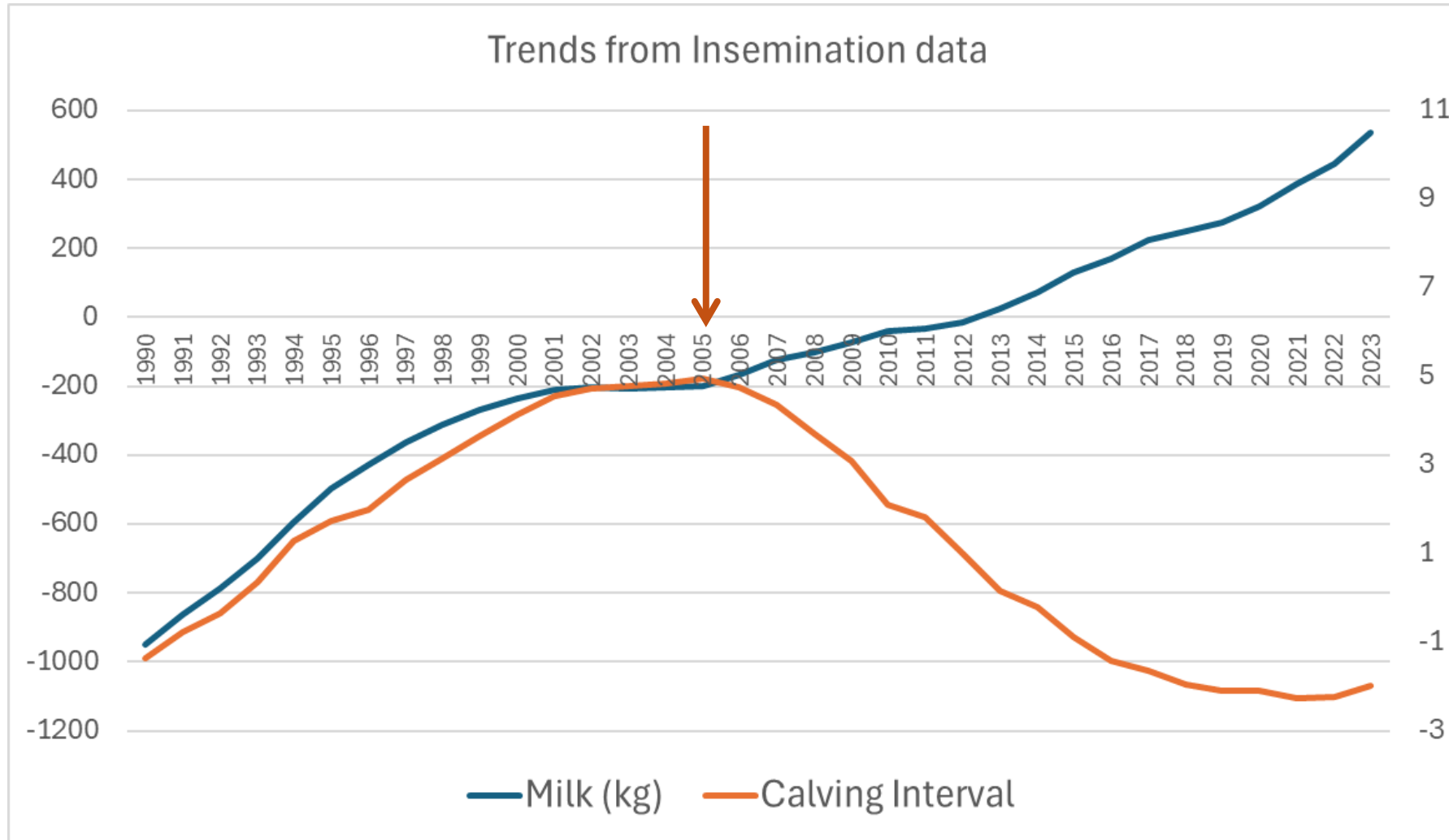
- Permanent (long term solution)
- Cumulative over generations



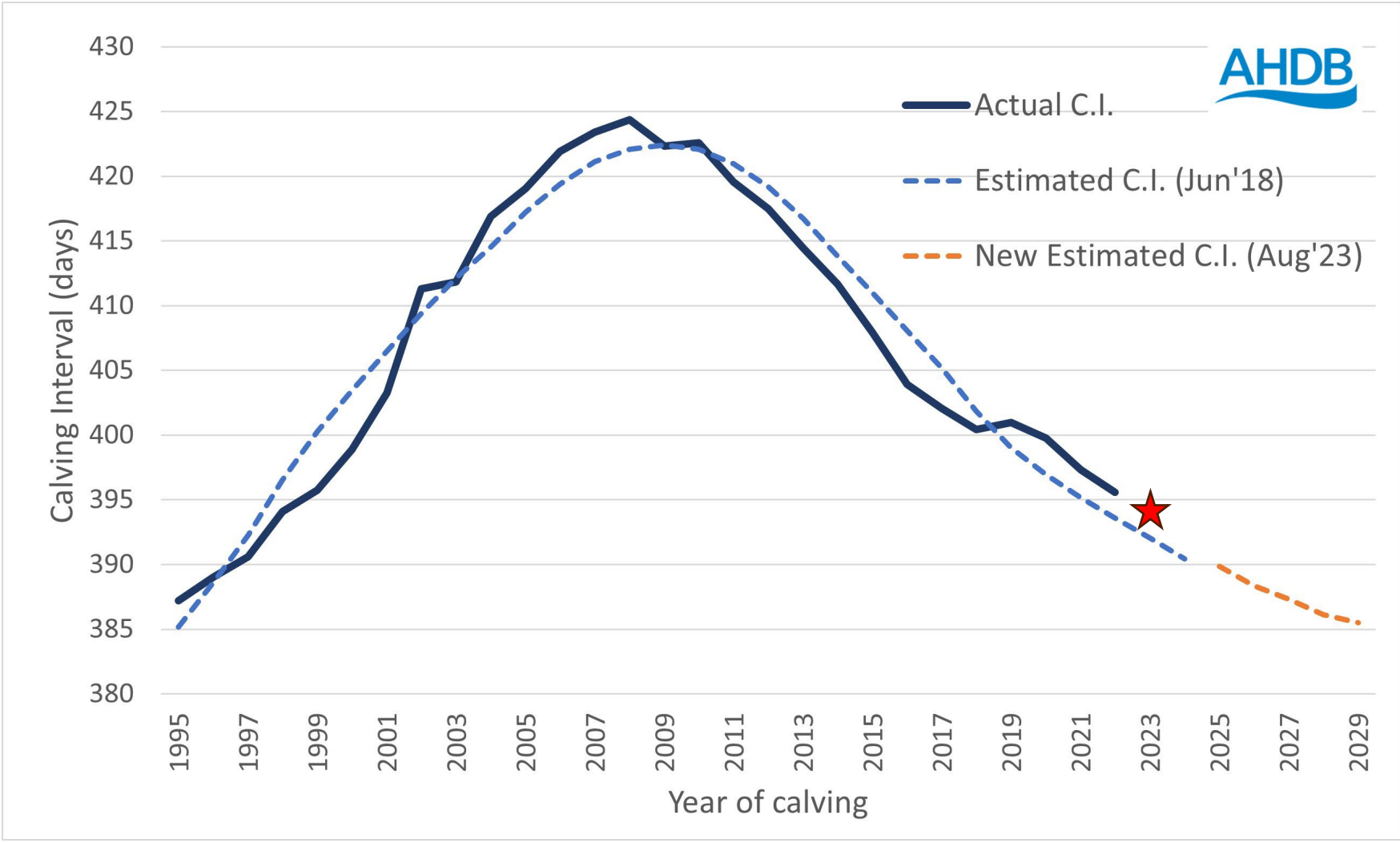
*It only takes a minute to breed a cow, but it can
take a lifetime to breed out any wrong
decisions*

Dairy genetics in a snapshot...

impact of the introduction of the UK Fertility Index



Impact of genetics – Calving interval



Breeding better calves for a better future

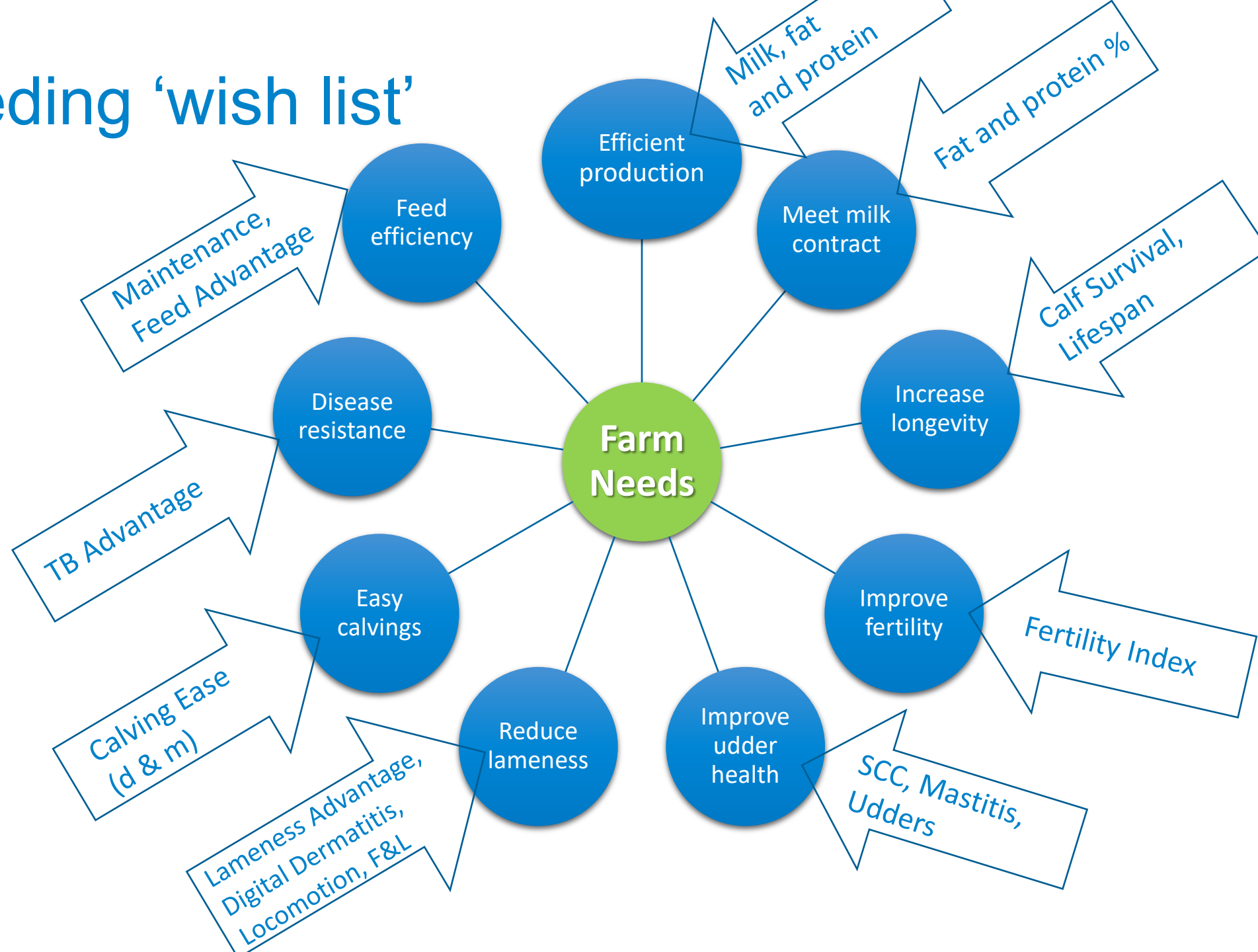
- Make sure the future generation has improved genetics !
 - Only use sires with the genetic qualities you need
 - And only breed from the best dams in the herd !
- What genetic tools exist to help us?
 - *(today's talk mainly covers Dairy cattle, but the same principals apply to beef)*
- What qualities are needed for a better future ?



Social licence to produce

- Consumers and Government have high(er) expectations of our industry
 - ✓ Increased supply to satisfy demand
 - ✓ Cheaper product to keep (or make) food affordable
 - ✓ Animal Well-being protected
 - ✓ Healthy animals to minimise use of medicine
 - ✓ 'Greener' to support sustainability agenda (..and make consumption justifiable)
- What does this mean for the future dairy cow?
 - 'Produce more from less'
 - In a way that is acceptable to society ('Licence to produce')
 - And 'easy care' cows

Breeding 'wish list'

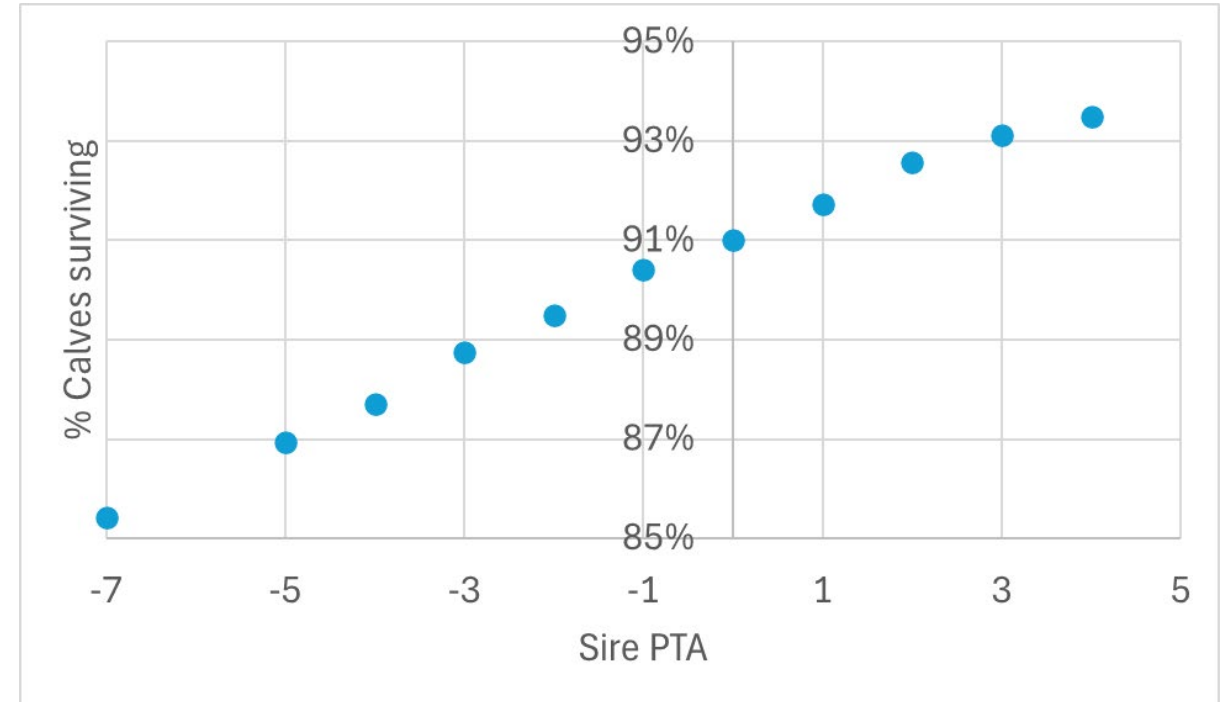
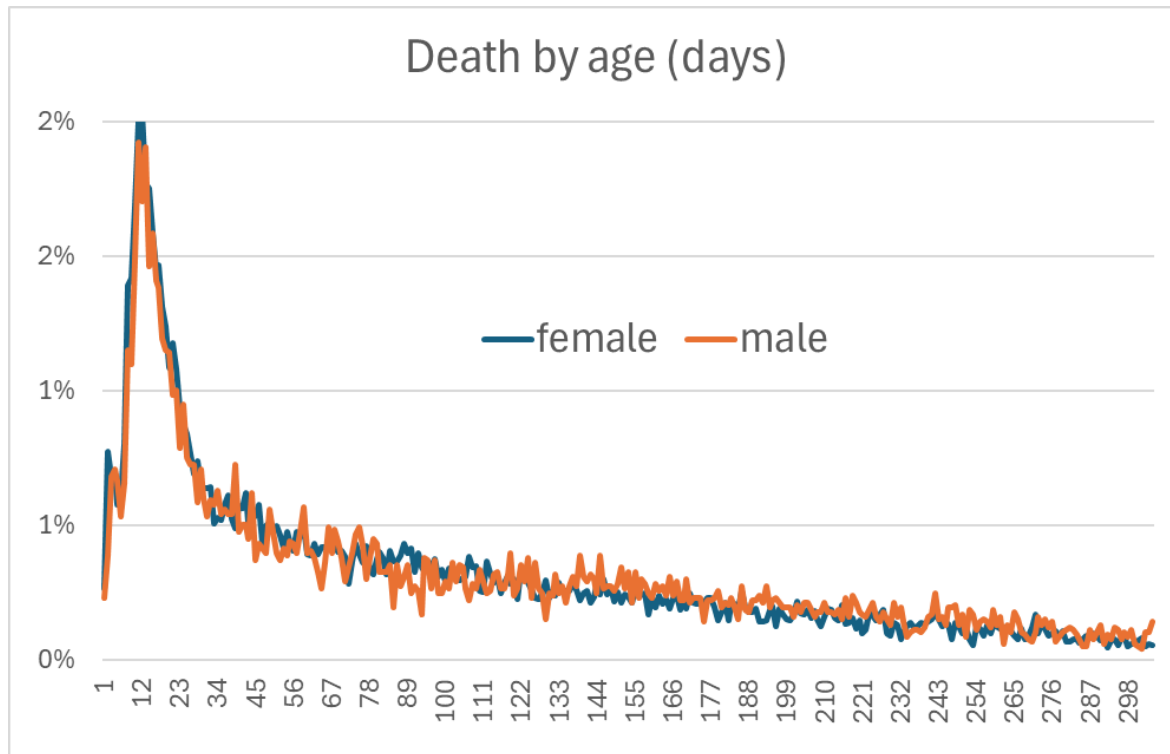


Genetic qualities to improve calf health

- Historically breeding has mostly focussed on the mature cow
 - Production, Health, Fertility, Longevity
- But focus now also given to the calf
 - Calf survival
 - Calving ease
 - Stillbirth
 - Scours
 - Pneumonia
 - (Dam colostrum quality)
- [#PhenotypelsKing](#)

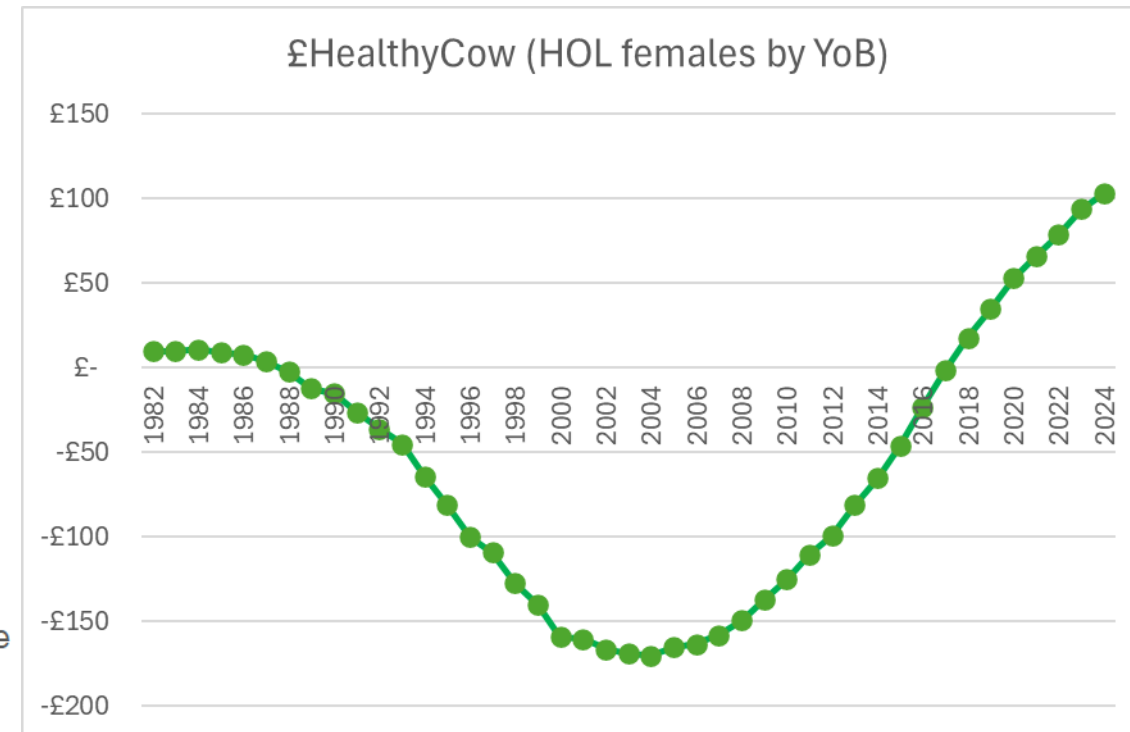
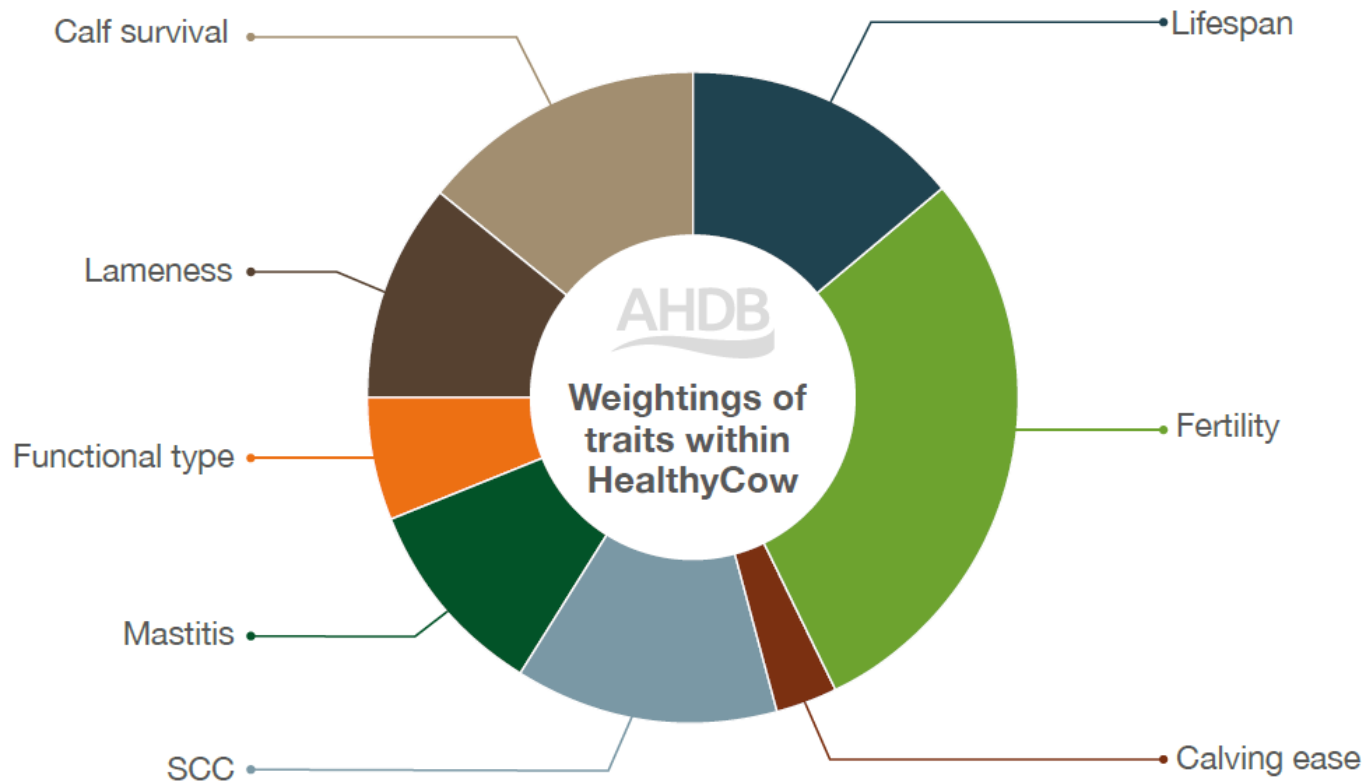
Calf Survival genetic evaluations

- Uses UK national identification data → Tagging until 10 months of age
- Heritability 5%



HealthyCow index

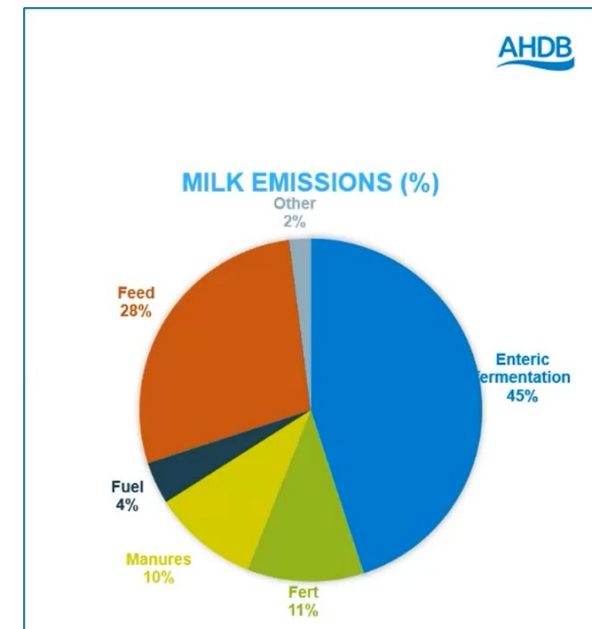
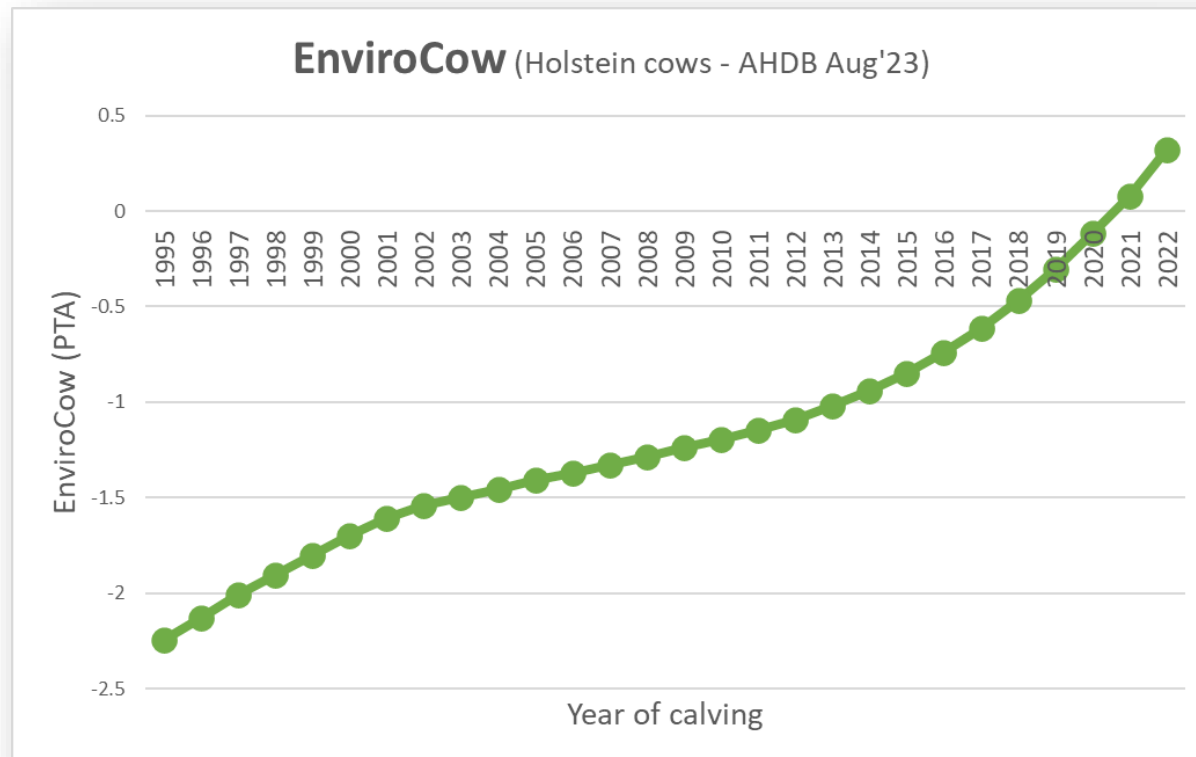
Represents the financial saving each bull is predicted to pass to his daughters through their better health (expressed in £)



EnviroCow index

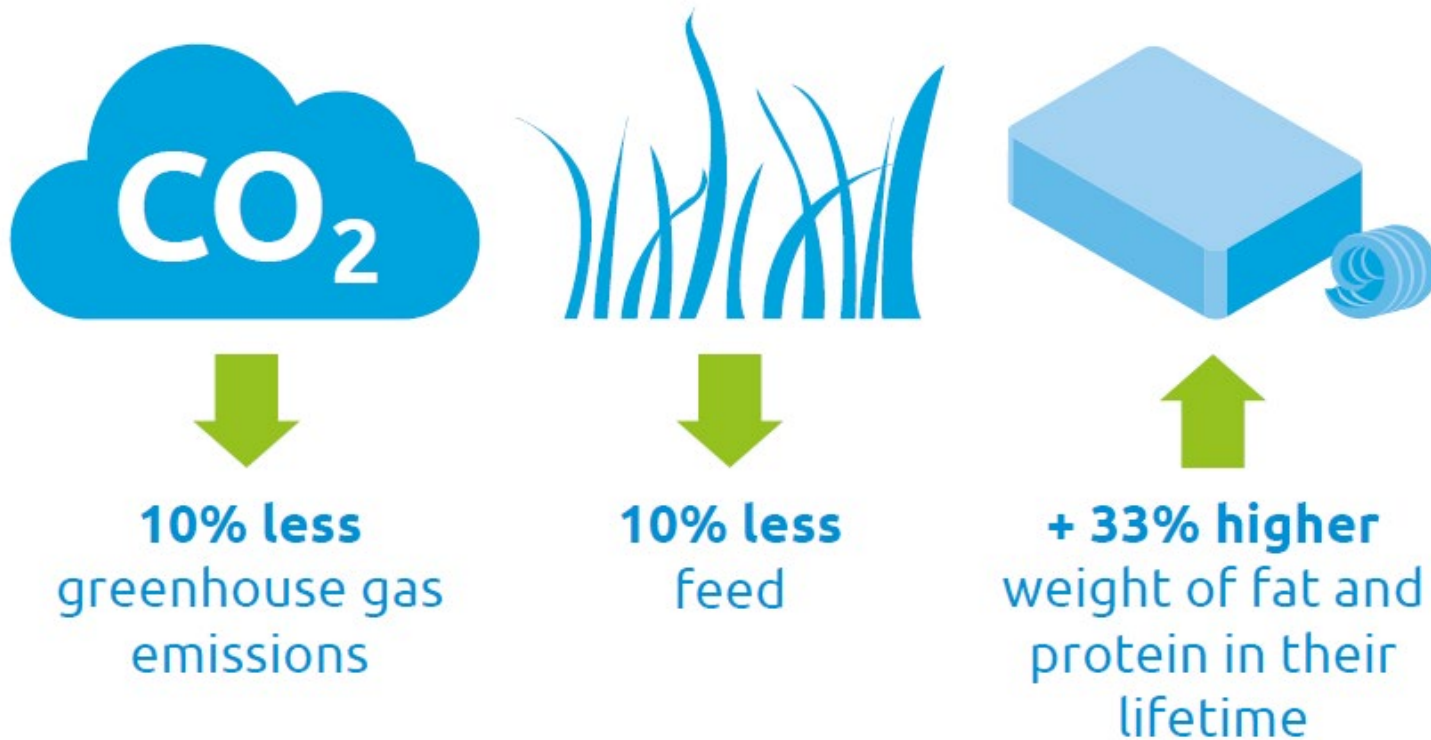


- Direct + indirect effects due to genetic improvement reduces CO₂e/kg FPCM by just over 1% each year
- Genetics is estimated to contribute a 20% reduction over 20 years



Estimated lifetime impact of EnviroCow

One-point higher score for EnviroCow equals:



INTERBULL BULLETIN NO. 59. 26-27 August 2023, Lyon, France

**The EnviroCow index and its impact
on the UK dairy industry's carbon footprint**

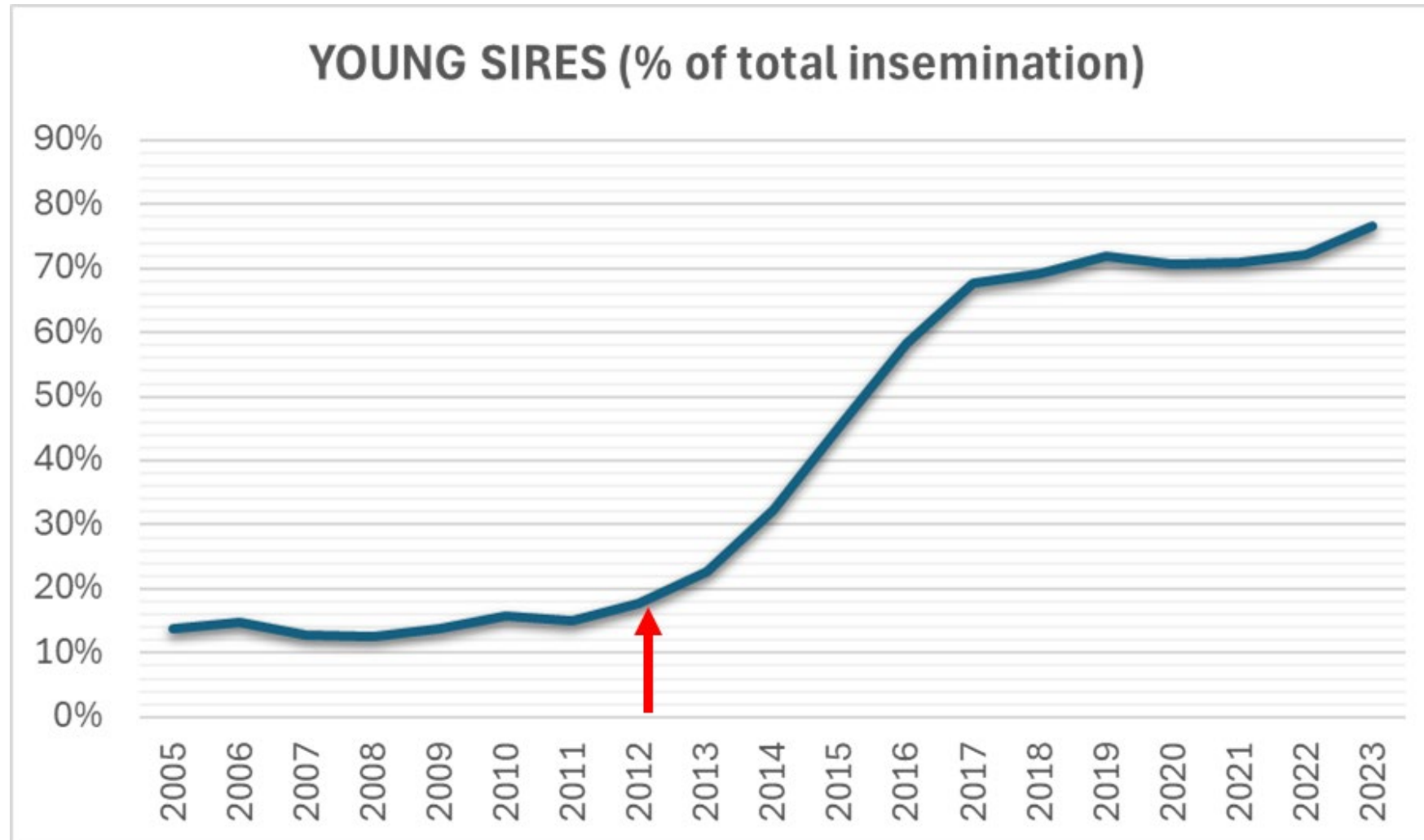
M.Winters¹ and M.Coffey²

Genomic data gives us early insight

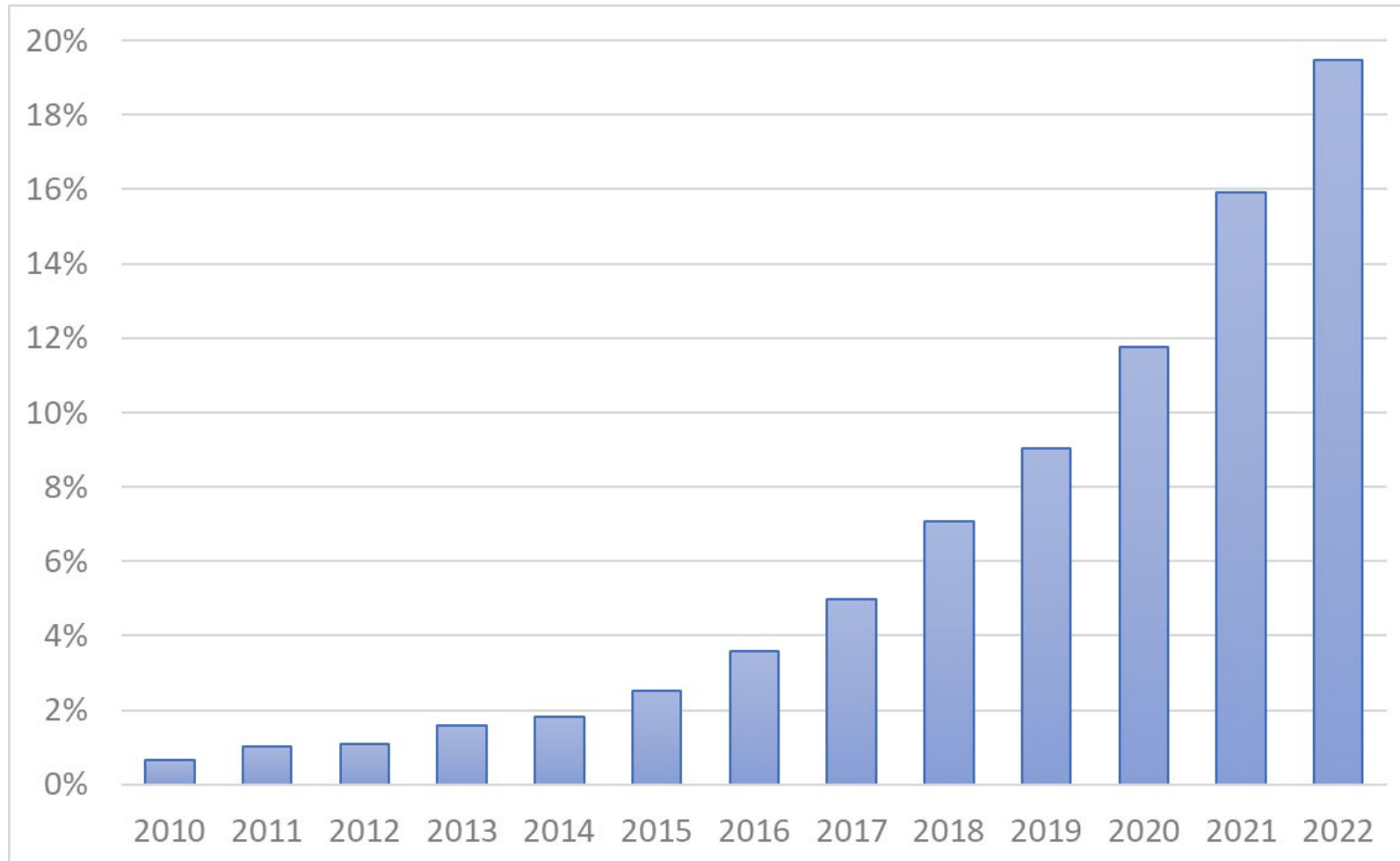
- Genomic evaluation of calves makes selection easier and accelerates genetic progress
- More reliable early assessment of traits
 - Has significantly shortened the generation interval
 - $Genetic\ gain = [Seln.\ intensity * Gen.\ variation * Reliability] / Generation\ Interval$
- Provides farmers with new tools to fine-tune their herd breeding program

Use of (genomic) young sires in the UK

(Holstein breed)



Proportion of UK females genotyped by Year of birth



*Across all breeds
(~400,000 born per year)*



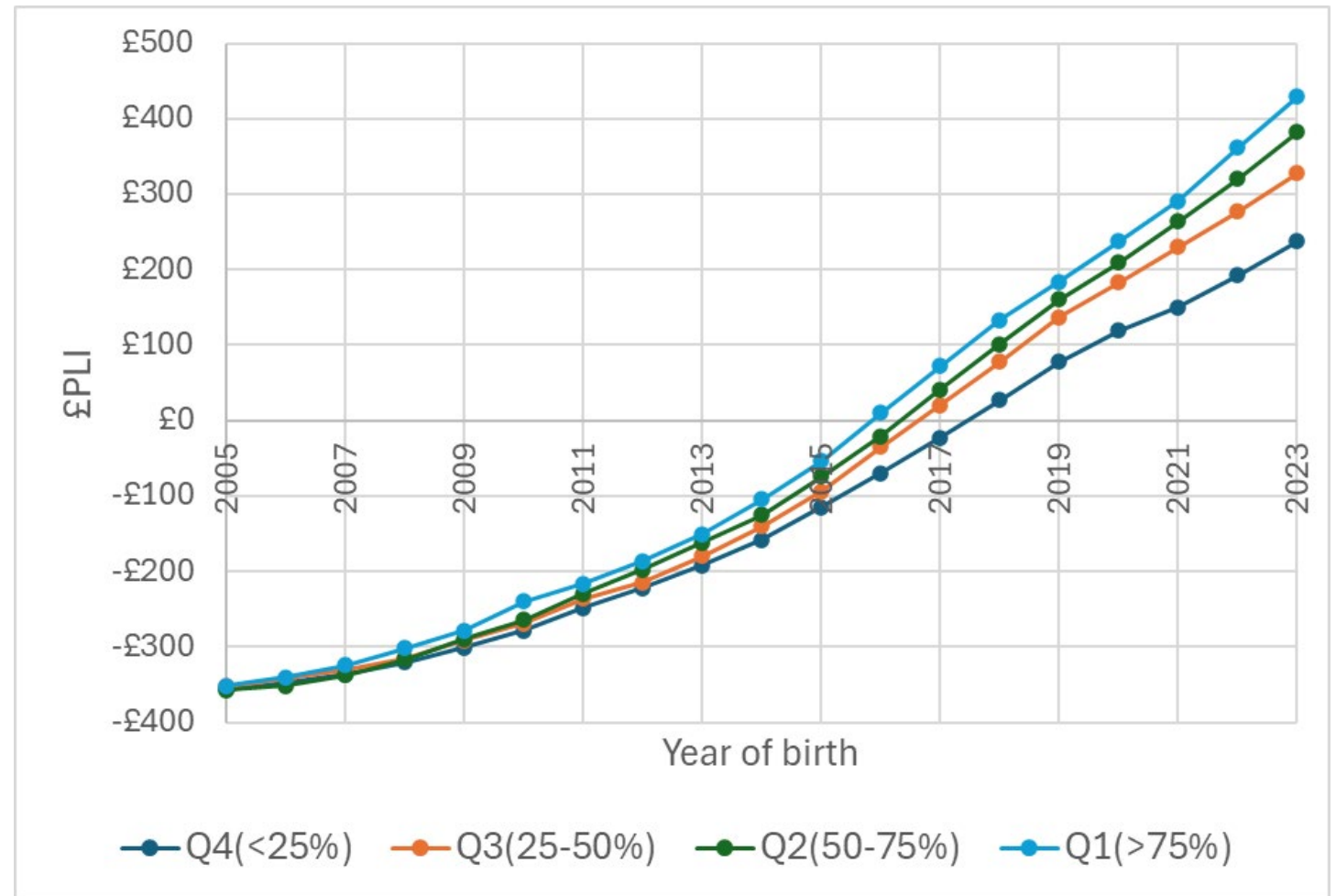
**ACCREDITED DNA DATA
INTERPRETATION CENTRE**
for Parentage Verification by SNP
Exp.: January 2026

Genomic testing of females – Accelerates genetic progress

- Rate of genetic gain accelerates as use of genomics in the herd increases
- Average £PLI of females split by % of genomic animals in the herd
 - Quartile 1 (>75% of females tested)
 - ...
 - Quartile 4 (<25% of females tested)

£PLI = Profitable Lifetime Index

(Economic selection index combining many traits with about 1/3 production)



Additional benefits of female genomic testing

➤ Parentage verification

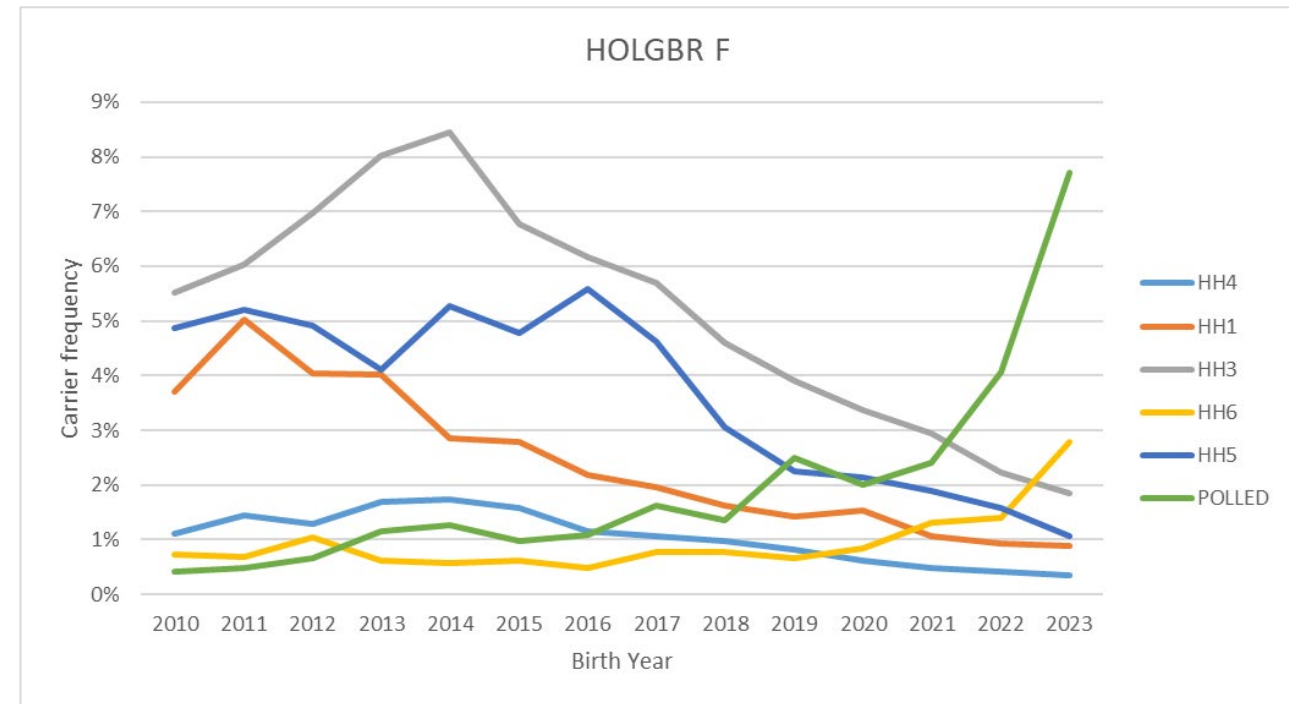
- Significant proportion of wrong parentage assignments (both sire and dam)

➤ Checking for known Genetic traits

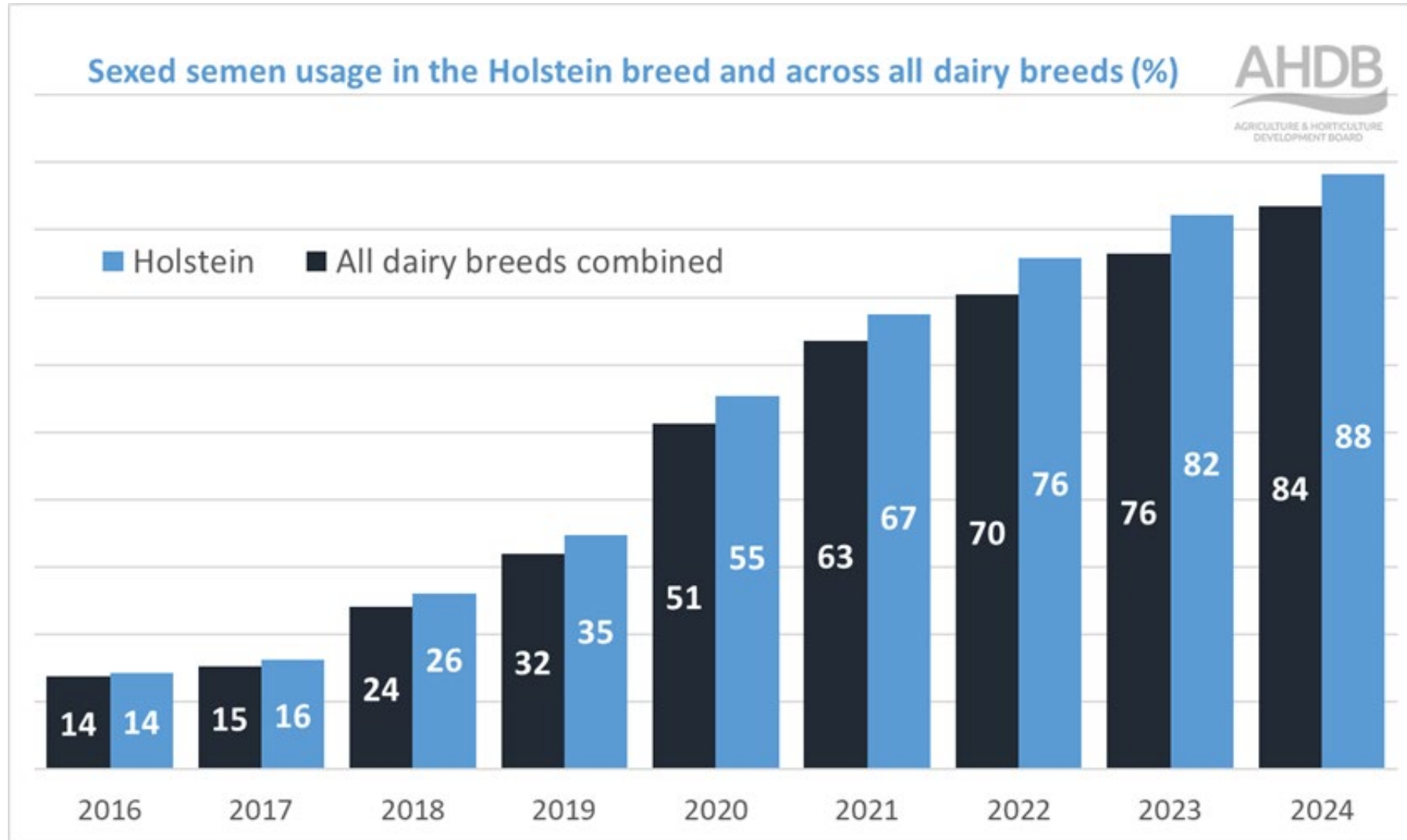
- Managing future matings

➤ Insight for herd management

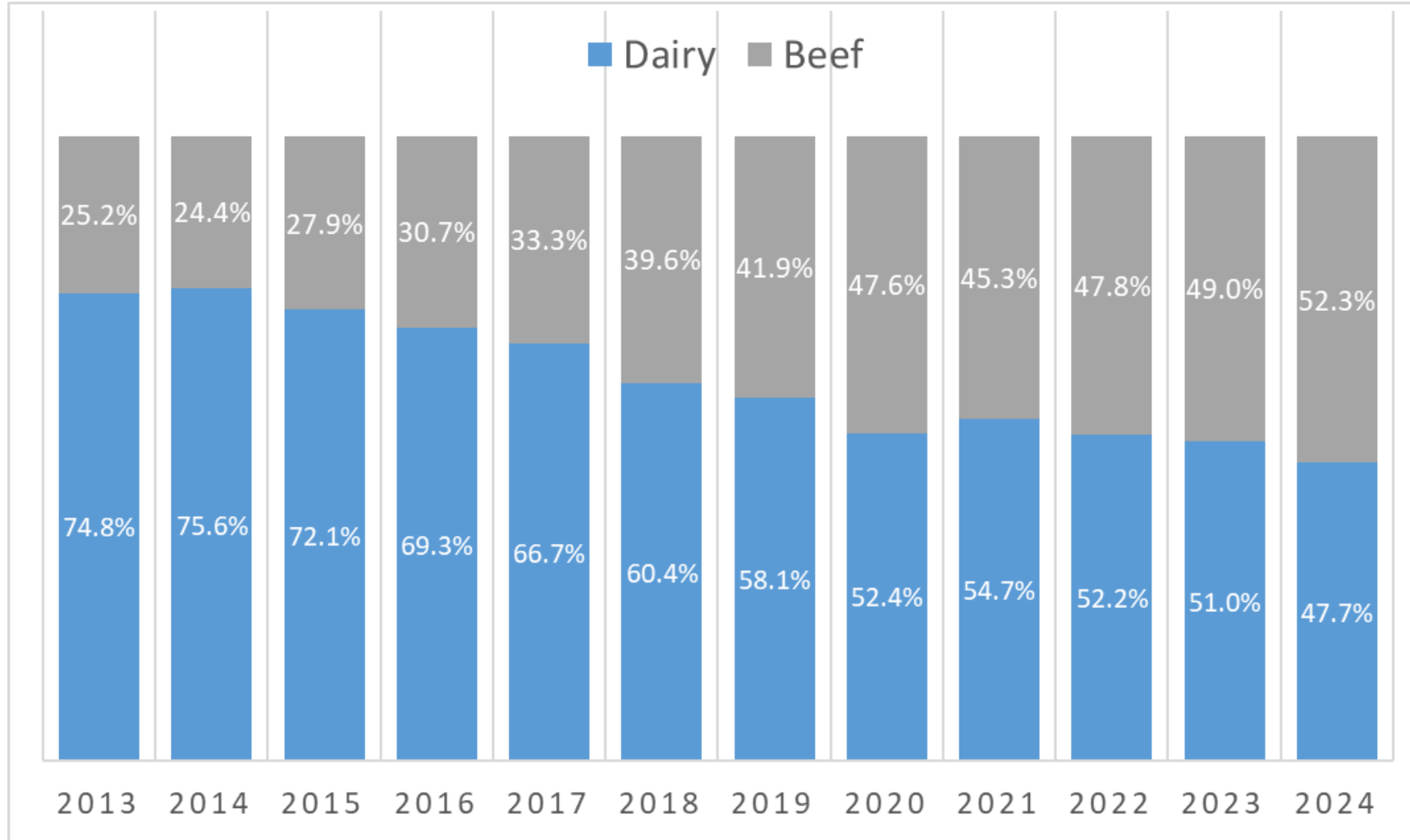
- Culling or Rearing
- Beef or Dairy mating



Use of sexed semen increasing in the UK



Use of Beef semen on dairy cows increasing

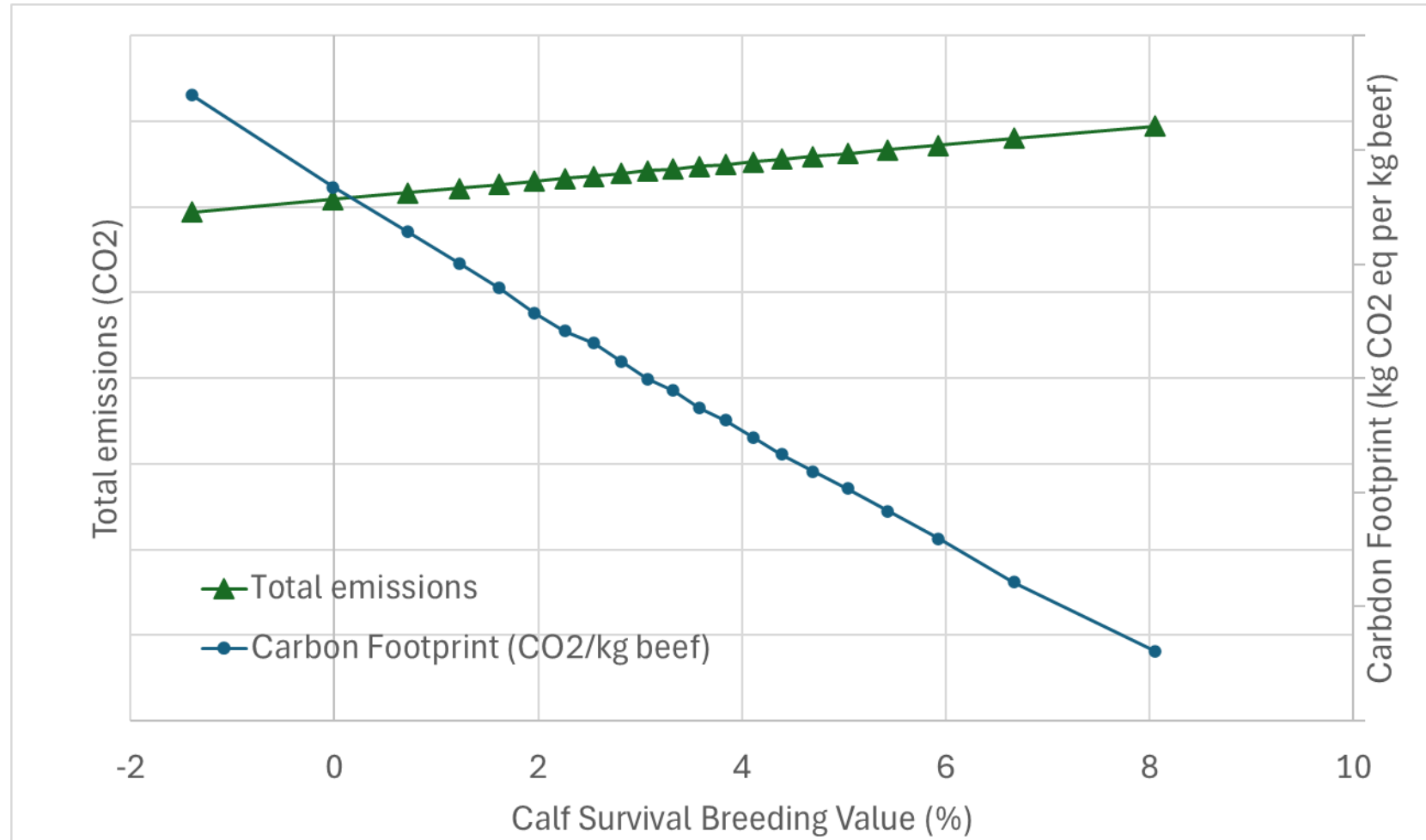


Need to consider the wider supply chain

- 52% of all cattle slaughtered in GB abattoirs are out of a dairy dam !
- Dairy farmer breeding choices increasingly impact the beef supply chain too
- Breeding is no longer simply Dairy *or* Beef
- But now need to consider Dairy *and* Beef
- Having both Economic and Environmental impact on the cattle sectors

Impact of calf survival on suckler beef CO₂

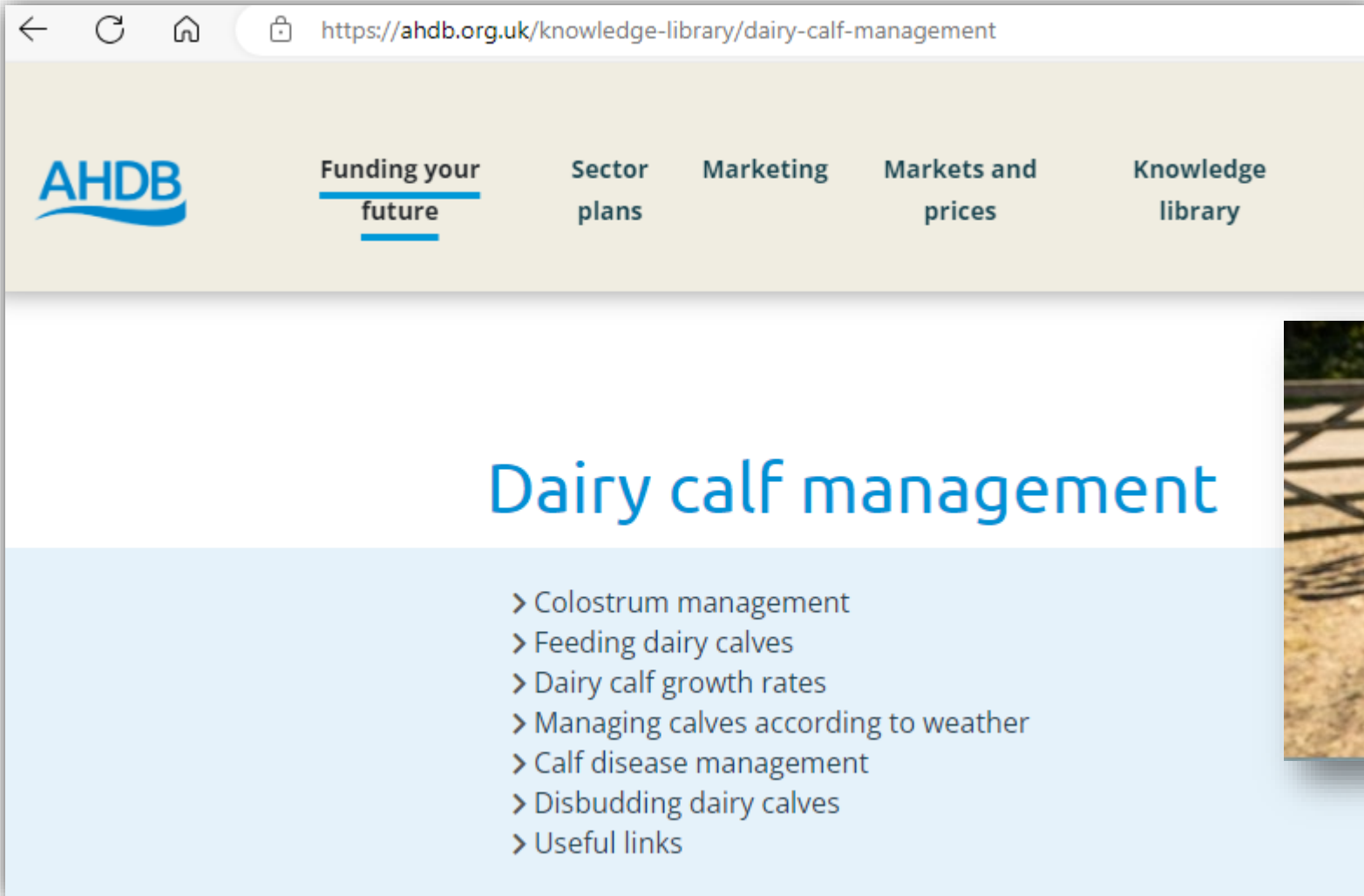
(*Prelim results of the **EnviroBeef** index)



Summary

- Young stock care starts with careful genetic selection
- Many genetic tools available to prevent issues early, and later, in life
 - Genetic indexes
 - Genomic insight
 - Sexed semen (beef and dairy)
- Breeding goals have shifted toward better health and sustainability
- Calf survival is advised to be included in selection
- Better national disease recording of early life will help to focus in on specifics
 - Scours, Pneumonia,...,colostrum quality

Further information: [//ahdb.org.uk](https://ahdb.org.uk)



← ↻ 🏠 🔒 <https://ahdb.org.uk/knowledge-library/dairy-calf-management>

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Dairy calf management

- › Colostrum management
- › Feeding dairy calves
- › Dairy calf growth rates
- › Managing calves according to weather
- › Calf disease management
- › Disbudding dairy calves
- › Useful links

