



Better cows: Challenges and opportunities

Margaret Kelleher
mmkelleher@icbf.com

IGA conference

14th Jan 2025



An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine



AgTech - it's in our DNA

Evolution of the EBI

Performance Traits Measured

Milk & Fertility



Calving



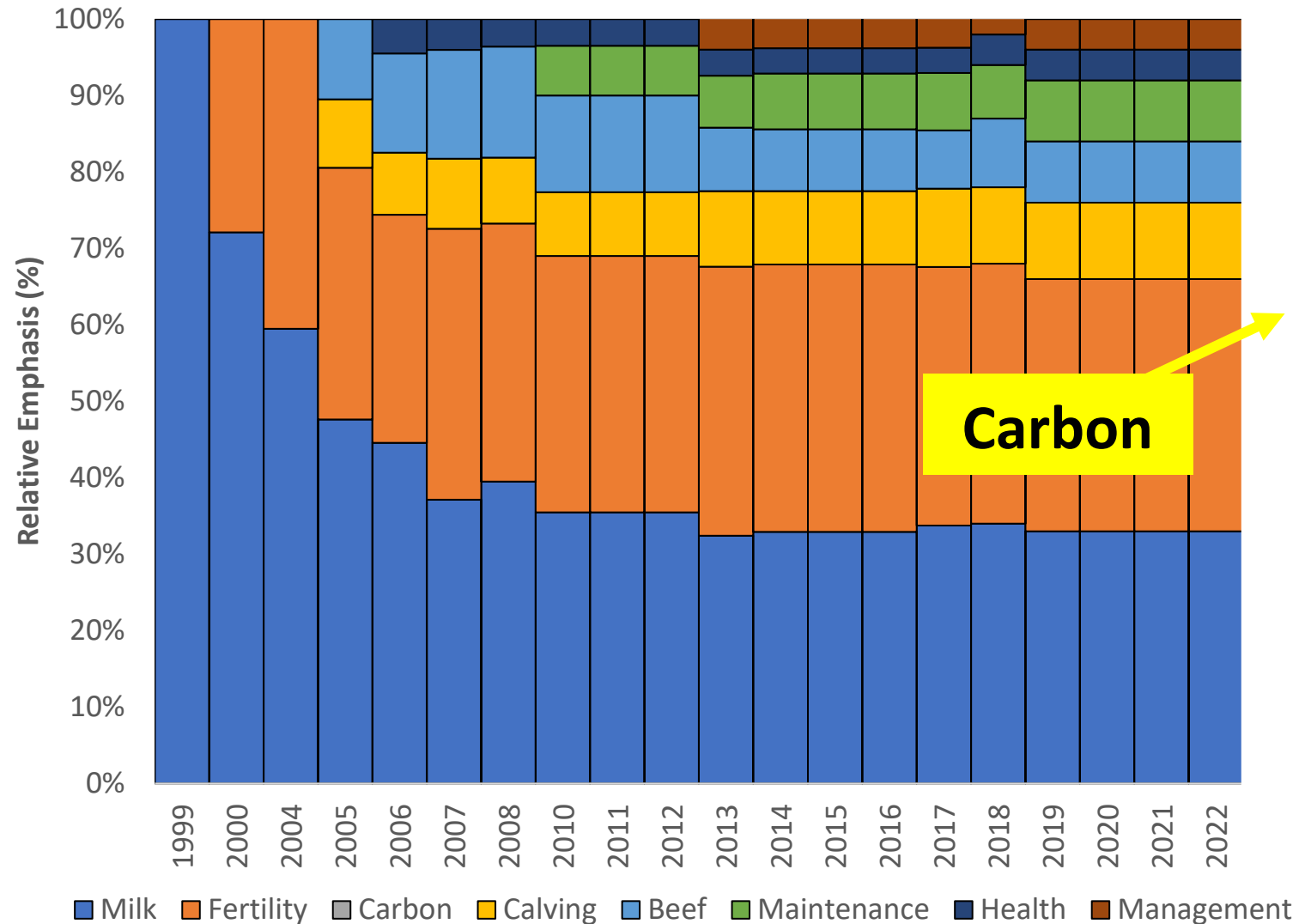
Beef



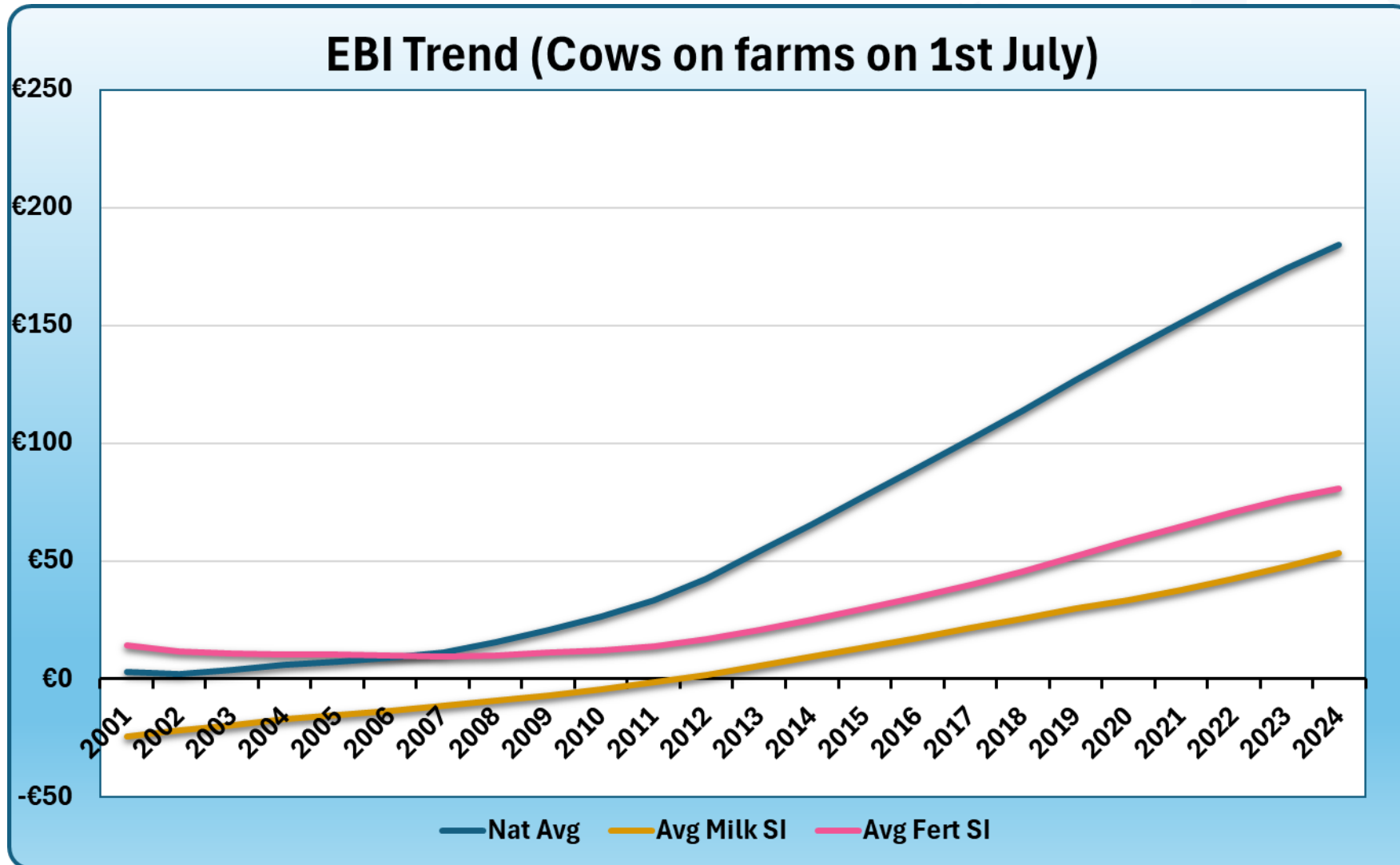
Maintenance, Management, & Health



Carbon



Dairy EBI Trend 2001-2024



- €1 increase in EBI = €2 increase in farm profit.
- Genetic Gain €184
➤ ~€11/year = ~€20/year more profit.
- Milk Sub-Index & Fertility Sub-Index increasing at a similar rate!



EBI is delivering higher performance

2023 KPI's by Herd EBI

KPI Metric (2023)	Btm 20%	Average	Top 20%
Average EBI	€117	€178	€231
Herds	2,268	14,118	2,267
Dairy Cows	80	99	146
Milk Litres per Cow	5,018	5,060	5,501
Butterfat %	4.12	4.26	4.45
Protein %	3.41	3.50	3.63
Kgs Milk Solids / Cow	388	404	457
Milk Price (cpl)	40.84	42.01	44.09
6-Week Calving Rate	60	68	81
Calving Interval (days)	398	384	369
AI Bred Repl. %	45	58	92
Kg CO2 / Kg FPCM	0.942	0.918	0.849

Top 20% herds on EBI delivering:

- **+53kg milk solids** per cow
- have better fertility
 - **-16 days** calving interval
 - **+12%** 6wk calving
- produced **0.069Kg** lower CO₂e compared to the average herd
- Equivalent to **€345** more per cow (assuming €6.50/kg MS) or **€34,000** for the average herd!

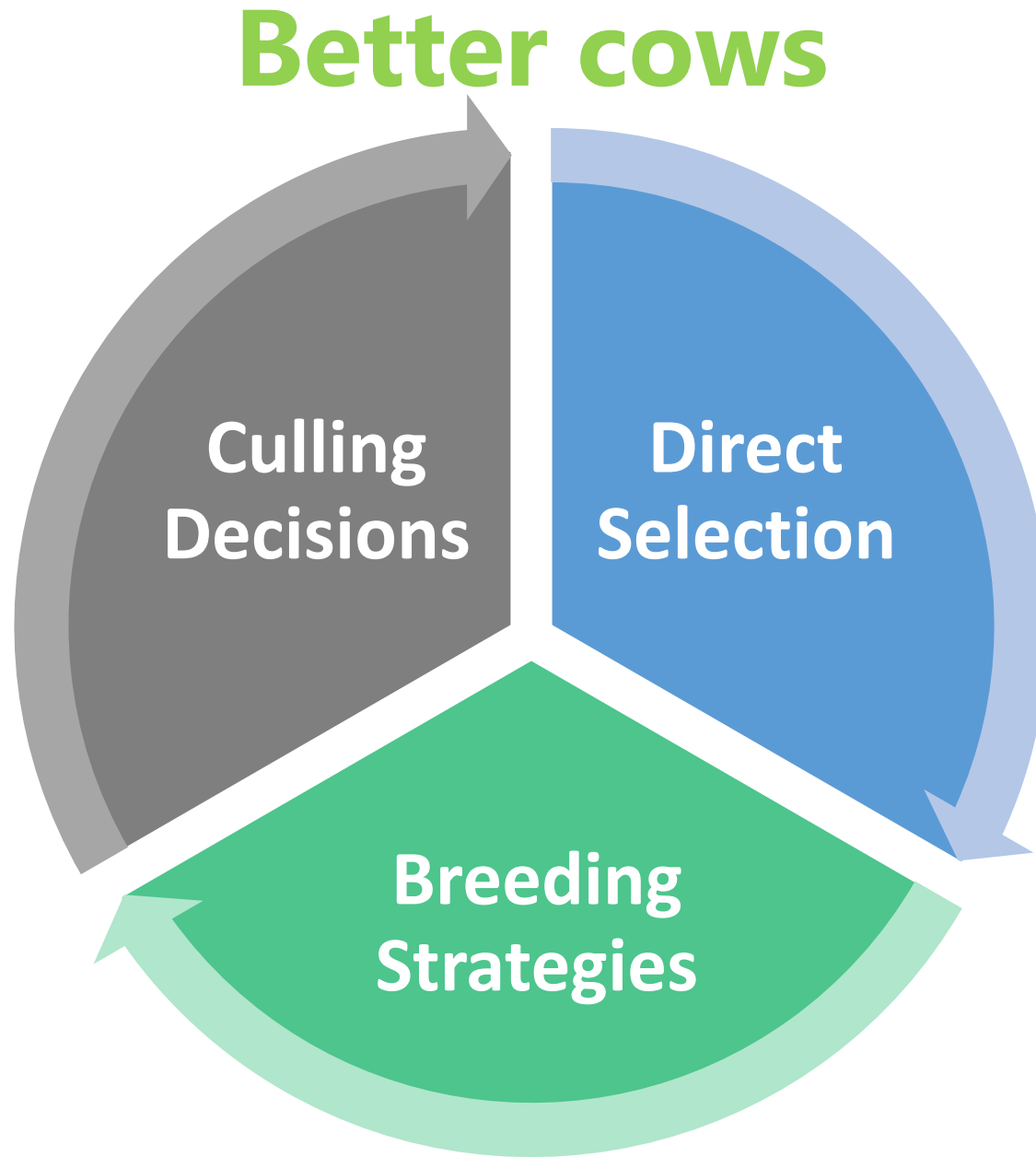
What if ?



What if exercise	Btm 40%	Top 20%		
Average EBI	€139	€231	Kg Milk Solids Difference	(C) Assuming 35% gain from genetics
(A) Number of Dairy Cows	81	149		
(B) Kgs Milk Solids / Cow	388	457		
(D) Total Milk Solids (A x B)	31,428	68,093		

(E) Kgs MS/Cow with improved genetics (B + C)	412
(F) Total Solids with improved genetics (A x E)	33,384
Milk Solids Difference (D - F)	1,956
Financial Difference @ €6.50/kg MS	€12,715

At National level = €57m
How could we make this happen?



Direct Selection

- What traits does your herd need gains on?

Herd

- Know your herds strengths and weaknesses
- Herd EBI score card

Herd A

Herd Number:	Your Herd	Star Rating ¹
Herd EBI	€170	***
Milk Sub-Index (Milk, Fat & Protein)	€68	*****
Fertility Sub-Index (Calving Interval & Survival)	€54	*
Carbon Sub-Index	€11	****
Calving Sub-Index (Gestation, Calving Difficulty, Mortality)	€33	****
Beef Sub-Index (Carcass Weight, Conformation & Fat)	€-25	*
Maintenance Sub-Index (Cow Liveweight)	€22	*****
Management Sub-Index (Milking speed & Temperament)	€4	*****
Health Sub-Index (SCC, Mastitis, Lameness & TB)	€4	*
1 Star Rating: * = 1 - 20% ** = 21 - 40% *** = 41 - 60% **** = 61 - 80% ***** = 81 - 100%		

Herd A: Average EBI = €170

Poor in Fertility, Beef, Health

Herd B

Your Herd	Star Rating ¹
€170	***
€28	*
€93	****
€11	****
€17	*
€6	*****
€15	***
€-1	*
€1	*

Herd B: Average EBI = €170

Poor in Milk, Calving, Management, Health

Direct Selection

- Select your highest EBI females to breed



Females

- Select best genetics
- High EBI
€170+
- Genotype females



LOW

EBI

HIGH

Direct Selection

- Select a Team of Dairy bulls **Equally**



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**Equal Usage of Dairy Bulls
Spring 2024**

icbf

(d). Previous Bull Team Size and Usage

Birth Year	Dairy AI Bull Team Usage	Most Used Bull	No dairy calves born from most used AI bull	% dairy calves born from the most AI bull
2023	15	FR6622	10	19%

(e). Dairy AI Bull Team Guidelines

Spring 2024 Breeding Guidelines for your herd

Herd Size (cows and heifers)	Minimum Number AI bulls	Maximum Bull Usage (%)
104	8	15%

(f). Dairy AI Bull Usage

Usage of Dairy bulls (10) in the herd since mating start date: 02/05/2024

Bull	Name of Bull	Proof	EBI	Milk SI	Fertility SI	No. Serves (70)	% of Serves
FR9810	RIVERSIDE ZEUS LIAM	GS	338	92	154	10	14
FR8862	BALLINTOSIG STAR TREK	GS	338	124	144	10	14
FR8881	BARRONSTOWN ROGER	GS	353	107	151	9	13
FR9091	WATERPARK JASPER 2121	GS	307	97	140	8	11
FR9819	CHERRYHILL TROOPER	GS	354	115	148	8	11
FR9358	CLOCHRUA MESSI	GS	305	123	120	6	9
FR9816	LAHARN BRUNO	GS	356	109	156	5	7
FR9842	(IG)BALLYDEHOB RINGO	GS	331	114	130	5	7
FR9844	PROSPECLODGE HARRY	GS	343	111	146	5	7
FR8875	WATERPARK JACK	GS	342	101	147	4	6

Bulls

- Use a team
- Use equally
- Max 15% matings to any 1 bull

Better cows



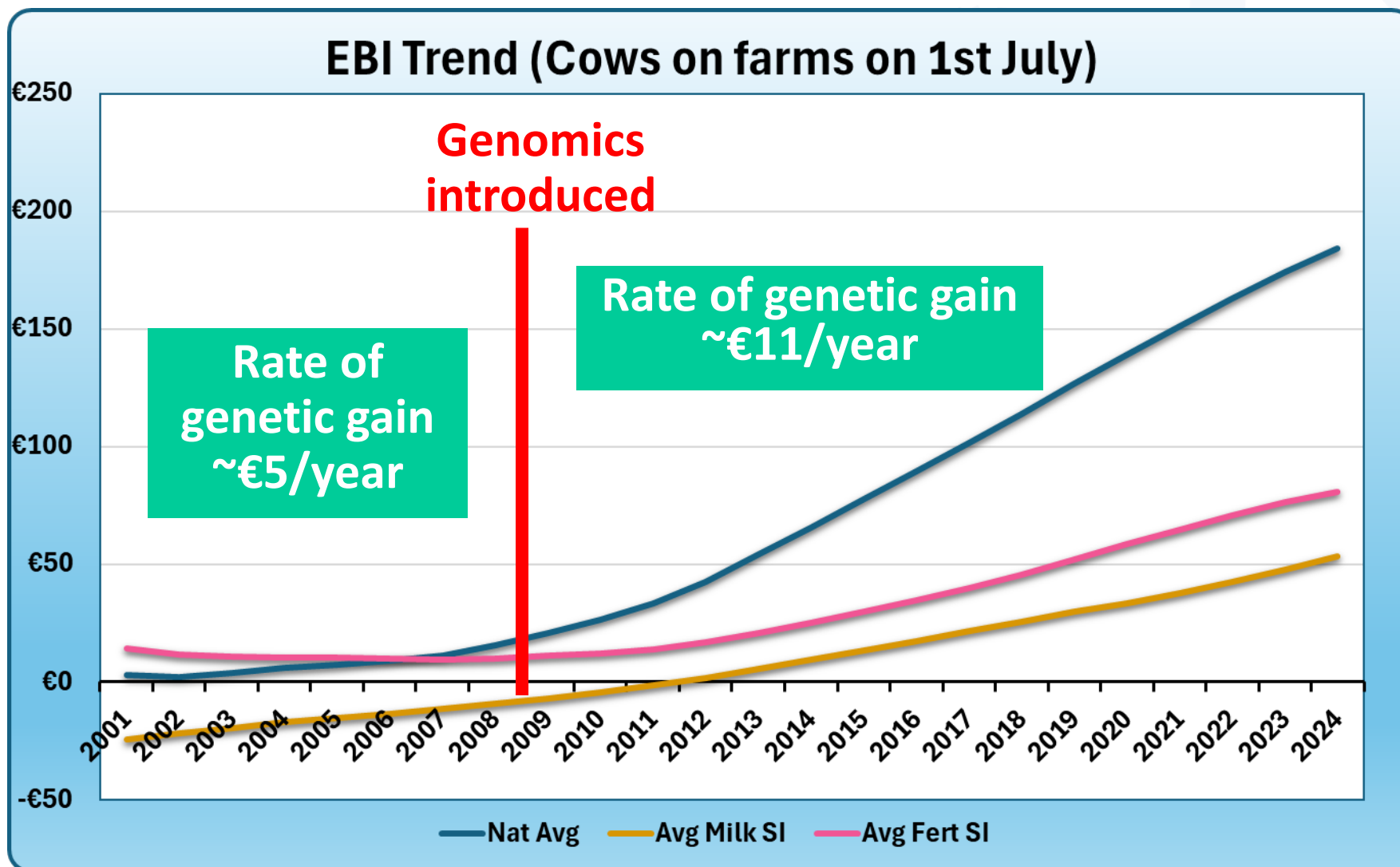
Herd
<ul style="list-style-type: none">• Know your herds strengths and weaknesses• Herd EBI score card

Females
<ul style="list-style-type: none">• Select best genetics• High EBI €170+• Genotype females

Bulls
<ul style="list-style-type: none">• Use a team• Use equally• Max 15% matings to a bull

EBI

Genomics



Rate genetic gain doubled

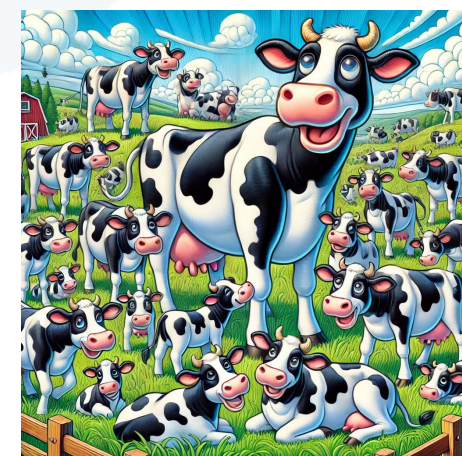
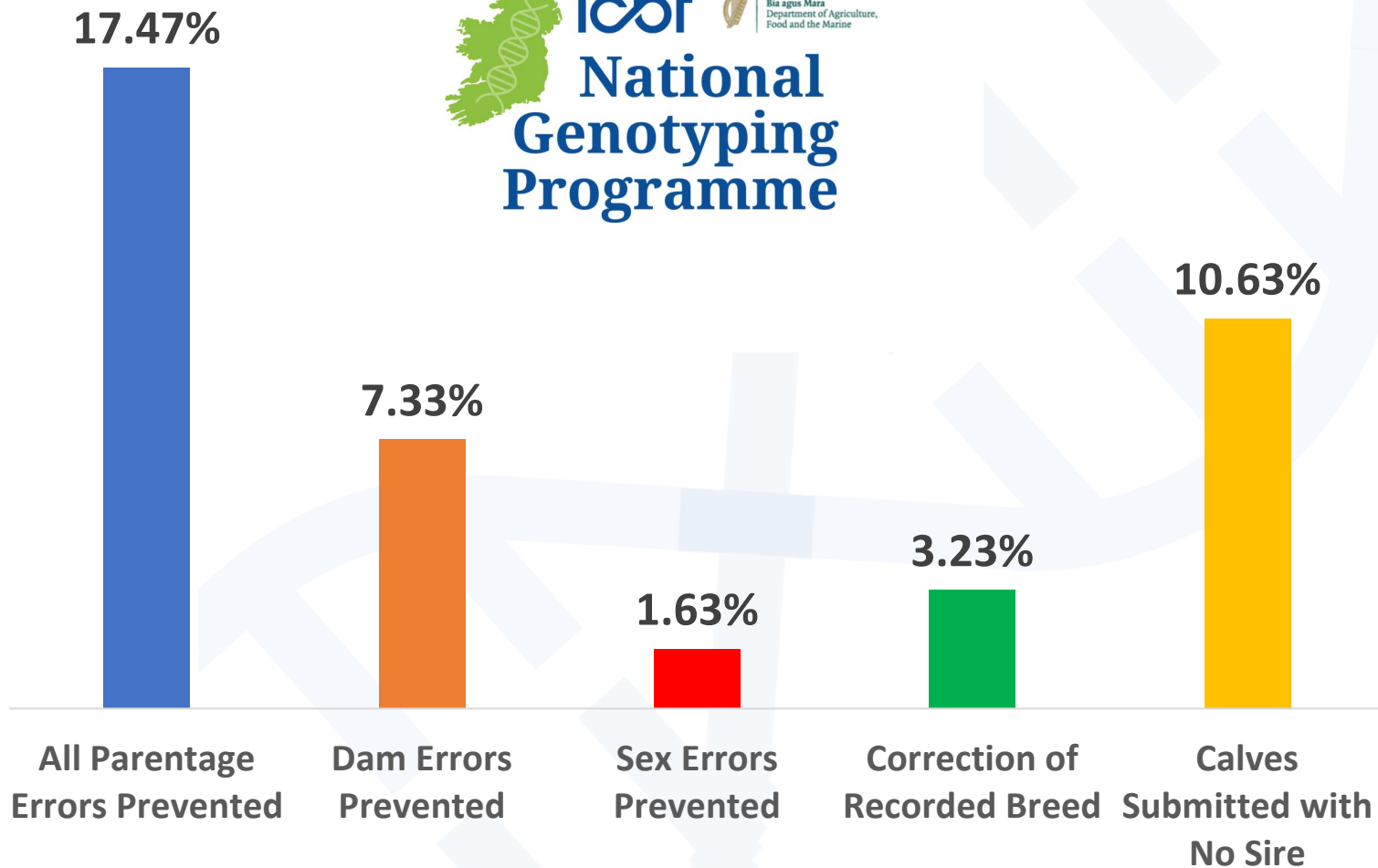


Genomic AI bulls
~€70 more profitable v stock bulls



35% dairy herds genotyped up from 6%

NGP – Genotyping Herds

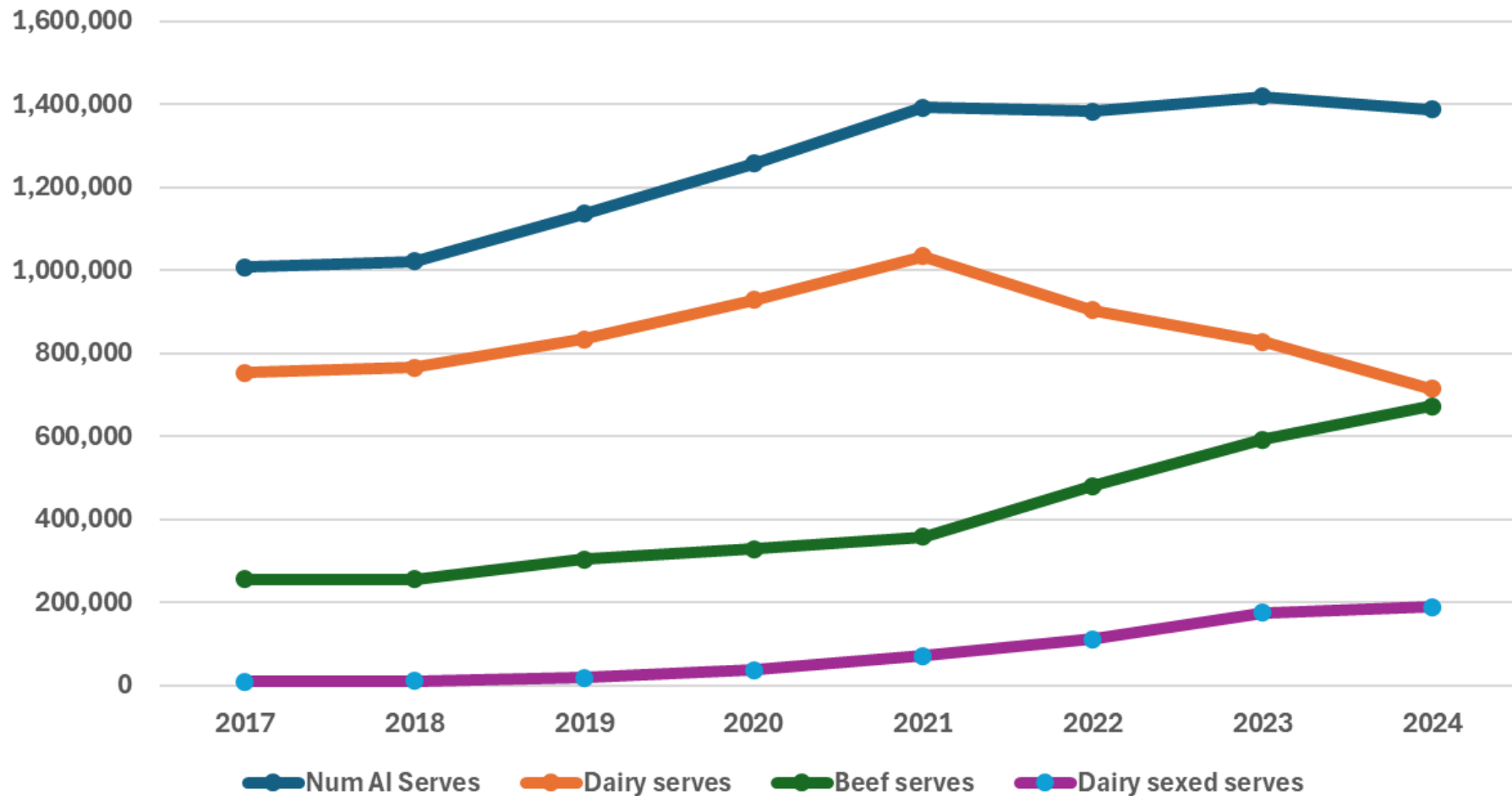


Example of ~18k breed errors corrected:

- 3,890 registered as AA but not AA
- 3,992 AA registered as another breed

Trends in number of AI services

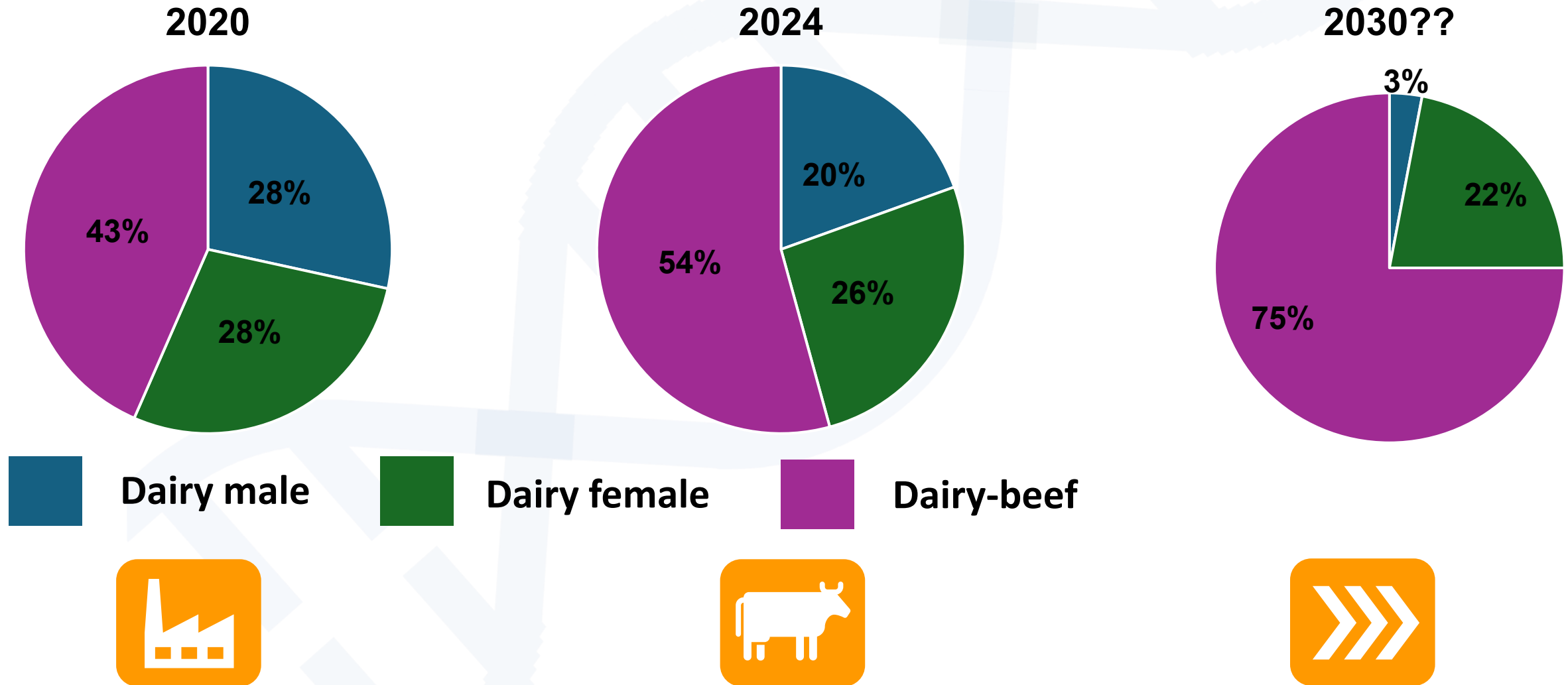
National AI Serves - Year to Date (31st Dec)



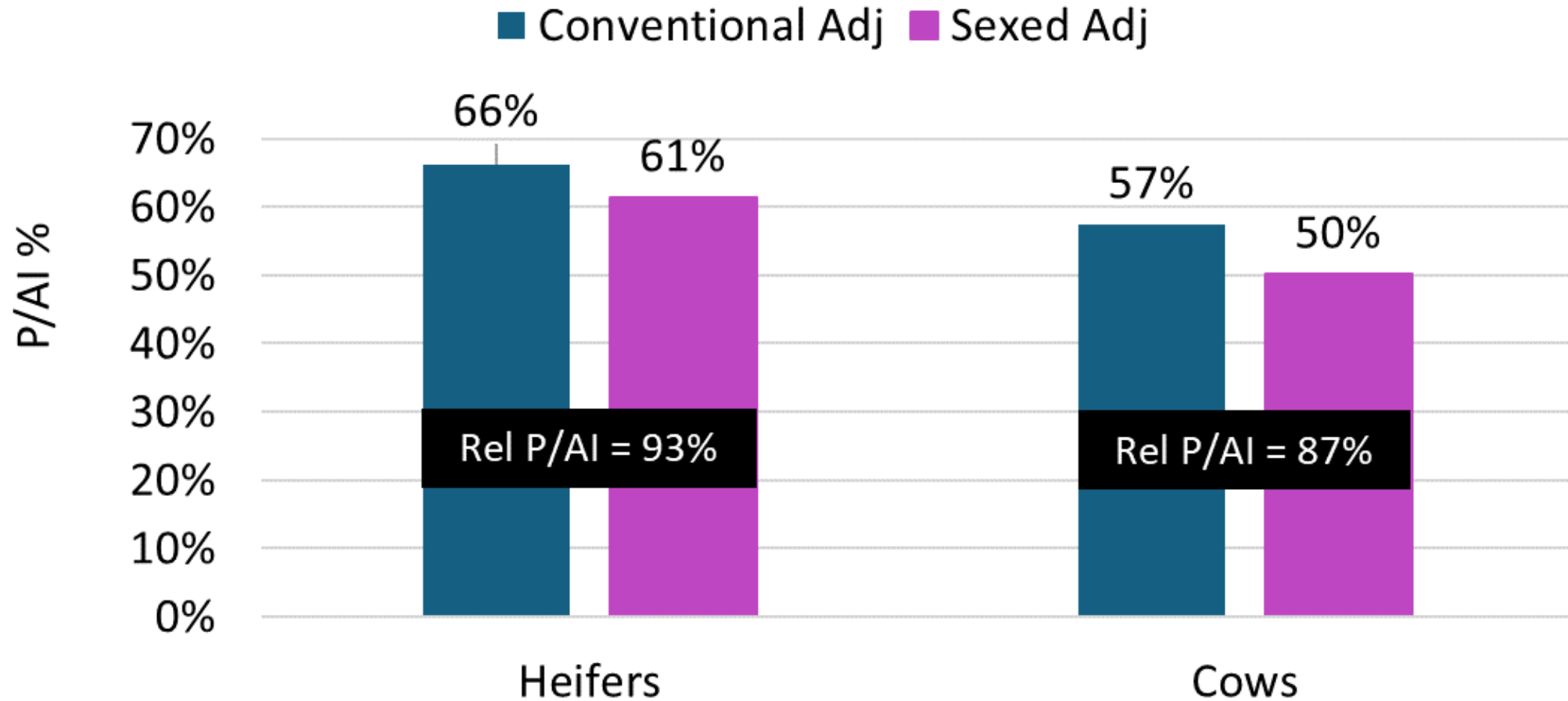
- Significant turn-around in the make-up of national cattle herd over the last 5 years
- Sexed Semen continues an upward trend
- Expected to continue over next 10 years



Sexed Semen: Calf crop trends in Spring



Pregnancy/AI at first service 2023



Better cows



Plan for strict restrictions on calf exports to Netherlands from 2026



Stella Meehan

July 3, 2024 4:50 pm

IRISH
**FARMERS
JOURNAL**

BEEF DAIRY SHEEP AGRIBUSINESS MACHINERY TILLAGE PEDIGREE BUILDINGS PROPERTY

Netherlands will close to Irish calves 'after 2025'

The short-term outlook for calf exports in 2025 'remains fairly positive', Bord Bia has said.



Amy Forde

DAIRY > NEWS

1 January 2025



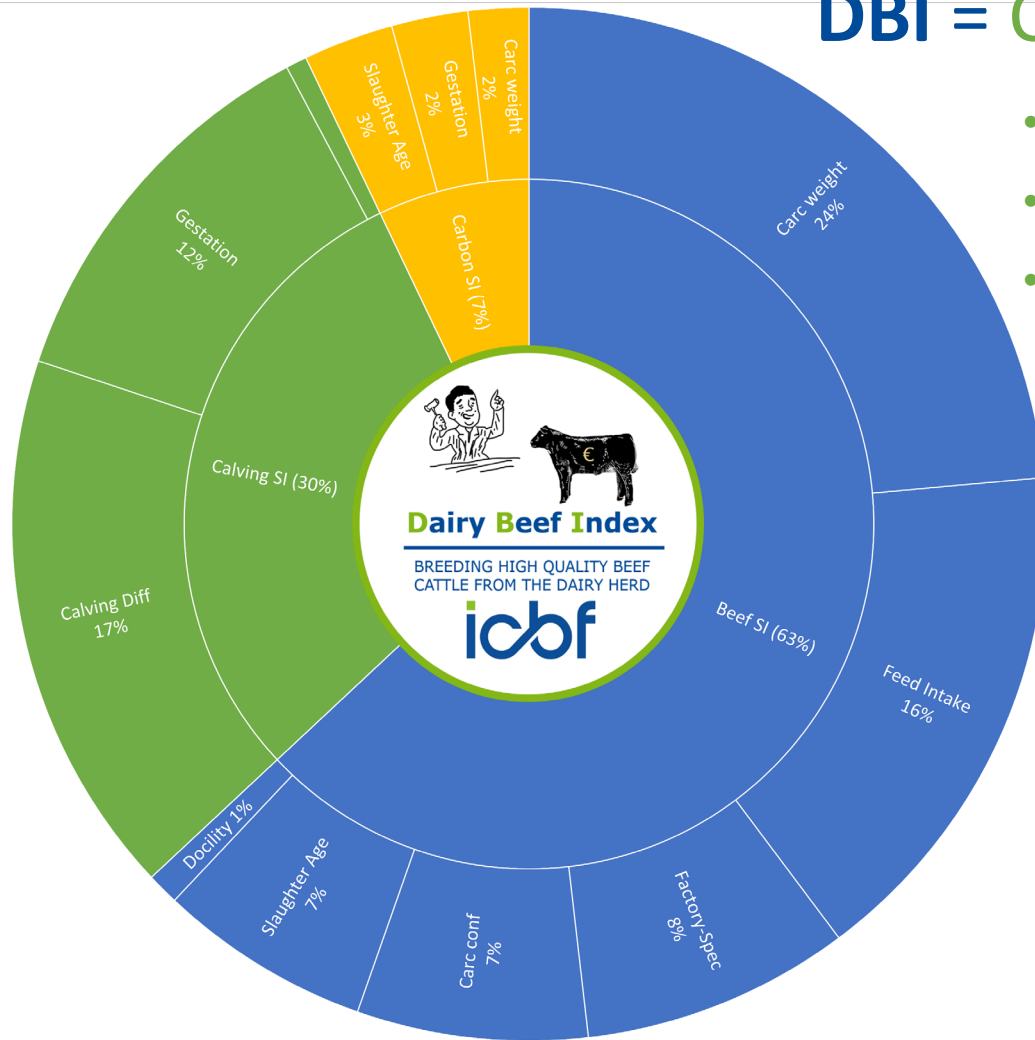
Just under 200,000 Irish calves were traded with customers in Europe this year. \ Donal O'Leary

LOW

EBI

The Dairy Beef Index (DBI)

$$\text{DBI} = \text{Calving Merit} + \text{Beef Merit} + \text{Carbon Merit}$$



- Dystocia
- Gestation
- Stillbirth

- Feed intake
- Docility
- Carcass weight
- Carcass conformation
- Age at slaughter
- Factory-specification
- Polled
- TB

- Carcass weight
- Age at slaughter
- Gestation

DBI = Traits relevant to breeder & rearer/finisher

Same DBI but very different bulls



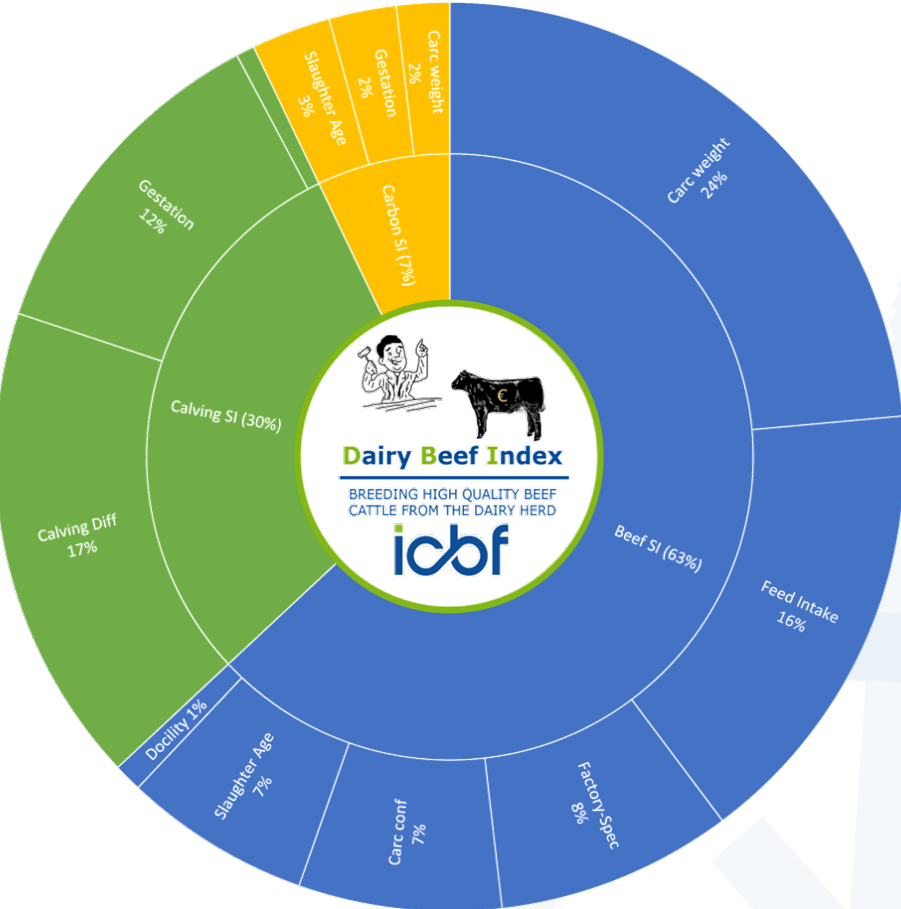
Bull	DBI	Calving subindex	Beef subindex	Cow CD %	Heifer Risk	Gest days	Carcass weight kg	Age at finish
A	€190	€60	€110	2.5	Low	-2.6	9.6	-19.3
B	€190	€15	€160	3.1	High	-1.6	19.6	-18.1
Diff	€0	€45	€-50	-0.6		+1.0	-10.0	+1.2

What's available? - Current Active Beef AI sires

PTA Dairy Cow %	Sires	DBI	DBI rel %	Calving SI	Beef SI min	Beef SI avg	Beef SI max	Cwt PTA avg
1%	1	€131	80	€47	€78	€78	€78	1
2%	46	€148	70	€48	€58	€94	€136	7
3%	123	€143	71	€33	€39	€106	€175	11
4%	110	€124	73	€1	€51	€125	€193	15
5%	109	€114	67	-€31	€74	€154	€213	24
6%	130	€96	70	-€55	€86	€159	€222	27
7%	96	€77	67	-€82	€88	€169	€225	31
8%	88	€62	67	-€106	€97	€178	€221	32

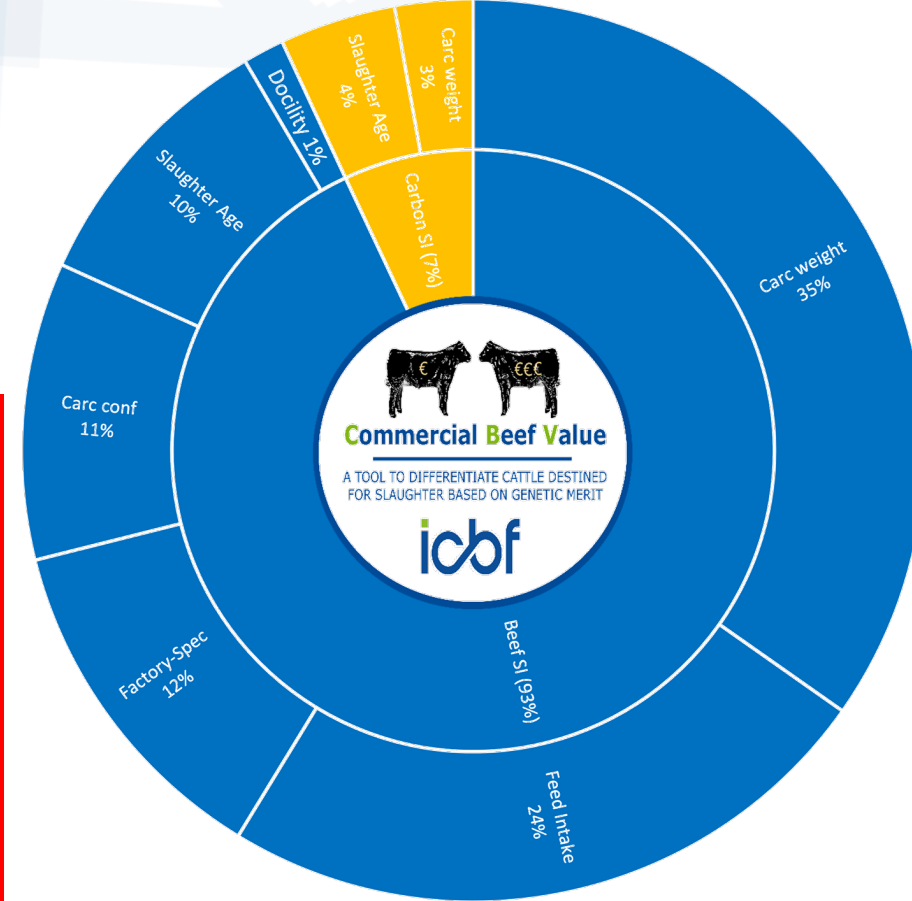
- Significant variation in DBI Beef Sub-index at each level of calving difficulty
- E.g. for a calving difficulty of 3% there is €136 difference in beef sub-index between the best and worst bull.

Calf on the ground: Commercial Beef Value (CBV)



- Calving traits removed
- Not needed for non-breeding animal

- Feed intake
- Docility
- Carcass weight
- Carcass conformation
- Age at slaughter
- Factory-specification
- Carbon



Does CBV work?



Analysis of 62k AA*HF steers finished in 2024
Association with CBVs generated Dec 2023

Star Rating	count	Genetic prediction Prior to slaughter (EBVs)				Phenotypic Performance			Price	
		CBV (€)	Age at Finish (days)	Carcass weight (kgs)	Conf (1-15)	Age at Finish (days)	Carcass weight (kgs)	Conf (1-15)	Calf price (€)	Factory Price (€)
5	12,495	€119	1.1	6	0.49	794	320	5.46	€215	€1,738
1	12,507	€36	3.4	-9	-0.10	821	308	5.04	€170	€1,657
5 v 1		+€83	-2.31	+15	+0.59	-26	+12	+0.42	+€45	+€82

Additional benefit from 26 days reduced age at Finish @€1.66 day (Teagasc) = €43 → €125 per animal!

Where is the CBV available?

- Online CBV profile for all Herds – all animals with a sire recorded.
- Free ICBF HerdPlus App
- Most Mart Boards – animals must be genotyped.



Value €	Star Ranking (Across Breed)	Carcass Weight (kg)	Carcass Conformation (1-15 scale)	Carcass Fat (1-15 scale)	Feed (kg D)
317	★★★★★	70.6	4.26	-1.14	-
283	★★★★★	63.2	4.30	-0.80	-
277	★★★★★	67.6	3.62	-0.96	-
275	★★★★★	58.8	3.76	-1.32	-
274	★★★★★	66.4	3.78	-0.74	-
268	★★★★★	59.2	4.00	-1.14	-
262	★★★★★	58.0	4.04	-0.70	-
259	★★★★★	66.8	2.78	-1.06	-
254	★★★★★	50.4	4.50	-0.80	-
247	★★★★★	61.0	2.66	-1.16	-
246	★★★★★	65.6	3.66	-0.70	-
246	★★★★★	60.6	2.92	-0.62	-

CBV Across Breed Within Breed
3291 €104 ★★★★★ ★★★★★
 20-JAN-24 Dairy x Beef
 Genomic Eval

Tag: 372222061943413
CBV Across Breed Within Breed
3413 €100 ★★★★★ ★★★★★
 16-MAR-24 Dairy x Beef
 Genomic Eval

Tag: 372222061943421
CBV Across Breed Within Breed
3421 €99 ★★★★★ ★★★★★
 28-MAR-24 Dairy x Beef
 Genotype Pending Eval

Tag: 372222061933420
CBV Across Breed Within Breed
33420 €97 ★★★★★ ★★★★★
 27-MAR-24 Dairy x Beef



NEW

Search option for Mart buyers



Mart Tracker

VIEW NOW

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ICBF Mart Tracker

07-Jan-2025

Dairy

Select Mart

Select Sex

Select Age

Search

* Mandatory Selection

webapp.icbf.com

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ICBF Mart Tracker

07-Jan-2025

Breed Type: Dairy

Ballyjamesduff Coop (19 animals)

Corrin (50 animals)

Wexford Farmers Coop (93 animals)

BALLYJAMESDUFF COOP MART

Lot: 411

National ID:

Sex: M

Sire: FR7907

DOB: 27-JAN-23

Breed	FR
Geno Eval	Yes
CBV	★★★★★
Breed type	Dairy x Dairy

Show More

25

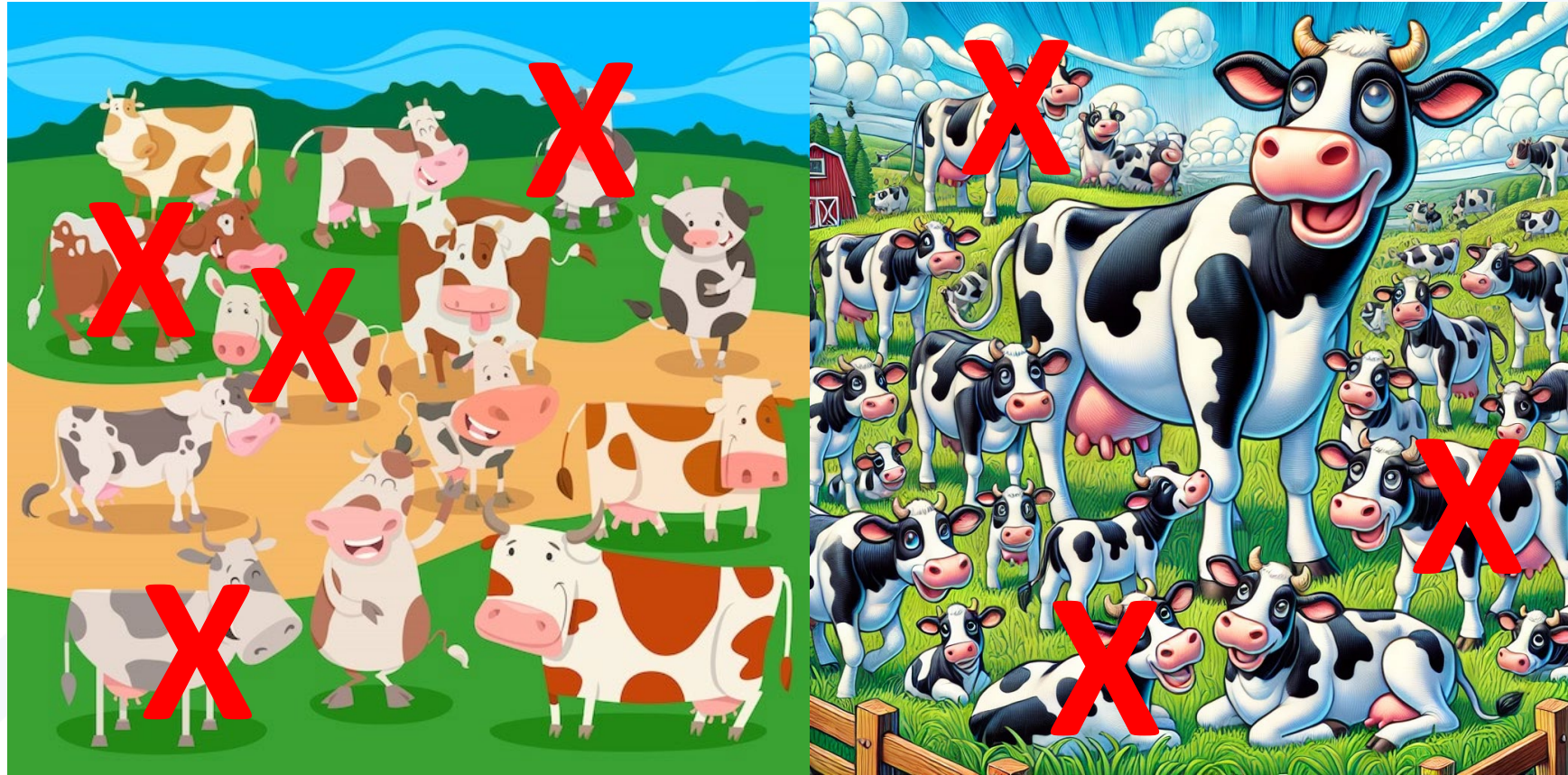
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Better cows



Breeding better cows

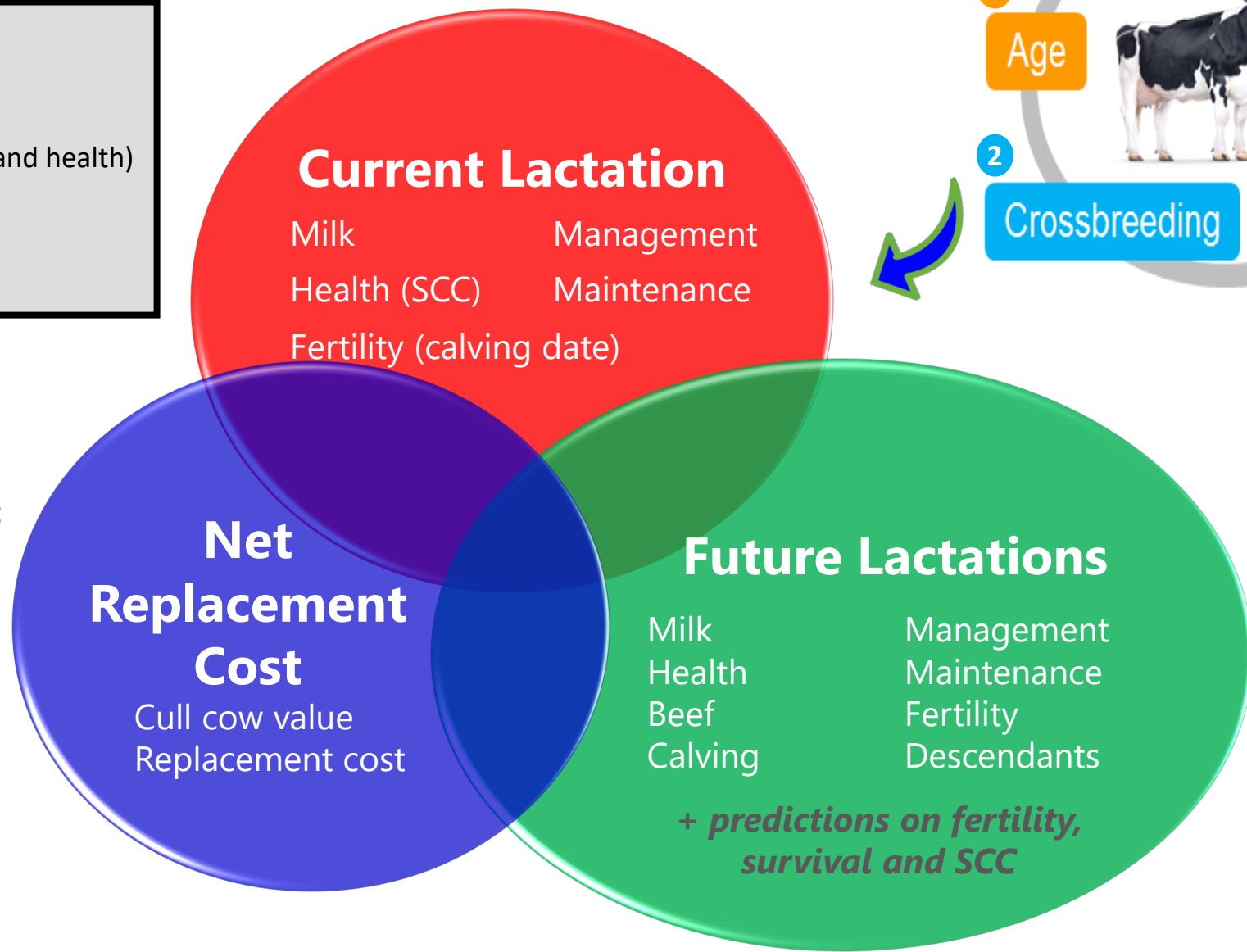
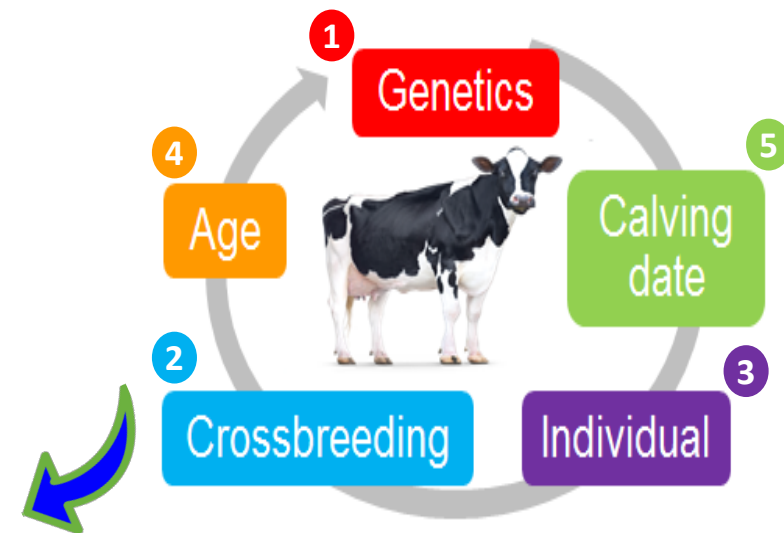


LOW

EBI

HIGH

- 1 Breeding values
- 2 Hybrid vigour
- 3 Individual effects (e.g. on production and health)
- 4 Lactation number
- 5 Current and future calving dates



Proposed updates to EBI in 2025

**Economic Value
Change**



**Base Population
Change**



**Health and
Management Update**



**Linear Type
Evaluation Update**

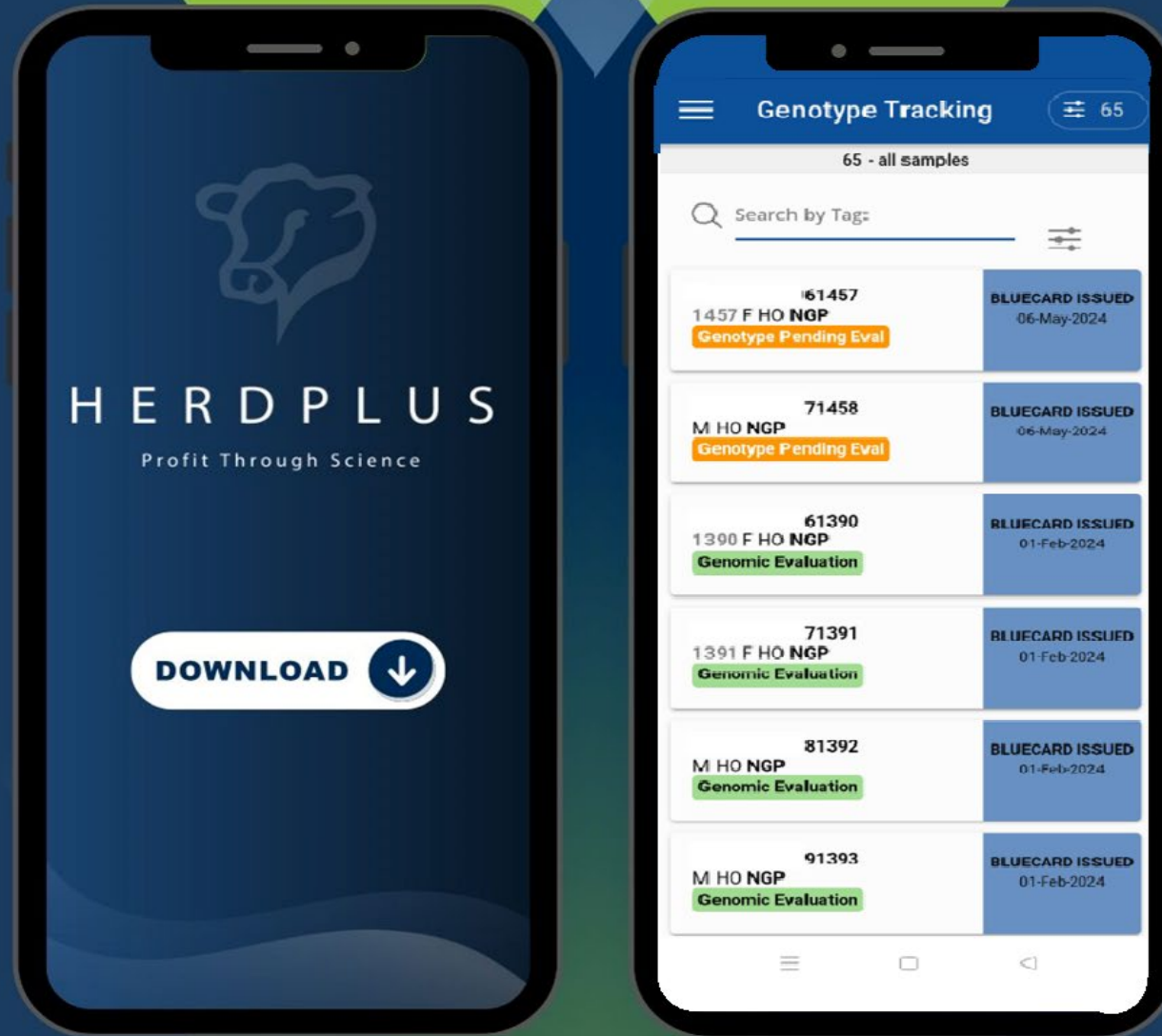
EBI
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Use New
HerdPlus
App to track
samples

Summary: Better cows

- EBI improves yearly; use **diverse bull teams evenly**
- **Genotyping** boosts breeding precision
- **Sexed semen** usage doubled, offering new opportunities
- Focus on **beef merit** for dairy-beef bulls to produce higher **CBV** calves
- Use the **C.O.W. index** to cull underperforming cows and retain the “better” cows



Our Farmer & Government Representation



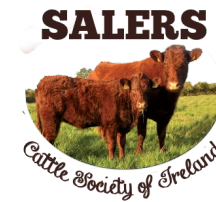
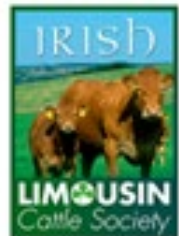
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