



The evolving landscape of beef from the dairy herd: A perspective from Ireland

Ross Evans ICBF

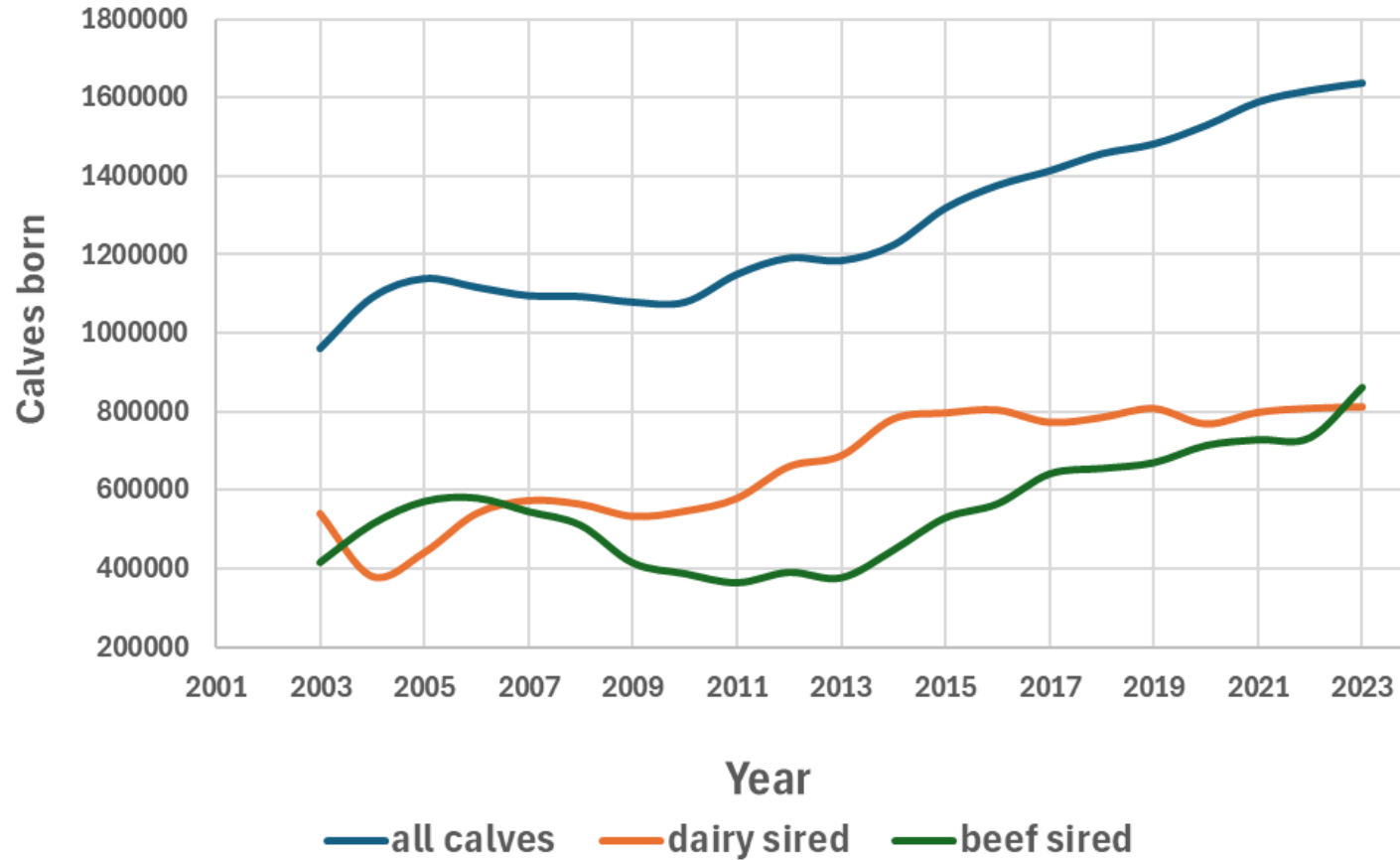


An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine



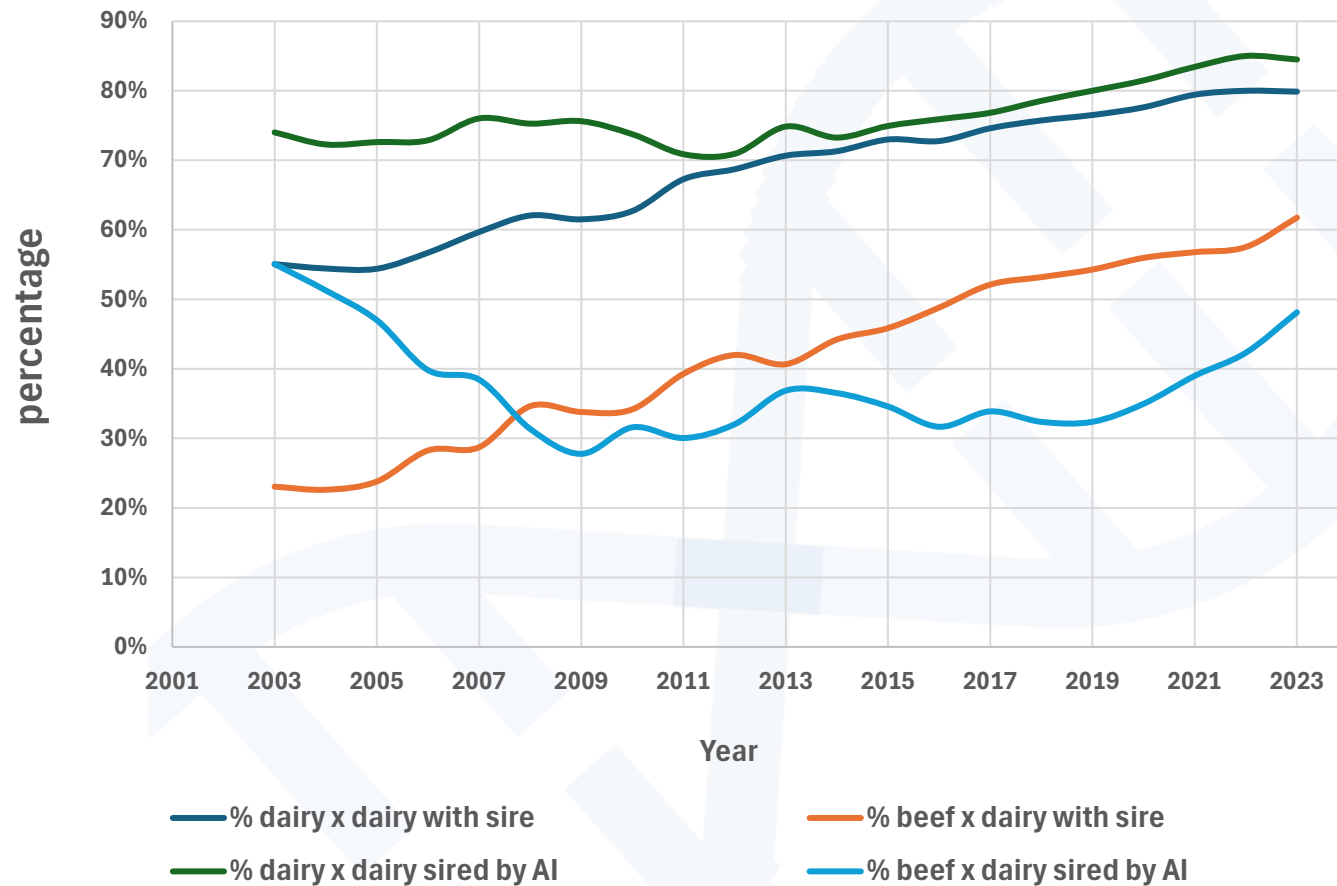
AgTech - it's in our DNA

Dairy herd birth trends



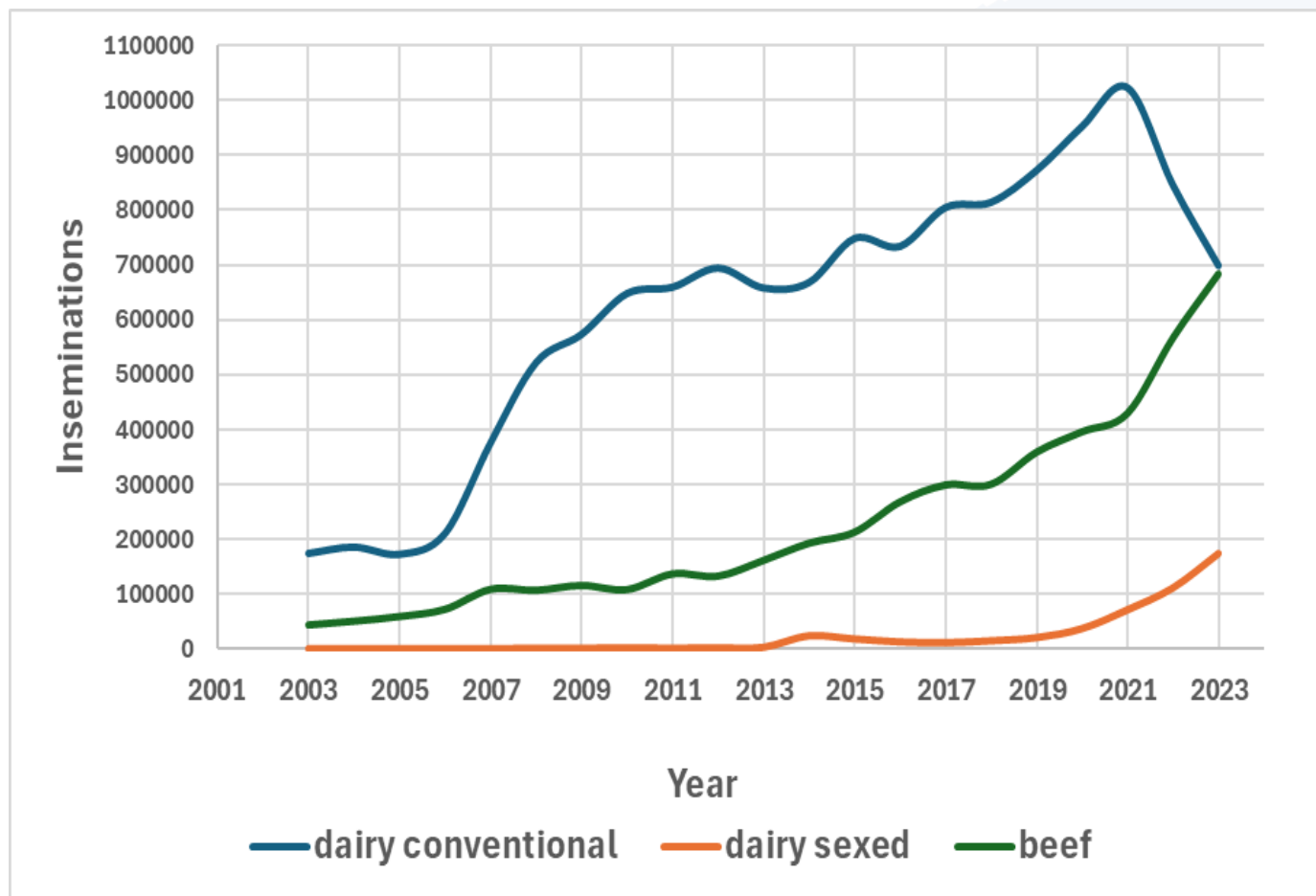
- 2023 Beef sired births now more than dairy sired
- 60% of beef carcasses now of dairy origin
- Herd size 69 to 101 cows

Sire recording levels



- Farmers did not see huge benefit to recording beef sires up to now
- AI replacing some of the natural service sire market
- National genotyping program will increase sire recording levels

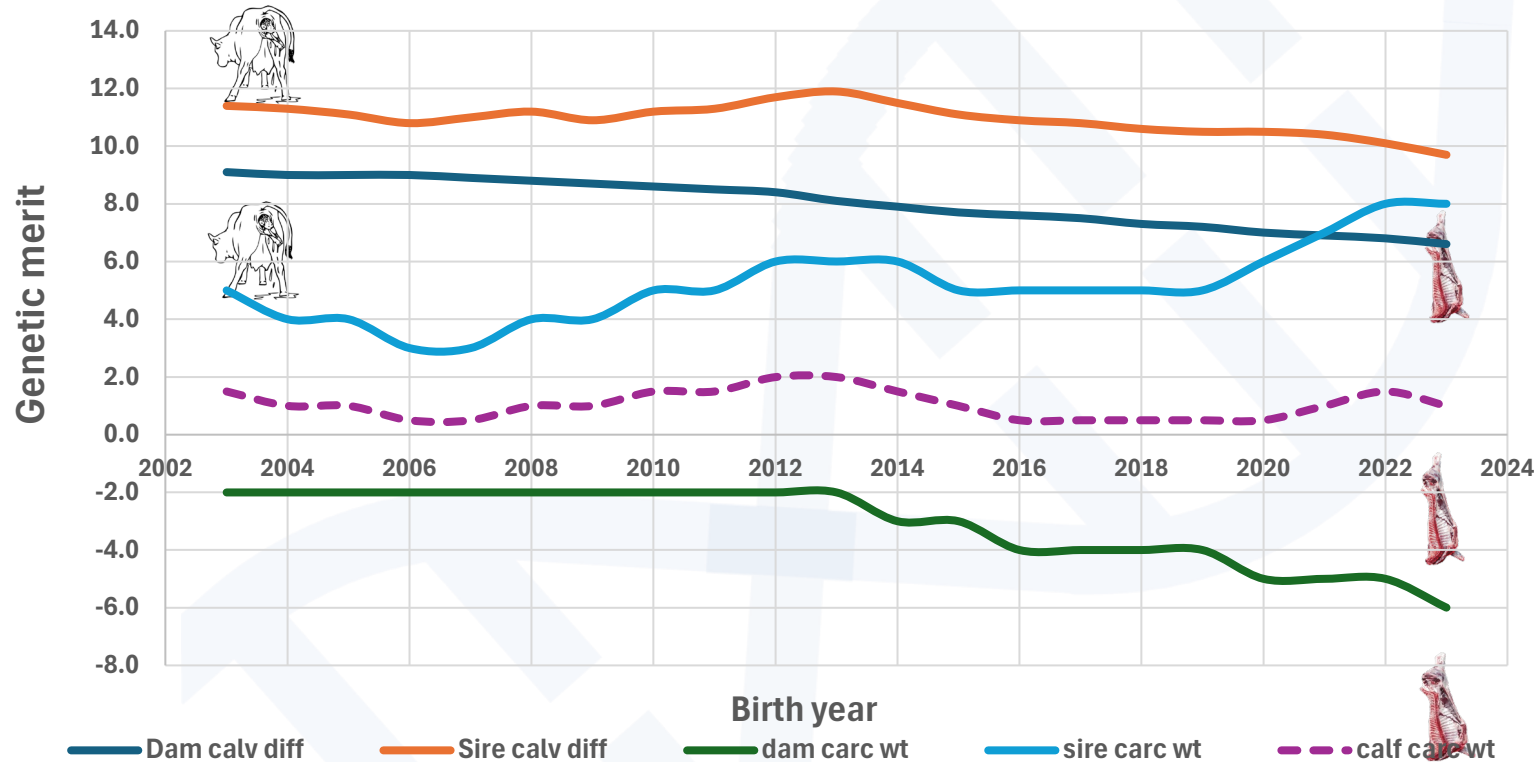
Insemination trends



- Beef inseminations now close to dairy
- Sexed dairy semen on an upward curve

The challenge!

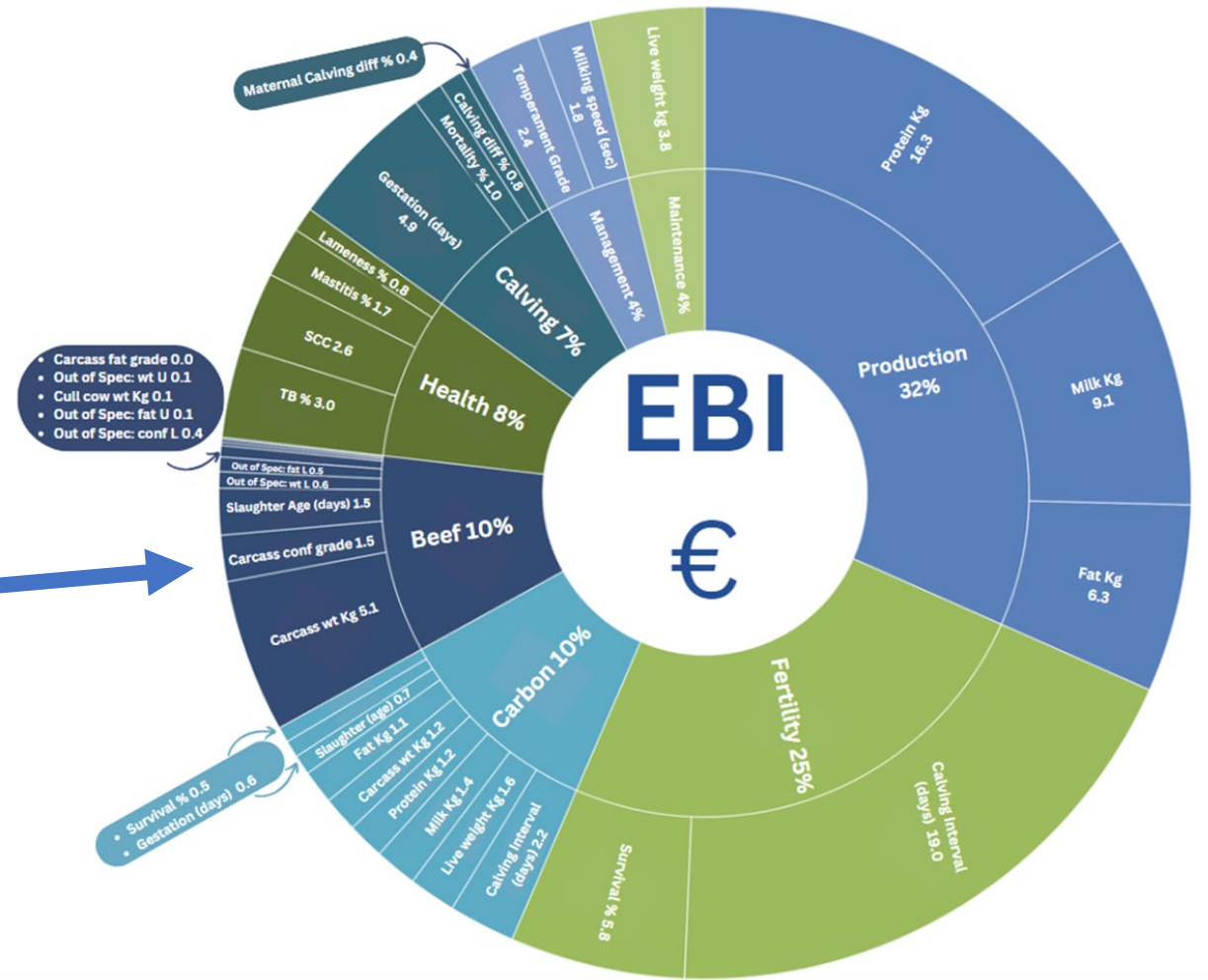
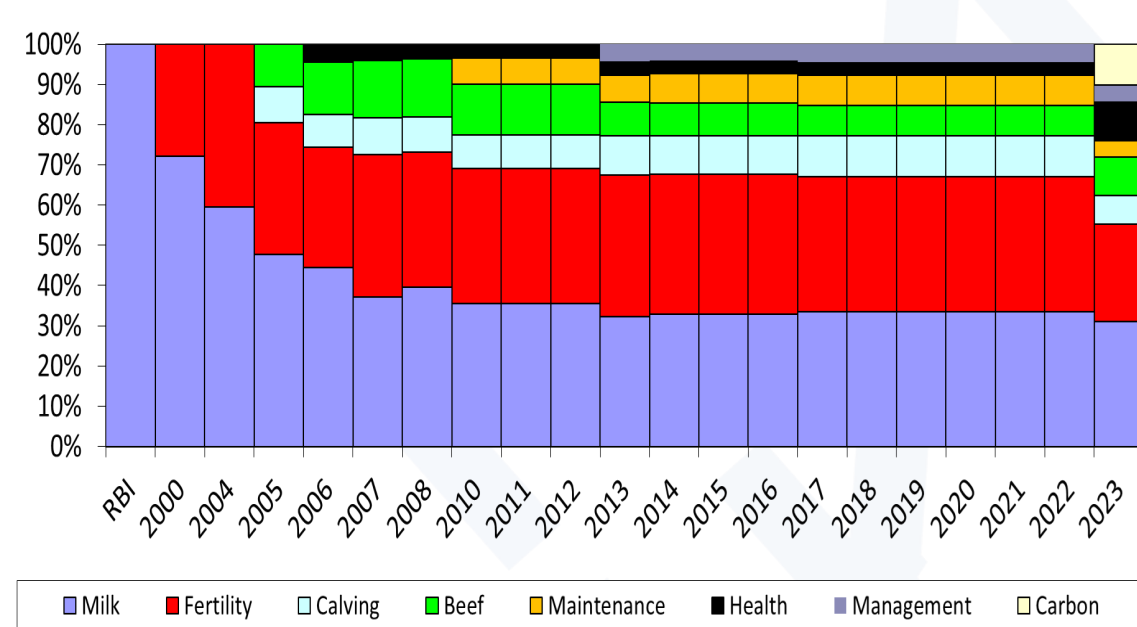
Genetic merit of parents of Beef x Dairy Calves



- Farmers prioritised calving traits, Milk and fertility over beef merit of calves
- Net stagnant carcass merit from dairy cow progeny

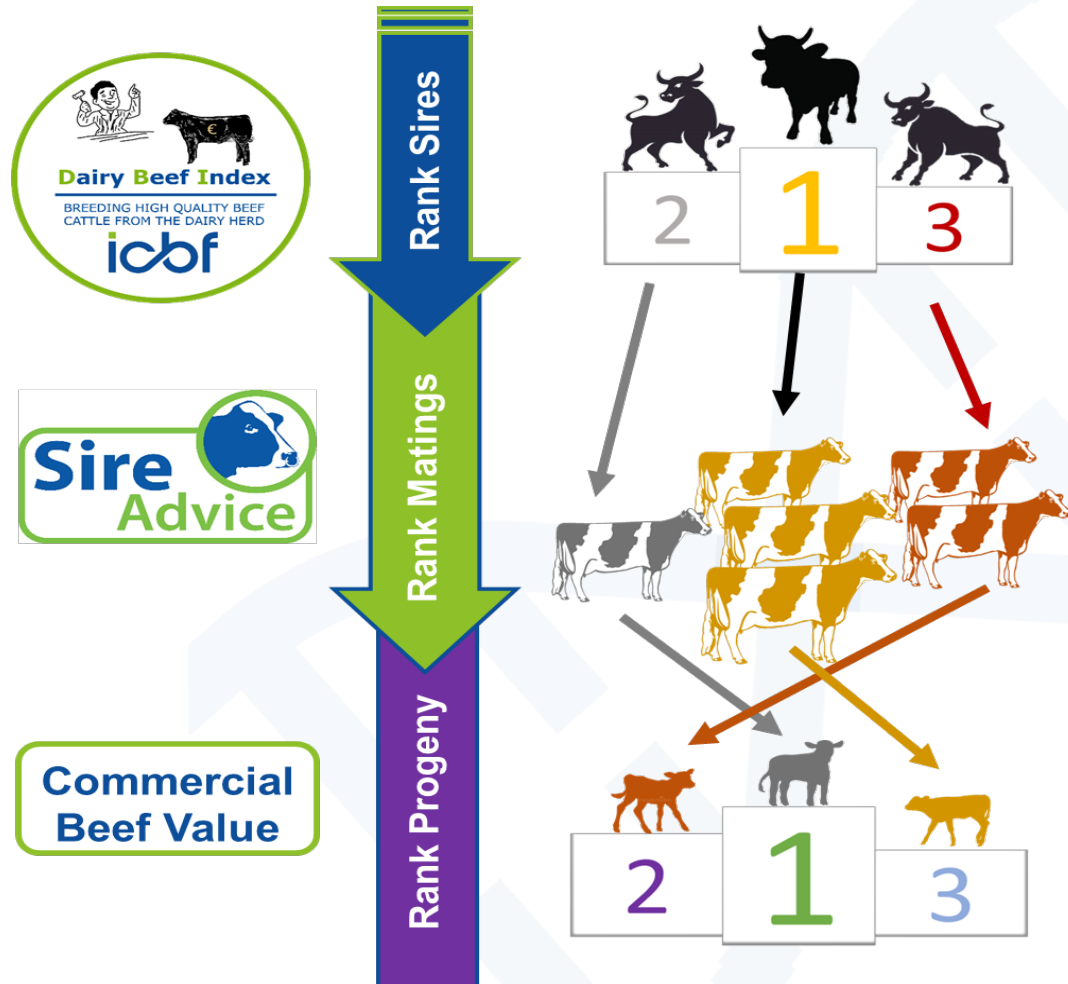
Even though!

Dairy breeding index has included a beef component for almost 20 years

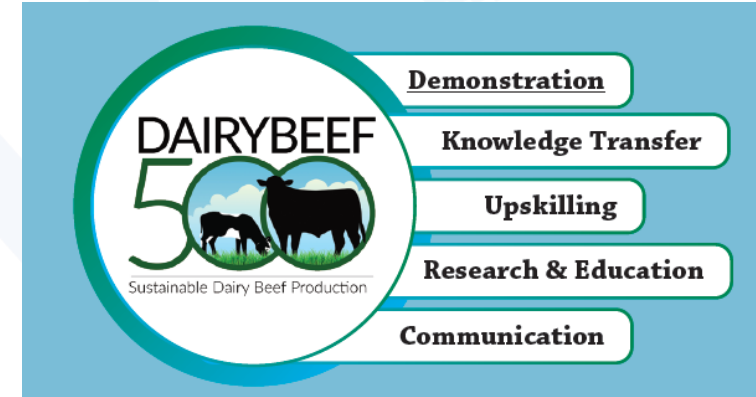


The proposed solution

A Trilogy of breeding tools



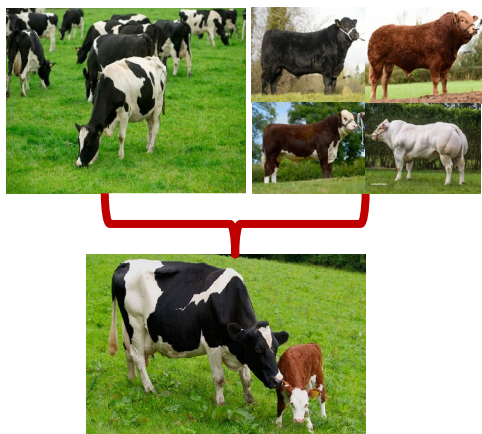
Farm best practice



Objectives

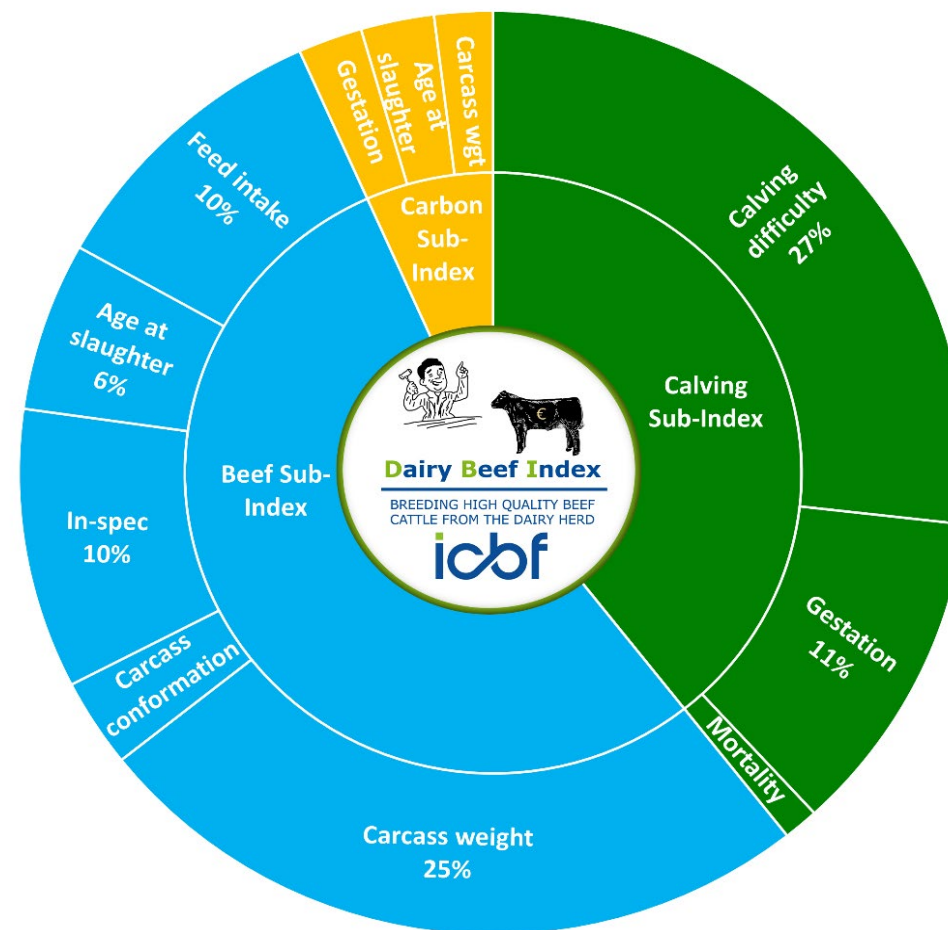
- €500/ha per hectare
- Beef and Dairy integration
- Improve beef merit of dairy-beef calves
- Promote best practices
 - Grass management, calf rearing, health
- Reduce environmental impact





Dairy Beef Index (DBI)

- Identifies beef bulls suitable for the dairy herd
 - Calving traits
 - Carcass traits
 - Carbon traits
- Launched in 2019
- Updated in 2023 to include age at slaughter, TB, Carbon






Mating advice

1. Farmer chooses sires and usage rates

- Farmer chooses females for dairy, beef, culling, crossbreeding....



Rank	Code	Name	Breed	DEI €	DEI Ref %	Calv Value SI €	
1	AU4489	DAUPHIN	AU	147	80	52	95
2	LM2814	EWIDENVALE IVOR	LM	144	95	-6	149
3	DPZ	DESPAGNOU	AU	140	83	8	131
4	SA2189	ULSAN	SA	137	87	46	91

2. Linear programming algorithm factors:

- Female predisposition to difficult calving + sire's calving difficulty genetic merit
- Hitting the carcass spec

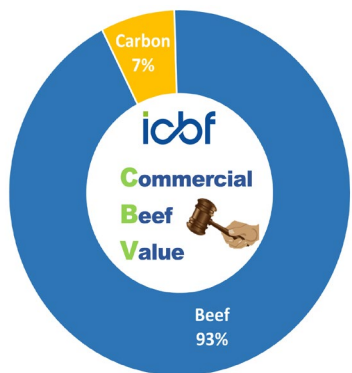


3. Farmer can save on database and send to technician handheld

4. 42% of cows were put through Sire Advice in 2024



Commercial Beef Value and NGP



Thursday 08:18 Session 1a: Decision Support Tools of the Future – Promoting Sustainability Farm Management

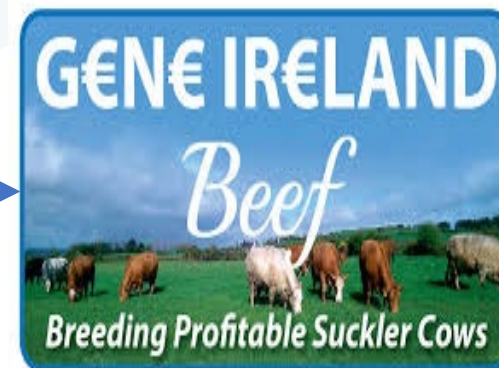
Margaret Kelleher: The Commercial Beef Value (CBV) encourages the adoption of sustainable and profitable practices in beef production.



Thursday 16:45 Session 9: Genomic's impact on Livestock Sustainability

Mark Waters: Unlocking Genetic Potential: The National Genotyping Programme for Ireland's Cattle Herd

Progeny testing programme



Common herds

490 herds in dairy
614 herds in beef
290 herds in both
25 straws: 5x5
~ 22k straws



44 sires in
2024 from 6
breeds

Common sires



377 sires
tested in both
programs

Initiatives with Meat Processors

Genotyping



- Breed surety
- Genetic merit



Sensory attributes of meat

Trained panel MEQ EBVs

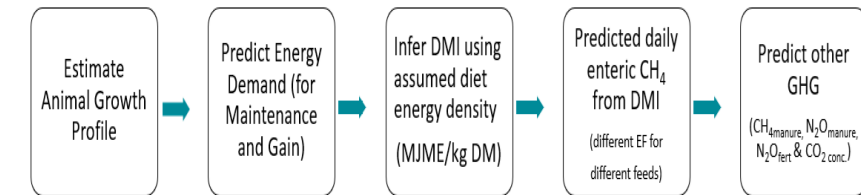


- Tenderness
- Juiciness
- Flavour



Climate

Leverage the database
Genetics, diet, systems

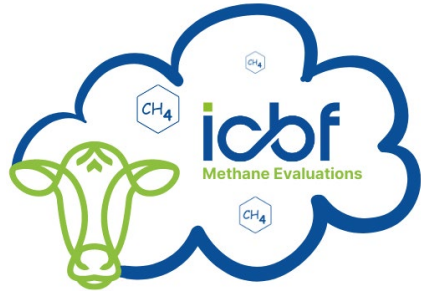


Carbon footprint / Carbon efficiency					
Greenhouse Gas Output per animal Expressed in kg of CO ₂ equivalent	106	3203	4446	3360	93% ★★★★★
Greenhouse Gas Output per kg Carcass Weight Expressed in kg of CO ₂ equivalent per kg Carcass Weight	106	10.23	13.17	11.11	96% ★★★★★
Greenhouse Gas Output per kg Liveweight Expressed in kg of CO ₂ equivalent per kg Liveweight	106	5.42	6.99	5.89	96% ★★★★★



Other initiatives.....

Methane PTAs



ICBF test evaluations for Gross Methane genomic predicted transmitting abilities

Methane PTAs are provided for All AI Bulls - Beef & Dairy

1,525 Tully cattle with methane phenotypes and 3,348 animals with feed intake phenotypes were used in this evaluation.

The most desirable PTAs are negative indicating the progeny will emit less methane. The trait is measured in grams per day

The data has been collected at the Tully beef performance research centre

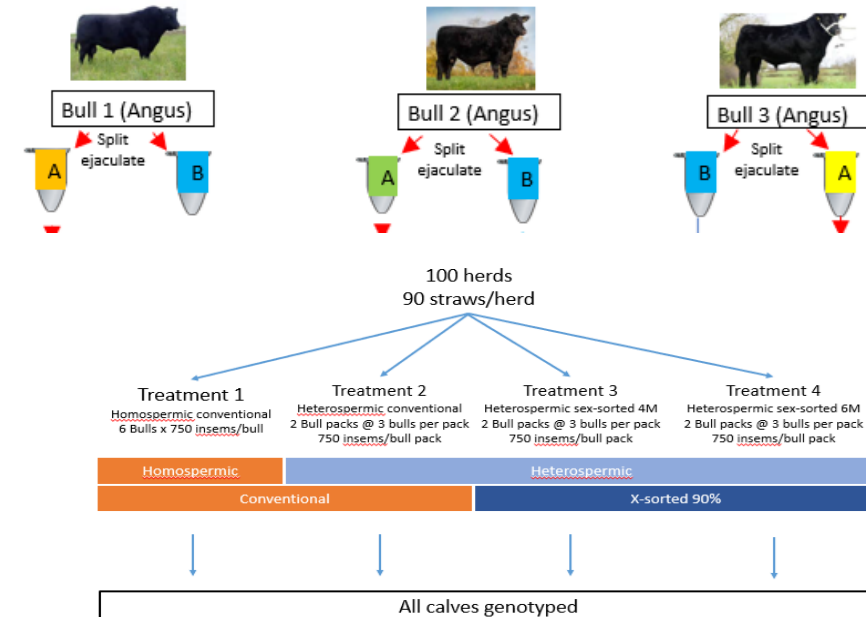
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Tag	Name	Main Breed	Birth Year	Owner	Active	Methane Gt/bv	Direction of PTA relative to average sire	Methane Reliability %	Num records per progeny	Avg Age progeny	Avg Methane of progeny	
DM1	DAMONA	LM	2008	EUROGENE/IC AI BULLS	Y	-27.87	Favourable	60	7	287	570	181
LM2188	WILSONE JORDONI	LM	2014	DOVEA GENETICS	Y	-24.7	Favourable	36	1	446	481	160
LM2118	TOMCHOICE BRONSTONE	LM	2013	NATIONAL CATTLE BREEDING CNTR	Y	-24.69	Favourable	76	11	175	459	175
LM4807	TOMCHOICE JET	LM	2014	EUROGENE/IC AI BULLS	Y	-24.26	Favourable	61	7	243	487	205
Z40	CARTYNEW GATLE	LM	2013	NATIONAL CATTLE BREEDING CNTR	Y	-23.95	Favourable	67	3	267	471	156
LM2151	BALLYGARAN STUD WIE	LM	2013	GENEREALAND MATERNAL PROGR	Y	-23.95	Favourable	59	5	194	461	186
LM4027	EXCEL	LM	2009	BOVA	Y	-23.85	Favourable	63	9	218	455	155
LM5068	NOOB	LM	2012	NATIONAL CATTLE BREEDING CNTR	Y	-22.25	Favourable	59	7	227	569	242
LM5983	IX	LM	2013	GENEREALAND MATERNAL PROGR	Y	-22.09	Favourable	47	3	204	458	159
LM5443	BROOKLANDS MARCO	LM	2017	DOVEA GENETICS	Y	-21.09	Favourable	37	1	188	703	202
LM2206	ELITE ICE CREAM ET	LM	2013	NATIONAL CATTLE BREEDING CNTR	Y	-20.79	Favourable	39	1	347	440	179
P2157	KILREE LEO	PI	2014	GENEREALAND MATERNAL PROGR	Y	-20.75	Favourable	57	6	211	480	189
LM5989	CORCAMORE LORCAN	LM	2016	GENEREALAND MATERNAL PROGR	Y	-20.43	Favourable	68	10	263	488	190

- 2k greenfeed animals on TMR diet
- Expansion to grass diet phenotypes
- Cow phenotypes

Improving male fertility

2024 Heterospermic semen field trial



Summary

- Dairy herd has expanded by ~24% since 2015
- Beef from dairy now 60% of all beef processed
- Strategy focusing on both beef sire and dairy cow beef merit
- Breeding goals for beef herd and dairy herd now more aligned
- Meat processors now engaged and see benefit of genetic solutions
- Utilizing the cattle breeding database for more than just genetic gain



Thank You