What has EBI delivered; National level?

Latest Genetic Trends in EBI by First Calving

Table 1. Change In Performance of the National Dairy Herd					
Year	Litres/Cow	Fat %	Protein %	F+P Kg Cow	6 week Calving rate
2010	4966	3.85%	3.37%	359	52%
2021	5466	4.20%	3.52%	434	66%

Profit (€) vs Year of first Calving — Avg EBI, Avg Milk SI, Avg Fert SI (2002–2022)
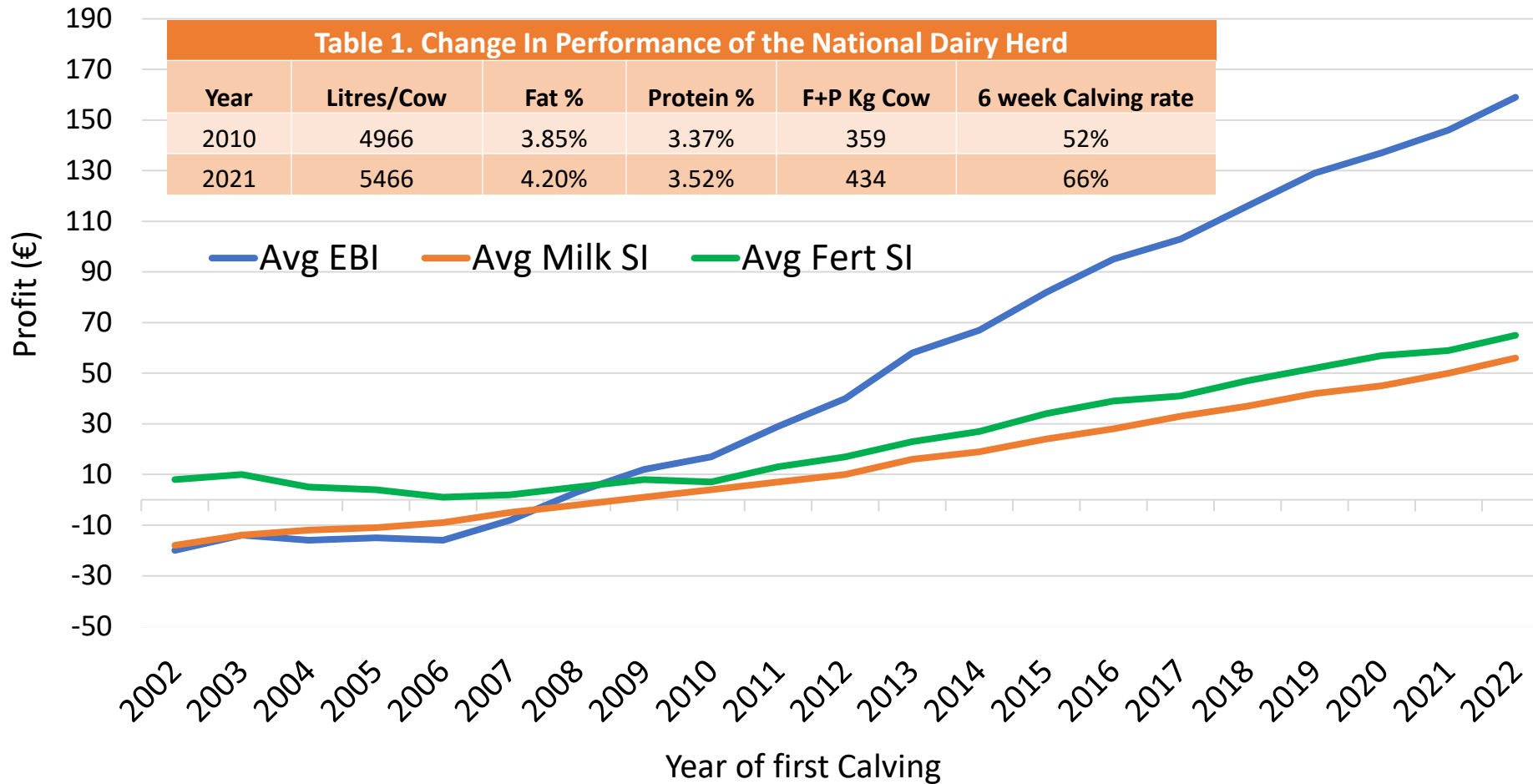
- Average EBI of 1st calving heifers this (n=293k) = €159.
- Rate of gain in EBI now €11/year
- => €284/lact or 5 cpl.
- The cows you have now are better that the cows that you had 10 years ago!
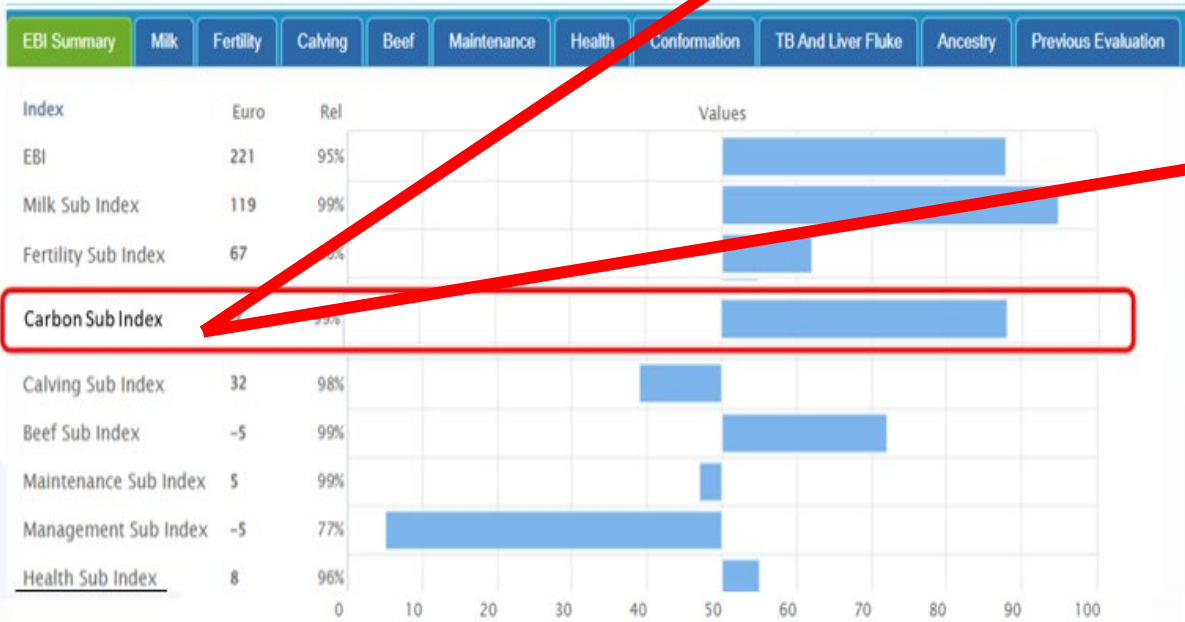
What traits make-up the Carbon Sub Index?

Trait		
Milk (Kg)		
Fat (Kg)		
Protein (Kg)		
Carcass we...		
Survival (%)		
Live weight		
Calving Inte...		
Days to Sla...		

Sub-Index	Current	New
Milk	33%	31%
Fertility	33%	24%
Carbon		10%
Health	4%	10%
Beef	8%	10%
Calving	10%	7%
Management	4%	4%
Maintenance	8%	4%

- Nine traits within the EBI make up the Carbon Sub-Index

- Some traits Increase Emissions & some traits reduce Emissions.

- Traits that reduce feed intake reduce Emissions.

- The weighting of other Sub-Indexes are adjusted to accommodate the new weightings on Carbon SI

- The Carbon SI makes up 10% of the overall EBI.

Where will farmers see the Carbon Sub Index?

- Herd reports
- Online profiles
- Animal search
- Catalogues
- Active bull lists

Average Carbon Sub-Index value for herds is €7

Teagasc — Agriculture and Food Development Authority

UCD DUBLIN — University College Dub

Table 2. EBI group effect on lactation performance	Elite	National Average
Fat %	4.47%	4.19%
Protein %	3.72%	3.55%
Kg Milk Solids/Cow	443	434
12 Week in-Calf rate	92%	81%

Parameters	2016	2017	2018	2019	2020	2021
Kg Milk Solids/Cow	588	595	544	586	606	625
Submission Rate %	91	90	96	95	91	94.5
1st Service Conception Rate %	43	50	69	64	74	72
6 week Pregnancy Rate %	59	54	83	79	87	87
Empty Rate %	9	15	13	12	9	7

- System trial at Teagasc Moorepark.

- EBI's; Elite herd = €214, (Top 1%)

- National Ave herd = €129

- Meal fed = 0.5 t per cow per year.

- Systems trial at UCD Lyons Research Farm.

- EBI of herd = €204 (Top 1%).

- Milk Sub Index= €69, Fertility Sub Index-=€81

- Meal fed = 1.5 t per cow per year.

Key point; High EBI cows are delivering, regardless of system.

ICBF Active Dairy Bull List

- Criteria: Bulls with an EBI reliability% > 35% and an overall Calving Difficulty reliability% > 70% (based on 23% heifer rel% and 77% cow rel%) with > 50 dairy calving records are included

Show 25 rows. Showing 1 to 25 of 928 entries | First Previous 1 2 3 4 Next Last | Hide filters ⌀ | Excel PDF Print

			Bull Details						EBI Details			EBI Sub-Indexes								Calving Difficulty Details				Semen Details		
Rk	Code	Bull Name	Sire	Main Breed	Herd Book Status	HO %	GI	EBI €	Rel %	Proof Source	Milk	Fert	Carbon	Calv	Beef	Maint	Mgt	Health	Risk of Dairy Heifer CDiff	Dairy Heifer CD%	Dairy Cow CD%	Dairy Calv Recs	Avail	Price	Supplier	
1	FR6547	(IG)STAMULLEN LUNASA SRM	FR4998	HO	SRM	69	Yes	390	67	GS	88	205	26	45	-8	24	1	11	High	8.4	2.8	2357	Medium	20	NCBC	
2	FR6960	(IG)BALLINROE XAAR	FR4728	HO	PED	63	Yes	388	67	GS	98	191	20	54	-16	28	5	7	Low	5.3	2.3	938	Medium	20	NCBC	
3	FR7752	OLCASTLETOWN CASPER	FR5860	HO	PED	84	Yes	387	60	GS	101	186	12	62	16	8	1	2	Low	4.0	1.5	154	High	22	Dovea	
4	FR8106	LEACHTNEILL BEIJING SRM	FR5539	HO	SRM	84	Yes	382	62	GS	90	204	22	51	-9	18	1	0	Low	4.5	2.0	155	High	18	Bova AI	
5	FR7296	(IG)CAPPAUNIAC ARAMAX	FR4728	HO	PED	84	No	379	67	GS	78	201	15	60	5	11	-1	10	Low	4.9	1.8	1310	Low	20	NCBC	
6	FR7866	(IG)CARRIGLEAGH STARWAR SRM	FR4728	HO	SRM	81	Yes	378	66	GS	109	182	9	54	-9	23	3	7	Low	4.1	1.8	100	Medium	18	NCBC	
7	FR6481	BROWNEY BARNA SRM	FR4717	HO	SRM	69	Yes	373	68	GS	103	184	10	50	5	7	4	10	Low	6.6	2.4	2150	High	22	Dovea	
8	JEX176	ROOVESBRIDGE TOKYO	JE5986	JE	XSR	28	Yes	371	59	GS	101	159	29	57	-42	41	9	19	Low	3.2	1.5	164	High	18	Bova AI	
9	FR7791	BARRACKHILL REUBEN	FR4513	HO	PED	66	Yes	368	67	GS	92	183	16	41	-5	17	10	15	Low	6.2	2.4	315	High	20	Dovea	
10	FR7038	DUNGORMAN EDDIE SRM	FR4726	HO	SRM	72	No	368	67	GS	119	197	5	47	-6	7	2	-3	Low	4.2	2.2	348	Medium	20	Dovea	
11	FR7680	CAPPASOUTH LEO SRM	FR5860	HO	SRM	75	Yes	366	59	GS	90	179	16	62	-10	13	3	14	Low	4.3	1.5	124	High	20	Dovea	
12	FR7938	(IG)BLACKNEY SHERJAH SRM	FR5208	HO	SRM	59	Yes	366	62	GS	92	172	22	55	-14	26	3	6	Low	3.8	1.6	137	Low	22	NCBC	
13	FR7926	(IG)STAMULLEN ZAKERY SRM	FR5803	HO	SRM	75	Yes	365	61	GS	109	158	17	48	-13	27	2	16	Low	6.0	2.6	84	Low	22	NCBC	
14	FR7907	(IG)GREENHILLS BALLINTOSIG	OTS	HO	PED	88	Yes	362	66	GS	88	168	7	67	6	7	0	19	Low	4.7	1.8	58	Low	20	NCBC	
15	FR7986	(IG)GLENREA ZAK	FR5239	HO	PED	88	Yes	360	63	GS	97	192	4	47	-7	-1	-5	32	Low	4.4	1.8	70	Low	19	NCBC	
16	FR6484	RIVERSIDE PIVOTAL 874 SRM	FR4728	HO	SRM	78	Yes	360	68	GS	102	185	16	51	-30	19	2	13	Low	5.0	2.0	3708	High	20	Dovea	
17	FR7143	(IG)TISAXON TROOPER	FR4728	HO	PED	81	Yes	357	68	GS	92	196	20	47	-30	25	-3	9	Low	6.6	2.3	1471	Medium	20	NCBC	
18	FR8094	OLCASTLETOWN OSCAR SRM	FR4728	HO	SRM	78	No	356	67	GS	107	169	11	58	-12	19	2	1	Low	4.0	1.8	58	High	18	Bova AI	
19	FR6981	ROCHEMOUNT LAD	FR4615	HO	PED	81	Yes	355	67	GS	111	173	7	47	5	0	2	10	Low	6.0	2.4	1550	High	21	Eurogene/LIC	

Selecting Younger GS or Older Daughter Proven bulls?

Fig 1. Ave EBI of AI bred rep females, by Sire Type

Legend:
- G€N€ IR€ Sire (G1)
- Genomic Sire (G2, G3 & G4)
- Daughter proven Sire
- Stock bull
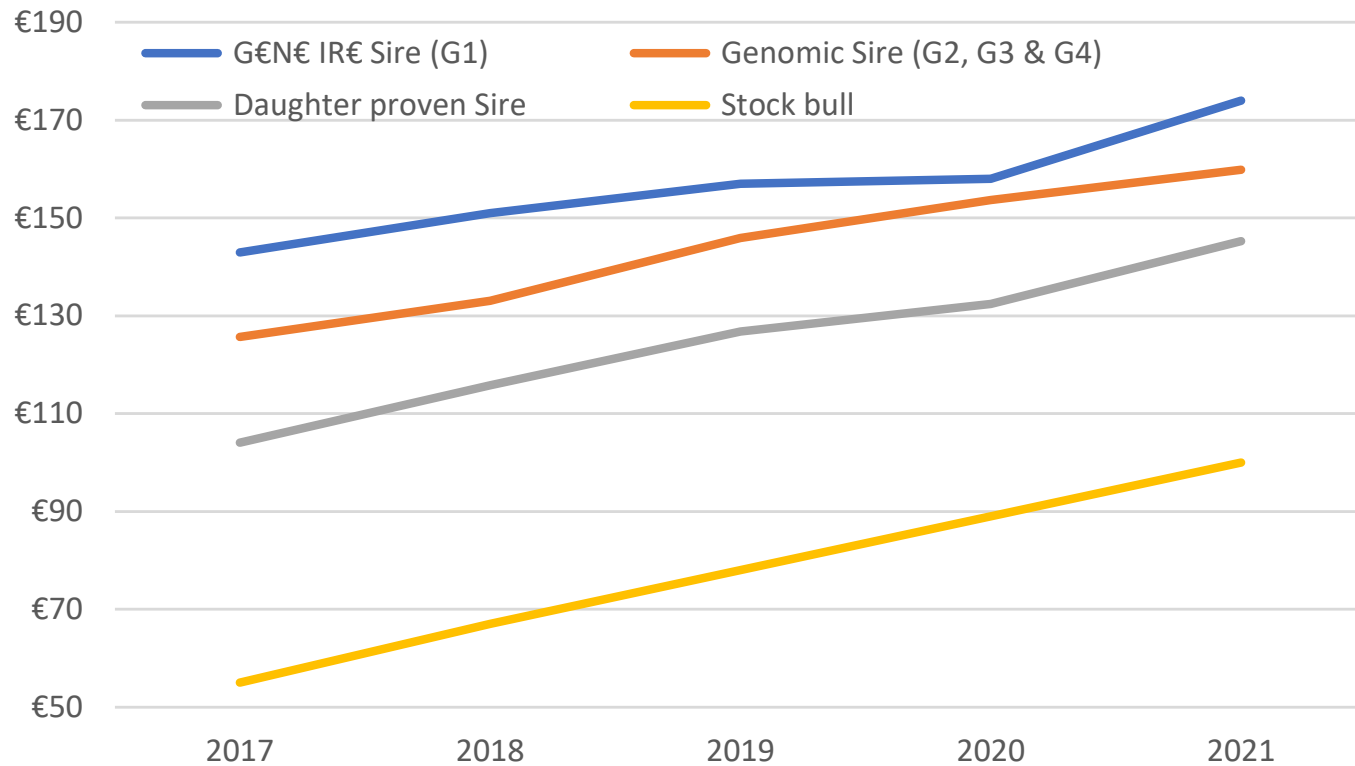
T1. Counts of AI bred rep females, by Sire Type

Category	2017	2018	2019	2020	2021
Heifer is a progeny off a =>					
- G€N€ IR€ Sire (G1)	11,396	18,730	20,234	15,005	12,329
- Genomic Sire (G2, G3 & G4)	108,030	119,086	119,978	141,718	137,015
- Daughter proven Sire	72,377	63,977	60,822	56,889	75,281
Total	191.803	201.793	201.034	213.612	224.625
% genomics	62.3%	68.3%	69.7%	73.4%	66.5%

T2. Ave Survival of AI bred rep females, by Sire Type

Category	2017	2018	2019	2020	2021
Heifer is a progeny off a =>					
G€N€ IR€ Sire (G1)	54.3%	66.0%	77.9%	87.2%	95.7%
Genomic Sire (G2, G3 & G4)	51.9%	65.1%	77.9%	87.3%	95.8%
Daughter proven Sire	50.8%	63.8%	76.3%	86.3%	95.5%

- Slight drop in usage of GS bulls in Spring 2020, based on 2021 born females?

- Progeny of younger GS sires have higher EBI (~€20 across 5 years) & last longer!

- Average EBI of 1st calving progeny from stock bulls (calved in 2021) was €100. Consistently ~€80 behind AI bulls, yet still some ~25% of dairy replacements are by stock bulls….!

Why G€N€ IR€LAND?

National Breeding Programme
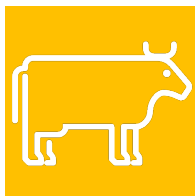
Perception that G€N€ IR€LAND bulls are "cheap test bulls". NO, they are the latest generation of highest EBI young bulls!

Accurate Genetic Evaluations

To provide accurate genetic evaluations for Irish Dairy bulls new genetics for farmers through a co-ordinated progeny programme.

Spring 2023

To test >80 bulls in partnership with AI companies. The expected EBI of bulls is **€350**. Note current ICBF Active Bull List is **€339.**
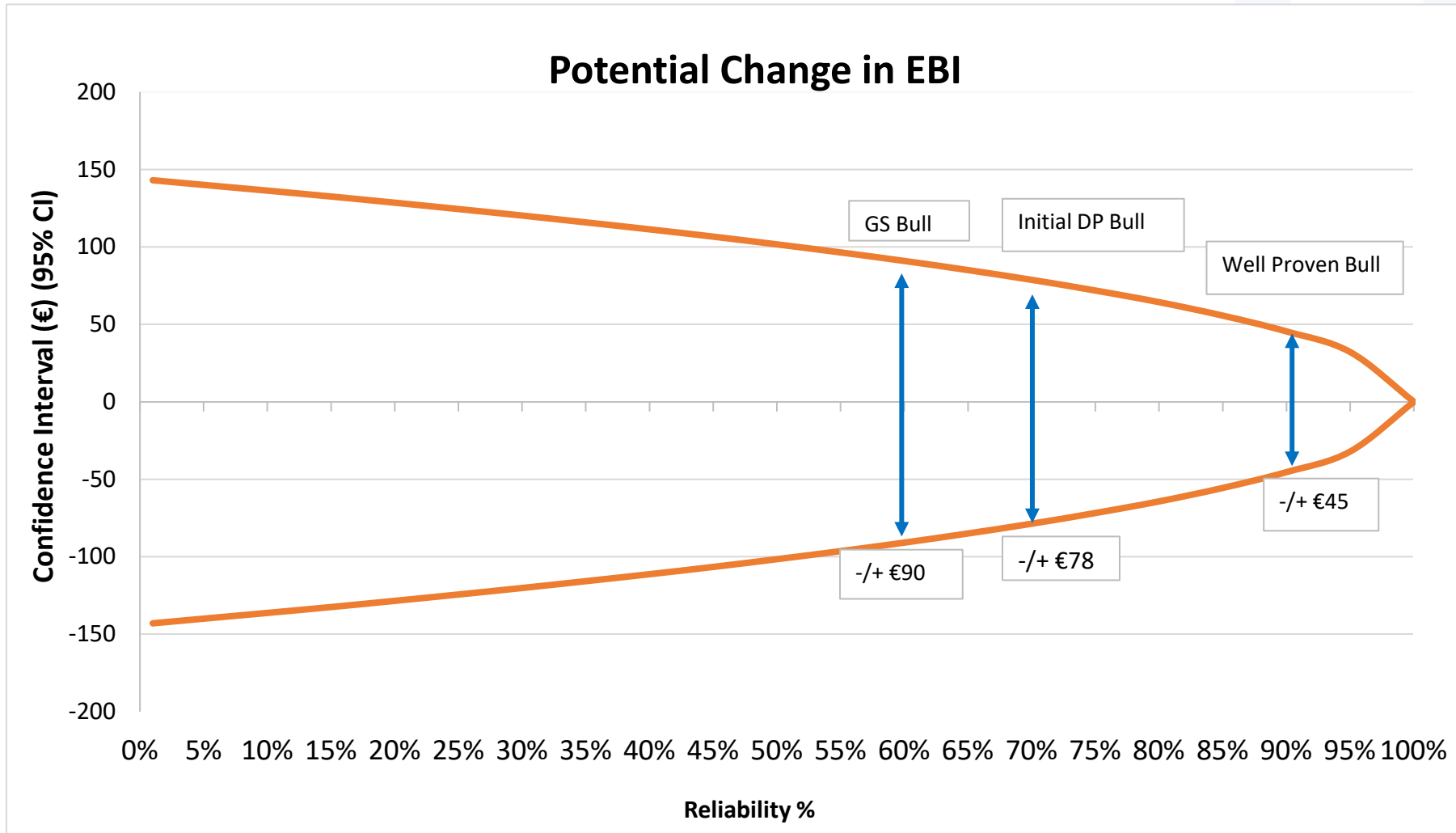
Benefits for Farmers

Attractive incentives for participants, e.g., reduced priced semen (€12 per straw), reduced price genotyping (€18) & Sire Advice.

icbf

PROGRESSIVE GENETICS

Forge Genetics / Bova AI

MUNSTER BOVINE

EUR★GENE
innovation driving results

Dovea GENETICS

NATIONAL CATTLE BREEDING CENTRE

Potential Change in EBI of an Individual Bull

Potential Change in EBI

Y-axis: Confidence Interval (€) (95% CI) — 200, 150, 100, 50, 0, -50, -100, -150, -200

X-axis: Reliability % — 0%, 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 100%

- GS Bull — -/+ €90
- Initial DP Bull — -/+ €78
- Well Proven Bull — -/+ €45

- All bull proofs can change as more information is collected on them, irrespective if the bull has a genomic or daughter proven proof!

- Proofs can rise or fall as the reliability increases on breeding values.

- The best breeding policy for farmers is to use a team of genomic bulls equally across the herd.

AgTech – it's in our DNA

Managing Risk – Use of Bull Teams

	Herds*
Number herds	5,973
Number bulls used	7.5
% to most heavily used bull	34%
% to most heavily used 3 bulls	69%
% herds where usage of 3 most heavily used bulls <=50%	18%

- Yes we use teams of bulls

- But we majorly over-use individual bulls
  - Especially relevant for heifers – herds using 1 or 2 bulls on heifers!
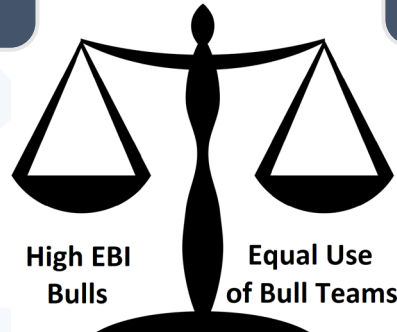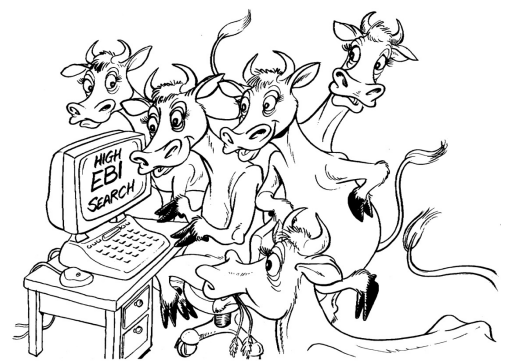
Sire Advice Standard & Plus

SIRE ADVICE
Manually Enter Bulls

[START]

SIRE ADVICE PLUS

[START]

High EBI Bulls | Equal use of bull teams.
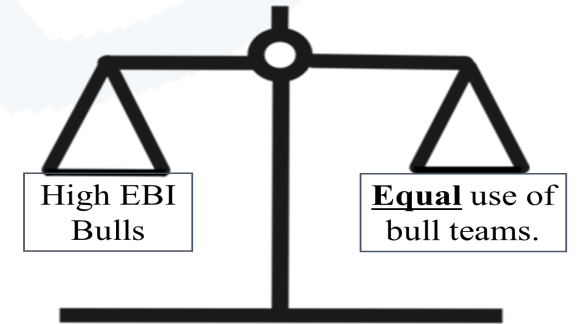
- Sire Advice will assist you make more informed breeding decisions for your herd.
- Select a team of bulls based on your own breeding objectives.

HerdPlus EBI Scorecard	Your Herd	National Average	National Top 10%	Your National Rank	Star Rating[1]
Herd EBI	€134	€118	€156	75%	****
Milk Sub-Index (Milk, Fat & Protein)	€59	€36	€54	96%	*****
Fertility Sub-Index (Calving Interval & Survival)					
Calving Sub-Index (Gestation, Calving Difficulty, ...)					
Beef Sub-Index (Carcass Weight, Conformation & Fat)	€-13	€-10	€-6	23%	**
Maintenance Sub-Index (Cow Liveweight)	€13	€13	€19	52%	***
Management Sub-Index (Milking speed & Temperament)	€2	€1	€3	72%	****
Health Sub-Index (SCC, Mastitis, & Lameness)	€1	€3	€5	24%	**

Guidelines for Bull Team Usage

Herd Size (Incl. Heifers)	Recommended minimum number of Bulls
0-50	7
50-100	7
	8
	10
200-250	11
250-300	12
300-350	13
350-400	14

*New Dairy Beef Mating's now available

- The mating program generates the best matings to maximise the genetic gain in your herd.
- Minimises variation between Milk and Fertility while eliminating any Inbreeding risk.
- All Sire advice matings can be uploaded to AI technician handhelds & printed on breeding charts.

Sire Advice Steps Beef-on-Dairy Mating's

Female Selector Choose animals to be matched with bulls through sire advice, or specify intended matings.
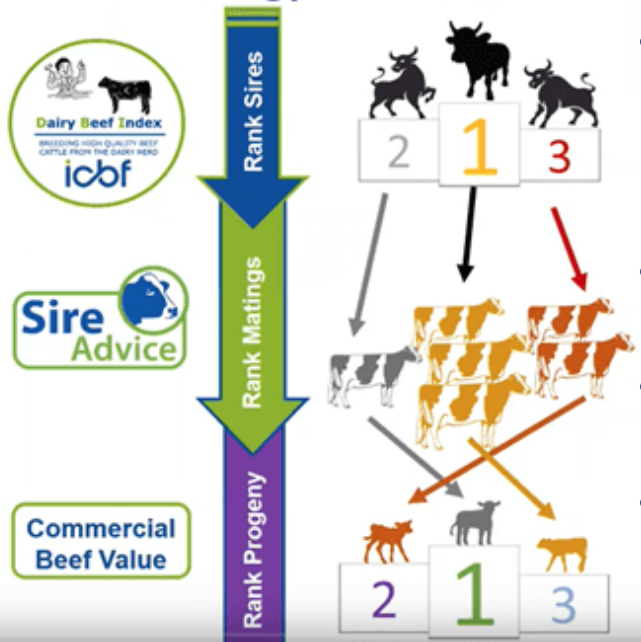
Dairy Beef Index
BREEDING HIGH QUALITY BEEF CATTLE FROM THE DAIRY HERD
icbf

Enabled ⬤

Dairy Beef Run Enabled: This will generate a beef mating, as well as a dairy mating, for every female. Any females specifically selected for beef will be allocated a beef mating only.

- Farmer has the option to select females for beef only or Sire advice can generate both dairy and beef mating's.

- Farmers selects their own DBI beef bull team. The quality of dairy beef progeny born will only be as good as the DBI sire team chosen.

- The dairy beef mating algorithm will then mate all the dairy beef sires against all selected females produce the best dairy beef mating for the individual cow.

- The linear program factors in the female's ability to calve (females' pelvic width), the calving difficulty of the chosen sire, whilst generating a dairy beef mating that maximizes the probability of the progeny to meet factory carcass specifications.

- Sire advice generates a dairy beef mating weighted against putting a difficult calving dairy beef sire on a female that is genetically predisposed to having a difficult calving.

- The program then looks at improving the carcass/beef value of the calves produced. This cannot be improved without a live dairy beef produced first.

- It is critical to select DBI bull teams with a variance of calving risk (both low and medium) with a good average range beef sub indexes to maximize the potential of this new breeding tool.

The trilogy of tools

Dairy Beef Index
BREEDING HIGH QUALITY BEEF CATTLE FROM THE DAIRY HERD
icbf

Sire Advice

Commercial Beef Value

Rank Sires

Rank Matings

Rank Progeny

2 1 3

2 1 3

Sire Advice Mating Results

- **Results Screen with both Dairy and Beef AI.**
- **3 bulls selected for each mating where inbreeding allows.**

Dairy Beef Cows	7
Dairy Beef Heifers	0
Total Number of DBI Bulls selected	2
Average DBI of Beef Bulls Selected	€140
Average beef sub index of DBI bulls	€98
Average Gestation length (bulls)	-1.1
Average CD of DBI Bulls (Cow/heifers)	2.7% / 6%

Mating Results:

1. **Prints to PDF Document**

2. **Prints to Breeding Chart**

3. **Matings sent to AI Handheld**

4. **Matings sent to Farm Apps**

FB	Cow EBI	Lact	DAIRY			BEEF		
			BULL 1	**BULL 2**	**BULL 3**	**BULL 1**	**BULL 2**	**BULL 3**
1293	€ 177	11	For Culling					
1400	€ 204	10	For Culling					
1437	€ 254	10	FR6439 (PED)	FR6984 (PED)	FR6649 (PED)			
1535	€ 190	9	FR6481 (SRM)	FR6547 (SRM)	FR6984 (PED)			
1579	€ 197	9	FR6481 (SRM)	FR6547 (SRM)	FR6984 (PED)			
1651	€ 238	8	FR6984 (PED)	FR6649 (PED)	FR6439 (PED)			
1659	€ 236	8	FR6984 (PED)	FR6649 (PED)	FR6481 (SRM)			
1665	€ 189	8	FR6984 (PED)	FR6481 (SRM)	FR6649 (PED)			
1666	€ 246	8	FR6984 (PED)	FR6649 (PED)	FR6481 (SRM)			
1710	€ 210	8	For Culling					
1751	€ 155	8	FR6481 (SRM)	FR6547 (SRM)	FR6984 (PED)			
1758	€ 215	7	FR6649 (PED)	FR6481 (SRM)	FR6984 (PED)			
1759	€ 199	7	FR6481 (SRM)	FR6984 (PED)	FR6547 (SRM)			

Overlay screenshot:

LAST HEAT/SERVE

LAST BULL

NUM SERVES

DATE

BULL USED

- Sire Advice Bull 1: FR4833
- Sire Advice Bull 2: FR4337
- Sire Advice Bull 3: FR2239

(Partial rows visible under overlay with beef bulls AA6682, LM2014, AU4460, etc.)

Our Farmer & Government Representation

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

IRISH CREAMERY MILK SUPPLIERS ASSOCIATION

Feirmeoirí Aontaithe na hÉireann
The Irish Farmers' Association
IFA

Our AI & Milk Recording Organisations

DoveaGENETICS

MUNSTER BOVINE
Collectively Improving Farm Life

PROGRESSIVE GENETICS

TIPPERARY COOPERATIVE

Our Herdbooks

Parthenais

IRISH ANGUS CATTLE SOCIETY

THE IRISH ABERDEEN-ANGUS ASSOCIATION

JERSEY CATTLE ASSOCIATION OF IRELAND

IRISH LIMOUSIN Cattle Society

IHFA
Irish Charolais Cattle Society

Irish Shorthorn Society Ltd.

SALERS Cattle Society of Ireland

IRISH HEREFORD BREED SOCIETY

Irish Aubrac

IRISH SIMMENTAL

MRI Cattle Society of Ireland
Meuse Rhine Issel -- Milk & Muscle!

THE IRISH MOILED CATTLE SOCIETY

AYRSHIRES

EASBB

BLONDE D'AQUITAINE

IRISH BELGIAN BLUE

Droimeann Cattle Society

ISP

MONTBELIARDE

Ireland's native dairy breed

Norwegian Red Cattle Society

icbf
Acknowledging Our Members