



Dairy Beef Developments for 2023+

Date: 16th November 2022

Andrew Cromie, ICBF

EBI updates event

Corrin mart



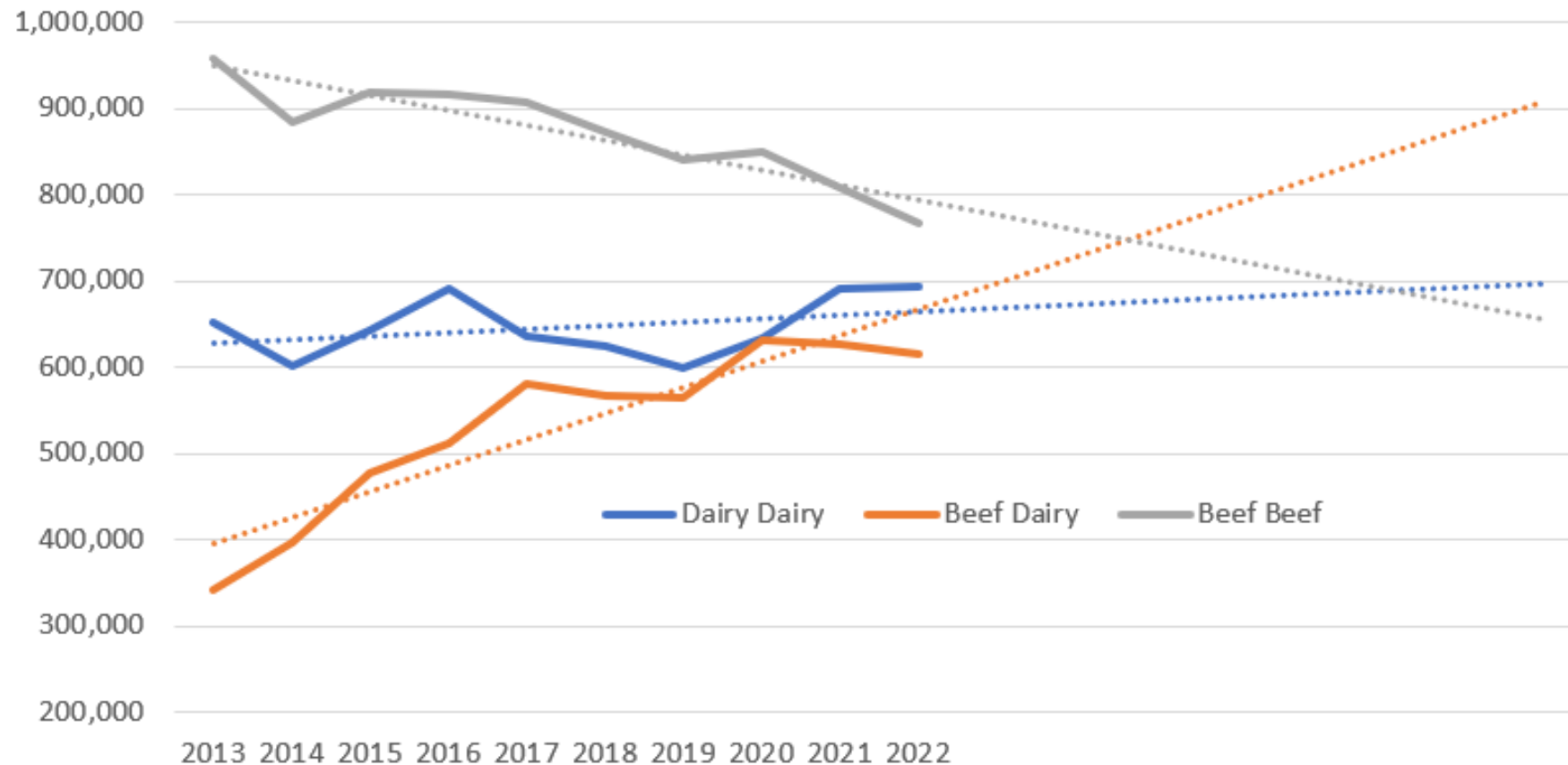
An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine



AgTech - it's in our DNA

Challenge; More & more calves from the dairy herd.

F1. Trends in 0-1 year old calves on Irish farms 1 June each year (2013-2022).



- Significant turn-around in make-up of national cattle herd over last 10 years.
- Expected to continue over next 10 years.
 - Suckler beef calves => 650k (-3% /year).
 - Dairy * dairy calves => 700k (stable dairy herd + no live exports).
 - Beef * dairy => 900k (sexed semen).
- As dairy farmers and industry, how are we influencing these likely outcomes?

Challenge; Dairy Beef is not high on our agenda!

Survey Response-Q1

Q.1 Please rank in order of importance of the traits you wish to improve in your herd over the next 5 years.

Number 1 Trait of Importance	Count of Responses	Percentage
Cow fertility (i.e. compact calving & reducing infertile rates)	108	30%
Total Kg milk solids	78	22%
Cow Efficiency (Kg Milk Solids/Kg Cow Liveweight)	63	18%
Fat and protein %	58	16%
Cow longevity (i.e. cows that will last longer)	16	5%
Herd health (e.g. mastitis, lameness)	10	3%
Cow type (feet and legs/budders)	20	6%
Calf quality Value	2	1%
Total	355	100%

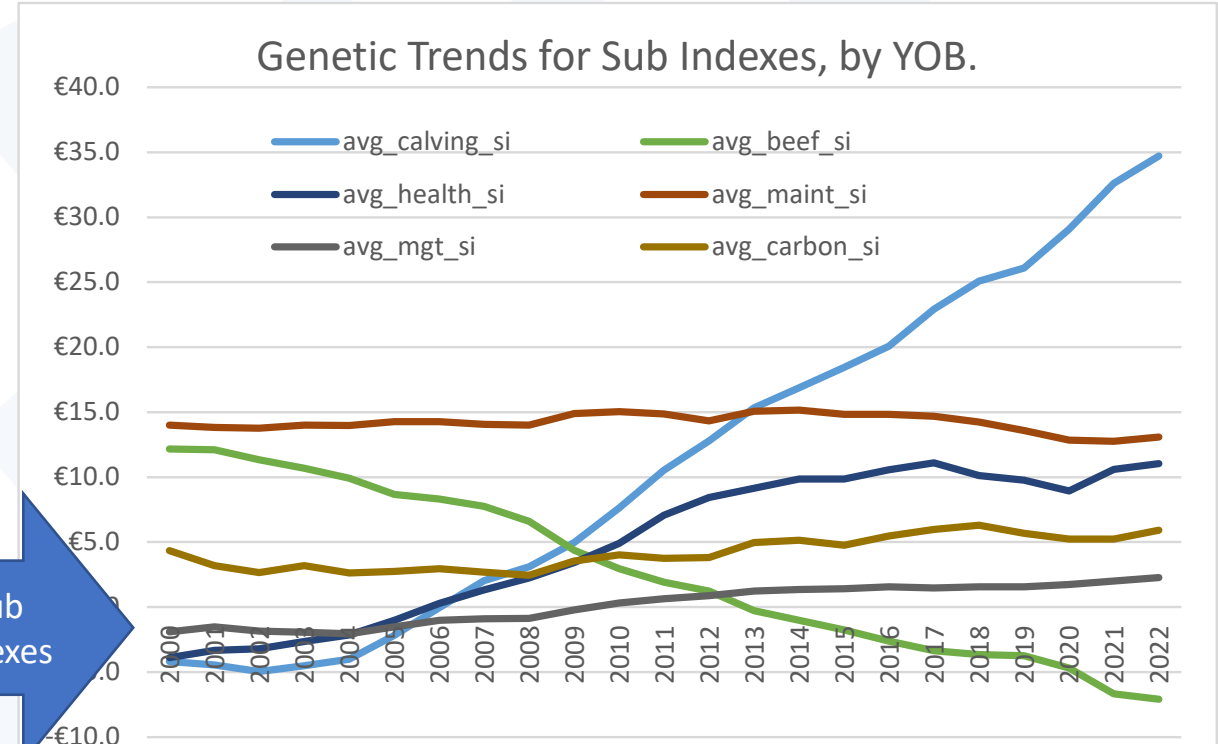
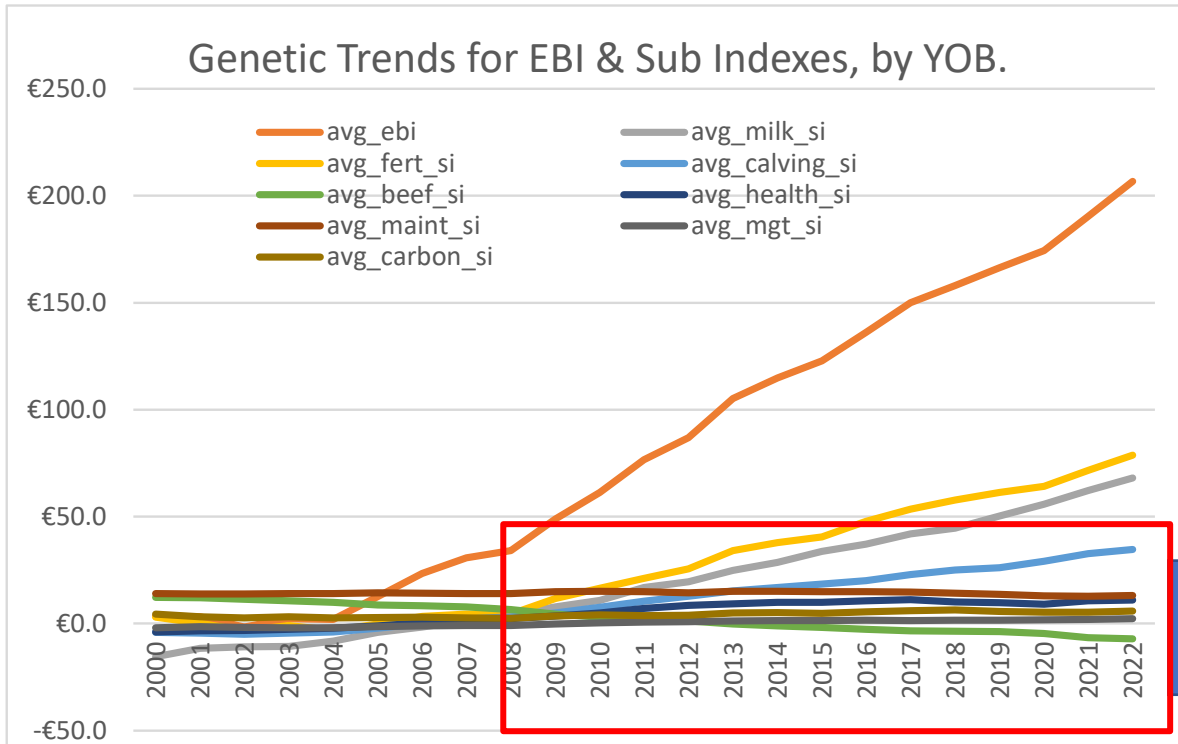
Dairy Beef Question - Question 4

Question: With the increased focus on carbon reduction, coupled with the threat to live exports, an increased emphasis is being placed on better integration of beef from the dairy herd. Please indicate which of the following are you likely to implement in 2022

Question 4	Total Respondents	Number of somewhat likely and very likely responses	% of Total
Use the Dairy Beef Index (DBI) when selection beef sires	310	208	67%
Use Beef AI as opposed to beef stockbull	310	203	65%
Use sexed semen	310	224	72%
Keep calve on farm to an older age (e.g. 4-5 weeks)	310	148	48%
Work with local calf rearers to purchase your dairy/beef stock	310	194	63%
Rear all my own Beef Calves	310	71	23%

- A number of key outcomes from the survey;
 - Dairy beef is not an important trait in the minds of dairy farmers, when picking bulls for use on their herd (i.e., the beef sub index aspect of the EBI).
 - But, about two thirds of participants would consider some form of initiative to help with greater dairy beef integration, e.g., sexed semen, DBI, use of AI, working with local calf rearers etc.

Challenge; Beef genetic trends from dairy declining.



T1. Trends in direction re: National breeding program.

Category	EBI	Milk SI	Fert SI	Calv SI	Beef SI	Health SI	Maint SI	Manage SI	Carbon SI
Dairy females 2022*	€206.8	€68.1	€78.8	€34.7	-€7.1	€11.0	€13.1	€2.3	€5.9
Top 20 Used Sires 2022**	€310.6	€101.9	€145.9	€51.1	-€12.4	€3.4	€9.8	€3.9	€7.0
Relative gain	Y	Y	Y	Y	N	N	N	Y	Y

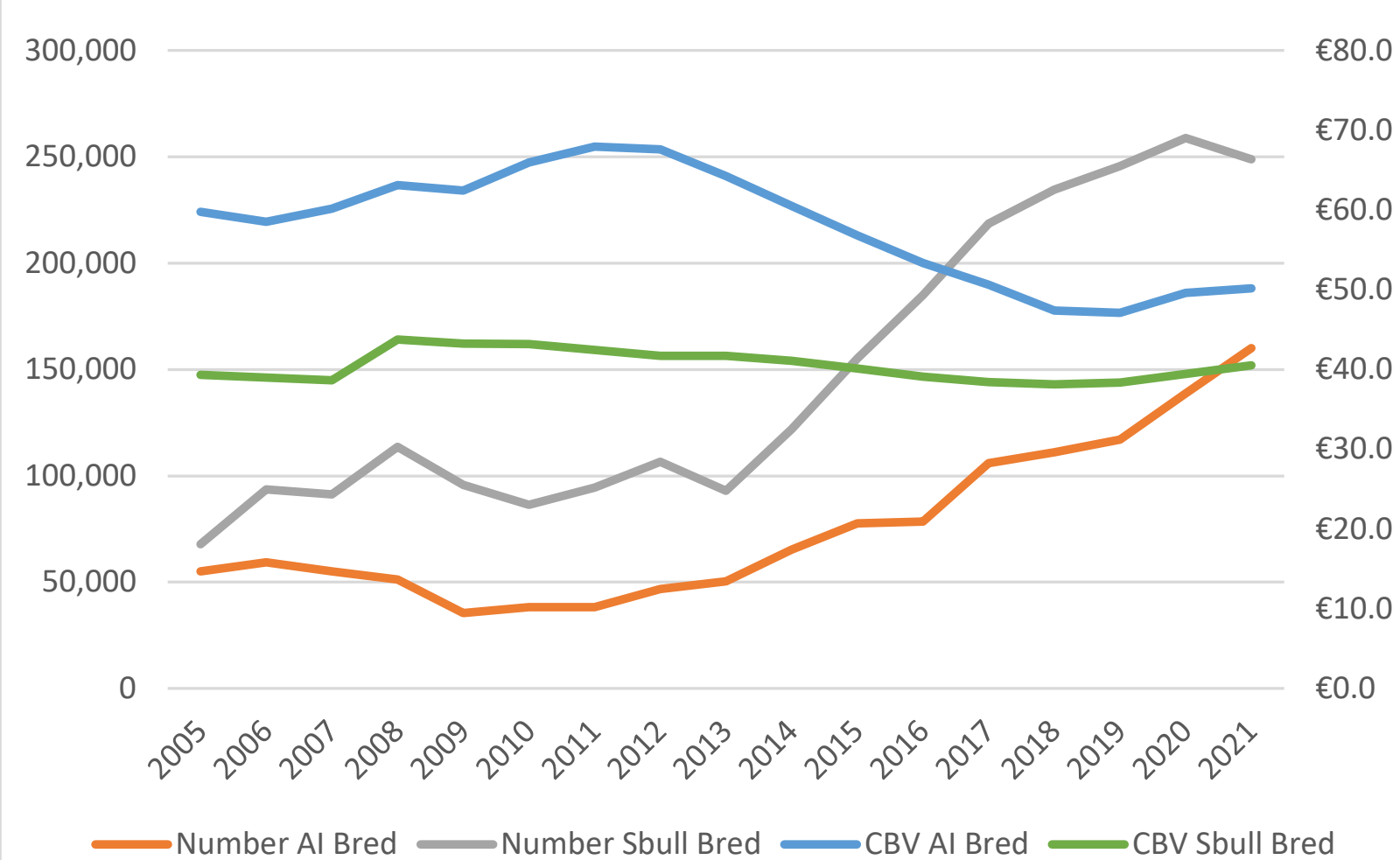
* Based on 367k dairy females born in 2022 ytd

** Based on 20 most heavily used sires in 2022 ytd (279k insems)

- Genetic trends are generally all moving in right direction, except for beef => can't simply fix within the EBI.
 - Need to focus on beef sub index when selecting dairy AI => critical role of breeding program.
- Additional "imbalance" for health traits.

Challenge; Beef * dairy genetic trends static.

T1. Number and CBV Trends for Dairy Beef Bred Calves.



- Decline in genetic merit stopped in ~2018. But no evidence of it “kicking on”.
- Of ~600k dairy beef calves/annum;
 - ~150k AI bred (~25%).
 - ~250 k Sbull bred (~40%)
 - Remainder (~200k and 35%) have no recorded sire => importance of genotyping.
- No real increase in % AI bred beef * dairy calves => need to encourage more dairy farmers to use high genetic merit beef AI bulls on their dairy herds.

Challenge; Working closely calf rearer's.

T2. Trends in calves purchased (2017-2021)					
Category	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Herds	8,886	8,860	9,401	10,198	10,398
		-0.3%	6.1%	8.5%	2.0%
Calves	297,329	292,040	320,913	342,682	364,332
		-1.8%	9.9%	6.8%	6.3%

* Based on herds purchasing 10 or more calves (<42 days) in any given year.

- Dairy farmer indifference also impacts the calf rearer;
 - Number of herds rearing 10 or more calves has grown steadily, from 8.8k in 2017/2018 to 10.4k in 2021/2022 (up 16%) => in line with growth.
 - **But.....only 42% of these herds have continually purchased calves each year from starting => huge fall-out.....why would rearer's bother?!**
- Given increasing number of beef calves coming from our dairy herd, this is now a massive challenge for our industry.

Challenge; Overall?

- **The Challenge.** How do we take an outcome that is currently viewed as a “bye-product” from the dairy herd and develop into an important additional asset for our beef farmers/industry?
- **The Specific Focus.** What is the role of genetics in helping achieve this outcome, i.e., through promoting greater dairy beef integration.
- **The Broader Context.** Where/how do these actions/initiatives get placed within the broader challenges that we are collectively facing, i.e., sustainability, climate & environment?

1. Across industry support.



Breeding Advice for Spring 2021*



1. Know your herd's strengths and weaknesses. Refer to your ICBF Herd EBI Scorecard to help establish what these are (*see overleaf*).
2. Select a team of high EBI AI bulls when breeding your dairy herd replacements. For a typical 100 cow dairy herd, a minimum of 8 bulls should be used on your herd, with no more than 15% matings to any one bull.
3. Target high EBI females (typically maiden heifers, first and second calvers) to breed your next generation of dairy herd replacements. Lower EBI cows should be bred to beef AI from the start of the breeding season.
4. Use the Dairy Beef Index (DBI) to select suitable beef AI sires for your dairy herd. A team of bulls should be selected that suits the various dams in your herd (i.e., maiden heifers, young cows and mature cows) and the number of these that are selected for beef AI. Bulls with higher beef merit figures should be selected for older animals. Consider the use of vasectomised bulls in conjunction with beef AI as an alternative to beef stock bulls. Avoid using dairy 'sweeper' bulls.
5. Use the ICBF HerdPlus Sire Advice Tool to help manage your breeding program and simplify the process of sire selection. It will allocate your bulls to cows based on their strengths & weaknesses, as well as manage inbreeding. Cows designated for beef AI should be flagged to ensure that only the best animals are used to breed dairy herd replacements. For more information on this tool please speak to ICBF HerdPlus, your Teagasc Advisor and/or your AI company.
6. If using sexed semen, only use high EBI sires and ensure that all sexed semen inseminations occur early in the breeding season. Any inseminations with Jersey or crossbred bulls should be conducted using sexed semen only. Pay careful attention to straw handling and AI procedures, as sexed semen contains fewer sperm, and these sperm are more fragile after the sorting process.

* These breeding guidelines have been developed by a DAFM-led dairy calf working group, consisting of key industry stakeholders. Members of the working group include the following: DAFM, ICBF, Teagasc, National AI companies, IFA, ICMSA, ICOS, Dairy Industry Ireland, Meat Industry Ireland, Bord Bia and Animal Health Ireland.

- Dairy calf stakeholder forum established in 2018.
- Under auspices of DAFM, but involving all key stakeholders in industry; Teagasc, ICBF, Bord Bia, MII, DII, AHI, farm orgs, AI companies. Meeting ~4-6 times/year.
- Objective; to improve the quality of calves being generated from the dairy herd.
- Focused on all aspects; (i) communication, (ii) key performance indicators, (iii) markets, (iv) genetic improvement, (v) health/disease/rearing, (v) linking with government policy etc.

2. Communication with herd-owners.

icbf

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

NAME
ADD1
ADD2
ADD3

HERDNUMBER

March 2022

Managing your 2022 Breeding Season

Dear Herdowner,

With the 2022 breeding season on the horizon, now is a good time to start planning.

To help support this, we have developed a set of breeding guidelines to improve the sustainability and resource efficiency of your dairy herd in the future (*please see enclosed*).

These guidelines have been developed by key industry stakeholders, including ICBF, Teagasc, the National AI companies, and XXXX. The guidelines include a simple 7-point plan, which if followed, will ensure the continued sustainable improvement of your dairy herd into the future.

In addition, this group has agreed the following overarching principles for our future dairy herd, and these principles are supported by the breeding guidelines.

The goals are to breed a dairy cow that is:

- (i) healthy and resource efficient (requiring fewer interventions, less labour, and less N and P use),
- (ii) sustainable (profitable and carbon efficient), and
- (iii) will produce calves that can integrate into our beef industry.

We encourage you to reflect on these goals in the context of your own dairy herd. You can do this by looking at your ICBF Herd EBI Strengths and Weaknesses report (*see enclosed*), which is the first point on the 7-point plan.

Finally, we would remind you that the best way to achieve these goals is to maximise the use of AI in your herd this breeding season. You can do this by using a team of high EBI dairy AI bulls (*see enclosed ICBF dairy active bull*) on females with an EBI of at least €140 to generate dairy replacements, as well as using high Dairy Beef Index beef AI bulls on lower EBI females (*EBI less than €140; see enclosed ICBF dairy-beef active bull*) to generate saleable cattle for finishing. These guidelines will help secure the future profitability, sustainability and carbon efficiency of your farm and the broader industry into the future.

Best wishes for your forthcoming breeding season.

Yours sincerely,

Sean Coughlan
Chief Executive, Irish Cattle Breeding Federation

The goals are to breed a dairy cow that is:

- (i) healthy and resource efficient (requiring fewer interventions, less labour, and less N and P use),
- (ii) sustainable (profitable and carbon efficient), and
- (iii) will produce calves that can integrate into our beef industry.

- Regular communication with herd-owners.
 - Letters sent to 16,050 dairy herds that had a minimum of 30 cows calving in 2022.
 - Focus on EBI, including herd strengths & weaknesses.
- Additional focus on dairy beef integration in 2022.
- This will evolve further in 2023 with the introduction of a new dairy beef integration score card => important link with new ICOS calf welfare charter.

Calf slaughter to be banned from 2024

AIDAN BRENNAN
DAIRY EDITOR
abrennan@farmersjournal.ie



the Bord Bia Sustainable Dairy Assurance Scheme (SDAS). This means that farmers who continue to send calves

According to ICOS chief executive TJ Flanagan, the new measure strengthens the original calf-welfare charter in

will be deciding over the next few months on what bulls they will be using next season, they have time to make

New Dairy Beef Integration Score – Concept

Category	Example Traits
Welfare, health and/or image related.	<ul style="list-style-type: none"> • Calves dead/slaughtered from the herd. • Calves moved from the herd that were dead/slaughtered within 6 months. • Calves born/moved into the herd that have not had a clear fate (i.e., dead, exported, slaughtered, calved) within a defined period, e.g., 3 years.
Genetics	<ul style="list-style-type: none"> • Calves with known sire • Calves with known AI sire • Level of genotyped calves. • Commercial Beef Value (CBV) of calves, <i>based on genotyped calves.</i> • EBI beef sub index of replacement females, <i>based on genotyped females.</i>
Carcass performance	<ul style="list-style-type: none"> • Average carcass performance for progeny born from the herd (i.e., carcass weight, grade, fat score, in-spec% & age at slaughter).
Overall	<ul style="list-style-type: none"> • An overall Dairy Beef Integration score for the herd reflecting; (i) welfare/health/image, (ii) genetics and (iii) carcass performance.

- Score card would be made available, with farmer consent (and as required), for various government and industry related programs, e.g., SDAS, dairy processor initiatives, DAFM/EU funded schemes etc.

3. Updating the EBI

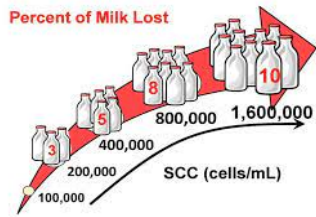
Carbon sub-index



New!

Health sub-index

SCC

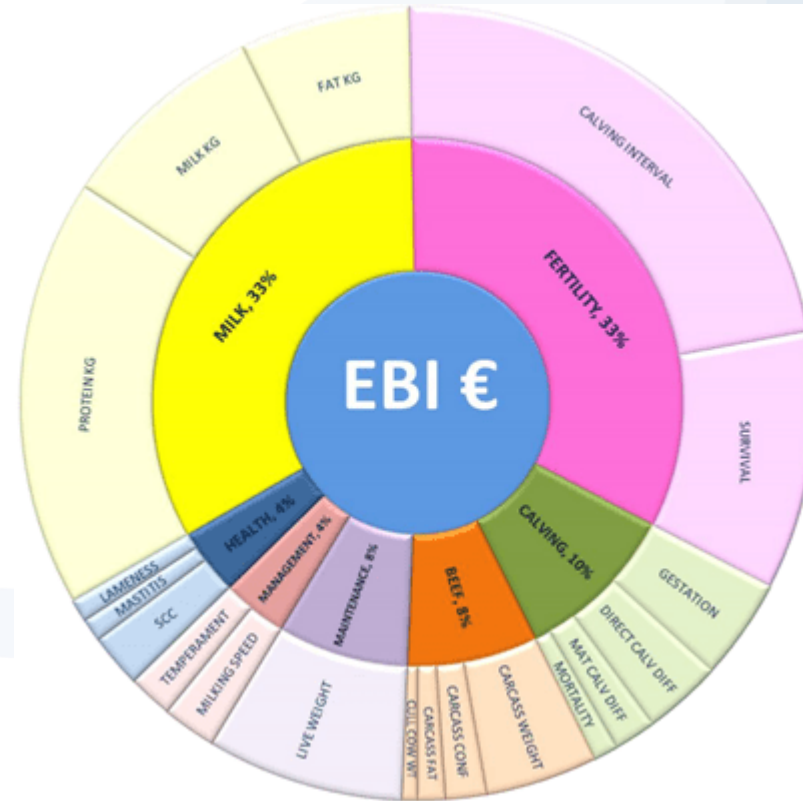


UPGRADE
LIVESTOCK

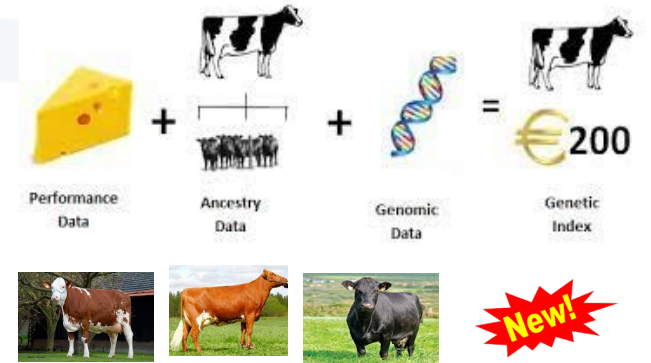
TB



New!



Genomics for minor breeds



Beef sub-index **BASE**

Cull
cow



Age at
slaughter

New!


Carcass
specifications

Progeny
Carcass traits

New!



4. Dairy Beef Index – New for Jan 2023.



J. Dairy Sci. TBC:1–17
<https://doi.org/10.3168/jds.2019-16912>
 © American Dairy Science Association®, TBC. JDS16912

A breeding index to rank beef bulls for use on dairy females to maximize profit

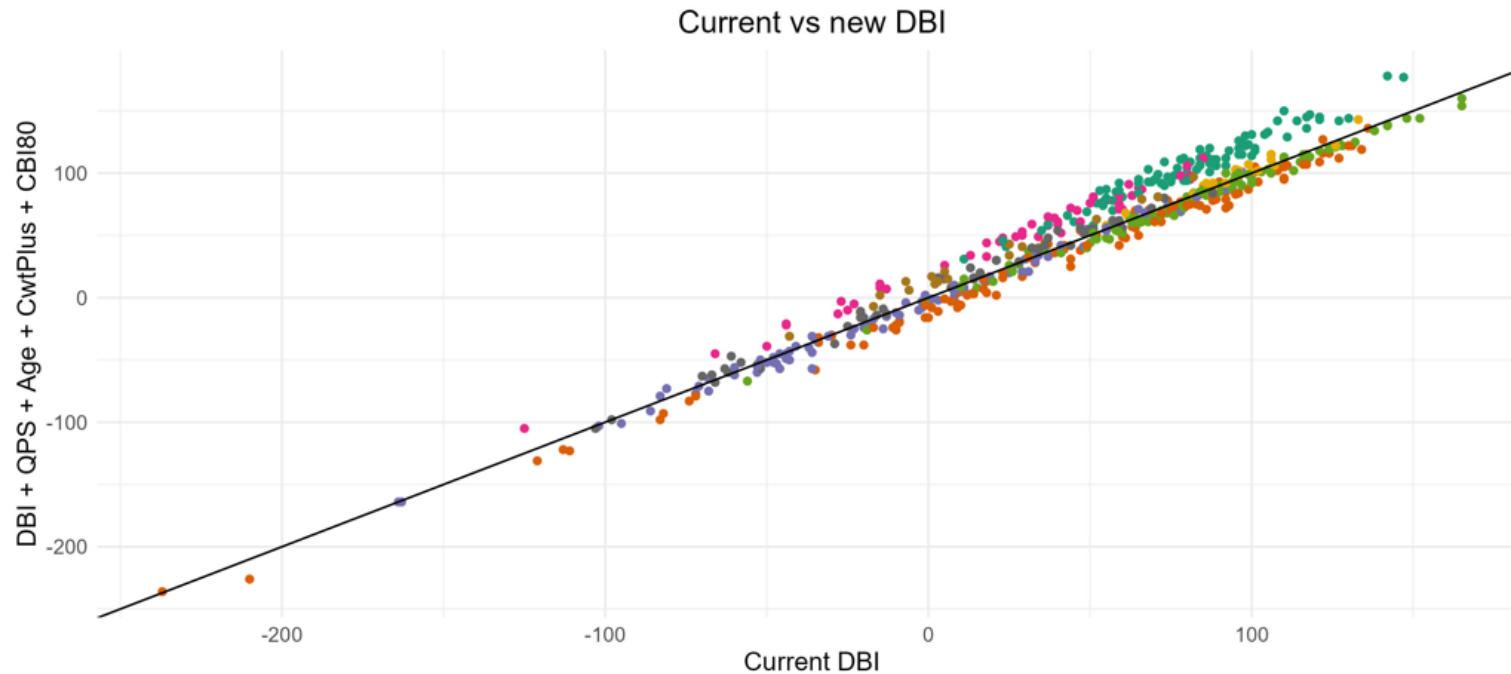
D. P. Berry,^{1*} P. R. Amer,² R. D. Evans,³ T. Byrne,² A. R. Cromie,³ and F. Hely²
¹Teagasc, Animal and Grassland Research and Innovation Centre, Moorepark, Fermoy P61 P302, Co. Cork, Ireland
²AbacuBio Ltd., Dunedin 9016, New Zealand
³Irish Cattle Breeding Federation, Highfield House, Shinagh, Bandon P72 X050, Co. Cork, Ireland

Trait	Sub-index	Current	New (Jan 2023)
Calving difficulty	Calving SI	35%	27%
Gestation	Calving SI	13%	11%
Mortality	Calving SI	1%	1%
Feed intake	Beef SI	9%	10%
Age at slaughter	Beef SI		6%
Carcass weight	Beef SI	27%	25%
Carcass conformation	Beef SI	4%	3%
Carcass fat	Beef SI	2%	
In-spec	Beef SI	8%	10%
Docility	Beef SI	1%	
Gestation	Carbon SI		2%
Age at slaughter	Carbon SI		3%
Carcass weight	Carbon SI		2%

- Developed initially by ICBF in conjunction with Teagasc & AbacusBio NZ in 2019 => a world first in context of beef from dairy.
- Will be updated in January 2023 to reflect; (i) latest economic values, (ii) new age at slaughter evaluations, (iii) new “in spec” requirements and (iii) a new carbon sub index => closer alignment with beef sub index in the EBI.
- Net effect => a shift in emphasis towards beef traits within the overall DBI, from current 50:50, to 60:40 in favour of beef.
 - Carbon sub-index with a weighting of ~7%.
 - Additional 6% for earlier finishing age from “growth rate” traits .

4. Dairy Beef Index – Impact of changes.

DBI breed plot with CBI80



DBI breed of top 100 bulls

	DBI Current	DBI + age + QPS tiered + CBI80
AA	22	44
AU	4	4
BA	7	3
BB	22	16
CH		
HE		2
LM	31	22
PI	1	
PT	4	4
SA	9	7
SP		

- High correlation in overall terms (0.90), but with some breed shifts => favouring earlier maturing breeds, in line with earlier finishing age trait + carbon sub index.
- New DBI proofs will be “go live” in January 2023.

5. Launch and roll-out of new commercial beef value.

Commercial Beef Value: a new era for indexes

The Commercial Beef Value (CBV) is a new ICBF genetic value for all animals destined for beef production. ICBF's Chris Daly reports.

Today'sfarm Commercial Beef Value (CBV) – what is it?

Appearance alone is a poor predictor of beef potential – the CBV will offer buyers and sellers a better estimate of a calf's true value.

Pearse Kelly
Head of drystock
Knowledge Transfer,
Teagasc Animal and
Grassland Research and
Innovation Programme.



Aidan Maguire with his Teagasc advisor David Argue.

- New Commercial Beef Value (CBV) launched in Dec 2021.
- CBV => The “beef” part of the existing dairy beef/terminal indexes.
- Will also be updated in January 2023, in line with roll-out of updated DBI.
- Will be available for genotyped calves on mart display boards => launched today!

5. CBV – Does it work?

T1. Comparison of Beef * Dairy animals based on performance at Tully (n=261)

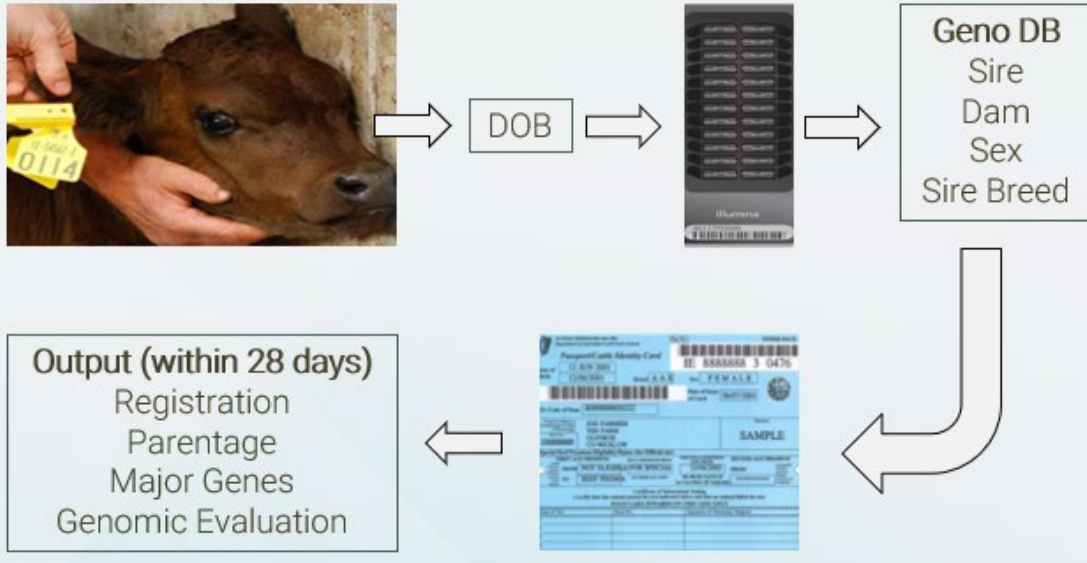
	Bottom 20%	20-40%	40-60%	Top 60-80%	Top 80%
CBV (€)	84	118	136	161	204
ADG on test (kg)	1.59	1.66	1.65	1.7	1.57
Carcass weight (kg)	297	319	318	325	326
Killout (%)	0.5	0.51	0.52	0.52	0.54
DMI (kg DM day)	12.4	13.3	12.9	13	11.9
CH4 (g DM day)	259	288	279	279	262
CH4 per kg carcass	0.9	0.92	0.88	0.87	0.81

T2. Comparison of Dairy * Dairy animals based on performance at Tully (n=186)

	Bottom 20%	20-40%	40-60%	Top 60-80%	Top 80%
CBV (€)	-2	28	42	55	81
ADG on test (kg)	1.12	1.23	1.25	1.27	1.26
Carcass weight (kg)	300	327	345	340	357
Killout (%)	49	49	51	50	51
DMI (kg DM day)	12.1	12.8	12.8	12.6	12.8
CH4 (g DM day)	261	264	265	258	251
CH4 per kg carcass	0.9	0.81	0.78	0.77	0.71

- CBV => operates on across breed basis.
 - Dairy bred => €0 to €80
 - Beef * Dairy => €80 to €200
 - Suckler beef => €200 to €350.
- An indication of expected relative profit from different animals at point of slaughter.
- Latest validation work from Tully indicates that, relative to 1 star animals (bottom 20%), 5 star animals (top 20%) were;
 - Higher carcass weights.
 - Higher kill-out %.
 - More feed efficient (re: cost of feed).
 - Significantly more carbon efficient (re: kg CH4 per kg Cwt) => 10-15% lower.
- Very important re: National inventory models and capturing value of genetic gain.

6. Commitment to Genotype the National Cattle Herd.



- Genotyping at birth (DNA calf registration) => the one sure way to ensure that dairy farmers put a greater focus on beef merit in the future => all animals will have a CBV at birth.
- Discussions underway re: establishing a suitable funding mechanism.

- 20% gain in accuracy from having animals genotyped at birth => “outliers” for the breeding program + correcting errors.
- Having the herd genotyped => surety re: genetic merit for climate/env => Important for any future “carbon farming/trading” programs (i.e., surety).
- Other wider benefits for industry, e.g., **dairy-beef integration**, enhanced traceability, labour saving, SCC (genocells), future R&D, & market point of difference etc.
- Can we transition our National cattle herd to DNA based calf registration over next 3-5 years? Win:win for govt/industry?

7. Industry initiatives that promote greater integration..



Sire selection will be key to securing 20c/kg beef sustainability bonus

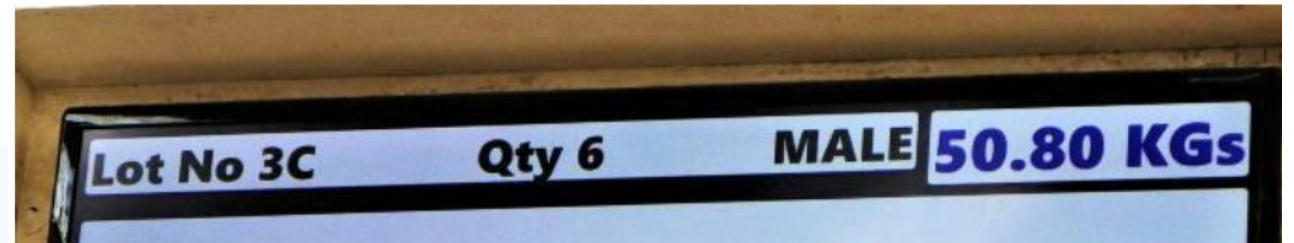
Why is the DBI important?

Research conducted at the ABP Demo Farm has shown a **direct link** between the sire's value of beef in the DBI and the live weight gain of the bull's progeny on the demo farm.

Looking to the future, it will be vital that the dairy and beef industries work together to ensure the dairy herd can produce milk but also produce calves that will be economically and environmentally sustainable to rear for beef.

In pictures: weight and sea impact lighter Friesian bull calf prices

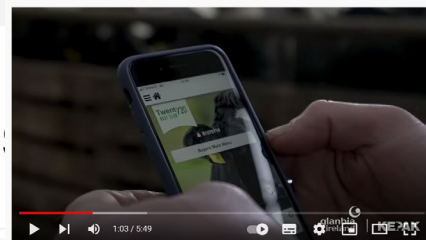
Calves going for export through the Cork Marts-ICBF export assembly need to be 48kg and this seems to be the dividing line in Bandon too.



- ICBF are involved in many dairy-beef integration initiatives “on the ground”, e.g., ABP Advantage (new), Glanbia-Kepak, Cork Marts, Kerry AgriFood.....
- Tools & infrastructure now in place, generating momentum with dairy (and beef) farmers re: these initiatives is a struggle => how can we increase?
- New DAFM/EU program re: dairy beef an opportunity.



Twenty20 Beef Club: €0.25/kg premium regardless of base price



Ross Brady discusses the key aspects of the Twenty20 Beef Club Programme



High vs Low CBV Herefords in Sheppards



Low CBV	Desc	High CBV
372214183652394	Tag	372217803371970
22/2/2021	DOB	14/2/2021
€275	Calf Purchase Price	€230
€7	Own CBV	€82
HE4648	Sire	HE5380
€12	Sire Beef S.I	€46
-€27	Sire Calv S.I	€9
-.5	Sire Carc Wt pta	5.1
508	Current Wt	588
.73	Lifetime ADG	.85
270	Predicted Carc Wt kg in 30 Days @ 51% KO	313
€1350	Predicted Carc Value (@€5/kg)	€1565



High vs Low CBV Angus in Sheppards

Low CBV	Desc	High CBV
372218883332503	Tag	372219189350947
13/2/2021	DOB	5/1/2021
€185	Calf Purchase Price	€200
€29	Own CBV	€80
AA5310	Sire	AA5280
€36	Sire Beef S.I	€43
€43	Sire Calv S.I	€32
1.9	Sire Carc Wt pta	8.2
550	Current Wt	686
.79	Lifetime ADG	.94
292	Predicted Carc Wt kg in 30 Days @ 51% KO	364
€1460	Predicted Carc Value (@€5/kg)	€1820

Summary.

- Dairy beef integration is a major challenge for the Irish ag-food industry.
- It is also a major opportunity, if we can work together to deliver a better product for calf rearer's/finishers.
- **Genetic gain has a major role to play in helping achieve this; EBI, Dairy Beef Index and now new Commercial Beef Value => new developments being launched today will be a major step forward in this regard.**
- Genomics will be key to delivering this increased genetic gain => surety & confidence for calf rearers.
- Industry collaboration (through greater integration/alignment) is crucial for success.
- Succeed in dairy beef integration and we will succeed in many of the other challenges that we face => profitability, sustainability and GHG mitigation.