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

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Abstract

The calving season is a compact period concentrated in the first 3 months of the year for three quarters of the 1.6 million national dairy cows in Ireland. Many of the resulting dairy-beef sired calves are sold off farm before the calf reaches 6-weeks of age whereby after that age a Tuberculosis test is necessary for sale. The abundance of these animals frequently results in market saturation, presenting challenges for sellers. Conversely, determining which animals will yield the greatest profit for subsequent buyers poses its own difficulties, as buyers face a gamble due to the absence of distinct visual disparities between young animals. The introduction of the Commercial Beef Value (CBV) by the Irish Cattle Breeding Federation (ICBF) marks a significant advancement in the dairy-beef industry in Ireland. This index addresses the challenge of assessing the profit potential of non-breeding beef animals, particularly calves sold off-farm before six weeks of age. The CBV contributes to;;

1. Genetic potential assessment: The CBV incorporates genetic factors related to intake, growth, docility, and carcass traits. This allows purchasers to make more informed decisions regarding the profit potential of individual calves.
2. 2. Decision support tool: The CBV serves as a decision support tool for farmers, helping them evaluate the performance and value of calves beyond what is visually apparent at a young age.
3. 3. Improved predictability: By providing more reliable information and predictability, the CBV enhances the purchasing process and encourages breeders to focus on producing higher-quality beef stock.
4. 4. Integration with existing systems: The CBV complements the existing Dairy-Beef Index (DBI), providing a comprehensive set of tools for both breeders and purchasers to evaluate animals' genetic potential.
5. 5. Environmental impact: Finishing animals at a younger age not only increases efficiency but also reduces environmental impact by consuming less feed and emitting fewer greenhouse gases over their lifetime.
6. 6. Genotype verification: Animals eligible for the CBV must undergo parentage verification through genotyping, ensuring the accuracy and reliability of the index.
7. 7. Availability in auction houses: The CBV is accessible through digital screens in auction houses, making it readily available to purchasers.

Overall, the introduction of the CBV represents a significant step forward in the dairy-beef industry, providing tangible benefits to both purchasers and breeders. By leveraging genetic information and technology, stakeholders can make more

informed decisions, ultimately driving improvements in animal quality, profitability, and environmental sustainability.

Keywords: dairy-beef, genetics, carcass.
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Introduction

In Ireland, three quarters of the 1.6 million dairy cows calve within the first three months of the year. In recent years, there has been a notable rise in the numbers of dairy-beef animals, yet simultaneously, a concerning decline in their carcass conformation scores has emerged. Historically, beef farmers lacked important information regarding the genetic quality of these progenies from dairy origins. However, the introduction of the CBV (Commercial Beef Value) has addressed this gap, empowering beef farmers with crucial insights for informed purchasing decisions, regardless of the animal's age. This tool holds significant potential to instigate tangible transformations within the industry, provided that beef farmers leverage this information in their procurement processes and that breeders of such animals respond effectively to industry demands.

Trends in the dairy-beef industry

Since 2017, beef calvings have accounted for approximately 40% of the overall dairy calvings. Nevertheless, this pattern has shifted in the past two years, witnessing a noticeable increase in the birth of calves sired by beef bulls within the dairy herd (Figure 1). Remarkably, this year marks the first instance where the number of beef calves born from dairy cows has surpassed the number of dairy calves born from dairy cows after the peak spring calving season. This trend also indicates that dairy farmers are increasingly using beef sires earlier in the breeding season.

The rise in dairy-beef offspring has led to a decline in dairy male calves, largely due to the use of sexed semen, which reduces both male births and the need for dairy females. Figure 2 compares this trend between 2020 and 2024 (up to April 20th). As this shift continues, following global patterns, the dairy male segment is expected to keep shrinking, with beef-on-dairy offspring filling the gap. This increase in dairy-beef calves offers beef rearers more choices, potentially leading to more profitable animals. The key question is whether these calves are improving in quality and becoming more cost-effective to rear.

The Commercial Beef Value

The CBV, or Commercial Beef Value, is a tool for gauging the quality and anticipated profitability of non-breeding animals.

The CBV offers farmers valuable insights into the genetic worth of their animals, encompassing traits important only for non-breeding farming, such as carcass weight, conformation, and feed intake (Figure 3). Similar to the EBI and Euro-Star Indexes, CBV is denoted as a €uro value. A higher €uro value signifies superior genetic merit across the included traits. Having the CBV available will allow farmers to make more informed decisions when purchasing or selling animals. Genotyped animals being traded through auction houses will have their CBV displayed on digital boards. When

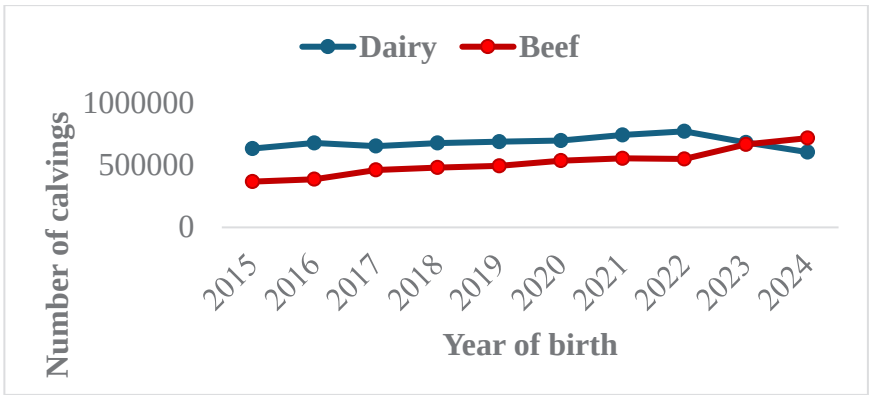

Figure 1. Number of calvings by April 20th each year for dairy and beef sired progeny in the dairy herd.

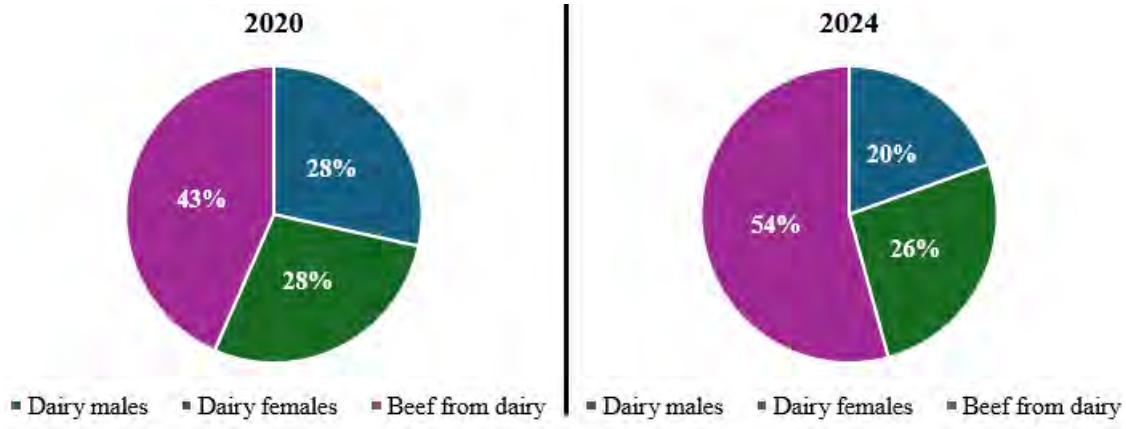

Figure 2. Proportion of dairy male, dairy female and beef from dairy offspring for spring calving up to April 20th for each year, 2020 and 2024.

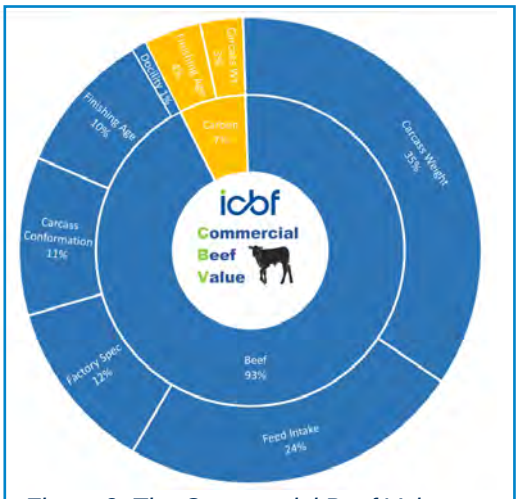

Figure 3. The Commercial Beef Value.

engaging in farm-to-farm sales, purchasers can request the seller's CBV profile which can be obtained via their ICBF Herdplus account. The beef merit of calves can vary significantly even within the same breeds (Table 1).

Validation

Analysis using the data from the ICBF national database shows that calves sired by beef bulls with higher genetic merit achieve better carcass weights, conformation, and are more likely to meet factory specifications than those sired by lower-merit bulls (Table 2).

Dairy steers showed only a €43 difference in calf purchase price between the bottom and top 10%. However, top CBV steers finished 16 days earlier and earned €275 more on finishing price. Angus crosses had even greater differences, with high CBV animals finishing 54 days sooner. Since CBV impacts the animal's entire life, beef finishers can use this tool to evaluate quality and efficiency when purchasing calves, weanlings, or store cattle.

Table 1. CBV values by breed for 2024 born dairy-beef calves (source www.icbf.com).

2024 Born Beef Calves from the Dairy Herd					
Sire Breed	**Btm 20%**	**Btm 40%**	**Average**	**Top 40%**	**Top 20%**
Angus	<€57	<€72	€79	>€86	>€104
Aubrac	<€111	<€127	€134	>€142	>€162
Belgian Blue	<€123	<€140	€148	>€156	>€177
Charolais	<€132	<€156	€165	>€174	>€197
Holstein Friesian	<€-18	<€-4	€2	>€8	>€21
Hereford	<€50	<€67	€74	>€82	>€103
Limousin	<€133	<€149	€156	>€164	>€186
Simmental	<€67	<€87	€96	>€107	>€130

Table 2. Calf price, finishing price and finishing age for A) dairy × dairy steers and B) Angus × dairy steers finished in 2023 by CBV decile.

A: Dairy steers finished in 2023

CBV Rank	Calf Price	Finishing Price	Finishing Age
Top 10%	€99	€1,538	817
2	€85	€1,471	823
3	€79	€1,455	826
4	€79	€1,439	826
5	€78	€1,415	824
6	€71	€1,409	826
7	€72	€1,392	827
8	€67	€1,373	829
9	€65	€1,338	832
Btm 10%	€56	€1,263	833
Difference Top & Bottom 10%	€43	€275	-16

B: AA X FR steers finished in 2023

CBV Rank	Calf Price	Finishing Price	Finishing Age
Top 10%	€249	€1,763	778
2	€235	€1,689	787
3	€230	€1,684	789
4	€231	€1,653	790
5	€229	€1,632	788
6	€223	€1,608	792
7	€218	€1,589	802
8	€211	€1,569	805
9	€208	€1,541	817
Btm 10%	€191	€1,490	831
Difference Top & Bottom 10%	€58	€273	-53

The National Genotyping Programme

The National Genotyping Programme (NGP) was launched in Ireland in 2024 with the aim of establishing a fully genotyped national dairy and beef herd. This initiative involves the genotyping of all calves born in the participating herds at birth. The genotype results are integrated into the national calf registration system through the DNA calf registration process. There is a significant benefit to farmers and the industry as inaccuracies in the recorded dam, sire and sex of each calf can be corrected before the bovine passport has been issued. In NGP herds this year, over 93% of all calves born have been verified to a sire. This provides more accurate CBV values and buyers can buy with confidence that the animal has been registered to the correct parents and their genetic merit potential has increased in accuracy. However, the overall quality of the population is one that needs some further scrutiny.

The Dairy Beef Index

To improve the CBV quality of beef progeny from the dairy herd, dairy farmers can use the Dairy Beef Index (DBI) breeding index to select beef bulls that will produce calves suitable for beef production while also maintaining desirable calving traits. The index consists of three sub-indices; Calving, Beef and Carbon (Figure 4).

Traits such as gestation, calving difficulty and mortality contribute to the Calving sub-index. Trends indicate that dairy farmers are increasingly prioritizing favourable calving traits and are making consistent advancements in this aspect annually. However, in the Beef sub-index, which encompasses traits like carcass weight, conformation, and feed intake, progress appears to be less pronounced (Figure 5).

Quality of dairy-beef progeny

The quality of dairy-beef animals, as measured by the CBV, has slightly declined since 2015. Between 2017 and 2022, the trend remained relatively stagnant, however, the last two years have seen a decline in CBV scores (Figure 6). This period also saw more dairy herds using beef sires and more dairy cows bred to beef sires. Trying to disentangle why the CBV values have declined is difficult and not all herds have witnessed a decline. For example, dairy herds consistently using beef sires have

Figure 4. Dairy Beef Index (DBI) composition.

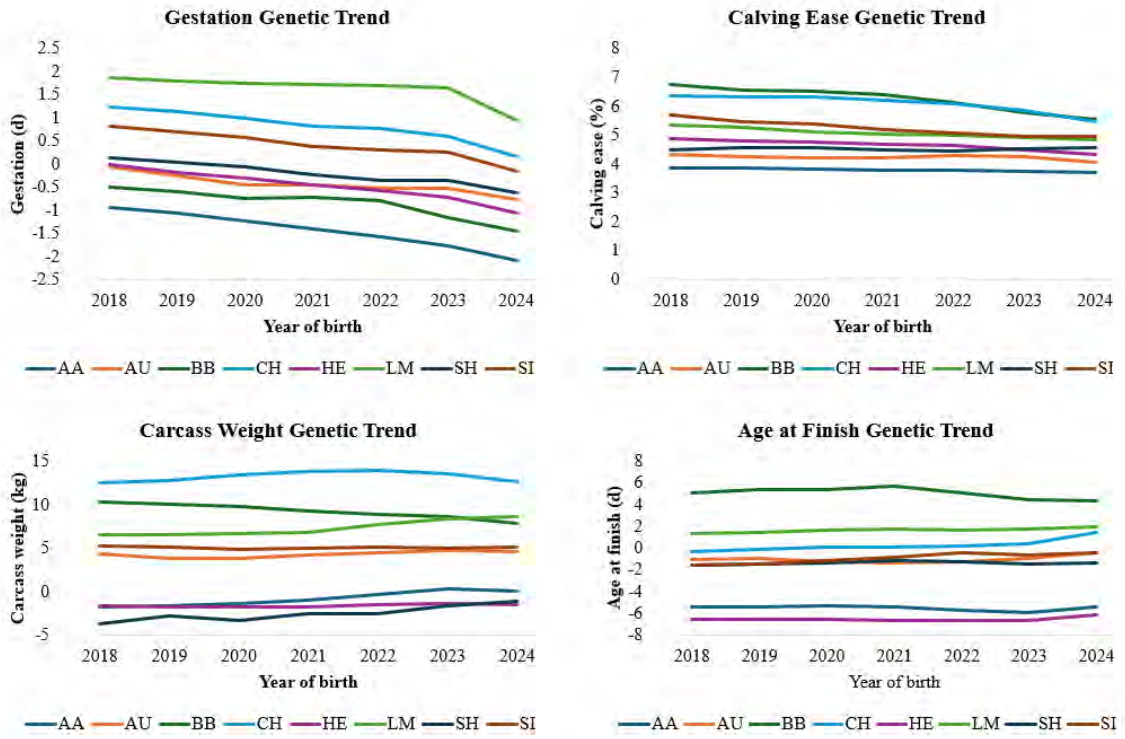

Figure 5. Genetic trend for calving traits (gestation and calving ease) and beef traits (carcass weight and age at finish) by year of birth and by breed.

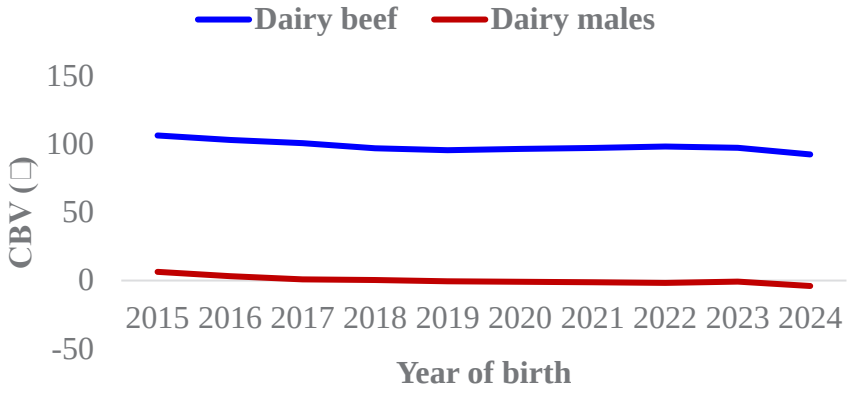

Figure 6. Trend in CBV for dairy beef and dairy male animals

generally seen annual improvements in dairy-beef calf quality, except for this year, although data is incomplete (Figure 7).

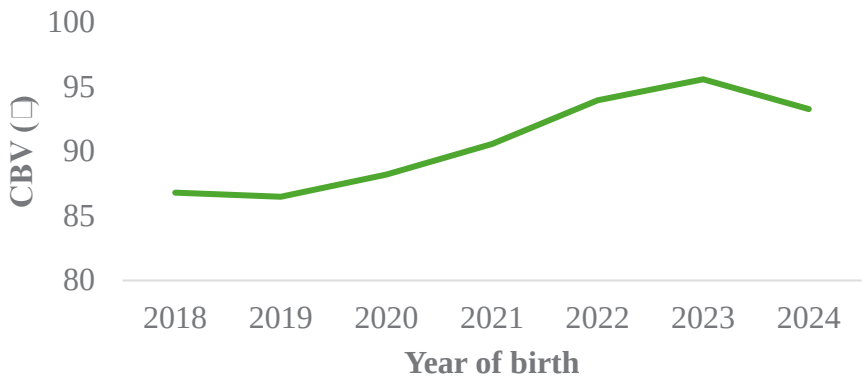

Figure 7. CBV by year of birth for dairy herds that consistently used beef on dairy (>25% calves dairy-beef in 2018 and remain so in 2024).

Conclusion

Breeding for higher beef quality traits is possible through careful selection of dairy-beef bulls on their DBI. Dairy farmers should opt for bulls with high beef sub-index values in the DBI as this is necessary for fostering improvements in calf quality. Beef producers play a pivotal role in expediting this progress by leveraging the CBV to inform their purchasing choices. The CBV stands as a catalyst for driving essential improvements in dairy-beef animal quality. Every industry stakeholder – from bull breeders to AI companies, farmers selecting bulls and those that raise the subsequent progeny, advisors, researchers and ICBF – all play a vital role in driving this change.