Dairy & Beef Evaluation Changes due Autumn 2025

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1 Dairy Evaluation Changes

Following research by ICBF and Teagasc, several improvements are envisaged to be introduced to the EBI as part of the September 2025 evaluation, pending test-proof publication as well as TAG and ICBF Board approval. Farmers will see changes to their individual animals in their EBI profile, EBI reports and the Animal Search.

The September 2025 evaluation changes include:

- Revised economic values
- An updated base population for milk and fertility traits
- An improved health as well as management genetic evaluation

Aside from these changes, the September 2025 evaluation will include a routine update of data extracts.

1.1 Revised economic values

Table 1. Comparison of the economic weights used in the EBI for the official and test evaluation

INDX	TRAIT	OFFICICAL_MAY_25	TEST_SEPT_25
MILK_SI	FAT_KG	2.08	2.16
	MILK_KG	-0.09	-0.109
	PROT_KG	5.88	6.825
FERT_SI	CALV_INT	-12.59	-13.715
	SURV	12.43	11.528
CALV_SI	GEST	-7.93	-8.64045
	MORT	-2.58	-2.58
	CDIFF_DIR	Non-linear	
	CDIFF_MAT	Non-linear	
MAIN_SI	LIVE_WEIGHT	-0.74	-1.6935
BEEF_SI	AGE_SLAU	-1.0125	-1.2675
	CARC_CONF	13.18	13.18
	CARC_WEIGHT	2.2875	3.01
	CULL_COW	0.03	1.1208
	QPS_DAIRY	0.75	0.75
HEALTH_SI	LAMENESS	-72.47	-82.33
	MAST	-82.65	-97.1
	SCC	-43.49	-43.49
	TB	-3.45	-3.45
MGT_SI	EASE_OF_MILKING	-0.31	-0.345
	TEMPERAMENT	35.86	62.60 (scale change)

Based on latest data regarding the values and costs of milk production in Ireland, Teagasc have updated the economic values in the Moorepark dairy systems model, which are used in the formulation of the EBI (Table 1). The economic value on each trait in the EBI is defined as the expected change in profit per unit change in that trait, holding all other traits in the EBI constant. These updates account for rising input costs, such as increased fertilizer and feed prices, higher output prices and future market projections. These updates have resulted in a projected milk price of 40c/litre incl. vat (but excluding bonuses; e.g., quality and sustainability) and a Protein to Fat ratio of 1.7 to 1. The cost of feed and fertiliser have increased to €370/t and €550/t respectively, while the cost of labour has also increased from €15/hour to €17/hour. As a result of this revision, the most notable change many farmers will observe is a change in the Beef Sub-Index and Maintenance Sub-Index of their herd due to the increased economic value of beef and also rising feed costs.

1.2 An updated base population for milk and fertility traits

In genetic evaluations, a base refers to a defined population of animals, typically from the past with extensive records, used as a reference point. Each animal's estimated genetic merit, or predicted transmitting ability (PTA), is expressed relative to this base. For example, if a sire has a PTA of +10 kg for fat yield and is mated to a base dam (PTA = 0 kg), his progeny are expected to yield, on average, 10 kg more fat than the base population if producing in the average environment. As time goes by and due to accumulated genetic gain, in terms of genetic merit, the current population get further apart (i.e., better) than the chosen base population; to reflect more realistic comparisons, the base population is updated to more recent animals. In breeding programs across the world, it is common practice to update fixed genetic bases every 5 to 10 years.

The old base for milk and fertility traits was based on 2005 born cows, calved and milk recorded in 2007, and milk recorded in at least two of the next five years. This is due to be updated to a more recent base for milk and fertility traits in September 2025; the new base will be updated to 2015 born cows, calved and milk recorded in the 2017-2019 period. The most important thing to know about a base change is that it has zero effect on the ranking of animals. Although a base change shifts the genetic evaluation of all animals, the shift is uniform across all animals, and therefore does not impact their ranking. The shift in EBI will result in each animal's EBI reducing by €97, of which €45 will be deducted from the Milk sub-index, while €52 will be deducted from the Fertility sub-index.

Table 2. On-farm milk and fertility performance of the updated base population

Realized milk performance (291 days = lactation length)						Fertility performance		
Milk yield (kgs)	Fat yield (kgs)	Protein yield (kgs)	Total milk solids (kgs)	Fat %	Protein %	Average Calv int. (days)	Median Calv int. (days)	Avgerage Survival (%)
6404	268	230	498	4.16%	3.57%	383.5	369.3	82.8%

1.3 An improved health as well as management genetic evaluation

All genetic evaluations are periodically reviewed. When the health and management evaluations were initially developed, lameness, mastitis and milking temperament were based on a time of financial incentives for accurate data recording; such incentives no longer exists and the data collected in recent years, as well as the editing procedures and evaluation methodology must reflect the recent time points. As a result, both the health and management genetic evaluations have been recently revised in-line with best practice to:

1) incorporate repeated lactation records of lameness and mastitis, as well as the changed temperament scale (from a 5-point scale to a 3-point scale)
2) use the predictor trait of linear scored locomotion to inform the health evaluation
3) update the editing procedure and calculation methods

4) assessment of health and management traits using the international best practice of single-step genomic evaluations, which increases the accuracy of traits by combining traditional pedigree information with genomic data in a single step, and
5) update the base population

2 Beef Evaluation Changes

Following research by ICBF and Teagasc, several improvements are envisaged to be introduced to the Replacement and Terminal Indexes as part of the September 2025 evaluation, pending test-proof publication as well as TAG and ICBF Board approval. Each of these changes will also flow through to the Dairy Beef Index and Commercial Beef Value.

The September 2025 evaluation changes include:

- Revised economic values
- Inclusion of scheme data (e.g., BEEP/SCEP) into the beef evaluations
- Integration of an updated file of foreign calving data
- Revised methodology for foreign beef data inclusion

Aside from these changes, the September 2025 evaluation will include a routine update of data extracts.

2.1 Revised economic values

Based on the latest data regarding the values and costs of suckler production in Ireland, Teagasc have updated the economic values which are used in the formulation of the Replacement and Terminal Indexes (Table 3). The economic value on each trait in the Replacement and Terminal Indexes are defined as the expected change in profit per unit change in that trait, holding all other traits in the index constant. These updates account for rising input costs, such as increased fertilizer and feed prices, higher output prices and future market projections. The cost of feed and fertiliser has increased to €420/t and €550/t respectively, while the

Table 3. Comparison of the economic values used in the Replacement and Terminal Index for the official and test evaluation

Index	Trait	Official_May_2	Test_Sept_25
Calf traits	Calving difficulty	-€6.04	-€5.43
	Gestation	-€3.01	-€3.68
	Mortality	-€9.61	-€11.91
	Docility	€5.50/€54.96	€5.96/€59.60
	Feed intake	-€0.18	-€0.20
	Carcass weight	€4.68	€5.89
	Carcass conformation	€17.59	€17.59
	Age at finish	-€1.66	-€1.69
	Polled (based on breed or genotype)	€7.30	€8.02
	Meat premium (Angus or Hereford)	€39.12	€39.12
	TB	-€1.13	-€1.13
Cow traits	Age at first calving	-€1.76	-€1.93
	Maternal calving difficulty	-€2.39	-€2.54
	Maternal weaning weight	€2.61	€3.19
	Calving interval	-€3.47	-€4.12
	Survival	€2.22	€2.09
	Heifer liveweight	-€1.27	-€0.94
	Cow liveweight	-€0.32	-€0.33
	Cow docility	€10.24/€102.42	€11.07/€110.70
	Cull cow weight	€3.90	€5.15

cost of labour has also increased from €15/hour to €17/hour. The cost of land rental has increased to €550/ha. These updates have resulted in a projected carcass price of €5.89 per kg. This carcass price has been derived by Teagasc, utilising EU forecasts for 2030 (€5.74/kg), adjusted for Ireland (i.e. seasonality of beef production) (Source: EC (2024), EU agricultural outlook, 2024-2035). From the EU report, carcass price is expected to increase by 2%, year on year from 2030 to 2035, and economic weights will be reviewed next year, given current trends on beef price. Sensitivity analysis has been conducted to assess the impact of a higher carcass price (€6.40/kg) which resulted in minimal re-ranking of animals (correlation = 0.99) across Terminal and Replacement indexes.

2.2 Inclusion of scheme data (e.g., BEEP/SCEP) into the beef evaluations

Calf and cow live weight data recorded by producers as part of national schemes will enter the beef genetic evaluation in the September 2025. All recorded data initially undergoes a quality check based on two methods (standard growth curves & machine learning); herd data that satisfy these checks follow the usual editing procedures of the beef evaluations. Due to differences in the variance structure and heritability estimates of the calf and cow live weight between scheme and non-scheme data, the scheme data has been incorporated into the national beef evaluations as correlated (i.e., predictor) traits to the non-scheme data.

Scheme cow live-weight data are used in the carcass weight evaluation as predictor traits of cow live-weights which have been recorded outside of the schemes; the genetic correlation between both sources of live-weights in the beef evaluation is 0.75. The heritability for cow live weight from the routine extract is 0.39 while from scheme data is 0.25.

Scheme calf live-weight phenotypes are used in the maternal weaning weight evaluation as predictor traits of calf live-weights which have been recorded outside of the schemes; the genetic correlation between both sources of live-weights in the beef evaluation is 0.75 for direct traits and 0.65 for maternal traits. The heritability for calf weight from the routine extract is 0.36 and 0.25 for direct and maternal traits, respectively. The heritability for calf weight from the scheme data is 0.26 and 0.13 for direct and maternal traits, respectively.

2.3 Integration of an updated file of foreign calving data

The calving evaluation is a single step genomic evaluation ran across both beef and dairy cattle. It uses phenotypes from Ireland as well as foreign breeding values computed by Interbeef. Changes in any national evaluation from Interbeef participating countries impacts the data submitted to Interbeef routine evaluation (changes in model, new traits, new variance parameters) and as a result also the foreign breeding values which are incorporated into the Irish genetic evaluation. Changes to the national models of the Interbeef contributing countries of France, as well as Denmark, Finland and Sweden came into effect in September 2024; these changes have resulted in updated across country correlations. The result of those changes on the foreign breeding values arising from Interbeef are due to come into effect in the Irish calving evaluation in September 2025.

2.4 Revised methodology for foreign beef data inclusion

The Irish beef evaluations uses phenotypes from Ireland as well as foreign breeding values computed by Interbeef, or sourced directly from the country of origin (when not available from Interbeef). In January 2025, the UK and France were the main providers of foreign data outside Interbeef.

The breeding values generated by Interbeef are provided to each member country in the same scale as that country: thus, no conversions are required in order to use them in the national evaluation. However, foreign breeding values sourced directly from abroad are in a different scale compared to the national evaluation; as a result, a conversion process is first required to utilise those values. The conversion methodology required to integrate these foreign data into the national genetic evaluation has been updated. In summary, the old methodology integrated such foreign data into the national evaluation as a correlated trait (using the variance structure of the country of origin), while the new methodology integrates the converted foreign data into the national evaluation as the same trait (as the goal trait) using the variance structure of the national evaluation; the latter is possible because the foreign data is converted to the national scale.