Tipperary
DAIRY CALF TO BEEF

Animal & Grassland Research and Innovation Programme

Tipperary Dairy Calf to Beef Demonstration Farm Open Day

Dairy-Beef Integration

Ballyvadin, Fethard, Co. Tipperary. Wednesday, July 10th, 2024

eagasc
Agriculture and Food Development Authority

DAWN MEATS

Shinagh Estates Limited

Tipperary Dairy Calf to Beef Demonstration Farm Open Day

Dairy-Beef Integration

Ballyvadin, Fethard, Co. Tipperary,

Wednesday 10th July, 2024

Table of Contents

Dawn Meats welcome

On behalf of Dawn Meats, I am pleased to welcome you to take part in our first Tipperary Dairy Calf to Beef Demonstration Farm Open Day with our partners Shinagh Estates & Teagasc.

Key to the Tipperary Farm is that it is a unique partnership between the beef and dairy sector, sending out strong messages in a number of key areas to produce a viable beef calf. Covering the importance of using the best genetics, calf rearing management and grassland management, as a key part of the feeding regime, in order to achieve the specification demanded by the marketplace in the most efficient manner. As a supplier of choice to many of the UK and Europe's leading retailers, foodservice and manufacturing operators it is essential we ensure a consistent supply of competitively produced high quality farm assured beef.

We have invested sensibly in infrastructural improvements on the farm in rearing facilities, milk feeding systems, fencing, water troughs, handling facilities and wintering facilities. Via our partnership with Shinagh and Teagasc we have worked with Dairy farmers to use the Dairy Beef Index (DBI) with a strong focus on the Commercial Beef Value (CBV) for the quality of stock and all the time taking into account the Ease of Calving & Gestation Period traits. We will be able to compare different breeds and genetics to help build the successful blueprint for dairy beef. Using this and efficient management we look forward to taking dairy beef calves through to slaughter at less than 24 months of age.

Over the past decade, the dairy bred beef has grown to account for approximately 60% of total beef input in Ireland. Given this, the information and learnings of the Tipperary Farm are strategically important. It is run on a commercial basis in order to show best practice and its potential as a viable farm enterprise. Teagasc bring strong technical advice and the farm is part of key programmes namely, Signpost Farms, DairyBeef 500 and ASSAP.

I do hope you enjoy your visit to the Farm, the Information Boards and the system's potential to be a key part of Irish farming systems going forward. See our 2023 and 2024 born cattle at grass, hear the presentations and please share your own ideas and comments. We also have a discussion forum at 2 pm at which you can enjoy lunch and some refreshments.

Thank you.

Niall Browne

CEO, Dawn Meats

Shinagh Estates welcome

Shinagh Estates are delighted to have the opportunity to be a partner with Dawn Meats and Teagasc in this joint venture on profitable, sustainable calf to beef production on this great farm in Tipperary. We know it is vital that all farmers in the beef supply chain can make a sustainable profit. As dairy farmers, we know that producing a higher commercial beef value (CBV) calf will give the beef farmer a greater profit margin.

This initiative of creating a direct link between the calf producers and the beef farmer is welcomed. Tipperary Beef farm will demonstrate how this link works and play its part in getting more such links established. It allows the beef farmer to influence the breeding of the beef calves coming from the dairy farmers and to financially incentivise better beef calves.

The calf purchasing template produced by Teagasc (included in this booklet) has worked well for two years now. It gives the dairy farmers a reliable market for calves and the beef farmer a reliable source of calves. It is the start of the chain in integration of the dairy and beef industries. When three partners: the dairy farmer, the beef farmer and the processor in this venture all work together for the greater good then great things can be achieved for everyone.

Dawn Meats are a great partner in this venture and the final piece of this integration. I would like to take this opportunity to commend them for their involvement and especially Dan Browne who has been their driver in getting this venture over the line to what you see here today.

Finally, without Padraig French, John McNamara and Chloe Millar of Teagasc this venture would not have happened. Jack Spillane and Stephen Baskin are running the farm day-to-day. The dairy farmers supplying healthy calves, you are the first vital link in this integration chain.

We thank you all.

Donal Santry

Chairman Shinagh Estates Limited.

Shinagh Estates Ltd are wholly owned by the four West Cork Co-ops: Bandon, Barryroe, Drinagh and Lisavaird. They are also the constituent Co-ops and owners of Carbery milk processor.

Teagasc welcome

Teagasc would like to welcome all dairy and beef farmers and industry stakeholders to the first open day of Tipperary Dairy Calf to Beef Demonstration Farm. This very important collaboration between Teagasc and our dairy and beef partners, Shinagh estates and Dawn Meats is the first dairy-beef demonstration farm undertaken by Teagasc.

The recent expansion of the Irish dairy industry has resulted in an increase of over 500,000 extra calves per year and Teagasc identified a need to develop a sustainable outlet for these calves. Recent Teagasc research at Grange and Johnstown Castle has shown that dairy calf-to-beef can be economically and environmentally sustainable. However, it requires much closer collaboration between dairy and beef farmers and the adoption of key technologies in genetics, animal health, grassland management and supplementation. For these reasons, Teagasc identified the need to have both dairy and beef industry partners involved in this project from the start and are very grateful for the support, commitment and input they have received in initiating this project from Dawn Meats and Shinagh estates.

This farm is significantly larger than most dairy-beef enterprises, however, the technologies of the dairy-beef genetics, calf health and grassland management are as relevant at any scale. Many commercial dairy-beef farms are operated by part-time farmers and an adequate return on the labour input will be a key determinant of the sustainability of the enterprise and that will also be an important KPI for the Tipperary beef farm that we will report on regularly.

Tipperary Dairy Calf to Beef Demonstration Farm is an integral part of the DairyBeef 500 campaign, the Teagasc Signpost Farm Program, Grass10, ASSAP and the new Better Farming for Water campaign. All of the key messages from these Teagasc programmes and how they are being incorporated into the demonstration farm will be on display today. Tipperary Dairy Calf to Beef Demonstration Farm here at Ballyvadin is also being used extensively by the Teagasc advisory service and they will continue to visit the farm with their discussion groups. After today you can continue to follow the work of the demonstration farm on *@Tipp_DemoFarm* on Instagram and X (Formerly Twitter) and *Tipperary Dairy Calf to Beef Demonstration Farm* on Facebook

Enjoy the day

Donal Mullane

Teagasc Regional Manager, Tipperary

Profitable Dairy Calf-to-Beef through integration

Padraig French
Teagasc, Animal & Grassland Research and Innovation Centre Fermoy, Co. Cork

Summary

The main objective of the Tipperary dairy calf-to-beef demonstration farm is to demonstrate the best technologies for profitable and sustainable production of beef calves from the dairy herd.

- The farm is operated as an independent standalone company which produces an annual set of audited accounts
- Tipperary Beef farm has no BISS payment and has full labour and capital costs but no land cost included in the budget
- The capital required to set-up the farm for the new dairy beef enterprise was approximately €980k of which €560k was for facilities and machinery the remainder for stock and working capital
- In 2024 the farm is forecast to generate a net margin of approximately €423/ha (including full labour costs) with a breakeven beef price of approximately €4.42/kg.

Farm system/stocking rate

The Tipperary beef farm is 112 ha of free draining clay loams and approximately 95 ha is used for the dairy-beef enterprise with the remainder sown to cereals (10ha) and under hedgerows, roadways and farmyard (7 ha). This 95 ha dairy beef land was sown with perennial ryegrass/clover swards in 2022 and is being managed as grass clover system with moderate (~100kg/ha) levels of synthetic nitrogen. The stocking rate on the farm will be determined by the ability of the farm to grow pasture and silage and the requirements of the animals reared through to slaughter at a young age. The farm is stocked initially with 325 calves in 2023 and 335 in 2024 and these will be reared through to beef as steers and heifers. The animals will be slaughtered when they reach adequate fat cover and the age at slaughter will determine the feed demand and the number of animals reared will be adjusted based on forage surplus/deficit. The target will be to maximise production from grazed grass and high quality silage and finish all cattle to meet factory specification.

Financial targets

Tipperary beef farm is operated as an independent standalone company (Ballyvadin beef farm Ltd) which produces an annual set of audited accounts. The capital required to set-up Ballyvadin beef farm Ltd. was approximately €980,000 was provided by the two shareholders, Dawn meats and Shinagh estates, in the form of €350,000 equity each and €130,000 of a

stocking loan and a €150,000 of an overdraft facility from Bank of Ireland. The capital was primarily used for farm infrastructure (table 1) and the remainder for working capital and livestock.

Approximately 10 ha of the farm is sown currently to Spring barley. Utilising this area from crop production will be reviewed as the farm reaches its stocking rate limit. Production year 2024 will be the first year the farm reaches full output with 335 calves and 320 yearling cattle on 95 ha. The initial target is to produce a carcass weight of 275 kg (average of steers and heifers) and to increase this over time using appropriate genetics and nutrition.. Approximately 3.5 cattle will be finished per hectare annually, producing 965 kg beef/ha. This level of production will require a pasture growth of 13 t/ha utilising 10.5 tDM/ha.

Table 1. The capital investment items on Tipperary Dairy Calf to Beef Demonstration Farm

Investment item	cost (€)
Reseeding (fertiliser, lime, cultivation, seeds and sprays)	120,981
Farm yard, crush, soiled water/effluent storage	107,715
Calf sheds (penning, floors, ventilation)	103,483
Office/staff facilities	68,880
Water system (troughs, piping, well, plumbing)	48,106
Fencing	36,718
Machinery	34,754
Miscellaneous	39,221
Total capital investment	**559,857**
Depreciation per annum (based on a plan for 15 years)	39,972

The forecast costs for the operation of the farm is detailed in Table 2. The farm has no BISS payment and has full labour cost but no land cost included in the budget. The system initially being operated has a relatively high output but also high input costs with a relatively modest net margin forecast at approximately 10% of turnover or €423/ha. The focus of the management team over the first five years of the project is to grow the net margin to €1000/ha. The strategies to achieve this growth will include, increasing carcass weight through genetic selection of sires, reducing concentrate supplementation through higher quality grass and grass silage use, increasing grass production and utilisation to match the stocking rate.

Farm Labour/management

Tipperary beef farm is managed and operated by Jack Spillane and he is assisted by Stephen Baskin who works part - time on the farm. Their primary focus is the management of the health and performance of over 650 cattle and the management of the pasture to ensure high animal performance and high grass utilisation. The key performance indicators for the farm include grass utilised, animal performance from pasture and silage, animal health and mortality, age of finishing, and proportion of the cattle reaching market specification.

Table 2. Tipperary Dairy Calf to Beef Demonstration Farm forecast P&L for 2024

	€ total	€/hd	€/kg carcass
Cattle sales	412,308	1293	**4.70**
Total sales	424,808		
Variable costs			
Calf purchase	39,195	117	**0.425**
Milk replacer	20,706	62	**0.225**
Concentrate	74,400	225	**0.820**
Fertiliser	22,505	72	**0.261**
Diesel	3,360	11	**0.039**
Lime	1,500	5	**0.017**
Contractor	45,180	144	**0.525**
Veterinary	13,200	42	**0.153**
ESB	3,600	12	**0.042**
Haulage	6,050	19	**0.070**
Miscellaneous	12,000	38	**0.139**
Total variable costs	**241,696**	**772**	**2.808**
Gross margin	**183,112**	**585**	**2.127**
Gross margin/ha	1,743		
Fixed costs			
Accountancy	7,200	23	**0.084**
Deprecation	39,972	119	**0.434**
Labour/management	71,844	230	**0.835**
Interest	12,350	39	**0.143**
Tractor rent	7,004	22	**0.081**
Total fixed costs	138,370	442	**1.608**
Total cost	**380,066**	**1214**	**4.416**
Net margin	44,742	143	**0.520**
Net margin/ha	423		

Hitting the spec – the role of breeding and feeding

Nicky Byrne[1], Chloe Millar[2], Jamie O'Driscoll[1] and Matthew Murphy[3]

[1]Teagasc, Animal & Grassland Research and Innovation Centre, Grange, Dunsany, Co. Meath; [2]Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork; [3]Dawn Meats, Grannagh, Co. Waterford

Summary

- Producing "in-spec" carcasses is important to maximise market returns and beef price received, and overall farm profitability
- High CBV steers produce more "in-spec" carcasses and generate €238/ha higher net margin than low CBV steers
- Feed conversion efficiency reduces as finishing period duration increases, to a point where feed cost per day can exceed additional carcass gain
- Timely drafting at a targeted fat score of 3- to 3+, after 60-80 finishing days is optimum for high CBV beef x dairy cattle.

Introduction

Ongoing research and experience from commercial dairy-beef farms demonstrate the opportunity that exists to produce profitable and environmentally sustainable beef from a predominately grass-based diet. Due to the increase in the national dairy cow-herd, the number of dairy-beef animals has increased in recent years, accounting for over 58% of prime cattle processed in Irish meat plants in 2023. Annually, there are now approximately 1.1 million calves available from the dairy herd for beef production. Furthermore, as a result of reduced herd expansion and the increased uptake of sexed semen technology, the use of beef sires on dairy cows has increased substantially; in 2023, 48% of calf registrations from the dairy herd were to a beef sire, and this is expected to be higher in 2024. Despite beef calf registrations from the dairy herd increasing, the beef genetic potential (CBV) of calves has reduced, due to declining dairy dam carcass characteristics and the continued use of low carcass merit beef sires. Fortunately, through the widespread use of high beef genetic merit sires the quality of the calf crop can improve rapidly.

Nationally, there is a policy and market ambition to reduce finishing age and to reduce the environmental footprint of beef, while maintaining carcass specification and grass-based credentials. Research has found that 60% of dairy-origin carcasses failed to meet carcass market specifications, primarily due to poor conformation. Dairy-beef heifers had the greatest difficulty in achieving overall market specification, because of light carcass weights and excessive carcass fat scores. The breeds, genders and genetics create potential but it is management that largely allows animals fulfil their potential at system level.

Carcass specification

The ability of cattle to meet overall carcass market specification is included in all dairy and beef breeding indexes, as well as the Commercial Beef Value (CBV), because of its impact on carcass value and profitability. Within these national breeding objectives animals are deemed to be "in-spec", once they achieve a conformation grade ≥ O=, carcass weight between 280 and 380 kg, a fat score between 2+ and 4=, and an age at slaughter ≤ 30 months. The ability of an animal to meet market specification determines the market returns, thus beef price received by farmers.

Conformation has the most impact on beef price received, as it is indicative of primal cut yield obtainable from the carcass. Each increment above base generally represents an additional €0.06/kg carcass, while the initial increment below base represents a €0.12/kg reduction and €0.06/kg carcass thereafter. Importantly the national average carcass conformation for beef x dairy and dairy x dairy cattle is O=/O+ and O-/P+, respectively. Cattle of conformation scores ≤ O- either do not receive or are severely penalised on quality assurance and breed bonus payments.

Most consumers daily meat requirement is purchased through major multiple retailers, where market research has indicated the optimum cut size and cost, for example costumers purchasing a two pack of striploin steaks have preference for medium sized steaks of acceptable thickness and adequate fat cover at a price range of €7-10. Therefore, a carcass averaging 280-380 kg satisfies consumer's requirements perfectly.

Impact of CBV and feeding strategy on steer performance - Teagasc Grange

Nationally, dairy-beef steers are finished at ~27 months of age during a third grazing season; however, with the policy ambition for younger finishing age, the economic efficiency of systems with lower finishing ages is of great interest.

An experiment was carried out in Teagasc Grange to investigate the potential of the CBV in predicting increased animal performance, as well as grass-based feeding strategies aimed at reducing finishing age. All calves on the study were born to Holstein-Friesian (HF) dams, and sired by Angus or HF sires. The Angus calves were subsequently split into two genetic groups, selected for being either 4-star or 5-star (High-CBV) or 1-star, 2-star or 3-star (Low-CBV) for CBV. This resulted in three genetic groups including HF. Within each genetic group, half of the animals were assigned to conventional management, receiving a grass-only diet during the second grazing season and being finished indoors from concentrates and grass silage (Conventional.), and the other half received 4 kg of concentrates/head daily from the 1 July during the second grazing season until finished at pasture (Supplemented.). Finished steers were drafted based on meeting a BCS of 3.75 (5-point scale), deemed to be equivalent of a carcass fat score of 3+/4-.

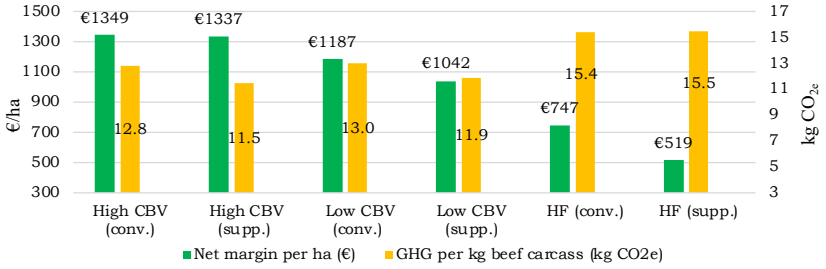
Overall, both Angus groups achieved a higher lifetime ADG than the HF steers. Finishing age was similar between the Low-CBV and High-CBV groups, indicating a similar 'fleshing' ability; however, High-CBV steers produced 18 kg more carcass than Low-CBV steers (Table 1). Animals are deemed to have met market specifications (i.e. "in-spec"), once they achieve a conformation score ≥ O=, carcass weight between 280 kg and 380 kg, a fat score between 2+ and 4=, and an age at finish ≤ 30 months. In terms of overall market specifications, 73% of High-CBV steers, 53% of Low-CBV steers and 22% of HF steers met the requirements. Failure to meet overall carcass specification was primarily caused by low carcass weights for Low-CBV animals, and poor carcass conformation for HF steers.

Table 1. Average growth and carcass performance of 2020-born and 2021-born dairy-beef steers per feed management strategy and genetic group

	Conventional			Supplemented		
	High-CBV	Low-CBV	HF	High-CBV	Low-CBV	HF
Finishing age (days)	641	652	717	603	601	711
Carcass weight (kg)	314	306	311	310	284	328
Carcass conformation score	O=/O+	O=	P+/O-	O+	O=	O-
Carcass fat score	3+/4-	3+	3+	4-	3+	3+/4-
Finishing period outdoors and indoors (days)	51	62	127	101	99	162
Finishing supplement (kg)	248	306	628	403	403	933
Lifetime ADG (kg)	0.91	0.88	0.82	0.92	0.86	0.85

Major improvements in beef production efficiency can be achieved from the use of high-beef merit genetics compared to HF. Although carcass weight was similar to HF, High-CBV animals were finished ~3 months earlier, requiring only half the number of finishing days indoors, which represents a major saving in feed costs.

Concentrate supplementation during the second half of the grazing season reduced finishing age of Angus steers by 1.5 months, which meant that an expensive indoor finishing period was avoided compared to their non-supplemented counterparts. In contrast, HF steers supplemented at pasture did not meet the desired fat level and required an additional 120 days of finishing indoors.



Base price of €4.85/kg. Finishing concentrate price €375/t. Protected urea price €550/t. ***Net margin excludes land & labour charge*** *and assumes a calf purchase price of €200 and €60 per head for early maturing (Angus) and HF bull calves.*

Figure 1. *Net profit (€/ha) and carbon efficiency of dairy-beef steer systems of contrasting beef merit and feeding strategy (Conventional vs. Supplemented)*

High-CBV steers generate more profit, and produce beef of a lower carbon footprint compared to Low-CBV and HF steers, regardless of management system (Figure 1). The CBV, along with the national genotyping programme offers farmers an opportunity to make informed decisions at market, allowing them to purchase the most efficient and profitable animal for their system.

Finishing guidelines

The selection of 'finished' dairy-beef cattle (drafting) is primarily dependent on their ability to meet market specifications for carcass fat score, which is between 3- (2+ for R grade or better) and 4=. Nationally, a high percentage of animals are being finished at excessively high fat scores, receiving unnecessary additional days on feed, and associated economic and environmental costs. Across Teagasc dairy-beef herds, the majority of early-maturing heifers achieve the target fat scores from pasture during the second grazing season, avoiding the need for an indoor finishing period. For early-maturing steers and late-maturing heifers this level of fatness can be achieved after a 60 to 80 day finishing period (indoors or at pasture), while Holstein-Friesian steers will require 100 to 120 days of indoor finishing. Finishing diets should consist of high quality grazed pasture or grass silage (>75% DMD) ad-libitum, in addition to 5 kg of concentrate daily. As finishing periods increase in duration, feed conversion efficiency reduces, ultimately to a point where feed costs exceed carcass gain benefits. It is essential that live weight gain and the level of fatness of finishing cattle are monitored regularly, allowing for timely drafting to minimise this occurring. Determining the body condition score (BCS) of each animal is essential, paying particular attention to the tailhead, rump, loin, ribs and the level of fat deposited between folds of skin. The 'fleshing' ability, or ability to lay down fat, of animals will determine the frequency of drafting; this is generally completed every 10 days during the finishing period across research herds in Teagasc.

The objective of the Tipperary dairy calf to beef demonstration farm is to demonstrate to farmers technologies which will help produce/identify a high beef merit calves, with the potential to produce beef efficiently. The

improved carcass performance of finishing animals on the farm to date based on increasing CBV is clearly illustrated in Table 2. The CBV has the same impact across gender, with high CBV heifers and steers producing heavier, more conformed carcasses, of significantly higher value at a similar finishing age. Although high CBV animals had a higher carcass weight and conformation score, they also had lower carcass fatness, but overall produced more in-spec carcasses, maximising value. Similar to what is observed nationally, dairy-beef heifers struggled to produce carcasses in excess of 250 kg, with 98% of heifers being under the 280 kg target previously outlined. Heifers have an earlier maturing growth pattern compared to steers, and hit target fatness at lower body weight and age. This early maturing nature needs to be exploited in dairy-beef systems by finishing heifers before a second winter (with or without concentrate supplementation) or after a short finishing period indoors. These animals purchased onto the farm at the start of the second grazing season were managed on high quality perennial ryegrass and white clover swards and were finished from a diet of high quality grass silage and 4 kg of concentrate. Total concentrate used to achieve targeted carcass fat was 375 kg and 424 kg for heifers and steers, respectively.

Table 2. Tipperary Dairy Calf to Beef Farm finishing performance of 2022 born heifers and steers

Star rating	CBV	Finishing age	Carcass Weight	Conformation	Fat	Value	No.
Beef x dairy							
Heifer							
1	€33	20.7	232	O=	3=	€1185	28
2	€72	21.2	244	O=	3=	€1270	13
3	€88	20.3	247	O=	3=	€1258	20
4	€115	20.4	256	O=/O+	3=	€1285	24
5	€152	20.7	269	O+/R-	3	€1356	24
Steer							
1	€34	21.4	276	O-/O=	3=	€1448	24
2	€72	21.4	280	O-/O=	3-/3=	€1447	20
3	€91	21.2	287	O=	3-/3=	€1484	22
4	€114	21.5	293	O=	3-	€1522	22
5	€154	21.2	309	O+	2+/3-	€1587	18

Conclusion

The CBV contributes to higher animal performance and profitability based on both Teagasc research and the Tipperary Dairy Calf to Beef Farm experience. High CBV cattle improve carcass value, and have a higher chance of meeting carcass specification. The generation of high CBV calves will play an important role in maximising market returns as the proportion of dairy-beef cattle in the national kill rises, maximising beef prices received by farmers. The production of high beef genetic merit calves from the dairy herd, will improve the sustainability of Irish dairy and beef production.

The Commercial Beef Value (CBV) for the Tipperary Calf to-Beef demonstration farm and calf purchasing agreement

Chloe Millar[1], John McNamara[2] and Margaret Kelleher[3]

[1]Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork; [2]Shinagh Estates Ltd, Shinagh, Bandon, Co. Cork; [3]Irish Cattle Breeding Federation (ICBF), Link Road, Ballincollig, Co. Cork

Summary

- The Commercial Beef Value (CBV) aids beef farmers in making more informed decisions when purchasing non-breeding stock
- Dairy farmers are advised to use beef bulls with a high Beef sub-index in the DBI to produce better quality beef x dairy calves
- The Tipperary Farm herd has a higher CBV compared to the national average for their beef x dairy stock due to selective mating and purchasing decisions
- Integrating the movement of calves from the dairy farm to the beef farm has advantages for both parties

Introduction

The recent introduction of the Commercial Beef Value, or CBV, provides beef farmers with important information about an animal's profit potential. The CBV is an index that includes the genetic potential of beef traits that influence the overall farm performance. Due to the large increase in beef x dairy born calves in recent years, beef farmers now have more choice and information at hand to help make their purchasing decisions.

The Commercial Beef Value (CBV)

The CBV 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 (drystock) enterprises, such as carcass weight, conformation, and feed efficiency (Figure 1). Similar to the EBI and Euro-Star Indexes, CBV is depicted as a €uro value. A higher euro value signifies superior genetic merit across all considered traits. CBV values by breed are presented in Table 1. Herdowners can find their CBV on their HerdPlus Profiles. Genotyped animals being traded through marts will also have their CBV displayed on mart boards, providing more information and confidence to potential buyers.

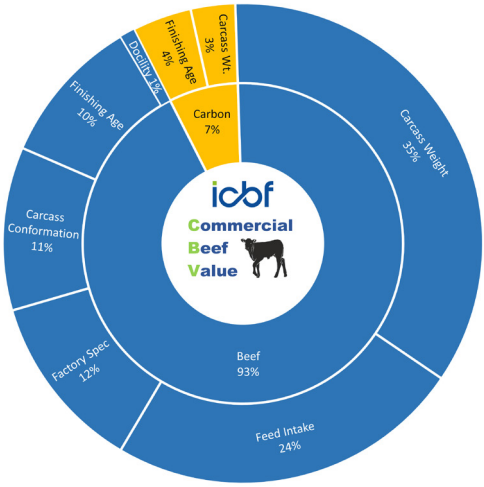


Figure 1. *The Commercial Beef Value*

Table 1. CBV 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	<€50	<€72	<€79	>€86	>€104
Aubrac	<€111	<€127	<€34	>€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

National trends

The genetic trends for the CBV in the national herd are presented in Figure 2. Improvements in the quality of suckler bred calves (green line) have been made year–on-year but beef from the dairy herd has been declining slowly annually. To reverse this decline, and enhance the beef quality from the dairy herd, breeding decisions need to be adjusted and more focused. The Dairy Beef Index (DBI) and CBV have key roles in bridging this gap. Instead of simply purchasing high CBV calves for the Tipperary Farm, the managers have strategically recommended beef bulls to the dairy farmers they source their calves from with a focus on high DBI beef bulls. This approach aims to enhance the quality of the resulting offspring in terms of CBV, which were then purchased by the Tipperary Farm.

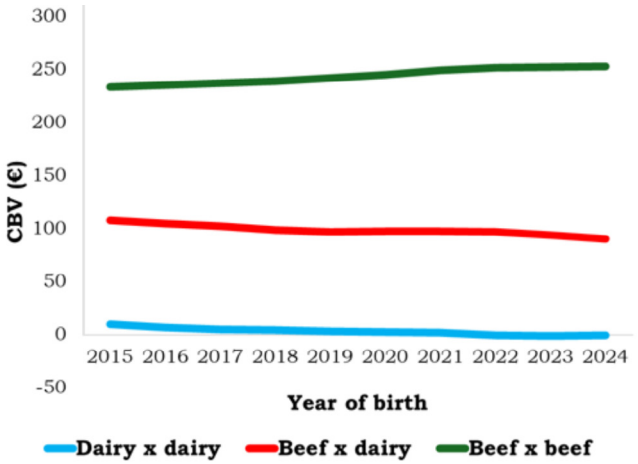


Figure 2. *Genetic trends for CBV*

Table 2. The DBI, Beef, Calving, and Carbon sub-indices for bulls used in the 2024 breeding season across the Tipperary Farm (n=14) and national herd (n=374)

Index	Group	N	Mean	Std Dev	Min	25th Pctl	Median	75th Pctl	Max
DBI (€)	National Herd	374	111	47	-125	85	118	143	209
	Tipperary Farm	14	157	25	120	138	151	177	198
Beef Sub-Index (€)	National Herd	374	120	48	-10	88	115	161	211
	Tipperary Farm	14	138	28	103	112	130	159	193
Calving Sub-Index (€)	National Herd	374	-8	56	-286	-44	6	34	76
	Tipperary Farm	14	19	29	-42	1	22	36	63
Carbon Sub-Index (€)	National Herd	374	-1	7	-15	-8	-1	6	12
	Tipperary Farm	14	0	8	-13	-9	4	6	10

Table 2 shows a comparison of the DBI and the sub-indices between the dairy-beef bulls used in the 2024 breeding season for the Tipperary Farm and the national herd. The average DBI of the 14 bulls recommended for the Tipperary Farm were €46 greater than the average DBI used nationally. Interestingly, the average beef sub-index of the beef bulls used was also €18 greater than the national average, suggesting that better quality beef calves are likely to be produced without negatively impacting the Calving or Carbon sub-index traits.

Tipperary Calf to-Beef demonstration farm

The Tipperary Calf to-Beef demonstration farm comprises 309 and 334 animals from 2023 and 2024 born cohorts, respectively (Table 3).

Table 3. Tipperary Calf to-Beef demonstration farm composition for 2023 and 2024

Tipperary Farm		2023			2024		
		Number	%	CBV	Number	%	CBV
Breed	AA	127	41.1	€89	172	51.5	€82
	AU	38	12.3	€137	48	14.37	€133
	BB				7	2.1	€135
	HE	18	5.83	€99	17	5.09	€87
	HO	76	24.6	-€4	35	10.48	-€12
	JE	4	1.29	-€62	1	0.3	-€31
	LM	12	3.88	€145	24	7.19	€146
	SA	34	11	€94	30	8.98	€90
Sex	F	109	35.2	€99	157	47.01	€100
	M	200	64.7	€60	177	52.99	€76
Group	Beef x Dairy	231	74.8	€101	298	89.22	€100
	Dairy x Dairy	78	25.2	-€10	36	10.78	-€13

The largest proportion of calves were from Angus sires representing 41% and 52% for 2023 and 2024, respectively. Other calves sourced in 2024 were sired by Aubrac, Saler, Limousin, Hereford, and Belgian Blue. Overall the beef x dairy calves exceeded the national average CBV, whereby Tipperary Farm 2024 born calves had an average CBV of €100 compared to €91 for the national average (Table 4). While the proportion of dairy x dairy calves purchased for the Tipperary Farm was lower in 2024, so too was the overall CBV compared to the national average CBV for this cohort. This reflects these dairy x dairy calves are the result of male calves produced from high EBI sexed dairy AI sires.

Table 4. Average CBV for national and Tipperary Farm for 2024 born animals

	National herd		Tipperary Farm	
	Number	Average CBV	Number	Average CBV
Beef x dairy	583540	€91	296	€100
Dairy x dairy	214464	€1	36	-€13

Calf purchasing specifications

When sourcing stock for the Tipperary Farm, a set of calf purchasing specifications were outlined.

Requirements:

All beef x dairy calves have to have a high beef genetic merit and be ranked in the top 40% on CBV. Most calves were of AI bred origin where the AI beef bull had been chosen from a pre-chosen list of AI bulls to use. Stock bull progeny were purchased at the discretion of the Tipperary Farm buyer

where these calves met the high beef genetic merit standards. Up to 10% of the male dairy calves were purchased if the calves were as of a result of sexed dairy AI matings. All calves had to be 14 days of age minimum upon arrival. Calves weighed at least 35 kg on departure and were in good health on arrival. Dairy farmers were required to vaccinate calves at a minimum of 5 days before transport with PI3 intranasal. The transport and notification of movements to the new herd number were the responsibility of the buyer. Calves were inspected and weighed on arrival.

Pricing of calves:

A base price was calculated using the average price of calves sold in Cork marts in 2023, with adjustments made to reflect CBV and weight differences from the base animal. The base price for beef x dairy male and female calves, weighing 55 kg and average CBV of €71, was €148 and €138, respectively.

Table 5. Pricing model for calves purchased for Tipperary Dairy Calf to Beef Demonstration Farm

Male base €148		Base kg 55 kg		Weight adjustment €5.00		
Female base €138		Base CBV €71		CBV adjustment €0.75		
Sex	CBV	Weight (kg)	Base Price	Weight Price Adjustment	CBV Price Adjustment	Final Calf Price
M	€81	40	€148	-€75.00	+€7.50	€80.50
F	€81	40	€138	-€75.00	+€7.50	€70.50
M	€71	55	€148	€0.00	€0.00	€148.00
F	€71	55	€138	€0.00	€0.00	€138.00
M	€71	60	€148	€25.00	€0.00	€173.00
F	€71	60	€138	€25.00	€0.00	€163.00
M	€51	55	€148	€0.00	-€15.00	€133.00

In future, the base price will be linked to the average price paid for an O3 carcass per kg in the previous year. Each percentage change in the beef price will be reflected in a similar percentage change in the base calf price for future years. The average beef price can be found here: https://www.bordbia.ie/farmers-growers/prices-markets/cattle-trade-prices/cattle-prices. Each 1 kg of liveweight above or below 55 kg resulted in the calf price being adjusted by €5 from the base price. Every €1 change in CBV resulted in a €0.75 adjustment in the calf price. Example calf prices based on the above specifications are in Table 5.

Dairy farmer's View

The dairy farmer's objective is to achieve a compact calving pattern for the herd. Currently, many dairy farmers are routinely calving 85% of their herd within six weeks from the start date. Grass, being the cheapest feed source, aligns with this objective as a compact calving schedule synchronizes the herd's feed demand with grass growth, thereby increasing profitability. Considerable time, effort, and cost have been invested in achieving this pattern, making farmers cautious about selecting beef bulls that could disrupt it.

The dairy farmer aims to use AI beef bulls that will not cause calving difficulties, as this is crucial for both animal and human welfare. Responding to this need, the AI industry is providing high genetic merit beef bulls through the DBI, which have acceptable calving difficulty figures for dairy farmers to use.

Gestation length is important to dairy farmers since each day a cow is not in milk incurs a cost. To manage this, some dairy herds have adopted a strategy of accepting longer gestation beef bulls at the start of the breeding season, switching to moderate gestation bulls mid-season, and finishing with shorter gestation bulls by the end of the breeding season.

Beef farmer's View

The CBV is a tool that beef farmers can use to source high-quality non-breeding stock. Through farm-to-farm agreements, beef farmers can influence the quality of beef x dairy calves by agreeing on a list of beef AI bulls that the dairy farmer will use during the breeding season. It is essential that calves are fed sufficient colostrum early post-birth, are healthy at the time of sale, and have received the PI3 vaccine at least five days before transport to minimise stress symptoms during the farm-to-farm movement.

Receiving all calves on an agreed day each week allows for organised labour, ensuring that all calves are properly weighed, penned, and fed upon arrival. The market offers €5 per kilo of live weight for heavier calves above a base weight, which also represents the cost of adding a kilogram to a calf when considering housing, bedding, milk replacer, and labour costs. Beef farmers prefer heavier calves, as they tend to be older and experience less setback from farm-to-farm movement.

Conclusion

The CBV will allow farmers to make more informed decisions when purchasing animals. Genotyped animals being traded through marts will have their CBV displayed on mart boards. When engaging in farm-to-farm sales, purchasers should request the CBV profile from the seller. The beef merit of calves can vary significantly even within the same breed.

Calf rearing: health and management

Jack Spillane[1], Chloe Millar[3], John Donlon[2] and Emer Kennedy[3]

[1]*Tipperary Dairy Calf to Beef Demonstration Farm, Ballyvadin, Co. Tipperary;*
[2]*Teagasc, Animal & Grassland Research Centre, Grange, Dunsany, Co. Meath;*
[3]*Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork*

Summary

- Intranasal pneumonia vaccines given prior to move to Tipperary Farm to allow for onset of immunity before movement and mixing
- Vaccination is the key management procedure to prevent clostridial diseases
- Calves are fed electrolytes on day of arrival
- Milk replacer is fed twice-a-day until 4-weeks old and calves are gradually transitioned to once-a-day milk feeding by 30 days old with solid feed offered as well
- Calves are gradually weaned at approx. 8-10 weeks old, when eating >1.0 kg concentrate and weighing 85 – 90 kg.

Health management

The main diseases of concern in the calves are pneumonia and clostridial diseases. The health management in Tipperary Farm focuses on reducing the impact of pneumonia through the strategic use of vaccines (Figure 1). Calves are typically transported to the farm at three weeks of age. An intranasal vaccine is administered to the calves on the dairy farm of origin 5 to 7 days prior to the movement. This vaccine provides protection against bovine respiratory syncytial virus (BRSV) and parainfluenza type 3 virus (PI3). BRSV and PI3 are the most common viral pathogens, which cause pneumonia in calves. Depending on the vaccine used the delay between administration of an intranasal vaccine and onset of immunity is as short as 5 to 10 days, this means that the calves have protection at the time of movement.

Infectious bovine rhinotracehtitis (IBR) is caused by bovine herpes virus 1 (BoHV1). BoHV1 can cause pneumonia and inflammation of the upper respiratory tract. Once infected by BoHV1 calves are infected for life. Calves may not show clinical signs of IBR but could shed virus in turn infecting other herd mates. In the Tipperary Farm, calves are vaccinated for IBR at three months of age using a live marker vaccine given intramuscularly.

Prior to the first grazing calves are also vaccinated using a ten in one Clostridial vaccine, two subcutaneous injections are given four weeks apart. Clostridial diseases are caused by bacteria which can be found in the farm environment, feed and water. Examples of Clostridal diseases include blackleg, tetanus and botulism. They are all diseases with a high

mortality rate, rapid onset clinical signs and are difficult to treat. Therefore, vaccination is the best option for protection.

Housing at the end of the first grazing season is also a high risk period for pneumonia. For that, reason calves are vaccinated using an injectable pneumonia vaccine 6 weeks prior to housing with a booster 4 weeks later. This injectable vaccine provides protection against BRSV, PI3 and *Mannheimia haemolytica* (a common bacterial cause of pneumonia). Injectable vaccines are useful prior to housing because they provide a longer duration of protection as compared to intranasal vaccines, however the period before the onset of protection is longer so they are less useful during the pneumonia risk period after movement to the farm.

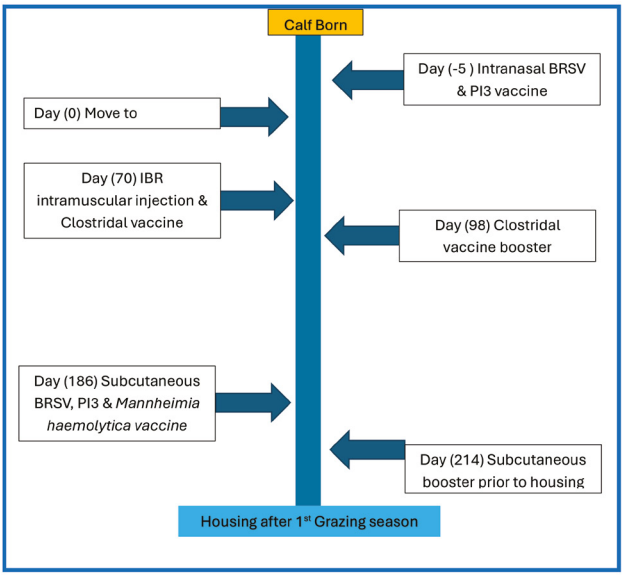


Figure 1. *Timeline of vaccinations given to calves during their first grazing season*

Arrival on farm and milk feeding

Calves are offered one sachet of electrolytes dissolved in two litres of warm water immediately upon arrival on the farm. One litre of milk per calf is also fed at feeding time on arrival day (approx. 3:30pm – 4:30pm).

From the day after arrival to 25 days old, calves are fed three litres of milk twice daily (6 litres/day). Milk replacer is mixed at 125g powder per litre (375g/calf/feed) and fed warm (38 – 40°C). Calves are fed using group teat feeders, all calves are observed during feeding to ensure they drink their allocated volume. Any calf showing signs of ill-health are isolated, treated and monitored, and details/treatments recorded. After feeding, all teat feeders and mixing equipment are thoroughly cleaned, using warm water and disinfectant/descaler. Calves have ad-lib access to clean water, concentrate and clean straw in a rack at all times.

From day 26 of age onwards, milk volumes are adjusted to transition calves to a once-a-day milk feeding plan with solid feed included in the diet. Details of the transition are presented in Table 1. On day 27 milk volume is reduced to 5.5 litres/calf, divided into two feeds (3.5 litres in the morning and 2 litres in the evening); on day 28, 5.5 litres/calf is fed once again but fed as 4 litres/calf in the morning and 1.5 litres/calf in the evening. At 29 days of age 5 litres milk/calf is fed – 4 litres in the morning and 1 litre in the evening; at 30 days old the transition to once-a-day milk feeding is complete – calves are fed 4 litres/calf/day in the morning. Milk is always fed warm (38 – 40°C), milk replacer is mixed at a rate of 125 g/litre, and fed at the same time every day.

Table 1. Milk feeding volumes when transitioning calves from twice-a-day to once-a-day milk feeding

Day	Water Volume	Feeding Rate	Total Litre/day	CMR grams
Day 26	6 litres (two feeds)	3L AM	6L	375
		3L PM		375
Day 27	5.5 litres (two feeds)	3.5L AM	5.5L	437
		2L PM		250
Day 28	5 litres (2 feeds)	4L AM	5.5L	500
		1.5L PM		188
Day 29	5 litres (2 feeds)	4L AM	5L	500
		1L PM		125
Day 30	4 litres (one feed AM)	4L AM	4L	500
		0L PM		0

Weaning

Calves are a minimum of 8-weeks at weaning. They need to be eating at least 1.5 kg concentrate/calf/day and weigh 85 – 90kg before they are weaned. Calves are weighed two weeks before weaning commences to monitor weight gain and assess if they are ready to be weaned. Weaning is gradual to minimise the post-weaning check in weight gain. Over the space of a week, the milk volume is gradually reduced every day from four litres to zero. Achieving a high concentrate intake before weaning is important as it promotes rumen development and the calf's ability to digest solid feed. An under developed rumen will inhibit the calf's ability to digest and utilise grass/concentrate. This could result in a nutrient deficiency which can significantly suppress the immune system, resulting in a poor response to vaccination, as well as resulting in calves becoming more susceptible to disease.

Calves are kept in the shed for a few days after weaning and a training wire is put in place in the shed to get them used to a fence. Calves are then turned out to grass, once the weather is suitable, and getting >1 kg concentrate/calf/day (16% crude protein) for approx. one month; they also have ad-lib access to straw during the first month at grass.

Signpost Advisory Programme and strategies to reduce on farm carbon footprint in a profitable manner

Leonard Betts
Teagasc, Carrigeen, Clonmel, Co. Tipperary

Summary

- The Signpost Advisory Programme launched in 2023 is designed to help farmers reduce their carbon footprint in a profitable manner
- A farmer's carbon footprint can be reduced by changing your management of hedges/trees which can sequester carbon.

The objectives of the Signpost Advisory Programme are:

- To lead and support the transition of Irish farming towards more sustainable farming systems.
- To contribute to the agricultural sector's efforts to reduce agricultural emissions in line with national policy objectives. Specifically, the Programme aims to reduce greenhouse gas emissions by 25% by 2030, in line with Climate Action Plan (2021) objectives. It also aims to reduce ammonia emissions by 1% below 2005 levels in the 2020 to 2029 period and by 5% from 2030 onwards.

In addition to these, the Programme also aims to improve water quality, maintain and in some cases improve biodiversity, reduce costs, and create more profitable and sustainable farming enterprises.

The Programme is a collaborative effort, led by Teagasc and includes all relevant industry partners and state bodies such as Bord Bia.

The principal actions recommended to reduce on farm emissions include:

- **Efficient Use of Fertilizers:** Use protected urea instead of calcium ammonium nitrate (CAN) or ordinary urea. This can significantly reduce nitrous oxide emissions. Protected urea allows farmers to spread urea-based nitrogen during the growing season without the worry of nitrogen being lost from the field through ammonia emissions. In a study carried out across four sites protected urea grew 0.5t DM/Ha more than urea or CAN fertilisers. Clover can also help to reduce use of chemical fertiliser.
- **Improve Manure Management:** Use low-emission slurry spreading (LESS) equipment. This can reduce ammonia emissions by up to 60% compared to traditional splash plate spreading.
- **Improve Animal Health and Breeding:** Healthier, more productive animals produce less methane per unit of output. Implementing a good herd health plan and using breeding strategies to improve productivity can help reduce emissions.

- **Improve Feed Efficiency:** More efficient conversion of feed into milk or meat reduces methane emissions per unit of output. This can be achieved through better feed quality, improved grazing management, and precision feeding.
- **Plant trees or hedgerows:** These can act as carbon sinks, absorbing CO_2 from the atmosphere. Hedgerows, composed of shrubs and trees, act as carbon sinks by absorbing carbon dioxide from the atmosphere during photosynthesis and storing it in their biomass and in the soil. This process is known as carbon sequestration.

  The potential of hedgerows to sequester carbon depends on several factors, including their age, size, species composition, and management. For instance, allowing hedgerows to grow out 1m either side and upward can increase sequestration by 1-2 t carbon per ha per year.

  There is over 18km of hedgerow on Ballyvadin farm. The total space for nature area as per the BISS application which includes tree groves and hedges is 13.66% of the total farmed area. The aim on this farm will be to avoid topping the hedges and only routine side trimming to enhance the carbon sequestration potential of the farm.

  Going forward, new hedgerow planting could be looked at on this farm to further enhance carbon sequestration potential.

  In addition to their role in carbon sequestration, hedgerows also provide other environmental benefits. They act as field boundaries, provide animals with shelter, support flood control and act as buffers for slurry and fertiliser applications. They also have a huge importance for biodiversity on farms. The farm at Ballyvadin has a very high biodiversity value.
- **Renewable Energy:** Consider using renewable energy sources on your farm, such as solar panels or wind turbines. Ballyvadin farm should consider installing roof solar panels to further enhance its carbon footprint. Ballyvadin farm have energy costs to heat water for feeding milk replacer to calves, electric fences, own well and shed lighting, solar panels would be a worthwhile investment.

Remember, many of the above strategies can also improve farm profitability. Farmers are part of the solution to emissions; this will create opportunities for income generation.

Agricultural sustainability support and advisory programme (ASSAP)

Noel Meehan[1] and Claire Mooney[2]

[1]ASSAP Manager, Teagasc, Deerpark, Ballinasloe, Co. Galway; [2]ASSAP Advisor, Teagasc, Dromin Rd., Nenagh, Co. Tipperary

Summary

- Ireland has been set a target by the E.U. Water Framework Directive of achieving 'Good Status' for all waters
- The River Basin Management Plan for Ireland sets out Irelands plan to achieve good status
- The ASSAP is a free and confidential advisory service and is available to farmers in 190 Priority Areas for Action (PAA's) and is a key part of helping achieve good status
- The Farming for Water EIP provides funding for farmers to implement actions that prevent the loss of nutrients and sediment to waters.

Introduction

In Ireland all water policy and management is led by the Water Framework Directive. Under this directive Ireland has been set a target of achieving at least 'good status' for all waters. However, despite a lot of good work over the last 20-30 years we are falling short in achieving this target.

Ireland's response to challenges around water quality is set out under the national river basin management plan. As part of this plan, 190 priority areas for action (PAA) have been identified across the country where water quality improvements need to be made. The recently launched Farming for Water EIP is available to farmers in PAAs and provides financial support to farmers to put in place specific measures that are beneficial to water quality.

Implementation of the ASSAP

The Local Authority Waters Programme (LAWPRO) have deployed a catchment assessment team of 60 scientists across the country to assess streams in PAA's in detail and identify the significant pressures impacting water in each PAA. Where an agricultural pressure is identified the farmers in the area will receive the offer of a free farm visit from an advisor under the ASSAP programme.

The ASSAP programme is made up of a group of 46 advisors (20 working under Teagasc jointly funded by DHLGH and DAFM and 26 advisors from the dairy processing co-ops). These advisors are available to provide farmers with a free and confidential advisory service that farmers in a PAA can avail of on a voluntary basis.

The advisors will meet the farmer to assess the farm for any potential issues that are having an effect on the water quality in the local stream. At the end of a visit the advisor and farmer will agree on where the farmer should focus improvements or actions, if any are required, on their farm.

The practical advice will be designed to 'break the pathway' and prevent nutrients and other contaminants from entering water.

Recommended actions for this farm

Land management

- Divert runoff from the farm roads to the fields
- Implement buffers when spreading organic and inorganic manures
- Fertiliser 3m
- Slurry 5m
- Slurry 10m* (2 weeks either side of closed period)
- Install Water bars along roads to divert rainfall into fields
- Re-camber roads away from streams
- Fence all drains on farm to exclude livestock and prevent bank erosion
- A bund needs to be installed on all bridges / crossing points so as to prevent direct discharge from farm roads to watercourses
- Targeted planting of hedges to protect critical source areas along watercourses, consider use of riparian margins in ACRES, Water EIP and the Woodland for Water Scheme would also be a good fit for the farm

Nutrient management mitigations

- Use of Less & protected Urea
- Use Pip maps demonstrating highest risk areas for N& P losses and where to avoid for early /late applications of nutrient
- Use the NMP for the farm to maximise nutrient use efficiency and reduce the reliance of chemical fertiliser

Farmyard management

- Do not stack round bales more than 2 high unless effluent collection facilities present
- Separate of Clean & Dirty Water in the farmyard
- Ensure all shoots and gutters are working

Better Farming for Water campaign

The aim of the '**Better Farming for Water**' campaign is to support and accelerate the adoption of actions on all farms to improve all water bodies (where agriculture is a significant pressure) to *Good or High Ecological Status*.

The objective of the '**Better Farming for Water**' campaign will be to support all farmers to reduce the loads of nitrogen, phosphate, sediment and pesticides entering our river network through either diffuse or point source pathways from agricultural sources. This will be achieved through the on-farm adoption of **8-Actions for Change**, which involve better nutrient, farmyard and land management.

These **8-Actions for Change** provide a structured, relatable approach for farmers to effectively engage with improving water quality. They will help to advance the understanding of the need for actions, and instil confidence that the actions undertaken are worthwhile and will result in sustained, positive improvements in water quality. The **8-Actions for Change of the campaign** are spread across 3 areas of the farm Nutrient Management, Farmyard Management and Land Management.

The 8-Actions for change of the campaign are:

- Reduce purchased nitrogen (N) and phosphorus (P) surplus per hectare.
- Ensure soil fertility is optimal for lime, phosphorus and potassium.
- Ensure application of fertiliser and organic manure at appropriate times and conditions.
- Have sufficient slurry and soiled water storage capacity.
- Manage and minimise nutrient loss from farmyards and roadways.
- Fence off watercourses to prevent bovine access.
- Promote targeted use of mitigation actions such as riparian margins, buffer strips and sediment traps to mitigate nutrient and sediment loss to water.
- Maintain over-winter green cover to reduce nutrient leaching from tillage soils.

Farming for Water EIP

The Farming for Water EIP was launched in 2024, and will continue until the end of 2027. The project is a collaboration between Teagasc, LAWPRO and Dairy Industry Ireland (DII) together with DAFM and DHLGH. A fund of €50 million is available to farmers in PAAs with the aim of delivering targeted actions to reduce losses of nutrients, sediment and pesticides from agricultural lands. The ASSAP advisors will engage with up to 15,000 farmers across the country to participate in the EIP where water quality needs to be improved. It will assist farmers in implementing voluntary measures on farm above regulatory requirements and ensure the "right measure is put in the right place".

Conclusion

The ASSAP programme is collaborative and the funding and support received from DAFM, DHLGH and the dairy industry has been critical to allow a new approach to enabling local landowners to engage positively in seeking solutions to local problems with the support of a confidential advisory service. Support from the farming organisations for the programme has been very strong, this is vital in communicating and informing farmers about the ASSAP programme and the '**Better Farming for Water**' campaign, together with the Farming for Water EIP will further enable mitigation actions to be implemented on farm and in turn improve water quality.

Grassland management and performance

Chloe Millar[1], Jack Spillane[2], Michael Egan[1] and Ciarán Hearn[1]

[1]Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork; [2]Tipperary Dairy Calf to Beef Demonstration Farm, Ballyvadin, Co. Tipperary

Summary

- The farm was previously in tillage prior to the lease commencement
- The grazing infrastructure has been developed to allow for a rotational grazing management system
- All paddocks have been reseeded in the past two to three years
- The target is to grow 12 t DM/ha/year with perennial ryegrass/white clover swards

Farm history

The 112ha block of land was leased on April 1st 2022, at this time approximately 20ha was in grass, while the remaining area had been in tillage (spring barley, spring oats and fodder beet). Since the farm was leased, approximately 12ha per year (2022, 2023 and 2024) has being used to produce spring barley. All other land has been reseeded, with approx. 80ha reseeded over the past 2-3 years.

Farm grazing infrastructure

A lot of grazing infrastructure in the farm has been redeveloped. At the start of the lease in 2022, there was 7km of farm roadways put in across 112ha. There were some existing roadways, which were mostly high quality. Some of the roadways needed upgrading to make them suitable for regularly moving animals. In spring of 2024, 1.5km of the existing roadways were upgraded.

The farm was fenced into 47 paddocks in April 2022. The paddocks are approx. 2.5ha in size. There was previously no water network on the farm; a total of 1.5 km of 45 mm water pipe, in addition to 25 mm secondary water pipes, was installed in 2022. These pipes service approximately 50 water troughs (690 Litres/150 gallons), with all water troughs positioned centrally in paddocks.

Reseeding and over-sowing

The importance of sward renewal is key to ensuring increased levels of herbage production and animal performance. Including white clover in swards increases both animal and herbage and also reduces chemical nitrogen fertiliser requirement. White clover swards can be established successfully by reseeding, using (5 kg/ha) of clover with 30kg/ha of perennial

ryegrass. Clover oversowing with 6.5 kg/ha should be carried out in the April and May period, it is important that there is adequate soil moisture post establishment. Post sowing management is vital for reseeding and oversowing, paddocks should be grazed at low covers, 1100 kg DM/ha for three/four rotations, heavy cuts of silage should be avoided for the first 12 months.

All the current swards were established with a mixture of perennial ryegrass and white clover. All paddocks reseeded to date have used grass mixtures including high Pasture Profit Index varieties (Table 1) (cv. AberGain, AberChoice, Ballintoy and Ballyvoy; 27 kg/ha)) and medium leaf white clover (cv. Buddy; 5 kg/ha). Any paddock that had a clover content <10% was over-sown in April/May the following year.

Table 1. Partial view of the Pasture Profit Index 2024.

Variety Details			PPI Sub-Indexes (€ per ha per year)							PPI
Variety	Ploidy	Heading date	Spring	Summer	Autumn	Quality	Silage	Persistence	Grazing Utilisation	Total €/ha per year
Galgorm	D	Inter	60	66	67	25	47	0	*	266
Aberspey	T	Inter	26	56	59	65	34	0	****	240
Aberclyde	T	Inter	38	61	41	44	45	0	****	229
Barwave	D	Inter	84	54	55	-19	52	0	*****	227
Gracehill	D	Late	37	53	54	11	70	0	**	225
Tollymore	T	Inter	54	49	44	21	70	-13	*****	225
Abergain	T	Late	24	53	46	48	45	0	****	217
Abermagic	T	Inter	22	57	74	18	27	0	***	198
Nashota	T	Late	45	48	33	28	39	0	*****	194
Aberplentiful	T	Late	50	56	46	11	29	0	***	193
Glenfield	D	Late	50	56	36	4	44	0	*****	191
Aberwolf	T	Inter	43	49	46	11	37	0	**	186
Ballintoy	D	Late	34	51	42	24	33	0	****	183
Moira	T	Inter	95	31	52	-32	36	0	***	183
Astonconqueror	T	Inter	63	46	41	-10	42	0	****	182
Anurad	T	Late	45	45	37	32	21	0	****	180
Meiduno	T	Late	39	48	42	28	22	0	****	180
Aberchoice	T	Late	7	58	54	22	32	0	**	174
Fintona	D	Inter	40	45	45	-4	47	0	*****	174
Abergreen	T	Inter	28	62	66	5	12	0	*	173
Dunluce	D	Inter	14	50	48	24	35	0	****	172
Aberbann	T	Late	-5	74	71	-25	56	0	***	171
Ballyvoy	D	Late	57	38	43	19	13	0	*	170
Bowie	D	Late	13	45	50	29	26	0	*	163
Gusto	D	Inter	40	43	60	2	10	0	****	156

Soil fertility

Optimal soil fertility is crucial to establishing productive swards. Grass and white clover swards require a soil pH of 6.5 and > Index 3 for P & K, for optimum clover establishment and maximising nitrogen fixation. There has been major efforts made to improve the soil fertility status over the past two years (Table 2), by targeting slurry and compound fertiliser to paddocks with the greatest requirement. The most recent soil test results, indicate that lime is needed on 20.2ha this year to increase the soil pH >6.3. The phosphorus levels on farm have not changed much over the 2-year period, 3% of the farm declined from Index 3 to Index 2; more targeted use of slurry and chemical fertiliser is required to bring the whole farm to a target Index 3 and 4 for phosphorus. The targeted use of artificial potassium fertiliser over the past two years has increased the area of the farm with optimal levels of soil potassium where 69% of the farm now in Index 3 or 4.

Optimising pH, phosphorus and potassium soil status will allow the farm to grow more grass, while maintaining sufficient levels (>20%) of white cover in grazing swards.

Table 2. Area of farm (ha) in each soil fertility category from soil samples taken in 2022 and 2024

Total area (ha)		2022	2024
		104.4	104.4
Soil pH	pH > 6.2	88%	81%
	pH < 6.2	12%	19%
K Index	1 & 2	44%	31%
	3 & 4	56%	69%
P Index	1 & 2	44%	47%
	3 & 4	56%	53%

Grass growth and grazing management

All grassland data (farm cover, reseeding, fertiliser, etc) is recorded in PastureBase Ireland (PBI). In 2023, the farm grew an average of 12.4t DM/ha (Table 3), 1.9 t DM/ha more than the average pasture production on Irish beef farms for 2023. Relatively low levels of chemical nitrogen (N) fertiliser (70 kg N/ha) were spread on the farm in 2023 (Table 5) so this growth can be largely attributed to the high level of reseeding that took place in 2022. To maintain this level of pasture production in 2024 the level of chemical N applied has been increased to date, with a target to apply approximately 150 kg/ha while also targeting an average sward white clover content of >20%.

Table 3. Total, grazing and silage pasture production (t DM/ha) and defoliation events (grazing and silage) for 2023

Paddock category	Grass yield (t DM/ha)	No. of grazing events	Grazing yield (t DM/ha)	No. of silage cuts	Silage yield (t DM/ha)
Average	12.4	5.7	7.7	1.3	4.7
PBI Top 10%	16.7	5.8	8.7	1.4	8.0
PBI Bottom 10%	7.7	5.2	6.2	0.6	1.5

PBI – Pasturebase Ireland

A total of 47 farm cover walks were recorded in 2023, using this data, the grazing season was extended to >300 days (Table 4). The farm was still in a transition period in 2023, with a lower average-stocking rate of 1.85 LU/ha. The farm is currently stocked at 2.49 LU/ha (Table 5), this stocking rate will require the farm to grow 12 – 13 t DM/ha/year consistently.

Maintaining pre-grazing yields between the target of 1200-1500 kg DM/ha can offer high quality feed to the animals. The pre-grazing yield has been kept low on the farm where newly reseeded paddocks are grazed at lower pre-grazing targets to encourage good tillering of swards – this figure will gradually increase to approximately 1400 kg DM/ha.

Table 4. Key grassland management performance indicators from three dairy calf to beef research studies across Ireland in 2023

Key performance indicator	Tipperary Demonstration	Grange	Johnstown Castle	Teagasc target
Farm covers	47	39	28	30
Days at grass	300	235	241	280-300
Stocking rate (LU/ha)	1.85	3.0	2.31	2.5
Magic day	3rd May	18th May	09th May	20th April
Average pre grazing yield (kg DM/ha)	1200	1750	1650	1400

In 2024, 40ha (38%) of the farm was closed up for silage on April 18th and harvested on May 25th. This first cut silage will provide the bulk of the winter feed supply for the farm. Further silage cuts will be harvested from surplus grass, when there is periods of excess growth over the summer period.

Table 5. Key performance grassland management indicators on the Tipperary Demonstration farm in 2023 and 2024

Key performance indicator	2023	Year to date (1st June) 2024
Farm covers	47	16
Turnout date	January 27th	January 17th
Housing date	December 1st	-
Chemical N applied	70 kg N/ha	72 kg N/ha
Organic N applied	9 kg N/ha	27 kg N/ha (2,500 gallons/acre)
% Farm with clover[1]	68%	70%
Stocking rate (LU/ha)	1.85	2.49
Average pre grazing yield (kg DM/ha)	1200	1200

[1]*Farm area with 20% sward clover content*

Conclusion

The farm has been established to support an intensive grass based dairy calf to beef production system. There has been a strong focus on reseeding and the inclusion of white clover in swards. The key challenge will be to maintain >20% clover in the swards to optimise animal performance. An effective farm roadway network and grazing infrastructure has been established to ensure that a long grazing season can be achieved, as the animals have close access to grass. The farm will be targeted to maintain high animal grazing performance as well as ensuring the farm is self-sufficient for grazing and silage DM production in the years ahead.

Grass10 campaign - Improving sustainability of our grass based systems

John Maher[1], Niamh Doyle[2] and Joseph Dunphy[3]

[1]Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork; [2]Teagasc, Johnstown Castle, Co. Wexford; [3]Teagasc, Athenry, Galway

Summary

- The Grass 10 campaign promotes sustainable grassland excellence
- The objective of the campaign is to achieve 10 grazings/paddock per year utilising 10 ton of pasture dry matter/ha
- Achieving high grass quality remains a challenge for the industry. Animals need to enter the right pre-grazing yield
- There is a requirement to focus the grassland industry on the establishment and management of grass/clover swards.

Introduction

The requirement for resilient sustainable systems of meat production has never been as high. There is continual change in global agriculture due to fluctuation in markets, agricultural policy, societal expectations and environmental constraints. As a result, there will be further requirement to increase efficiency and sustainability in Irish pasture-based systems.

Grass10 Campaign

The Grass10 campaign aims to promote sustainable grassland excellence on Irish livestock farms (dairy, beef and sheep). The Grass10 partners are Department Agriculture Food & the Marine, Grassland Agro, AIB, FBD and the Irish Farmers Journal. The primary objective of the Grass10 campaign is to utilise 10 tonnes of pasture dry matter (DM)/ha per year by achieving 10 grazings per paddock on grassland farms. The following farm practice changes were prioritised:

- Improving grassland management skills
- Improving grazing infrastructure
- Soil fertility — improve soil pH, P and K levels.
- Increase the level of reseeding
- Improving the level of clover in pastures
- Increasing PastureBase Ireland (PBI) usage

The Grass10 campaign will continue to focus on increasing grass growth and utilisation of home grown feed on Irish grassland farms in a sustainable way.

Improving the level of grazing management

Currently, there are many Grass10 grazing courses operating across the country and this model of improving the level of grassland management and measurement locally has worked well. This is fundamental work carried out during the Grass10 campaign and the plan is to further develop this knowledge transfer model to increase farm level adoption of grassland measurement and management using PastureBase Ireland (www.pbi.ie).

Every additional grazing achieved per paddock/field will increase the level of grass grown by about 1500 kg DM/ha (Pasturebase Ireland data). The length of the grazing season can improve also. Every extra day the animal spends at grass will increase profit by about €2/LU and also reduces greenhouse gas and ammonia emissions. Emissions are reduced by animals feeding themselves and spreading their own manure but also because the animal is eating a superior diet.

White clover

There is now an increasing demand and requirement to include white clover in grazed pastures due to its ability to biologically fix nitrogen, allowing for significant reductions in chemical nitrogen fertiliser while maintaining herbage production. White clover can also increase cattle performance by an additional 0.1 kg/day due to its greater nutritional value. There are challenges in establishing clover at farm level. These issues revolve around time of sowing, soil fertility, herbicide choice and grazing management. There is a huge requirement to focus on educating the grassland industry in the establishment and management of grass/clover swards.

Nutrient management

Grass requires a continuous and balanced soil nutrient supply to achieve its production potential. Many drystock farms are capable of growing in excess of 10 tons DM/ha annually. This level of grass production requires reasonable quantities of nutrients such as Nitrogen (N), Phosphorous (P), Potassium (K) and Sulphur (S) supplied at the correct time.

Farmers need to make more focused decisions regarding fertiliser and manure management strategies for their farms. High fertiliser prices and strict limits under the Nitrates Action Plan have led to decreasing trends in national soil fertility. A recent review of soils tested at Teagasc indicates that the majority of soils in Ireland are below the target levels for pH (i.e.6.3) or P and K (i.e. Index 3) and will be very responsive to application of lime, P & K. On many farms sub-optimal soil fertility will lead to a drop in output and income if allowed to continue. It is important to complete a farm fertiliser plan to guide fertiliser / manure decision and to avoid further decline in soil fertility levels. Teagasc has highlighted 5 steps for effective soil fertility management: 1) Have soil analysis results for the whole farm. 2) Apply lime as required to increase soil pH up to target pH for the crop. 3) Aim to have soil test P and K in the target Index 3 in all fields. 4) Use

organic fertilisers as efficiently as possible. 5) Make sure the fertilisers used are properly balanced.

The return in grass production from correcting soil fertility is very high. Increasing soil P and K indices from Index 1 to Index 3 will increase grass DM production by about 3 ton /DM/ha under a grazing system.

Liming acidic soils to correct soil pH will result in the following;

- Increased grass and crop production annually
- Increase the release of soil N by up to 80 kgN/ha/year (60 units/acre/year)
- Increase the availability of soil P and K and micronutrients
- Increase the response to freshly applied N, P & K as either manures or fertiliser

Grass quality

The key to mid-season management is to ensure a constant supply of high quality grass ahead of the animals at all times. High weight gains can be achieved from a grass-only diet once the correct pre-grazing yield is offered and high levels of utilisation are continuously achieved. Grass stem and dead material are lower in feed quality, difficult to graze, reduce animal intake, grow less grass and result in poorer live weight gain. The difference in average daily gain between grazing the right cover of grass (1300-1600 KgD/ha) and grass of poor quality is 0.25 kg of weight gain per day. Over 200 days, this is about 50 kg of weight gain, which can result in an additional €100/animal.

High animal performance will be achieved by maintaining a consistent grass supply for the herd and monitoring farm grass cover weekly. This will allow decisions to be made to alter grass supply early; for example, adjusting stocking rates or removing surplus grass.

Grazing Infrastructure

Most farmers know that having a paddock system delivers a lot of benefits for them and their farm, and in turn have invested money in creating a paddock system. Good grazing infrastructure will enable more days at grass, provide easier management of grass at times of peak growth and make grazing less weather dependent. The target should be to design a paddock for three days grazing followed by a 20-25 day recovery period. Proper subdivision of grazing land into paddocks is essential to be able to successfully manage pastures and achieve desirable rotation intervals. Paddocks should ideally be connected with an efficient roadway system (grass roadways are adequate far away from the yard) so that the herd can move from one paddock to any other paddock on the farm. The roadway should be designed to allow animals to be returned to housing during inclement weather in the Spring & Autumn as easily as possible and by one person. Long narrow paddocks should be avoided, as it results in

walking over ground to graze the end of the paddocks, increasing the risk of poaching in difficult grazing conditions. Keep paddocks square if possible. Where rectangular, the depth of the paddock should be no more than twice the width. In excessively large paddocks, where grazing takes too long (> 3 days), grass re-growths rates are reduced.

Decide on the number of paddocks required; have at least six or seven paddocks/grazing divisions for each separate grazing group of animals. Minimising the number of grazing groups reduces the number of paddocks needed.

A good water supply is extremely important for production, health and welfare of livestock. The water supply system must be good enough to supply adequate water needs in the paddocks. The guidelines are outlined below.

Water intake:	10 - 15 litres per 100kgs body weight per day
Trough size:	Allow 5-7 litres per livestock unit
Ballcock:	Medium pressure-gives flow rate of 32 Litres/min versus 8 Litres/min with high pressure
Main pipe layout:	Ring/Loop system preferable

Identify the most appropriate water trough(s) position in each paddock. Where possible, share a trough between paddocks but, more importantly, position the troughs to allow further, possibly temporary, subdivision of paddocks.

Teagasc DairyBeef500 Campaign

Alan Dillon[1],Tommy Cox[2], Gordon Peppard[3] and Fergal Maguire[4]

[1]Teagasc Advisory, Gortboy, Kilmallock, Co. Limerick; [2]Teagasc Advisory, Mohill, Co. Leitrim; [3]Teagasc Advisory, Kilkenny , Co. Kilkenny; [4]Teagasc Advisory, Dunsany, Grange, Co. Meath

Summary

- Compared to 2022, profitability of DairyBeef500 monitor farms increased by 3% in 2023, to €542/hectare (ha)
- Carcass weights decreased by 9.6 kg and 12.1 kg for dairy x dairy and beef × dairy steers, respectively, between 2022 and 2023
- Finishing age reduced by 0.5 months for dairy steers, and 0.4 months for dairy-beef steers, between 2022 and 2023
- Stocking rate remains the primary driver of profit on DairyBeef500 monitor farms. Exceeding €500/ha net profit is difficult for farms stocked under 170 kg organic nitrogen/ha.

Introduction

The Teagasc DairyBeef500 campaign began in 2021 and will run for an initial 5-year period. The campaign centres on a cohort of monitor farms located nationwide, which incorporates best practice in an effort to increase profitability in a sustainable manner. Additionally, the campaign organises a new entrant dairy calf-to-beef, five-day training course, which is in its second year. Thirty-eight students will have completed the course by the end of 2024. To maximise dissemination from the campaign, the DairyBeef500 team assist local Teagasc B&T advisors organise dedicated dairy-beef discussion groups and host open days in association with media outlets.

Profitability

The 15 DairyBeef500 monitor farms complete Teagasc E-Profit Monitors annually. Despite the very challenging weather conditions which prevailed in 2023, profitability on the farms increased by 3% relative to 2022. The average net margin, excluding all subsidies, was €542/hectare (ha) in 2023 compared to €517/ha in 2022. During 2023 beef prices increased by 4% from €4.77/kg to €4.96/kg carcass weight. The excessive rainfall in 2023 resulted in delayed turnout to grass in spring and earlier housing in autumn. The shorter grazing season meant animal weight gain from grazed grass was reduced, and extra quantities of concentrates and silage were required instead. On a number of the monitor farms, the increased beef price in 2023 was offset by a lower carcass weight.

The net profit ranged from €47/ha (one of the new entrants) to €1459/ha (one of the established farms operating a high-output bull finishing system).

Gross output across the programme farms averaged €3330/ha resulting in an average gross margin across the group of €1341/ha. Variable costs ranged from €1030/ha to €2798/ha with an average of €1990/ha for 2023, which is an increase of 1% compared to 2022 (Table 1). Feed and milk replacer expenditure increased by 7% despite the cost of inputs dropping from the inflated prices of 2022. Fertiliser expenditure decreased by 23% as result of fertiliser price dropping from historic highs seen in 2022. Contractor costs increased by 20% in 2023, mainly due to increased volumes of silage being harvested and extra slurry spreading costs resulting from prolonged housing periods.

Table 1. Mean variable costs (€/ha) on DairyBeef500 monitor farms: 2023 vs. 2022

Variable cost	2023	2022	% Change
Feed/milk/calf ration/forage	1187	1112	+7%
Fertiliser	288	354	-23%
Vet	128	125	+2.4%
Contractor	173	144	+20%
Other	214	178	+20%
Total	1990	1913	+4%

Fixed costs across the programme farms averaged €799/ha in 2023, an increase of 3% (Table 2). From 2022 to 2023, no major increases in individual fixed costs were recorded on programme farms. A number of large-scale investments such as buildings and machinery have been put on-hold due to rapid increase in cost of materials. It is expected these delayed investments will recommence in 2024 and beyond resulting in an increase in fixed costs to in excess of €1,000/ha on many of the farms.

Table 2. Mean fixed costs (€/ha) on DairyBeef500 monitor farms: 2023 vs. 2022

Fixed cost	2023	2022	% Change
Machinery running	137	136	n/a
Depreciation	162	153	+6%
Repairs/maintenance	114	120	-5%
Land lease	125	121	+3%
Others	261	244	+7%
Total	799	774	+3%

Assessing the effect of stocking rate on the profitability of DairyBeef 500 farmers

The current target net margin for the DairyBeef 500 program is €500/ha, excluding direct payments. Many factors such as calf price and beef price at the date of sale will have a direct impact on the gross output and profitability of this enterprise; however, the main factor within the farmers' control affecting profitability of these systems is the stocking rate operated at farm level.

An analysis of the stocking rate of all DairyBeef 500 program farmers in 2023, showed that in order to meet the program target net margin, in general, stocking rate needed to be at a minimum of 2.1 livestock units per hectare (LU//ha), equivalent to 167 kg organic N/ha. At this stocking rate, 70% of program farmers met the profit target, where only 15% of farmers below this stocking rate met it. Program farmers stocking rates ranged from 1.73 to 3 LU/ha or 136kg to 230 kg organic N/ha. Decreasing stocking rate by 10% from 2.2 LU/ha will reduce gross output per hectare by ~ €267/ha and further stocking rate reductions will have greater impact as can be seen in Table 3.

Table 3. Sensitivity analysis of stocking rate (livestock units (LU)/ha)) reduction on DairyBeef500 monitor farm output and profitability

Stocking rate reduction %	Stocking rate (LU/ha)	Gross output/ha	Gross output/ha reduction
0	2.20		
10	2.00	-€267	-€107
25	1.65	-€745	-€298

Challenges to dairy calf to beef enterprises going forward

To achieve net margins of >€500/ha, stocking rates of over 170 kg organic N/ha appear to be necessary. This means that these farms require a nitrogen derogation; however, some producers are concerned about the future status of Ireland's nitrogen derogation. If farm stocking rates are required to be less than 170 kg organic N/ha, the opportunity to obtain a net margin of €500/ha is reduced unless calf purchase prices reduce, beef prices increase and/or input costs reduce substantially. With the changes in nitrate allowances for young cattle, it will be necessary to achieve younger finishing age in steers to support high stocking rates, as the revised allowances for steers >12 months have increased.

Grass

Grazed grass is the cheapest animal feed for beef production in Ireland. The cost per kg of live weight gain from grazed grass is approximately one-fifth of an indoor silage and concentrate diet. Consequently, on DairyBeef 500 farms, the aim is to maximise weight gain from grazed pasture over an extended grazing season. The length of the grazing season has a big impact on the level of live weight gained from grass. In 2023, thirteen out of the fourteen farmers had cattle out by mid-February; however, weather conditions deteriorated in March, with many farms needing to rehouse cattle until early-April. In the autumn, all farms housed their cattle earlier than planned due to poor grazing conditions. The unfavourable weather in 2023 had a big impact on animal performance and costs, as cattle were indoors for longer.

Based on the group report from PastureBase Ireland, the monitor farms with over 20 grass measurements grew 10.6 t grass DM/ha in 2023. To support this level of grass production farmers used 161 kg N/ha across the

year. Soil fertility across the farms has increased since the inception of the programme with a big emphasis on correcting soil pH in the last 12 months. Nevertheless, all farms still have at least 20% of the farm sub-optimal for soil fertility. Almost three-quarters of programme farms have incorporated white clover into their swards through reseeding and over-sowing and 40% of farms have established red clover silage swards to reduce N inputs and increase silage production and feed value.

Carcass performance on Dairybeef 500 farms

In dairy-beef systems, ensuring high levels of individual animal performance from arrival on-farm until finishing is key to maximising carcass output. Obtaining maximum carcass weight at a reduced age is one of the main drivers of profitability, while it will also reduce the carbon footprint of beef produced. Irish agriculture is obliged to reduce greenhouse gas emissions by 25% by 2030, as set out in the Climate Action Plan. One of the many strategies to achieve this target is the reduction in the finishing age of animals on beef farms by up to three months by 2030 relative to 2018. Slaughter performance for steers, heifers and bulls were analysed for 2022 and 2023 across all Dairy beef 500 farms. Variance was found between farms and between years.

Average carcass weight for dairy-sired steers declined by 9.6 kg between 2022 and 2023 (Table 4). Finishing age also reduced by 15 days to 24 months. Carcass conformation score did not change. Beef-sired steers followed a similar trend to dairy cross steers, with a 12.1 kg lighter carcass, a 12-day reduction in finishing age and similar carcass conformation for 2023 compared to 2022.

Table 4. Dairy and dairy × beef steer slaughter performance on Dairybeef 500 farms

Year	Carcass weight (kg)	Number	Conformation score	Slaughter age (months)	Price (€/kg)	Carcass value (€)
Dairy × Dairy Steers						
2023	298.0	863	O-	24.0	4.84	1441
2022	307.6	764	O-	24.5	4.63	1425
Difference	-9.6	+99	N/A	-0.5	+0.21	+16
Beef × Dairy Steers						
2023	299.3	243	O=	22.7	5.05	1511
2022	311.4	248	O=	23.1	4.84	1507
Difference	-12.1	-5	N/A	-0.4	+0.21	+3.7

Mirroring the performance of steers, average carcass weight for heifers was 5.3 kg lighter in 2023 than in 2022. However, this reduction in weight was not associated with a younger age. In fact, average slaughter age of heifers was one month older in 2023. Furthermore, carcass conformation score reduced by one grade from O+ in 2022 to O= in 2023.

Table 5. Beef × dairy beef heifer slaughter performance on Dairybeef 500 farms

Year	Carcass weight (kg)	Number	Conformation score	Finishing age (months)	Price (€/kg)	Carcass value (€)
		107.0	O=	21.5	5.20	1312
2022	257.7	205.0	O+	20.5	4.84	1247
Difference	-5.3	-98	-1 grade	+1.0	+0.36	+65

Bull carcass weight had the biggest drop, whereby on average they were 24.5 kg lighter in 2023 than in 2022. Again, similar to heifers, this reduction in weight was not associated with a younger finishing age, rather an increase in age of 20 days. Carcass conformation remained the same, with an average grade of O= recorded in both years.

Table 6. Dairy × dairy bull slaughter performance on Dairybeef 500 farms

Year	Carcass weight (kg)	Number	Conformation score	Slaughter age (months)	Price (€/kg)	Carcass value (€)
		308	O=	21.5	4.70	1360
2022	313.9	267	O=	20.8	4.60	1443
Difference	-24.5	+41	N/A	+0.7	+0.1	-84

Summary

The overall performance of cattle on the DairyBeef500 monitor farms dropped in 2023. This can be attributed to poor weather conditions leading to late turn out to pasture in spring and early housing in autumn. With a number of the farmers at a stocking rate close to 170 kg organic nitrogen, changes to the nitrogen excretion rates on males >12 months will mean a reduction in output from these farms otherwise these farms will require a nitrates derogation.

DAWN MEATS

Contact Our Procurement Team:

Anthony Dowd	Ballyhaunis (Beef)	**087 2625090**
Roger Ryan	Ballyhaunis (Lamb)	**087 2534327**
Paul Mullaney	Charleville	**087 9614323**
Daniel Bergin	Charleville	**087 9178779**
Conor Howley	Charleville	**087 9113953**
Micheál Murphy	Charleville	**086 245 6413**
Bernard Cullen	Kildare (Beef)	**087 2563070**
John Kennedy	Kildare (Lamb)	**087 2605386**
Peter Quinn	Rathdowney	**086 2611816**
Eoin O' Sullivan	Rathdowney	**087 1956004**
Sean Behan	Grannagh	**087 2561836**
Kevin Cullinane	Grannagh	**087 4192123**
Walter Cleary	Grannagh	**087 7382295**
John Neville	Grannagh / Charleville	**087 2232469**
Niall Grufferty	Slane	**086 8937517**
Sarah Gogarty	Slane	**086 0485145**

sales@dawnmeats.com www.dawnmeats.com

Notes

Teagasc,
Animal & Grassland Research and Innovation Centre,
Moorepark,
Fermoy,
Co. Cork.

Tel : 353 (0)25 42222

www.teagasc.ie

Agriculture and Food Development Authority

Fermoy Print & Design 025-31355