

# Dairy in a Healthy and Sustainable Irish and European Food System

**Welcome to the Summer 2023 edition of the European Milk Forum (EMF) newsletter as part of our “Dairy in a Healthy and Sustainable European Food System” campaign. The year to date has been yet another busy one with dairy farms across the country responding to the global demand for Irish dairy products while simultaneously grappling with higher input production costs. As we look ahead to the upcoming autumn season, there is plenty to focus the minds of dairy farmers who are striving to balance the challenges of maintaining economic viability while progressing the implementation of environmental efficiencies.**

Dairy farming is one of Ireland’s oldest indigenous industries, enjoying a proud and rich heritage stretching back over 6,000 years. We have one of the most efficient production systems in the world, with our temperate climate, pasture-based grazing system and cows outdoors for almost 365 days of the year combining to excellent effect. Farm families across Ireland are aware of their role as custodians of the land and of leaving it in a better place for the next generation. It is a natural part of the farming psyche to want to improve upon what is there, and to ensure that when the land passes on it is set up for the next generation to continue to contribute positively. For dairy farmers, the land is their livelihood, and they are heavily invested in ensuring sustainability is the hallmark of what they do.

Much of the national conversation regarding climate change is focused upon the role of agriculture and how it is contributing to achieving the targets of our national Climate Action Plan and the European Union ambition to achieve Net-Zero by 2050. We have consistently highlighted that the response to climate change requires a whole of society approach, and that dairy farmers won’t be found wanting and are stepping up to the plate. In this latest edition of our newsletter, we showcase the work of our dairy farmers to embed the latest environmental practices into their milk production processes and highlight the continuing efforts to support biodiversity on farms across Ireland. From safeguarding hedgerows to installing bird boxes, farmers appreciate the importance of biodiversity to local ecosystems.

Recent research carried out by the European Milk Forum shows that consumers have confidence in dairy farmers to continue to respond to climate change, while previous findings show that almost 9 in every 10 consumers would be satisfied to pay more for dairy products, provided the increased cost supported the application of the very latest environmental initiatives. Such findings demonstrate the strides that dairy farmers are making and how their efforts are being noted and appreciated by consumers. Most importantly, dairy farmers are not content to rest on their laurels and appreciate the significant trust shown in them.

While our production system presents the industry with many significant advantages, there is a sector-wide awareness and acknowledgement of the need to keep sustainability front of mind and to adopt a best-in-class approach. To that end the role of a host of stakeholders within the industry is critical and we are pleased to feature Dr Zoe McKay who demonstrates how academic research and innovation conducted at UCD Lyons Farm is supporting the ongoing sustainability journey of Irish dairy farming.

There is significant global demand for Irish dairy products, highly regarded for nutrition, affordability and taste. According to the latest Bord Bia Dairy Export figures, the industry generated a value of €6.8 billion, representing a 33% growth on 2021 figures with over 1.7 million tonnes shipped to 130 markets worldwide. Underpinning this is the work of 17,500 family run dairy farms, who play an integral role in the continued viability of the industry and are critical to our global reputation for quality products.

Events in Russia and Ukraine have thrown the global food supply chain into sharper focus with the result that consumers are more attuned to the provenance of their food. We know from our previous European Milk Forum research there is a desire among consumers for locally produced products with “low air miles” and Bord Bia Bloom presented us with the opportunity to further highlight the role of Irish dairy farmers as local food producers. This event also allowed us to engage directly with a consumer-focused audience at one of Ireland’s biggest sustainability events.

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Our latest research finds that over three-quarters of those surveyed regard the dairy industry as hugely important to Ireland. When we consider this, we need to appreciate that it is an industry, built upon the work of farm families, who must be supported to continue their sustainability drive. The length and breadth of Ireland, in rural and regional communities, dairy farmers are working year-round, from dawn to dusk, to ensure that they produce a top-quality product with environmental sustainability front of mind. It is a continuous journey, undertaken by Irish dairy with a sense of commitment and purpose and a strong realisation of the important contribution they are making now, and will continue to make into the future.



**Zoe Kavanagh,**

Chief Executive, National Dairy Council & Spokesperson,  
European Milk Forum



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AID FROM THE  
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# Sustainable Dairy at Bloom 2023

The European Milk Forum in collaboration with the National Dairy Council were pleased to take part in Bord Bia Bloom 2023, an innovative horticulture, food and drink experience with nature and sustainable living at its heart. Considered the most-sustainably operated large-scale event in Ireland, Bloom attracts over 100,000 visitors to the annual five-day event.

As part of this year's event, the European Milk Forum hosted a panel discussion – "How Irish Dairy is Central to a Sustainable European Food System" – availing of the opportunity to engage directly with a consumer-focused audience and share the powerful story of Irish dairy, in a national and European context.



Thomas Ryan, Head of Agri-Sustainability & Customer Engagement at dairy co-op Tirlán

**"Irish dairy farmers all have the same objective – to leave the farm in as good or better condition for the next generation. Since 2018, our farmers have achieved over 7% reduction in emissions in milk produced. We're not there yet but we are on a journey to reduce emissions, and we can see the horizon."**

Spokesperson for the European Milk Forum in Ireland and CEO of the National Dairy Council Zoe Kavanagh was joined by leading figures in the Irish dairy industry including Dr Deirdre Hennessy, Lecturer in Sustainable Agriculture at University College Cork, dairy farmer Denis Fagan and Thomas Ryan, Head of Agri-Sustainability & Customer Engagement at dairy co-op Tirlán, with Aidan Brennan, Dairy Editor at the Irish Farmer's Journal as moderator.

Speaking during the panel discussion, Zoe Kavanagh highlighted the significant strides being made by Irish dairy farmers, who play

a vital role as food producers, delivering a quality and nutritious product to consumers, both nationally and internationally.

"Our dairy farmers are impressively self-sufficient and resilient. Faced with all the challenges of climate change, all of them have stuck up their hands to commit to and deliver a 25% reduction in emissions by 2030. For consumers and concerned citizens, be reassured the Irish dairy sector has really committed to this massive undertaking that is not just words but actions – that's why we had this garden at Bloom to tell the story of dairy production to curious consumers."

"When families purchase Irish dairy, they can be assured that it is sustainable, healthy and locally produced. Ireland's grass based low-intensity farming model and temperate climate ensures that our 17,500 dairy farms are ideally placed to continue to produce dairy products in the most environmentally sustainable manner possible."

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**"Clover is a magic plant, it fixes nitrogen from the atmosphere and makes food for the soil and grass, reducing the amount of fertiliser farmers need."**

Dr Deirdre Hennessy, Lecturer in Sustainable Agriculture at University College Cork

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Pictured at the European Milk Forum Panel Discussion at the NDC Garden at Bord Bia Bloom were (l-r) Aidan Brennan (Event MC), Dairy Editor, Irish Farmers Journal; Zoe Kavanagh, CEO National Dairy Council and EMF Spokesperson in Ireland; Denis Fagan, Dairy Farmer; Thomas Ryan, Head of Agri-Sustainability & Customer Engagement, Tirlán and Dr Deirdre Hennessy, Lecturer in Sustainable Agriculture, School of Biological, Earth & Environmental Sciences, University College Cork. Image credit: Robbie Reynolds Photography

# Sustainable Nutrition



**New research unveils our Irish palate for a sustainable diet. More than 8 out of 10 Irish consumers said they had made changes towards a more sustainable diet but affordability is a key consideration says Dr Yvonne Finnegan, Registered Dietitian & Nutrition Consultant to the National Dairy Council.**

Recent research has confirmed that Irish diets need to become more sustainable from both an environmental and health perspective.<sup>1</sup> But what is the appetite for change? A survey conducted on behalf of the National Dairy Council this year looked at the top 3 factors considered by the Irish public when choosing a healthy sustainable diet\*. Affordability came out top of the list with nutrition and locally produced foods closely following. Carbon footprint was amongst the least likely factors to be considered which may well reflect consumers' lack of understanding in this area. From a policy perspective, the results highlight that affordability and nutrition cannot take a back seat when it comes to enabling consumers to adopt more sustainable diets.

With so much competing for consumers' time and attention, the good news is that 84% had said they had made one or more changes towards eating more sustainably. Around half said they were trying to reduce food waste through better planning and to only consume what they needed. 'Treat' foods are often omitted from conversations on sustainability despite not being an essential part of the diet or offering much by way of positive nutrition. Research shows that 'sugars, syrups, preserves and sweeteners' were the highest contributing food group to Greenhouse Gas Emissions (GHG's) in the diets of Irish children and teens<sup>1</sup> so it's encouraging that a third of those in the NDC survey said they were trying to consume less.

## **Blanket messages to reduce animal foods may be unhelpful**

While dairy is enjoyed by the majority of people in Ireland, the survey also threw up some inaccurate perceptions around

how much dairy we consume. Around half of those surveyed said we eat about the right amount of dairy while over a third thought we consume too much. The reality is that on average the majority of Irish adults only consume two of their three daily recommended portions from the 'milk, yogurt and cheese' food group. As dairy products are nutrient rich foods and are large contributors to nutrients like calcium, riboflavin, vitamin A and B12 in the Irish diet, we need to be careful about blanket messages to reduce animal foods as some may actually need to increase their intakes to meet their nutrient needs. That is why taking a more personalised approach to sustainable diets (which is being explored as part of the SuHeGuide project in Ireland) may offer a more promising way forward. Looking at nutrient availability per price of serving, milk is also one of the most affordable sources of nutrition.

## **Plant-based diets continue to perplex consumers**

There was also considerable confusion over the term 'Plant-based diet' with almost half surveyed believing it to refer to a vegetarian or vegan diet and a further 15% not knowing what it meant. It's a confusion that's understandable given that the term plant-based diet is used inconsistently. But if consumers interpret advice to adopt a more plant-based diet as meaning a vegan diet, this could well be a barrier to people making realistic changes towards more sustainable healthy diets. While the term 'plant-based' can certainly cover vegan and vegetarian diets, plant-based diets can also include moderate amounts of meat, eggs, fish and dairy. As always, quantity is important and moving countries toward more quantitative

local dietary guidance may be useful. The Irish food pyramid and eating guidelines, which recommend varying proportions of both plant and animal foods is a good example of a diet that is plant-based and animal optimised. A 2023 Food and Agriculture Organisation (FAO) report has confirmed the important role of animal foods including dairy in a nutritious healthy diet stating that the nutrients found in animal products cannot be easily replaced with plants, particularly during key life stages like infancy to teens, pregnancy and older age.<sup>2</sup> In addition, new dietary guidelines for older adults in Ireland now recommend 3-4 servings of dairy per day in recognition of the important role of dairy in the diet as a highly palatable source of valuable nutrients in this group.<sup>3</sup>

## **Can dairy help us eat more plant-based meals?**

Interestingly only 4% in the Irish survey said they had moved to a vegan diet to be more sustainable while four times as many said they had cooked more vegetarian dinners during the week. This suggests that including dairy and eggs along with plant foods is a more acceptable alternative, particularly for families who have to often cater for a variety of different likes and tastes. Ultimately, we need to make eating sustainably achievable for as many people as possible if we are to see significant progress in this area. In this regard, dairy has much to offer in terms of balancing nutrition, taste, affordability and environmental considerations. And with Ireland being one of the most efficient countries in the world for milk production, and continuing to make progress, consumers can be assured of the role of dairy within a sustainable food system.

*\*A nationally representative survey was carried out amongst a sample of 1,000 adults aged 18+ by Coyne Research and commissioned by the NDC. Quotas were placed on the number of interviews achieved in each demographic grouping (age, gender, region and social class) to ensure it matched the Irish population. All fieldwork was conducted between the 31st January - 7th February 2023.*

### REFERENCES

1. Kirwan et al. Assessment of the Environmental Impact of Food Consumption in Ireland-Informing a Transition to Sustainable Diets. *Nutrients*. 2023 Feb 16;15(4):981. doi: 10.3390/nu15040981.
2. FAO. 2023. Contribution of terrestrial animal source food to healthy diets for improved nutrition and health outcomes - Key messages. Rome.
3. gov.ie - Healthy Eating for Older Adults ([www.gov.ie](http://www.gov.ie))

# Dairy Innovation

## Sustainable Dairy Research at UCD Lyons Farm

Lyons Estate, Celbridge, Co. Kildare



**Dr Zoe McKay, Assistant Professor of Grass and Forage Science at University College Dublin, writes about the research work underway at the Dairy Education and Research Facility at UCD Lyons Farm which is playing a key role in driving sustainability efforts in Irish dairy farming.**

University College Dublin (UCD) is unique among Irish third level universities due to its teaching and research farm which provides access to multiple farming enterprises to support teaching and research programmes in the Schools of Agriculture and Food Science and Veterinary Medicine. UCD Lyons Farm is home to a dairy herd of 185 high genetic merit Holstein Friesian dairy cows. This herd facilitates an array of collaborative research studies to investigate tools, technologies and innovations to improve the sustainability of Irish dairy production.

### **A focus on sustainable milk production**

The UCD Lyons Systems Herd is into its eighth year of establishment and is focused on developing a sustainable high-output grass-based spring milk production system. It is widely recognised that grass-based systems will predominate in Ireland. However, grazing systems that have developed utilise large quantities of grazed grass and have in the main been based on low output per cow (c. 5,500 kg/cow/year). There are reasons to consider the development of grazing systems that are based on higher output per cow such as (i) concerns about increasing dairy cow numbers and environmental emissions, (ii) facilitating farm expansion for land limited and fragmented farms, (iii) lack of available skilled labour on farms and (iv) lack of infrastructure on farms to deal with expanding animal numbers.

This Dairy Research Ireland funded project has found that a higher output (c. 7,433 kg/cow/year; 596 kg milk solids/cow/year) grass-based spring milk production system can be

sustainable when built on a foundation of good grassland management when it meets both milk and fertility targets.

### **Importance of grassland management**

From a grassland science perspective, our research with the Systems herd has been focused on implementing tools and technologies to increase the growth and utilisation of grazed grass. Grazed grass is the cheapest feed available and Ireland's climate allows us to grow it really well over a long grazing season. Other strategies we have implemented to increase the sustainability of the dairy herd are to reduce the use of chemical fertilisers through soil sampling, nutrient management planning and the use of protected urea. In addition, the inclusion of clover into the sward has a key role to play as clover has the ability to take nitrogen from the atmosphere which is freely available and convert it into a form that plants can use as a free source of nitrogen, thus reducing our reliance on chemical nitrogen.



UCD Systems Herd at UCD Lyons Farm. Image credit: UCD School of Agriculture and Food Science



UCD Lyons Farm. Image credit: UCD School of Agriculture and Food Science

### **Role of low crude protein concentrate feed and home grown feed ingredients**

The reduction in the use of chemical nitrogen and an increase in the efficiency of how dairy systems use nitrogen is of critical importance. By 2030, a 50% reduction in nutrient losses to the environment must be achieved. While our grass-based system offers many advantages, a limitation is that grass only swards supply nitrogen in excess of the cows' requirement. Strategies are required to improve nitrogen use efficiency. Within the UCD Systems herd, research has been conducted to investigate such strategies. When grass is in short supply, concentrate supplementation (pelleted feed) is offered which presents an opportunity to alter the protein content of the dairy cows' diet. Imported ingredients such as soya and maize are common ingredients used in concentrate feeds. However, these ingredients contribute negatively to the sustainability of the system through increased carbon footprint.

**“Over the last four years, our research has shown that you can reduce the crude protein content of the concentrate offered from 18% down to 12% during the main grazing season with no effect on milk production or composition.”**

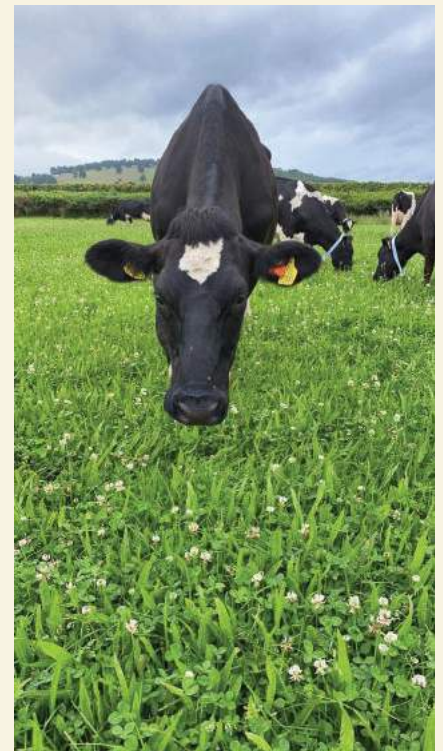
Furthermore, this concentrate feed can be made with home grown feed ingredients (barley, oats, rolled beans) instead of imported ingredients with no effect on milk production.

### **Pasture-NUE project supporting the development of alternative plant species**

In addition to the inclusion of white clover to reduce the fertiliser requirement, we can include other plant species into the sward which may have benefits to how nitrogen is used by the dairy cow. This is something we are currently working on at Lyons Farm as part of a Department of Agriculture, Food and the Marine funded project (Pasture-NUE), in which we are investigating the inclusion of perennial herb ribwort plantain (*Plantago lanceolata*) into grazing swards and its potential to reduce nitrogen excretion from dairy cows by altering the way nitrogen is used and how it is excreted. This study involves grazing dairy cows on swards containing grass, clover and plantain over the duration of their lactation and analysing what effect that has on their milk production, milk composition, nitrogen utilisation and excretion and enteric methane emissions.

**“Increasing the sustainability of Irish dairy farming is essential for the future viability of the sector.”**

Further research, knowledge transfer, farm level adoption and layering of many of the above strategies will be integral to this process.



Pasture-NUE project: dairy cows grazing swards containing perennial ryegrass, white clover, and plantain. Image credit: UCD School of Agriculture and Food Science

For further information on UCD Lyons Farm Dairy, go to <https://www.ucd.ie/lyonsfarm/research/dairyresearch/> and to learn more about UCD Systems herd go to [https://www.ucd.ie/lyonsfarm/research/dairy\\_research/systemsresearchherd-weeklynotes/](https://www.ucd.ie/lyonsfarm/research/dairy_research/systemsresearchherd-weeklynotes/)



McCarthy Farm. Image credit: Dora Kazmierak – and NDC & Kerrygold Quality Milk Awards

## Biodiversity in Action

**Key EU policies such as the Farm to Fork Strategy and the Common Agricultural Policy (CAP) both stress the importance of improving biodiversity as part of the development of sustainable production systems.**

Biodiversity is hugely important for local ecosystems and dairy farms are no exception. Ireland's dairy farmers are working hard to implement environmental initiatives with the support of programmes such as the Teagasc Signpost programme and Protecting Farmland Pollinators EIP. These partnerships help Irish dairy farmers to enhance biodiversity as part of a sustainable dairy production system.

Led by the National Biodiversity Data Centre, the Protecting Farmland Pollinators project focuses on helping farmers to incorporate small actions into their annual routines to help biodiversity thrive alongside a productive farming system. A European Innovation Partnership (EIP), the project is funded by the Department of Agriculture, Food, and the Marine (DAFM) under the Rural Development Programme 2014-2020.

Launched in 2021, the Teagasc Signpost Programme aims to bring science to practice and ensure the adoption of emission reduction research and technologies at farm level. Beginning with 120 Signpost demonstration farmers (50 dairy farms), support is now available to all Irish farmers.

Learn more about the actions taken by some of Ireland's dairy farmers to prioritise biodiversity.



Dairy farmer Shane O'Loughlin. Image credit: Finbarr O'Rourke

### **Shane O'Loughlin, Co. Kildare**

A participant in the National Biodiversity Data Centre's Protecting Pollinators European Partnership Innovation Programme, Shane has set aside 10 acres of the farm for conservation and biodiversity. This dedicated area for native Irish flora and fauna provides a perfect habitat for bats, birds, bees and other wildlife and has the added benefit of carbon sequestration. Shane has also switched from cutting hedgerows on a 3-5 year rotation, as opposed to annually. For dairy herds, hedgerows can also provide shelter and shade from weather extremes while hedgerows with a dense base provide shelter for small animals such as the hedgehog.



Austin & Yvonne Connelly on their dairy farm in Tuam, Co. Galway. credit: Traction Media

## **Austin & Yvonne Connelly, Co. Galway**

The family have installed bird and bat boxes across the farm and have taken care to protect mature trees. They have also planted hundreds of trees to aid rewilding. Rewilding is an excellent way to support rewilding and flowering trees like hazel, willow, wild cherry and elder can provide berries and seeds for mammals and birds in the autumn.

Local wildlife on the Connelly farm includes wild geese, pheasants and ducks while wild salmon spawn in a nearby stream. The Connells have also left aside a hectare to aid overall biodiversity.



The McCarthy family (l-r) grand-daughter Chloe, Michael, Mary Ita and son Alex at the family farm in Feenagh, Co Limerick. Image credit: Dora Kazmierak – and NDC & Kerrygold Quality Milk Award

## **Michael, Alex and Mary Ita McCarthy, Co. Limerick**

Safeguarding farm hedgerows are a key part of the McCarthys' biodiversity efforts. They repair and maintain established hedgerows, keeping a close eye on overall health and quality. They have also planted almost five hectares of new hedgerows across the farm. Hedgerows act as natural shelter for cows, help reduce agricultural run-off reaching rivers and can help prevent soil erosion. As the area of native woodlands in Ireland is quite small, hedgerows are a crucial wildlife habitat across the countryside.

Hedgerows are also important for habitat connectivity, allowing the migration and movement of species and reducing habitat isolation and fragmentation.



Richard Starrett on the farm. Image credit: NDC

## **Richard Starrett, Co. Donegal**

Hedgerows and conservation areas have been designated across Richard's farm for habitat protection and he has also preserved 2.72 hectares near the River Finn for wildlife and habitats, with an abundance of dandelions and unfertilised grass.

Dandelions in particular are a crucial food for insects from mid-March to mid-May, vital for bees, butterflies and other flying insects. Post-flowering, dandelions produce seed eaten by greenfinches, goldfinches and other birds. There are also a large number of mature trees on the land.

# Irish Consumer Research

**New research is showing that almost 9 in 10 consumers believe dairy farmers can make the necessary changes to achieve climate action targets while 7 in every 10 (76%) believe that the industry should be supported to remain viable for future generations.**

The findings are from a survey of 1,500 Irish adults by the European Milk Forum campaign, "Dairy in a Healthy and Sustainable European Food System".

Zoe Kavanagh, Spokesperson for the European Milk Forum in Ireland and Chief Executive of the National Dairy Council, said the research shows that Irish consumers continue to support dairy farmers, and equally appreciate their important role in a sustainable food system.

**"Combatting the climate crisis requires a society-wide response. Our findings demonstrate that consumers have confidence in Ireland's 17,500 family-run dairy farms to implement the necessary sustainability initiatives and to continue to respond proactively to the challenge of climate change.**

**"While concerns have been expressed about the need to implement technological innovations and achieve quick results, the findings also demonstrate that overall, Irish consumers have confidence in dairy farmers to make a real difference and are aware of the work underway so far. We do need to acknowledge the balancing act between remaining economically viable and ensuring our family-run dairy farms are supported to further enhance their milk production process. It is important not to lose sight of the fact that dairy farming supports 60,000 jobs and reached a record 6.8 billion euro in Irish exports."**



**89%**

Believe Irish dairy farmers can make the necessary changes to achieve climate action targets



**76%**

Believe dairy is hugely important to Ireland - economically and culturally



**76%**

Say the industry should be supported to remain viable for future generations



**75%**

Feel informed about the role of dairy farmers as food producers



**48%**

Fear rising input costs risk farmers' sustainability strides

## The European Milk Forum

The European Milk Forum (EMF) is a non-profit organisation which plays a vital role in driving the strategic development, management and exchange of integrated information initiatives on milk and dairy across Europe. Through a three-year EU funded campaign, "Dairy in a Healthy and Sustainable European Food System", five national dairy boards in Belgium, Denmark, France, Ireland and Northern Ireland are working in collaboration to highlight the essential role of dairy in a healthy diet, while also reinforcing the dairy sector's positive contribution to society and the environment through a sustainable, locally produced food system. Join the conversation on social media via: #SustainableDairyEU