

dairy

'We must create a culture of awareness of dairy farms as bright and positive places'

Q&A

with **Laurence Shalloo**,
Head of the Teagasc
Animal & Grassland
Research and Innovation
Programme

1 Times have been relatively good in dairying, can this continue?

Dairy commodity prices spiked in 2022, resulting in a dramatic increase in milk price at farm level. Dairy farm profitability was very strong, despite increased input costs. In spring of 2023, there has been a severe market adjustment which is very quickly impacting on the milk price.

As in other sectors of the economy, supply versus demand is putting increased pressure on labour costs. The focus for 2023 at farm level must be on costs of production. This is the most important strategy that can be used to reduce the exposure associated with commodity market fluctuations.

2 How can dairy farmers best contribute to reducing greenhouse gas emissions and preventing climate change?

When one looks at the IPCC reports, in particular around the role that soil can play in storing carbon, it is clear that agriculture will play a key role in meeting the GHG emissions challenge.

While the land use and land use change sector is not currently counted as part of agriculture we expect that this will change by 2030. Using current methods, Irish agriculture accounts for approximately 37% of total

national GHG emissions, and has a target to reduce by 25% by 2030.

Teagasc is currently preparing its third iteration of a marginal abatement cost curve (MACC) for agriculture. This tool identifies GHG emissions mitigation strategies and associated economic impact at farm level. There are technologies that can and should be implemented today which will reduce GHG emissions and increase farm profitability or be cost-neutral.

These include introduction of clover, move to protected urea-based N fertiliser, increased soil fertility, higher EBI usage, reducing age at slaughter. There are other technologies that will have substantial cost implications at farm level and will therefore be less likely to be embraced, at least in the short term.

There is an increasing investment being made into identifying new solutions and developments. The diverse and expanding research programme at Teagasc includes research on different fertiliser types, genetics, feed additives, manure, development of a digital platform to engage farmers.

There is some early promise in this research across a whole range of areas. Examples include that the estimated enteric methane emission per cow in an Irish grazing system is less than current models suggest; genetics are having a more positive effect on enteric methane emissions than had been previously considered; and the research on feed additives (albeit at an early stage) is showing some promising results.

3 Can you envisage a dairy farm that doesn't buy in any artificial nitrogen?

The journey on chemical nitrogen fertiliser use, both at research level



and at blueprint level, has been dramatic.

The key driver of profitability in a pasture-based system is grass utilisation. Maintaining and increasing grass utilisation while reducing chemical N will increase profitability and reduce purchased nitrogen surplus, which will result in less nitrogen in the system available for loss.

A number of studies in both Ireland and New Zealand have shown that increasing grass utilisation, when not associated with increased purchased nitrogen in the system, will result in reduced nitrate loss.

Modelling has shown that reducing chemical nitrogen would result in a reduction in grass growth of the order of 15-20kg DM/ha per 1kg of chemical nitrogen reduced unless replaced with some other strategy.

The reduction in chemical nitrogen must be based on increasing grass utilisation, increasing soil fertility, optimising the use of slurry and increasing clover or else the reduction in chemical N will result in increased bought-in feed (at much higher cost than chemical N) and reduced farm profitability.

4 Finding affordable, qualified, labour is an ever growing challenge. Do farmers need to adjust their expectations?

The people challenge is probably the biggest challenge on dairy farms today. In a society with full employment, there can be a real challenge to secure people. The People in Dairy Initiative was launched in 2017 and identified a number of areas to focus



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ties for staff, investing in farmer HR skills, and implementing appropriate practices at farm level, developing seasonal business models that allow people to move between industries.

Importantly, we must create a culture of awareness of dairy farms as being bright and positive places with the potential for employment for people interested in satisfying work, whether as a career or on a seasonal basis.

5 We are a relatively high animal welfare milk producer. How can we protect that reputation, and get paid for it?

Dairy cows in Ireland have, on average, access to grazed grass for 71% of the year and are free to roam around an assigned paddock/paddock. Irish pasture-based systems, with average milk yields of 450 kg milk solids (MS)/cow, have one of the lowest milk yields per cow in Europe.

Irish animals are less exposed to production-type diseases and issues that are common in countries where milk production per cow is maximised. In Ireland, profitability is not maximised where milk production per cow is maximised but is optimised where grass utilisation per hectare is optimised. Therefore, animals

are not pushed to their biological limit.

Cow age profiles have been increasing, facilitated by, for example, emphasis on health and fertility within the EBI. Our key animal welfare considerations are lameness and somatic cell count (SCC). SCC is a good indicator of mastitis based diseases. Data from the Animal Health Ireland (AHI) CellCheck programme shows that the average SCC levels in dairy herds have declined over the past 10 years. Average SCC is now close to 175,000 cells/ml (AHI, 2021).

In terms of lameness; a recent analysis of 11,742 cows across 68 pasture-based dairy farms in the Munster region shows that just over 30% of cows studied had mild suboptimal mobility, 6% of cows had moderate suboptimal mobility, and less than 1% of cows had severe suboptimal mobility. This compares favourably with most international comparisons.

A potential risk from a welfare perspective centres around male dairy calves.



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on which are still relevant today.

We must continue to develop long-term strategies around training, creating career pathways for all levels, having appropriate farm facili-



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There has been a substantial growth in dairy calf-to-beef production since milk quotas were removed. The dairy industry must embrace technologies like sexed semen and the dairy beef index.

A key component of calf transport centres on animal welfare, which will need to be supported with strategies that minimise animal discomfort and stress, underpinned by science. This is a substantial focus of the calf welfare research programme through the Moove research project.

There is a real need for joined-up strategies between the beef and dairy industry to develop profitable beef systems that are early maturing (lower GHG emissions) and can provide a reward to both the dairy and beef farmers, while helping to decarbonise agriculture. This is the major focus of the DairyBeef500 programme.

6 You are the head of the Teagasc Animal & Grassland Research and Innovation

Programme. What message do you have for beef and sheep farmers?

Many of the areas of research transition across enterprises, for example research on clover, multispecies pasture and soil fertility go across beef, sheep and dairy.

For beef and sheep to be competitive in the long term, there needs to be a continued focus on increasing pasture in the systems of production.

Similar to dairy this needs to be done with less purchased N, so the focus must be on increasing the use of clover in conjunction with improved soil fertility and increased grassland measurement and management.

The beef and sheep programmes are areas of research that are continuing to grow as a result of Teagasc's climate strategy and the development of a centre of excellence in the area of climate research. This will facilitate a broader research programme across these areas.

The sheep programme has an increasing focus on anthelmintic resistance in conjunction with genetics and grassland.

The beef programme has an increasing focus on profitability and reducing the age at slaughter, through greater emphasis on pasture type and management and forage quality across all stages of the animal's life combined with appropriate genetics.



7 To what extent have we exhausted our comparative advantage from growing grass?

Recent analysis has shown that Ireland's comparative advantage relative to a number of EU countries has increased since milk quotas were removed.

However, we must continue to focus on maximising grazed pasture and pasture utilisation while minimising supplementary feed and matching stocking rate to the growth potential of the farm. Pasture-based systems will result in a seasonal milk supply where the comparative focus must be on costs of production to maintain advantage.

The farms that had a strong focus on cost control were in general less exposed as input price inflation occurred and therefore all farmers need to redouble their effort around costs in 2023.

This may pose a question on the intensity of the overall operation. There is growing evidence that products from grazing animals can be differentiated in the marketplace, we must continue to grow and exploit that potential.

8 What do you see as the key technical developments in dairying in the next five years?

Between the average of the period

from 2007 to 2009 and 2022, milk solids have increased nationally by 96%.

Interestingly, approximately 50% of that increase came from increased milk solids per cow and 50% from increased cow numbers.

A full breakdown shows that 36% originated from increased milk volume per cow, 14% originated from increased fat and protein percentages, 20% from increased cows facilitated by increased stocking rates and 30% through extra cows on new land.

In future, there will be more use of sexed semen and higher DBI beef genetics in the dairy herd.

This will result in higher rates of genetic progress in the dairy herd and animals with better beef characteristics coming from the dairy herd.

There will be greater focus on fertiliser N use and type coupled with greater emphasis on white and red clover. Increasingly, there will be investment in technologies that increase labour efficiency and improve work-life balance.

From a research perspective, there will be greater focus on developing strategies that allow dairy farmers to progress while meeting the environmental challenges, reducing costs at farm level and reducing the labour requirements of the systems operated.