IFA

Liquid Milk Handbook

Why we need specialist liquid milk producers, now quotas have gone

Table of contents

Introduction

On 31st March 2015, 31 years of EU milk quotas, which put a limit on the amount of milk any EU farmer could produce, came to an end.

This is viewed as a positive development by Irish dairy farmers; an opportunity at long last to exploit their fullest potential and expand production, at a time when global market opportunities are growing rapidly.

It will come with challenges of strong price and cost volatility, but policies and instruments can and must be developed to help farmers to cope with this.

While expansion opportunities are clear for the export market, the domestic market for drinking milk is mature, and has seen displacement of domestic supplies since 1996, with imports from Northern Ireland now making up 25% of sales.

For the 1,800 specialised dairy farmers supplying the domestic consumer market with liquid milk, who are generally contracted for this purpose for only a portion of all the milk they produce, this creates a dilemma: the only option for growth is to produce more milk for export. The most economical way of doing this is off grass, on a seasonal basis.

However, the lower the percentage of the farmer's production that is for their liquid milk contract, the less economic sense it makes to continue with it, and the more tempting it is to focus exclusively on growing output for export.

So, how can we secure consistent, locally produced, fresh milk supplies for Irish consumers all year round?

Executive Summary

The liquid milk system is costlier and therefore vulnerable in the post quota expansion

Liquid milk producers are contracted to produce a set amount of milk daily, to ensure that fresh, locally produced milk is consistently available for consumers on supermarket shelves.

To do this, farmers generally calve the required number of cows in autumn, at considerable extra cost, mainly due to additional labour and feed input.

The specialised production system also engenders greater complexity and is difficult to streamline and make more efficient.

It is clear that, in the absence of fit-for-purpose pricing structures, the economic sustainability of the production system is fragile as expansion opportunities are only available for non-liquid milk.

Liquid milk: a part of Ireland's market for milk that we must value

The Irish liquid milk market is valued at around €530m at retail prices. While we plan our expansion on export markets, we simply cannot take for granted this valuable part of our markets for milk, but rather we must nurture it.

Milk and dairy have a very strong positive health association, and the sector has a real opportunity to use solid NDC produced research to capitalise on this to develop and innovate.

Irish consumers have been shown in Bord Bia research to value locally produced food, which they associate positively with quality. They also associate positively locally produced food with local employment and economic benefit.

Market regulation is the norm where availability is uncertain

Where the availability of fresh milk, either due to economics, seasonality or a strong export orientation, cannot be left to market forces, market regulation has evolved, which always involves financial incentives for farmers.

Some is private (e.g. retailer contracts to secure supplies in the UK and in Australia), some is government run (US milk class system, New Zealand Dairy Industry Restructuring Act).

Ireland's National Milk Agency is also an example of government run regulation.

Specialist liquid milk producers, if they move to creamery milk production, will never return to liquid milk production.

How reliable are the alternatives to local specialist suppliers?

Extended production into the autumn by spring milk producers, while theoretically more possible now that quotas have ended, is inadequate because it is unreliable. Low milk prices and/or poor autumn weather affecting grass growth would affect availability.

While there is an established import path from Northern Ireland, large-scale reliance on imports is also unsatisfactory. Fresh liquid milk cannot be transported economically across very long distances, and currency and availability considerations will challenge the viability and consistency of imported supplies.

Replacing fresh milk with long-life UHT milk would go against Irish consumer preferences.

It is clear that, in the post-quota expansion of Ireland's export production, market forces will militate to push specialist producers towards more profitable, seasonal systems.

Recommendations

Market regulation is required - something already recognised by the establishment of the National Milk Agency (NMA), and the Dublin and Cork District Milk Boards it replaced.

The liquid milk market, in particular, and the domestic market for dairy products in general, are valuable elements of our markets for milk, and must be included in the Food Wise 2025 strategy.

The powers of the National Milk Agency must be strengthened, to ensure it gathers the relevant stakeholders on its board, and is given the mandate to engage with retailers and food services operators in fulfilling its regulatory role.

The NMA must be missioned to assess the economic sustainability of payment systems applied by each dairy, and empowered to refuse to register them, as necessary.

Finally, an Observatory of input costs must be established to flag variations in real time.

Case Study:
Denis Fagan, liquid milk producer in Meath

My name is Denis Fagan, and I farm in Kildalkey, Co. Meath in partnership with my brother David and my parents John and Margaret.

We are second generation liquid milk producers, and we supply Glanbia with fresh milk for the consumer market.

Unlike spring milk producers, we milk all year-round, 365 days a year.

Our liquid milk contract is about 65% of all the milk we produce. To meet our daily volume requirement, we calve just under one third of our herd in autumn, and the rest in spring.

In recent years, we have been able to use the milk quota resources available within our local co-op to more than double our herd size.

Therefore, our future expansion plans are modest, and will be done mostly from existing resources. This is because our milking platform – the amount of available grazing land near our milking parlour – is now fully utilised.

Now that quotas are gone and the dairy sector is embracing export growth, I am concerned about the future sustainability of liquid milk producers like me, and what it will mean for the security of fresh milk supplies.

To the dairies, and my own dairy Glanbia in particular, I say: we really value the marketing, branding, promotion and product innovation investments made to support the sales of our milk. However, the premium we receive in the winter months must fully remunerate our full costs, including our own labour, to secure milk supplies.

Retailers must continue to offer consumers the choice to buy locally produced, fresh, branded milk. The price point at which they sell the milk to consumers must reflect the total cost of putting this quality fresh product on the shelves. It must also reflect the extraordinary nutritious value milk offers to consumers through all stages of life.

Politicians must introduce and enforce strong legislation of the retail chain that protects and promotes income security for producers of all fresh produce.

To consumers, I say, thank you for your continued support in buying local brands. When you do this, you support jobs in the sector and in the local economy. But you also benefit from the outstanding nutritional value milk offers you as part of a varied and balanced diet.

As a farmer, I would like to see all stakeholders in the chain understand that it is in the best interest of consumers that they would co-operate in securing the sustainability of the fresh milk supplies which I and my fellow-liquid milk producers depend on for our livelihoods.

Liquid milk producers operate a system with higher built-in costs and complexities

Producing to meet a daily contracted quantity of milk from freshly calved cows, year round, requires a specialised system. This system involves calving different numbers of cows at different times of the year to match the milk supply pattern required by contract.

This is fundamentally different from the prevalent spring creamery milk production system, in which herds are – ideally - compact calved in the early spring months, and most milk is produced optimally off grazed and ensiled grass, but with extreme seasonal variations in volumes produced between spring/summer and winter.

The year-round system is a substantially costlier production system.

Some of the cost difference lies in the greater complexity of the liquid milk system versus the spring production system. One - spring milk production - allows for substantial streamlining and seasonalisation of tasks and production phases. The other - the specialist liquid milk system – requires significantly more hours of labour throughout the year carrying out the same tasks, e.g. calving through more than a single period, feeding to keep cows productive through the year, managing multiple groups of young stock, less available seasonal downtime to carry out repair and maintenance, etc.

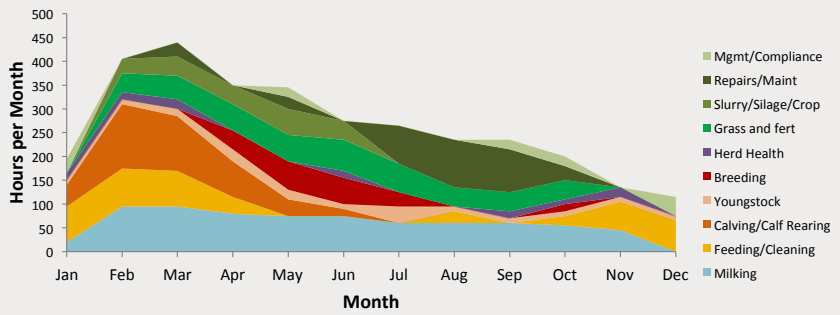
This is best visualised by the following two graphs tracking annual labour demand per task for both systems, produced by Dr Joe Patton for the IFA Liquid Milk Forum in July 2014.

The difference in the total labour input between the seasonal and the year-round system will differ from farm to farm, but for a typical 120 cow herd, it could be up to 892 hours per annum, equivalent to over 7 hours per cow.

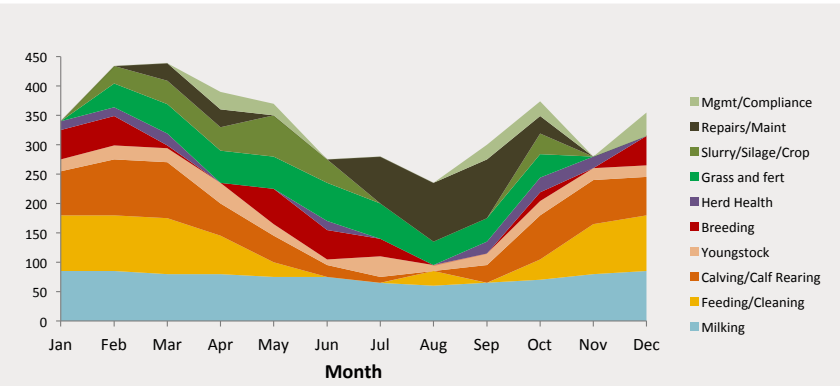
Greater complexity also impacts on the ability to repeat performance reliably each year. Risk of suboptimal winter forage quality, cow fertility, etc., are increased. It also limits access to the resources needed to be able to achieve profitable growth - depending on the scale of the farm.

The higher cost nature, as well as the complexity, of the specialist system, also means that those farms will be much more exposed to the increasing volatility of input costs, especially international grain and feed protein markets, fertiliser prices, energy costs and the cost of capital.

Annual labour demand for seasonal...



...and year-round systems



Source: Dr Joe Patton, Teagasc

The specific challenges of expansion for liquid milk producers

Concerns around the implications of the end of quotas for the continued sustainability of the specialist liquid milk production system were one of the main reasons for producing this Handbook.

In the Annex, Teagasc's Liquid Milk Specialist Joe Patton models the possible consequences in three different scenarios for a 28% milk supply expansion – one for a herd with 40% autumn calving, one for a herd with 15% autumn calving, and one for 100% spring calving.

He says clearly that, in volatile dairy markets, successful, profitable expansion will only happen with low input costs and optimum efficiency. In the Irish context, this is best delivered by a grass-based, spring calving, production system.

Liquid milk producers will also have ambition to increase their non-liquid output while retaining their liquid milk contractual commitments. To do so, they will have to optimise the efficiency of their system, minimising milk produced surplus to contract requirements in winter by reducing the number of cows calving in autumn, and optimising milk produced off grass.

"Profitable expansion can only happen with low input costs and optimum efficiency"

The take-away messages from Dr Patton's modelling exercise are as follows:

- Reducing autumn calving to match exactly contractual requirements, i.e., minimising winter milk production surplus to contract, does not reduce milk output value, and is the optimum autumn calving scenario to supply a liquid milk contract.
- Conversely, calving extra cows in winter to produce milk in excess of contract has a negative impact on margins.
- The spring calving only scenario reduces output value due to lower volume, and the absence of a liquid milk winter premium payment.
- However, its feed budget is lower than the optimum autumn calving feed budget, and even optimum autumn calving creates additional winter milking overheads not incurred by spring calvers.
- The margins, including winter liquid milk payments, make the optimum calving scenario the most profitable. However, any margin for the liquid milk system comes from securing a bonus on the winter litres supplied.
- The impact of the optimum autumn calving scenario relative to the spring calving scenario on peak output is negligible – suggesting that encouraging even economically viable autumn calving is an inefficient way of addressing processing capacity issues – something for processors to take good note of!

“Any margin for the optimum liquid milk system comes from the bonus on the winter litres supplied”

The implications of these findings for expanding liquid milk herds are that, as their expansion plans increase the proportion of their production over and above their liquid milk contract, the scale or “critical mass” of their autumn calving is reduced and the importance of the liquid milk element diminishes. This will, in time, weaken the commitment to the liquid milk production system, and further expansion would probably lead to the discontinuation of autumn calving altogether in pursuit of better margins.

Is your winter scheme paying you?

A number of milk purchasers, who are trying to extend supplies over the shoulder months to improve processing capacity utilisation, operate winter schemes in which farmers who are calving a limited number of cows in autumn, or simply stretch their lactation, receive premiums for the milk supplied over the winter months.

“Extended lactation does not contribute to a reliable availability of fresh, quality milk”

In the case of extended lactation, this will occur when milk prices are high and/or conditions good and farmers seek to capitalise on this to increase income or cash flow, but it cannot be relied upon where profitability is challenged – it requires costly additional feeding – or where conditions are unsuitable. Therefore, it does not contribute to a reliable availability of fresh, quality milk.

“Milk processors need to clearly define objectives when influencing suppliers to deviate from most profitable supply curve”

Winter milk from freshly calved cows, on the other hand, is what the drinking milk market needs to be able to rely upon during the winter. Ideally, a winter scheme should provide sufficient returns to farmers to allow for critical mass in terms of numbers of cows calved to service it, as outlined in Joe Patton’s model in the annex, and should fairly remunerate the additional costs incurred.

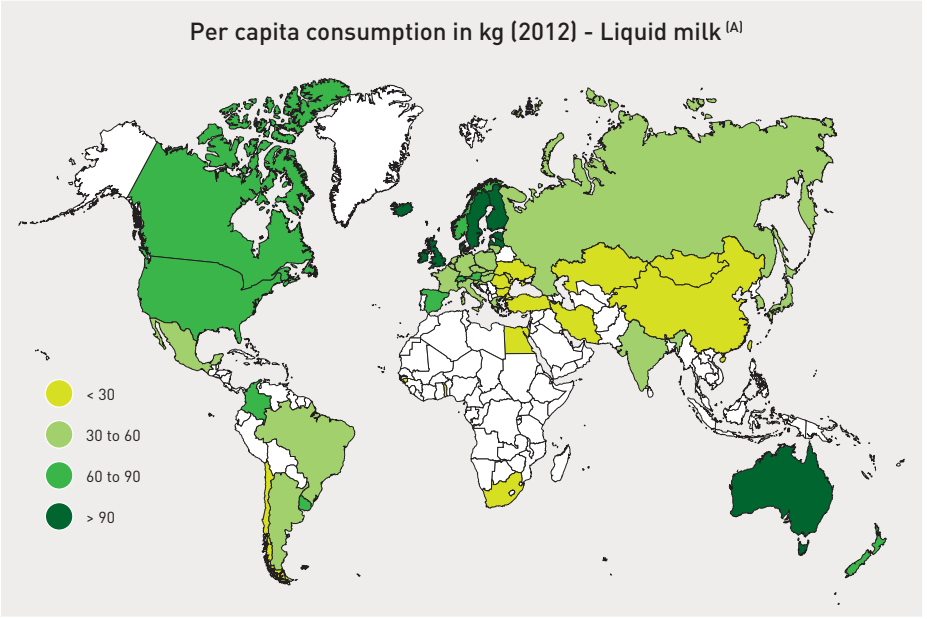
To quote Dr Joe Patton on this, “It is important to highlight that peak milk management and winter milk supply should be viewed as related, but separate issues in terms of future milk pricing and contract structures. Milk processors need to very clearly define their objectives if imposing price mechanisms that influence suppliers to deviate from the most profitable supply curve at farm level”.

Specificities of the Irish liquid milk market

Irish consumers drink their way through €530m of liquid milk annually

Irish consumers are among the highest consumers of drinking milk in the world. Data from a 2013 survey by the International Dairy Federation (IDF) put us at the very top of the league, at around 138 litres per capita per annum.

Irish consumers are also more likely to 'drink' their dairy intake as liquid milk than 'eat' it in butter or cheese, and they consumer their milk fresh, rather than Ultra Heat Treated (UHT).



(A) May include milk drinks and fermented products. Source: IDF

Many European markets have, over the past few decades, evolved towards an increased prevalence of UHT milk, heat treated at much higher temperatures than pasteurisation requires, and therefore having a much longer shelf life – six months is not unusual.

"The Irish are among the highest consumers of fresh liquid milk in the world"

This has resulted in milk being commoditised and cheapened, playing for example in the French market a role not too dissimilar to the "buffer" role SMP and butter used to play for the Irish industry at the height of intervention.

From a consumer's view point, UHT milk is a very different product from fresh milk, especially when it comes to consumption patterns and flavour. UHT milk consumers around Europe tend to use milk as an ingredient rather than a drink.

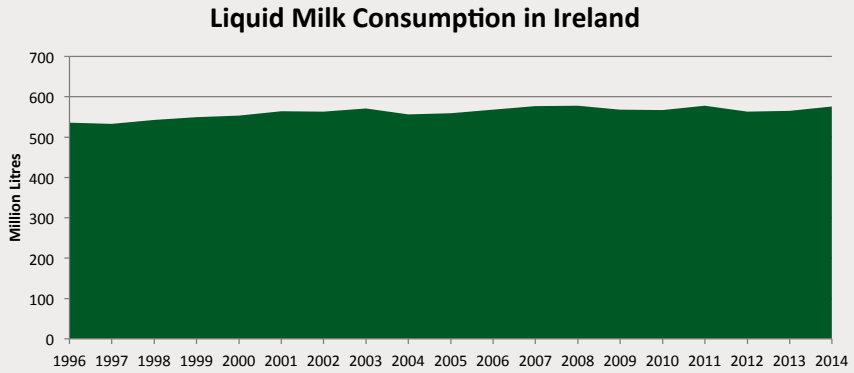
Irish consumers who favour fresh drinking milk and consume a substantial share of their dairy intake as drinking milk would not readily change over to UHT.

The domestic liquid milk trade is an important part of Ireland's dairy market

The Irish liquid milk market retail value is around €530m for 2014 (NMA), of which 75% or €400m is sourced from Republic of Ireland producers. This compares with dairy exports valued at just over €3.0bn (Bord Bia).

This means that around 8.5% of Ireland's milk output is generating just over 13% of the value added to Irish milk in Ireland – this is surely a valuable market worth nurturing as part of our overall strategy for Ireland's dairy sector.

While historical trends have been towards lower liquid milk consumption on maturing western markets, it has increased slightly in Ireland, by around 5.5% in the last 20 years, reflecting increased immigration and population growth. Notwithstanding a 2% increase in 2014 over 2013, the more recent trend has been one of stability.



Sources: CSO/NMA

The positive health associations of dairy are a major opportunity for the sector

There is scope for this very valuable market to be grown further, bearing in mind the considerably more positive new scientific research results and thinking around health and milk and dairy consumption.

The Bord Bia 2013 *PERIscope*, which studies the attitude of British and Irish consumers to their food, shows that ROI consumers continue to be more favourably disposed towards dairy products compared to British consumers, with daily consumption of dairy higher in ROI. There is also evidence of high awareness of the importance that dairy plays in the diet, which is high at 90+% in both countries.

Research results strengthening the positive association of health with dairy must encourage processors to further innovate in the areas of nutritional needs for consumers at various life stages (the role of dairy and milk in the diet of the ageing, development of high protein milks), rehydration after exercise (greater focus on sport, exercise, health and diet among the general population and policy makers) and also of convenience (packaging).

> *"The positive association of health with dairy must encourage processors to innovate"*

The National Dairy Council (NDC)has done considerable research proving the value of dairy and milk in the nutrition of every age group[1].

For the over 50s, the bone and muscle building properties of dairy were highlighted, as well as the benefits for healthy gums and teeth, the contribution milk can make to proper hydration and the need for physical activity.

> *"NDC research has proven the nutritional value of milk and dairy for every age group"*

For all adults, the NDC research emphasises the nutritional value of dairy consumption and its ability to assist with weight management in the context of a balanced diet and active lifestyle.

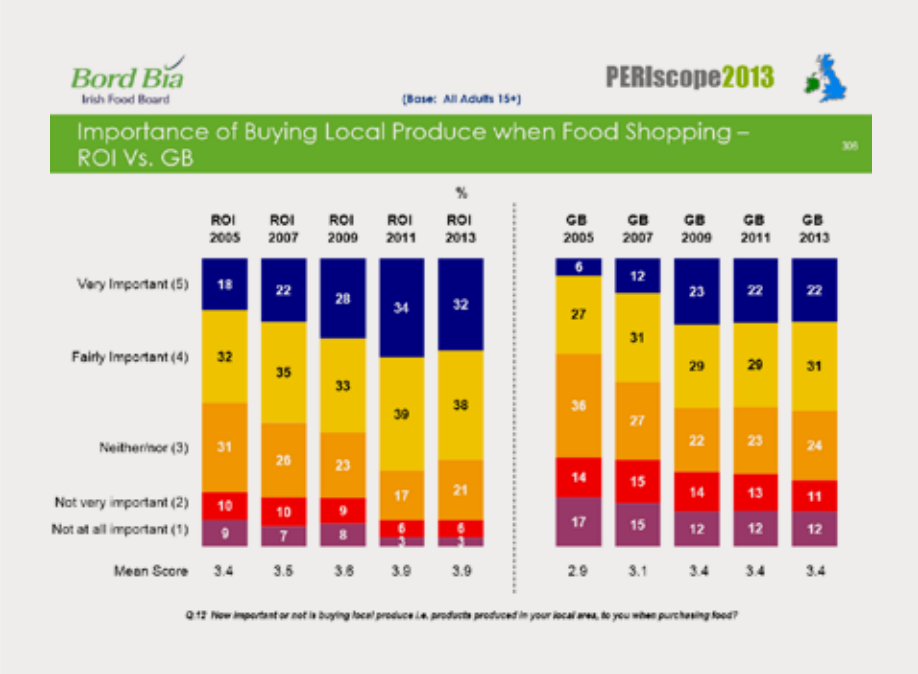
For children over the age of five, the NDC stress the important part dairy can play in securing the necessary balance in children's diets, and its value in supporting bone health in conjunction with physical activity.

1 www.ndc.ie/publications/leaflets.asp

Republic of Ireland consumers value locally produced food

According to the Bord Bia 2013 PERIscope, 7 in 10 Irish adults consider buying local produce to be important when shopping for food. This is significantly higher than in the UK, where only half of all consumers take this view. ROI consumers associate "local" with quality, absence of preservatives, health benefits and traceability.

What is also interesting is the evolution of this trend for Irish consumers since the pre-recession period. While the study did not ask the question specifically it is probably fair to assume that the importance of supporting local employment and the economy also feeds into this preference.



A further Bord Bia study carried out in 2013 "Retaining Loyalty to Irish Brands" also explores the motivation and level of attachment of Irish consumers to Irish produced products. The top two reasons given by respondents in the study as to why they would buy Irish brands were to support jobs and to support the local economy.

The National Dairy Council (NDC) guarantee campaign has shown that the concept of locally produced and processed milk resonates with Irish consumers, and most of the main retailers are sourcing at least some of their private label milk from suppliers offering NDC marked product.

It is clear that this concept continues to appeal to Irish consumers, and needs to be better leveraged to promote our locally produced fresh milk.

"Consumers associate "local" with "quality", and buy Irish brands to support jobs and the local economy"

Precedents for regulated liquid milk markets

In many markets around the world regulation, either by the sector itself or by the regulatory authorities, has proved necessary to secure supplies of drinking milk for domestic consumers in the context of seasonality, problematic economic sustainability, and/or a dominant export market.

> *"The regulation of liquid milk markets has in all cases required financial incentives to secure production"*

In all cases, this has required financial incentivisation of producers through premiums or enhanced payments, because the milk would not have been produced without it.

There are a number of examples for regulated liquid milk markets.

UK – Retailer-aligned supply contracts

In the last decade, declining milk production trends, increasing input prices, increasing price volatility in commodity markets and further concentration in the processing and retail industries have combined to destabilise the supply of raw materials of strategic importance to dairy businesses in the UK.

The prevalence of retailer-aligned contracts has increased in recent years. Developed as a strategy by the major retailers to increase security of milk supplies in response to declining milk production, they have become more widespread with most major retailers operating some form of aligned milk pool.

There is a range of benefits offered to suppliers as part of these aligned milk pools which are generally in line with the retailer's Corporate Social Responsibility strategy.

Aligned contracts are primarily limited to the three large liquid milk processors in the UK - Arla, Dairy Crest and Robert Wiseman Dairies - who together supply the majority of retailer own-label milk.

Approximately 24% of the milk produced in GB during the 2010/11 milk year was purchased on retailer-aligned contracts.

In 2015 those types of contracts paid the highest average annual price for milk in the UK, by a margin of nearly 16p per litre over the lowest prices.

"UK retailer contracts were developed to secure milk supplies in the face of declining production"

The most recent league published by the UK's AHDB Dairy for July 2015 [2] confirms this, with the lowest price paid for some First Milk Midlands, East and Wales at 17.93p/l (24.3c/l), and the highest paid by Dairy Crest for the Marks and Spencer's retailer-aligned contract at 33.69p/l (45.6c/l).

Example of retailer-aligned contract: the TSDG contract

The Tesco Sustainable Dairy Group (TSDG) contract commits Tesco to paying a milk price above the average cost of production of TSDG members.

Farm consultancy group Promar carries out an independent analysis of the production costs of TSDG members on behalf of Tesco.

The Tesco TSDG farmgate price also includes a market tracker element that takes effect if commodity market prices exceed the TSDG cost of production.

Prices are assessed on a six-monthly basis in April and October each year.

The price class system in the US

This classification originates in the Federated Milk Marketing Orders (FMMO), first introduced in the US in the 1930s. The purposes of the FMMO were to provide for orderly marketing of milk, to assure reasonable prices to both dairy farmers and to consumers, and to assure an adequate supply of wholesome beverage milk to consumers.

The milk classes are defined as follows:

- **Class I:** Beverage Milk (poured)
- **Class II:** Soft Manufactured Products (Yogurt, Cream, Cottage Cheese) (spooned)
- **Class III:** Hard Cheeses and Cream Cheese (cut with a knife)
- **Class IV:** Dry Milk Products and Butter (spread with a knife, mixed with water or fluid). Class IV price is generally tracked as the reference US milk price.

"The US FMMO assure an adequate supply of wholesome beverage milk to consumers"

2 For more info, see http://dairy.ahdb.org.uk/market-information/milk-prices-contracts/milk-calculator-and-contracts/league-tables/

As the primary purpose of the FMMO is to secure 'fluid' milk for consumers, Class I milk is priced at a premium over Class IV milk due to perishability and the need for consistent supplies. The price is based on a complex formula based on constituents, and differential premiums differ from region to region, or marketing area.

According to Hoard's Dairyman, the current Class I base price (October 2015) is $15.84 per hundredweight of milk (32.2€c/litre), while Class IV (August 2015) is well below that at $12.90 (26.2€c/l).[3]

New Zealand – the Dairy Industry Restructuring Act (DIRA) and the Raw Milk Regulations

Since 2001, as a precondition of the merger of the New Zealand Dairy Co-operative Dairies Ltd, the New Zealand Dairy Board and the Kiwi Co-operative Dairies Limited to form Fonterra, the DIRA legislation was enacted. At the time Fonterra collected 96% of milk supplies by dairy farmers in New Zealand, giving it a dominant position on the domestic market.

DIRA compels Fonterra, through the Raw Milk Regulations, to make 5% of its supplies available to independent processors at either an agreed price, or regulated price.

According to Ministry for Primary Industries, the stated purposes of the Raw Milk Regulations[4] are:

- to provide an entrance pathway into the farm gate milk market, and
- to support competition in domestic dairy product markets.

Because of the difficulties created for processors engaged in the domestic consumer product market by the highly seasonal nature of New Zealand's milk supplies, special measures were also introduced over the years, including a premium over the farm gate price that independent processors had to pay to compensate Fonterra for having to supply milk on a flatter profile than the seasonal supply curve.

More recently this was replaced by a monthly limit on the quantities independent processors can secure. This latest approach means that larger domestic independent processors get less "regulated" milk and have to compete with Fonterra for milk at real farm gate prices. It also means that smaller and new operators have access to the said 'regulated' milk in a manner which ensures they can compete efficiently, and have the certainty of supply they need.

3 See www.hoards.com/class1 for details.
4 See archive.mpi.govt.nz/news-resources/faqs/proposals-to-amend-dira-and-raw-milk-regulations for details.

Australia – Supply agreement between processor Murray Goulburn and retailer Coles'

"The Murray Goulburn supply contract contains rise and fall provisions to protect the farmer's premium"

This ten-year milk supply agreement between Murray Goulburn (Brand Devondale) and retailer Coles' was agreed in April 2013, started in July 2014 and promised improved returns for farmers.

The deal locks in a margin for farmers, removing the volatility of international prices.

According to the Murray Goulburn press release from 10th April 2013, "The milk price paid by Coles under this unique agreement locks in a premium that will deliver additional profits to Devondale dairy farmers over the life of the contract. The premium is not affected by price fluctuations in international dairy markets or movements in the Australian currency and the contract contains rise and fall provisions to protect the premium farmers receive."

"As a Co-operative, Devondale will return 100% of the profits from this agreement to its farmer-shareholders through higher farm-gate returns."

Recommendations

1. Include the domestic market for milk in the FoodWise 2025 plan

The FoodWise 2025 strategy states that "...the development of a functioning domestic consumer retail market must be pursued to encourage innovation investment by agri-food companies and producers"[5]

However, it identifies consumer value added products only in the context of global markets and global consumers.

In the dairy specific "Sectoral Briefs", when it comes to the domestic market, it only highlights "farmhouse, artisan and higher end cheeses and butters"[6] for mention.

The domestic market for liquid milk, while relatively small in volume, is of substantial retail value at over €530m.

It is an important market in its own right, which must be nurtured.

Generating the same value from additional exports would take a great deal of investment at both farm and processing levels, so it is imperative that a strategy for the liquid milk market be developed within the context of the FoodWise 2025 plan.

2. The National Milk Agency must be a real forum for the sector's stakeholders

The National Milk Agency must be revitalised, and the make-up of its board reviewed to ensure all the relevant stakeholders are properly represented.

The National Milk Agency must be legally mandated to interact with retailers and food services operators in the fulfilment of its mission to ensure that farmers receive adequate compensation for the costs of liquid milk production.

5 FoodWise 2025,Growth Opportunities, Consumer Trends, page 33.
6 FoodWise 2025, Sectoral Briefs, Dairy, page 70

3. The National Milk Agency's powers must increased, and its remit widened

The Milk Supply Act (1994), which established the National Milk Agency, gave it the mission to regulate the supply of milk for liquid consumption.

The milk sold or supplied for liquid consumption must, as per the Milk Supply Act, be purchased from a producer under a contract registered under the Act, or from a registered processor who purchased it from a producer under a registered contract. Milk legally imported into the state does not come under the remit of the NMA.

The Agency must register contracts between producers and processors for the supply of raw milk for the liquid milk market which is of suitable quality, and which provide for a minimum specified percentage of supply over the winter months, or is for winter months only.

The NMA must be satisfied that the contracts provide "adequate compensation to the producer for raw milk supplied under the contract throughout the year, taking into account, in particular, in relation to the winter months, the economic cost of production of raw milk of suitable quality for heat treatment for liquid consumption all the year round".

However, the NMA has been given few means of pursuing this mission.

The National Milk Agency must be mandated to assess in detail the economic sustainability of producer pricing systems, not just contracts. Where pricing systems are deemed uneconomical, the NMA must have the power to refuse registration and insist on changes being made.

4. An Observatory for Input Costs must be created

Input costs, especially feed, energy, machinery and labour, are crucial considerations in the viability of liquid milk producers.

Even determined efforts by farmers to improve efficiency can be undone by wild fluctuations in unit costs of feed and feed ingredients, energy and machinery-related costs in particular.

We believe it is imperative that an Observatory be created that can monitor and flag input cost volatility in real time, so that all in the liquid milk retail chain understand the pressures on profitability, and that these can be built into price negotiations as a matter of course.

Conclusion

Fresh drinking milk produced locally by specialist suppliers is a high-value, nutritious product, which makes a very important contribution to the diet at every life stage.

Pure market forces cannot always be relied upon to deliver consistent, fresh, quality supplies all year round. In Ireland, this has already been recognised with the setting up of the National Milk Agency by the Milk Supply Act (1994) after the abolition of the Dublin and Cork District Boards.

In many other countries around the world, different types of market regulation apply for similar reasons.

It is vital that, in the quest for export-oriented expansion, we would not lose sight of the importance of our domestic market for milk.

We must not allow it to become commoditised and utilised exclusively as a loss leader and driver of footfall in supermarkets, as the ultimate logic on that path is to drive down its value, and replace it with lower cost, and potentially unreliably available imports from near markets, or UHT milk – either 'solution' letting down consumers.

Without a strong commercial return for winter milk and a strong premium based on that return, winter payment schemes must not be put forward that are aimed at incentivising farmers to deviate from their optimum supply curves.

Securing fresh milk supplies post quota will need a rethink of payment systems, including stronger incentives to allow farmers to cover the additional costs intrinsic to liquid milk production and to justify continuing their commitment to their liquid milk contracts.

The stakeholders in the industry must work together to provide farmers with a framework, a clear roadmap which shows them that there is a future for them in remaining committed to liquid milk, even in the context of export oriented dairy expansion. This is the only way we can secure locally produced, high quality fresh milk supplies for Irish consumers for the long term.

Appendix

Modelling potential expansion scenarios for a liquid milk herd at average scale and efficiency – Dr Joe Patton, Teagasc

The abolition of milk quota affords Irish dairy farmers an opportunity to take a fresh look at the structure of their overall business. For liquid milk producers, who supply a capped domestic market scaled at approximately 8-10% of national milk output, the opportunities for marketing increased milk output will by definition be confined to the export sector.

Given the volatility of international milk commodity markets, it is important for long-term profitability that any expansion undertaken occurs at low input cost, particularly in relation to feed budget expenses. Analysis of Teagasc profit monitor data over a number of years shows a strong relationship between maximising the proportion of grazed grass in the diet of milking cows and reduced total production costs. Calving cows in spring to synchronize feed supply and demand is an important management practice in this regard. A question therefore arises for liquid milk producers, who generally calve a significant proportion of the herd in autumn, as to what is the most appropriate strategy for herd expansion in a situation where contracts for fixed volumes of winter milk supply are currently in place.

With this in mind, a simple analysis was conducted to examine the potential changes to milk supply and revenues, feed inputs and overhead costs, for a typical liquid milk herd undertaking expansion under three possible calving pattern scenarios. The analysis presented uses a liquid milk farm operating at close to average herd size, proportion of liquid contract and technical efficiency for the sector. The baseline data for this farm were:

- Herd size 78 cows supplying 485,000 litres annually
- Liquid milk contract 600 litres per day or 45% of annual production
- Calving 38% of the herd from early September to December
- Grazing area 40 hectares, total 58 hectares
- Total purchased feed cost 7.03cpl

Numerous surveys conducted by individual milk processors have estimated an average milk expansion capacity of 25-40% within their existing supplier base, therefore the projected scale of increase in this analysis was 28% (i.e. from 78 to 100 cows). The three scenarios investigated were:

- **WIN-40:** A herd expansion of 25% retaining liquid milk contracts, with no change in milk supply pattern or proportion of autumn calving (40%)
- **WIN-15:** A herd expansion of 25% and retaining liquid milk contracts, while adjusting autumn calving (to 15%) to minimize the proportion of milk supplied as surplus to contract during winter months
- **SPR-100:** A herd expansion of 25% while moving to 100% spring calving, discontinuation of liquid milk contract supply

Calving Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SPR-100	0	62	26	8	4	0	0	0	0	0	0	0
WIN-40	10	18	16	10	6	0	0	2	14	12	8	4
WIN-15	10	32	28	10	5	0	0	0	0	6	6	3

Table 1. Calving patterns for the 3 expansion scenarios

It was assumed that land resources, technical efficiency and herd genetic merit remained consistent in across all scenarios. Milk and feed budget were calculated using the Teagasc Calving Pattern and Feed Budget Model, while marginal overheads were estimated from Teagasc labour and dairy inputs survey data.

Milk profiles and revenue

Milk revenues and profiles for the 3 expansion scenarios are presented in Table 1/Figure 1. A liquid milk bonus of 7.5cpl for 600 daily litres Sept-Mar inclusive was assumed available as per the baseline scenario. Milk revenues for WIN-40 and WIN-15 were higher than SPR-100 as a combination of higher milk volume (due to milking 365 days per year) and liquid milk bonus payment, which was forgone by SPR-100 due to its supply profile. The proportion of milk supplied by WIN-15 during the winter October-March period is reduced to the minimum required to meet liquid milk contracts.

	WIN-40	WIN-15	SPR-100
Litres Supplied	622,099	620,437	599,506
per cow	6221	6204	5995
Base Milk Value 30cpl	€ 186,630	€ 186,131	€ 179,852
Liquid Bonus Value	€ 9,765	€ 9,765	€ -
Total milk value	**€ 196,395**	**€ 195,896**	**€ 179,852**

Table 2

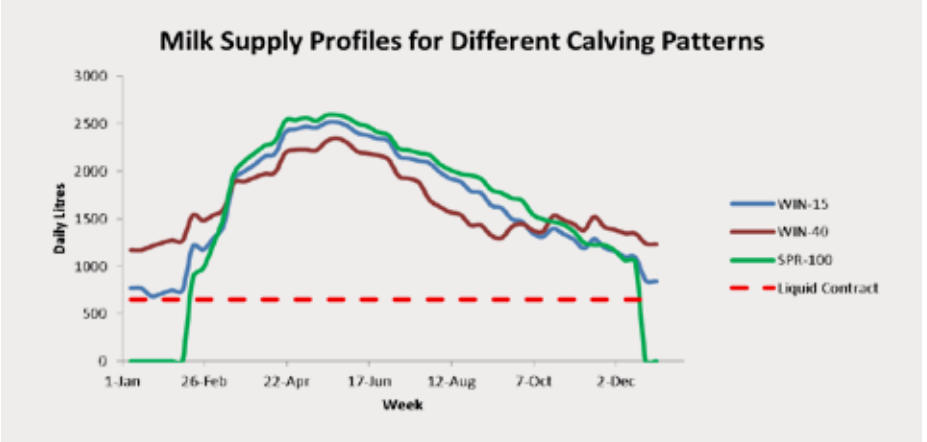


Figure 1

Feed Budget Costs

Feed budget costs are presented in Table 2. Concentrate inputs were costed at €280/tonne equivalent for 18%CP high UFL ration, while purchased forage was costed at €150/t DM equivalent for 72 DMD 25% DM grass silage. There is a significant difference between the feed budget costs for WIN-40 and SPR-100, with WIN-15 intermediate. This reflects the differences in milk supply profile, whereby total milk output during high cost months is minimized for SPR-100 but greatest for WIN-41.

	WIN-40	WIN-15	SPR-100
Milking Cows Concentrate	€ 43,812	€ 39,580	€ 34,270
Heifer Concentrate	€ 3,126	€ 2,641	€ 2,610
Concentrate Budget Cost	€ 46,938	€ 42,221	€ 36,880
Silage making costs	€ 10,988	€ 13,063	€ 13,257
Purchased Forage	€ 10,148	€ 5,395	€ 4,322
Silage Budget Cost	€ 21,136	€ 18,458	€ 17,579
Feed Budget Costs	**€ 68,074**	**€ 60,679**	**€ 54,459**
Purchased Feed	€ 57,086	€ 47,616	€ 41,202

Table 3

Winter Milking Overheads

All-year round milk production requires extra labour input as a result of milking for an additional 4-6 weeks per year, increased complexity of stock management (multiple batches of cows and youngstock per age class), and more complex routine management tasks. Parlour consumables and energy costs are also somewhat increased relative to a spring milk system.

	WIN-40	WIN-15	SPR-100
Parlour running costs	€ 960	€ 870	€ -
Labour			
Milking	€ 2,450	€ 1,750	€ -
Stock Management time	€ 2,900	€ 1,015	€ -
Total	**€ 6,310**	**€ 3,635**	**€ -**

Table 4

The additional labour element in particular is often not fully accounted for in cost benchmarking exercises, due to increased direct labour input of the owner-operator. However, in this analysis, own labour input is standardised across the three scenarios and the extra milking and stock management is included as a paid equivalent at market rates. The result is a significant increase in marginal overheads for WIN-40 compared to SPR-100, with WIN-15 intermediate.

Margin Differentials

Comparing cash margins over feed across the three scenarios, the WIN-15 and SPR-100 return similar margins before liquid bonus payments, with WIN-40 significantly lower due to its relatively high feed budget cost. When liquid bonuses are included, the WIN-15 returned the highest margin as it returned similar milk revenue for a lower change in feed cost relative to WIN-40.

When overheads are accounted for, the SPR-100 is the most profitable option in the absence of a winter milk bonus payment. When bonuses are included, WIN-15 returns the highest margin, however the bonus is insufficient for WIN-40 to return a higher margin than SPR-100.

	WIN-40	WIN-15	SPR-100
Base* milk margin over feed cost (BMOF)	€ 118,556	€ 125,452	€ 125,393
Total milk margin over feed cost (TMOF)	€ 128,321	€ 135,217	€ 125,393
BMOF minus extra winter milk overheads	€ 112,246	€ 121,817	€ 125,393
TMOF minus extra winter milk overheads	€ 122,011	€ 131,582	€ 125,393

Table 5. Margins over feed and overheads for three expansion scenarios. * Excludes liquid milk bonus value

Implications for expanding liquid milk herds

Any cash margin advantage for the liquid milk systems relative to SPR-100 is generated by securing a bonus on winter litres supplied. The analysis also shows that calving extra cows in autumn to produce milk in excess of contract during winter months has a negative effect on cash margins.

While WIN-15 returned a higher margin than SPR-100, the scale of differential is relatively modest at €60 per cow. Securing this additional margin requires a year round milking operation and extra system complexity. The extra cash margin may become viewed by many suppliers as an insufficient return, especially if further herd expansion becomes possible over time. In this situation the value of liquid milk payments would become diluted over additional output.

The WIN-15 scenario operates on the basis of minimizing the supply of surplus to contract winter milk in order to retain bonus payments while controlling feed costs. This is achieved by reducing the proportion of autumn calving to 15% of the herd, and delaying start of autumn calving until October. While liquid contract volumes continue to be met, the scale or 'critical mass' of the autumn calving herd is reduced and the liquid milk element becomes less important compared to the pre-expansion scenario. This would have the effect of weakening the commitment to liquid milk production in the system. Further herd expansion would be likely to lead to a discontinuation of autumn calving entirely, in order to streamline herd management at increased scale, and to allow the business more flexibility in dealing with milk price/feed cost volatility.

Finally, it is interesting to observe the effect of calving pattern on milk supply during the peak supply months. Compared to SPR-100, the WIN-15 calving pattern has a minimal effect, reducing monthly milk supply by 0.38% and 0.49% of annual deliveries for May and June respectively. The WIN-40 calving pattern reduces peak supply by 1.4% and 1.6% for May and June. This is a modest change in peak supply given the proportion of autumn calving, and reflects the persistency of lactation/second peak of autumn-calving cows grazing in late lactation.

Thus, it is important to highlight that peak milk management and winter milk supply should be viewed as related but separate issues in terms of future milk pricing and contract structures. Milk processors need to very clearly define their objectives if imposing price mechanisms that influence suppliers to deviate from the most profitable supply curve at farm level.

Feirmeoirí Aontaithe na hÉireann
The Irish Farmers' Association
IFA