



“Future looks bright for Irish Dairy”

On Tuesday 28th January we hosted the Arrabawn Dairy Conference in the Abbey Court Hotel in Nenagh, Co. Tipperary. Despite the challenges facing the Irish Dairy sector such as animal welfare, the environment, veganism and so on, there was a great sense of passion and enthusiasm about the future of the dairy sector in Ireland among the large crowd of farmers present on the night.

“The Irish dairy industry at an international level is a major player” was the message from Conor Mulvihill, Director of Dairy Industry Ireland (DII). During his presentation titled ‘Irish Dairy Industry 2030: Opportunities and Threats’, he said “People are saying dairy is finished, veganism is growing and all these sorts of things, but these are the facts, the global population is rising”. He went on to state “here are the global trade figures; in 2010 there were 40 million tonnes of global trade; in 2018, a decade later, we have gone up by nearly 50% to 60 billion tonnes of dairy trade and the forecast to 2030 and 2040 is for more growth.” Conor outlined that “we are exporting more than 90% of our dairy, we are in the right block, this is global dairy trade and you can see the EU is the dominant force in global dairy trade.” He added “the population of Nigeria in 2010 was just over 150 million; a decade later - by 2018 - it has gone up to 200 million. The game is being played in south-east Asia and China at the moment, but I think Africa is going to be a huge area of growth in 10 to 15 years’ time... from a dairy market we have to follow where the population is and where the demand is and you can be sure they aren’t worried about veganism there.”

Jack Nolan from the Department of Agriculture, Food and Marine gave a presentation titled ‘The Nitrates Derogation, where to from here?’. Jack spoke about the environmental challenges facing dairy farmers currently and into the future such as water and air quality but he was very optimistic about the opportunities available to the dairy industry if we can further improve our green image. Jack also outlined the nitrates action programme and the nitrates derogation review which come into effect from 2021. These included a compulsory liming programme, low emission slurry spreading, crude protein concentrate reduction, use of clover, and biodiversity measures for farms stock



L-r Edward Carr Arrabawn Chairman, Conor Mulvihill (DII), Trevor Donnellan (Teagasc), Jack Nolan (DAFM) and Dr Paddy Wall (UCD) , Conor Ryan Arrabawn CEO

over 170kg N. Trevor Donnellan (Teagasc Economist) gave a very insightful review of the climate action plan and the Marginal Abatement Cost Curve (MACC). In total there are 25 actions outlined on the MACC which can be implemented to help reduce our Greenhouse Gas Emissions (GHGs). The MACC comes under three main mitigation pathways:

1. Reduce Agricultural Methane & Nitrous Oxide - lower emissions (animals, animal waste and fertiliser)
2. Sequester Carbon (via land use change and forestry)
3. Energy efficiency & biofuels and bioenergy.

The main actions standing out to reduce GHGs are dairy EBI, changing fertiliser type (protected Urea), forestry and wood biomass for energy.

Trevor outlined that Ireland’s Ag emissions are currently about 20mt and is likely to rise to 21 or 22mt by 2030 if radical action is not taken in the near future. The climate action plan gives agriculture a reduction target of 10-15% by 2030.

Dr. Paddy Wall was the highlight of the night however, telling great stories which had the room in laughter while also getting his very strong points across to

the audience. Speaking at the event, he said: “Human nutrition is the end product. You are what you eat is as true now as it has ever been. So really you are in the human health business; believe it or not.” “In Ireland they call the doctors and nurses the human health professionals. They are not the health professionals; they are the sickness professionals. They manage sick people,” he joked. He added: “So if anyone asks you what business are you in, don’t tell them that you milk cows, tell them you are in the human health business. You are producing food for humans to keep them healthy. We have to be aggressively proud of the product we are producing; milk is a great product. The future is looking good; you have a great future”. Dr. Wall also stated the potential for Ireland’s hedgerows and grasslands to be acknowledged as carbon sinks on farms. He pointed out that “hedgerows sequester 50% more carbon than forestry”. “We need policymakers to recognise that, so that farmers are actually acknowledged for carbon sequestration. It’s not just about reducing it [carbon emissions]”. A Question & Answer session was chaired by Chairman Edward Carr after the presentations and this presented the farmers with the opportunity to challenge the speakers on the topics discussed over the course of the night.

NEWS

Arrabawn Co Op would like to thank everyone for attending the Dairy Conference which explored the challenges facing the Irish dairy sector through fascinating presentations from leaders of the Agriculture sector. We would also like to thank our speakers on the night Conor Mulvihill (DII), Trevor Donnellan (Teagasc), Jack Nolan (DAFM) and Dr Paddy Wall (UCD) for entertaining us on the night.

The conference concluded with a presentation by Chairman Edward Carr and Vice Chairman Martin Callanan to outgoing Co-Op Secretary Jerry Ryan who retired after 44 years. We would like to wish Jerry and his family best wishes for the future.



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Farmer Relations Advisor



Ronan Moran has been appointed to the position of Farmer Relations Advisor. Following Jerry Ryan's retirement, Ronan takes responsibility for managing relationships with Arrabawn's milk suppliers, as well as other internal and external stakeholders. Congratulations to Ronan on his internal promotion, which is effective immediately.



Large attendance at the Arrabawn Dairy Conference in the Abbey Court Hotel.

Milk Quality Advisor:

Dairy Health Certificate 2020 Reminder

Each herd that supplies milk must be certified by your vet annually to meet specific animal health requirements as specified by the Department of Agriculture, Food and the Marine.

These certificates must be submitted to Arrabawn Co-Op each year. The recommended time to certify your herd is at your annual herd test which enables you and your vet to fully complete and sign the form while inspecting the cows. If you have misplaced your blank Health Cert please contact your milk advisor and a replacement cert can be sent to you.

Chlorate & Trichloromethane (TCM) Residues in milk

Stringent regulations for specific dairy products play a major part in our Irish Dairying Industry today. The main two chlorine residues that the dairy industry is focusing on

presently is chlorates in powders which affects iodine metabolism in infants and TCM which affects butter quality. Due to increased food safety concerns this needs to be addressed promptly. Failure to comply can result in loss of current and/or future contracts with customers. Our customer base seeks the full removal of chlorine-based products by the end of 2020

Chlorates are produced by the degradation of sanitising agents such as chlorine, chlorine dioxide or Hypochlorite. TCM is formed when chlorine in the detergent/steriliser comes in contact with the fat in the milk or organic matter

All milk bulk tanks must use chlorine free detergent from 1st January 2020
From the 1st of January 2021 all milk suppliers must use chlorine free detergent for milking machine washing.

DAIRY MARKETS OUTLOOK

In 2019 we saw modest growth in global milk supply and we expect continuation of the same in 2020 with output predicted to be up by 1% and slightly higher increase in milk solids. A major reason in curtailing supply over the last months were the weather conditions in Oceania. Within the EU, strong export demand has helped reduce skim milk powder stocks and keep other products in balance. The coronavirus is starting to impact Chinese demand in dairy over the last few weeks and it has already softened demand across many other key commodities.

In terms of the key product categories, the butter market remains flat with stocks in balance and export demand required to maintain this situation. SMP and WMP were the more buoyant products in the marketplace over the last few months but Chinese demand being curtailed has brought a softening to these products as reflected by the latest GDT auction results. Casein and cheese both remain firm and the outlook for the next number of months looks positive.

Overall the market appears to be in a relatively good position from a supply demand perspective and the key concern will be the impact of the coronavirus on demand out of China.

TopStart PEP3 Milk Replacer

**Give your calves
the best start
with TopStart**

TopStart PEP3 quality-assured calf milk replacer, specifically designed and manufactured for Irish calves, has already been used to successfully rear over 20,000 calves across - Ireland under the Co-op Source brand.

Contains PEP3 to aid digestion and gut developments



SPECIAL OFFER:
Purchase 10 bags TopStart
- get 1 bag Calf Starter Free

ARRABAWN LOYALTY BONUS SCHEME

Following the launch of our Loyalty Bonus Scheme in 2019 to reward milk supplier customers for their continued loyalty in purchasing farm inputs from Arrabawn, the scheme continues to operate from December 1st 2019 to November 30th 2020 and will be based on purchases per litre of milk sold to Arrabawn.

The bonus will be issued in the form of a Gift Voucher which can be traded in any Arrabawn store. This scheme will be in addition to the current Feed Bonus Scheme.

For example:

A farmer supplying 400,000 ltrs milk to the co-operative is expected to purchase farm inputs (feed, fertiliser, hardware, veterinary etc.) worth approx. € 28,000 which is equivalent to 7cents/ltr. This level of purchase will entitle the supplier to a Gift Voucher of approx. €120. If the farmer purchased €40,000 worth of goods he will receive a gift voucher of approx. €160.

Please contact your local Sales Rep for more information.

BONUS SHARE SCHEME MAKE SURE NOT TO MISS OUT ON YOUR 'BONUS SHARES' FOR PURCHASING FEED THROUGH ARRABAWN

Arrabawn operates a Bonus Share Scheme whereby shareholder customers are issued with bonus shares based on the value of ruminant feed purchased in the previous year. Last year the bonus shares allocated amounted to 2% of the value of feed purchases.

For example:

The average 100 cow herd is entitled to 600+ shares using the below figures

<u>Animal Numbers</u>	<u>Overall Tons</u>
100 cows x 0.8 tons per cow	80 tons
Replacement Stock	30 tons
Total	110 tons

Please contact your local Sales Rep for more information.

MILK RECORDING-GETTING THE FACTS TOGETHER

As most people know milk recording will become a requirement for dairy farmers in the coming years. It will be needed for numerous reasons. Milk recording will pay you back in the long run! Milk recording can improve milk yield by 406L and gross margin by €42/cow. Data driven decisions are the best decisions. Can't improve on what you don't measure. Milk recording costs roughly €12/cow.

When: At least **4 times** in **Spring** herds (March, May, July, October) and 6 times in **All** year round herds.



1. Choose the best cows to breed top quality bulls for even better progeny. While slowly culling poor performing cows, who aren't paying their way.
2. EBI's of cows is increased with Milk Recording values, also increasing their progeny EBI status. In-Calf Heifers will have increased sale value. While bull calves may be selected by AI companies for future breeding. TB reactor cows will get fair price for cows culled.
3. Mastitis will be reduced, as high SCC will be identified as a primary source of infection.
4. Low SCC cows have better yield and solids! Also, SCC penalties will be reduced.
5. EBI of cows is more accurately awarded with milk recording, increasing values again.
6. Removing just one millionaire SCC cow will dramatically reduce your overall SCC count. A small proportion of cows have major influence of over-all bulk tank SCC.

To organise a Milk Recording -

Contact: - **Progressive Genetics - 01 450 2142**
 - **Munster AI - 022 43228**

Killimor Supplier wins Nugent Trailer



Standing left to right Seamus Ryan & Dermot Hobbs Arrabawn, Edward Treacy Winner, Pdraig Broderick Manager Killimor Store. Front.. Caoimhe Treacy & Enna Treacy.

Central Auctions Nenagh Mart

Calf Sale every Tuesday at 11am.
Prompt payment guaranteed and movements completed on time.

We appreciate that it is a very busy time of the year for dairy farmers and that it is difficult to have the time to bring your calves to the mart. With this in mind we are offering you an all-in service to have your calves collected at a reasonable cost, numbered and sold on your behalf. We have the experience of numbering and selling livestock on people's behalf for years and we assure you of the best possible service. We will contact you with the prices achieved for your approval after sale.

Calf Sellers Commission Rates: Single Lot €7. Double lots €12. Lots of 3 upwards €5 per head.

To avail of this service please contact David White at 086 890 4036 by 3pm on a Monday.

Calendar of Upcoming Sales Nenagh Mart

Dairy Sales: Wednesday 26th February, Show & Sale Thursday 5th March, Wednesday 11th March, Wednesday 25th March, Wednesday 8th April, Wednesday 22nd April, Wednesday 6th May.

Bull Sales: **IHFA** - Wednesday 1st April, **Hereford** - Saturday 11th April & Saturday 16th May.

Aberdeen Angus - Wednesday 22nd April & Wednesday 6th May.

Roscrea Mart

16th March - Limousin Bull Sale, 4th May - Limousin Bull Sale

Early Cow Nutrition- 100 days Post-Calving.

Early lactation is the busiest time of the year for your cows. They calf down, reach their peak yield, prepare for getting in calf again while not being able to consume their peak dry matter intake. All these events require a lot of energy which must be supplemented through the diet. It is natural that cows will lose some weight but it can be controlled with good diet management.

Some tips:

- Cows require 17-18% Crude Protein in their diet for early lactation. Ensure to choose a good quality dairy nut with the sufficient protein content. This need for protein will support milk peak yield, maintain body condition and general health (immune function). Cows may need up to 8-10Kgs of concentrates in early lactation, ideally split into morning and evening feed.

$$\text{CP Silage} + \text{CP Dairy Nut} \div 2 = 17-18\%$$

E.g. » 13% + 22% = 17.5% CP in diet

- Energy and carbohydrates are also critical is balance in the diet. All the above-mentioned activities require energy along with protein. Energy is in high demand; their energy intake must be higher than energy expenditure. Ketosis and NEB- Negative Energy Balance are a result of low energy intake, which will have a knock-on

effect on feed intake, loss of BCS, lower yield, longer to cycle again.

- A cow could lose 0.7kg/day if not feed its daily energy requirements. A high genetic merit cow will mobilise body fat at a higher rate than a lower genetic merit cow.
- Cows should be encouraged to up their feed intake to maintain high milk production. Every additional kg of Dry Matter consumed can support 2-2.4kg more milk. Feed intake can be encouraged by;
 - Good forage quality- DM and DMD.
 - Increased feeding frequency- little and often. Ensure silage always pushed in.
 - Feed Infront of cattle 20hrs of the day.
 - Consistency in feeding
 - Forage length of at least 2.6cm to encourage chewing and rumination.
 - Avoid major changes in diet
 - Cows tend to eat straight after milking, ensure sufficient feed is available directly after milking.
 - High producing cows will tend to eat 12 times a day for roughly 23 minutes.

Silage DMD (%)	75%	70%	65%
Dry + well preserved			
Supplement (27 litres)	6.5	7.5	8.5
Supplement (32 litres)	8.5	9.5	10.5
Increase by 1-2kg if silage is wet and/or poorly preserved			
Targets for total diet composition for winter milk dairy cows			
Lactating Cow			
	Early-peak ¹	Mid-late	Dry cow
Dry matter intake (kg/day)	21.0	16.0	11.0
Energy UFL (per kg DM)	0.95-1.0	0.85-0.9	0.75
Fibre (min): NDF (%)	32	-	-
ADF (%)	21	-	-
Starch (max)	22	-	-
Oil (max)	5-6	-	-
Protein PDI (g/kg DM)	105-110	95	70
Crude protein (%)	17	15-16	13
Mineral profile (% of diet)			
Ca	0.8	0.7	0.4
P	0.4	0.35	0.3
Na	1.7	1.5	1.0
Mg	0.3	0.25	0.28

¹ peaking at 38-40kg milk



Spring grazing advice

Quite a few farmers have been able to get out to grass in the last couple of weeks. Teagasc have shown that each extra day at grass in spring is worth €2.80 per cow so it's important to get spring grazing management right. However there are a number of important management decisions to be made in order to capitalise fully on this.

1. Fertiliser - at this stage the milking platform should have received a half bag of protected urea per acre. If not, get it out straight away. The only exception is ground that received slurry. 1000 gallons of typical slurry is equivalent to a bag of 6-5-32, so 3000 gal/acre is the same as 15 units of N. At this time of year, it should be possible to grow 10-12 kg DM for every kg of N fertilizer applied, so it's an excellent investment. If soil tests show P & K is required, a little and often approach is recommended for P. However, for K moderate applications are ok in early spring (up to 20 units/acre) but avoid large applications (more than 30 units/acre) until later in the year as too much K in spring grass can result in Magnesium deficiency and grass tetany. In early-mid March, a further 46 units of N (1 bag of P. urea) should be spread across the whole farm, to reach the target of 70 units/acre of N by April 1st. If you are too busy get a contractor to do this job, don't delay as it will cost you money in lost grass.

2. Spring rotation planner - There will never be enough grass to exactly match forage demand in early spring. So some form of plan is needed to ensure the right amount of

grass is utilised. The first step is to select the anticipated start date of the second rotation. For dry farms, this should be close to April 1st. On wetter ground, it might be April 15th or thereabouts. The spring rotation planner will then calculate the exact area you should graze each day between the start of grazing and the start of the second rotation. The example below shows the weekly area to be grazed on this farm. PastureBase Ireland has the spring rotation planner feature as part of the online programme. It can also be found online on the Teagasc website. Accurate use of this tool will ensure you don't overgraze and run out of grass before rotation 2 starts. Remember the target cover for the first paddock of rotation 2 is 1200-1300 kg DM/ha. You need to follow the spring rotation planner as closely as possible or you won't have enough grass to start rotation 2 at the target date.

3. Post grazing residuals or 'clean outs' - The target grazing residual sward height is 3.5-4 cm. It's important to graze tightly at all times of the year so that the following regrowth is high quality grass. Leaving half grazed paddocks behind will result in more dead material in the sward base in the subsequent rotation and a poorer quality sward that is lower in leaf and higher in stem. This will affect milk protein levels and yield at an important time of the year when cows are at peak yield.

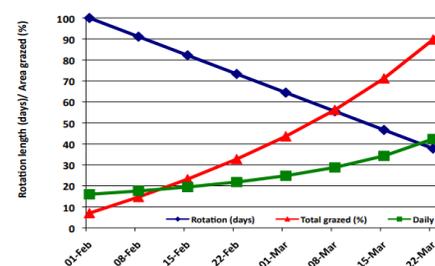
4. Grazing in wet weather. All of the above points depend largely on weather conditions. However, you have to be flexible and ready to take an opportunity when weather provides.

Often, March can be wetter than April. If a couple of dry days come, take advantage and get cows out. There are numerous strategies to improve grass utilisation in wet weather.

They include:

- On-off grazing - let cows out for 3 hours after each milking. They will consume 90% of their total daily intake of forage during this time.
- If out full-time and its wet, use 12-hour breaks - set up your paddocks so that cows do not back graze over yesterday's allocation.
- Use back fences and temporary spur roadways if necessary to avoid poaching.

Figure 1: Sample Spring Rotation Plan for a 40 hectare dairy farm.



Example of a spring rotation planner. Note that as growth accelerates in March & April, the curve moves upwards & the daily area grazed becomes larger.

Protected urea: what is it, does it work, and is it cost effective?

Ireland has a very favourable climate for growing its largest crop, grass. To achieve grass growth potential, fertiliser nitrogen (N) is a key input. However, fertiliser nitrogen also plays a role in gaseous N losses and water quality. The Irish government has committed to reduce national losses of both ammonia and the potent greenhouse gas nitrous oxide while achieving good status for all waters. In relation to gaseous emissions agriculture accounts for 33% of national GHG emission and 98% of ammonia emissions and as a consequence is under the spotlight to reduce emissions. The use of protected urea nitrogen fertiliser is the largest single avenue currently open to Irish agriculture to meet these commitments to reduce GHG and ammonia emissions.

What is protected urea?

Protected urea is urea which is treated with an active ingredient called a urease inhibitor. The urease inhibitor can be either a) coated onto the outside of the fertiliser granule or b) incorporated into the urea granule melt during manufacture.

How does a urease inhibitor work and what role does it play in stopping ammonia loss? Urease is the enzyme which catalyses the conversion of urea to ammonium. It is during this conversion that ammonia gas is lost from untreated urea. A urease inhibitor blocks the active site of the urease enzyme. This moderates the rate at which urea converts to ammonium. In so doing ammonia loss is reduced to low levels.

Will slowing the conversion from urea affect the availability of N for the grass crop?

No, because the conversion of protected urea to ammonium begins as soon as the fertiliser granule starts to melt. The urease inhibitor moderates the rate at which the urea-N converts to ammonium. The result is that the conversion occurs over period of a few days rather than a few hours, as would be the case with conventional urea. Remember, when fertiliser N is applied to soil its aim is to supply the grass or crop with N over a period of days to weeks rather than hours.

Are there different urease inhibitors used to manufacture protected urea? What are they?

Yes, the following products are recognised as acting effectively as urease inhibitors: a) NBPT b) 2-NPT, c) NBPT+NPPT. Teagasc has conducted research with all three inhibitor options, most extensively with NBPT and NBPT+NPPT.

Are these approved for use in Ireland?

Yes, these active ingredients are approved for use by the European Chemicals Agency through the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) process.

Can I spread protected urea throughout the growing season?

Yes, you can spread protected urea across the growing season at times when you

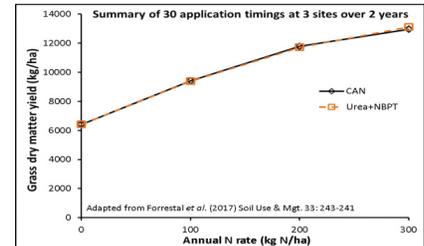


Figure 3. Summary of total annual grass dry matter yield (kg/ha) for CAN and protected urea evaluated across 2 growing seasons (2 years) on three soils (locations)

would otherwise spread calcium ammonium nitrate (CAN) or unprotected urea. This may potentially simplify the fertiliser spreading programme on the farm and setting up of fertiliser spreader for only 1 straight N product each year.

Will using protected urea reduce yields?

No, published Teagasc trials (Figure 3) have shown that protected urea consistently yields as well as CAN in Irish grasslands with no difference in annual production between the two fertilisers.

Will using protected urea reduce efficiency?

No, published Teagasc trials conducted in different areas of Ireland have shown that the nitrogen recovery efficiency of protected urea and CAN are consistently the same.

Fertiliser N product	N content (%)	Cost per tonne (€)	Cost/kg N (€)
Urea	46%	391	0.85
Protected urea	46%	437	0.95
CAN	27%	284	1.05

Is protected urea cost effective?

The costs below show protected urea to be less costly than CAN while performing just as well in terms of yield and N recovery efficiency. Bear in mind that fertiliser costs fluctuate but always make the cost comparison on the basis of cost per kg N for straight N products.

Does protected urea reduce Emissions?

Does protected urea reduce loss of the potent greenhouse gas nitrous oxide? Yes, published Teagasc trials have shown that protected urea has 71% lower nitrous oxide emissions than CAN

Does protected urea reduce loss of Ammonia?

Yes, based on published Teagasc research protected urea has comparable ammonia loss to CAN and ammonia loss is reduced by 79% compared to urea

Is there potential for protected urea to reduce nitrate loss to water?

Yes, during periods when leaching occurs

GHG emissions	Ammonia emissions		
	Level	High	Low
	High	Urea	CAN
Low	Urea	Protected Urea	

nitrate present in the soil is vulnerable to leaching loss. Protected urea does not deliver N directly as nitrate to the soil, therefore reducing the risk of nitrate losses occurring with rainfall post fertiliser application. Reduced ammonia loss compared to urea will also reduce the risk of ammonia N being deposited from the atmosphere onto sensitive

habitats or into sensitive water bodies.

Summary

Use of protected urea can reduce agricultural greenhouse gas emissions and ammonia emissions while maintaining yield and saving cost.