# Milk Matters

## SUPPORTING SUSTAINABLE FARMING

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ISSUE 59 - JANUARY 2018

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Happy New Year and welcome to the January edition of

# MILK MATTERS

## DAIRYGOLD'S DAIRY ADVISORY BULLETIN

Dear Milk Matters Reader,

In this edition we progress our nutritional focus from dry cow management to the transition cow management. Grass silage alone will not meet the energy requirements of your cow at the point of calving. She needs an energy source. Feeding the transition cow is a recognised necessary management practice by many national and international experts.

In our **Calf Rearing Section,** we focus on feeding the new born calf. Colostrum, concentrates, straw and water all play important roles in rearing a healthy calf capable of doubling its birth weight quickly. Have you considered using a milk replacer? They can deliver the same and better performance for a lower cost than whole milk.

This month's **Grass Matters**, explores the importance of grazed grass and nutrient efficiency in our goal of farming with minimal environmental impact.

While Doreen Corridan, discusses antibiotic microbial resistance (AMR) and the actions we should be taking in 2018 to minimise disease on our farms.

Please Join us on the 12th of January in Corrin Mart for our Dairy Day.

Yours Sincerely,

*Liam Stack*

Liam Stack M.Agr.Sc

RUMINANT TECHNICAL MANAGER,
DAIRYGOLD AGRIBUSINESS

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*To contact the editor of*

MILK MATTERS

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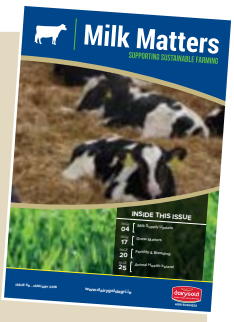


# UP TO EIGHT MONTHS EXTENDED CREDIT

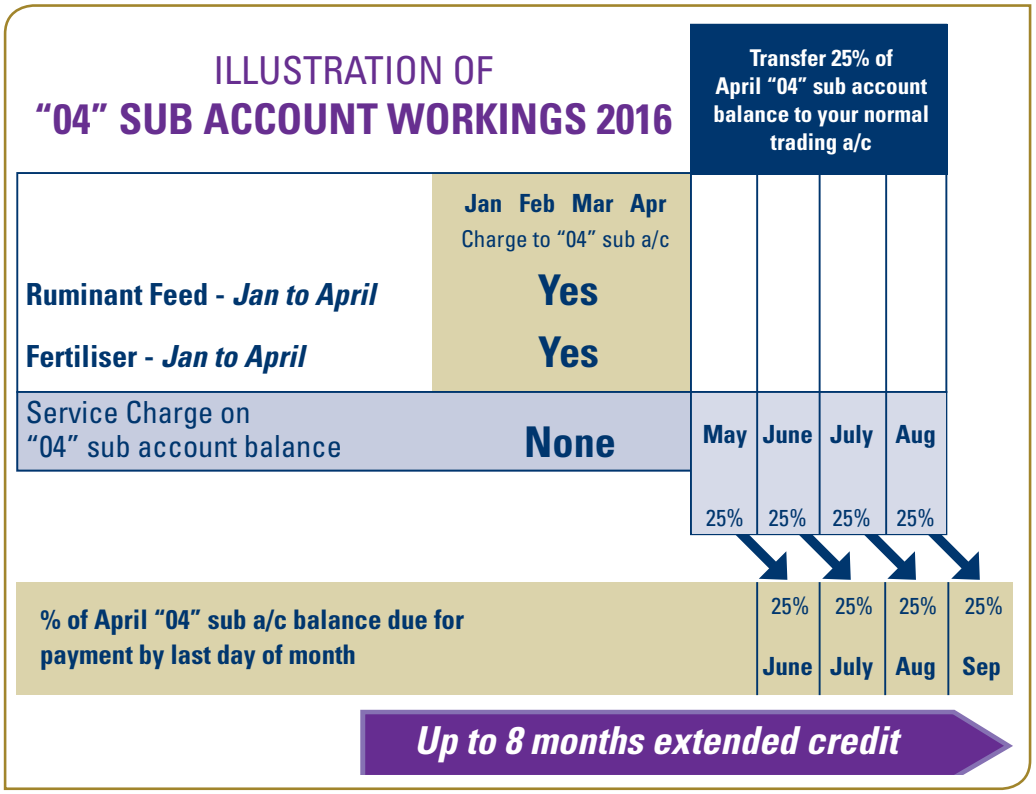
## GET INTEREST FREE CREDIT FOR 5 MONTHS WITH THE DAIRYGOLD 04 A/C.

As you will be aware we have for many years offered several months of free extended credit for fertiliser purchases through the use of the "04" sub account. In 2016 we successfully extended this option to ruminant feed and milk replacer. You again have the opportunity to use your "04" sub account for feed, fertiliser and milk replacer from 1/1/2018. Simply ask to charge your ruminant feed and fertiliser purchases into your "04" sub account, when placing orders in the months of January to April inclusive.

**0% APR**

### What's the benefit?

For example, instead of paying for January feed at the end of February, you can pay for 25% of it at each month end from June to September. This gives you up to eight months free credit on 25% of your January purchases.




## HOW DOES IT WORK?

You can charge ruminant feed, fertiliser purchases and milk replacer to your "04" sub account in January to April inclusive. At the end of each month from May through to August, one quarter of your April 30th balance on your "04" sub account will be transferred into your main trading account for payment due at the end of the following calendar month. (See table illustration above) As a Co-operative, we would greatly appreciate your support in ensuring that when your extended credit amounts become due for payment at the end of June, July, August and September that you will make every effort to pay them on time and in full. Thank you.

# MILK SUPPLY UPDATE

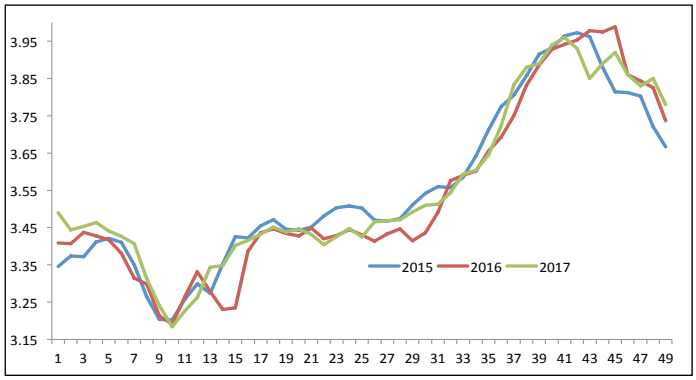
## WEEK 49, 2017

By LIAM STACK, M.Agr.Sc, Ruminant Technical Manager

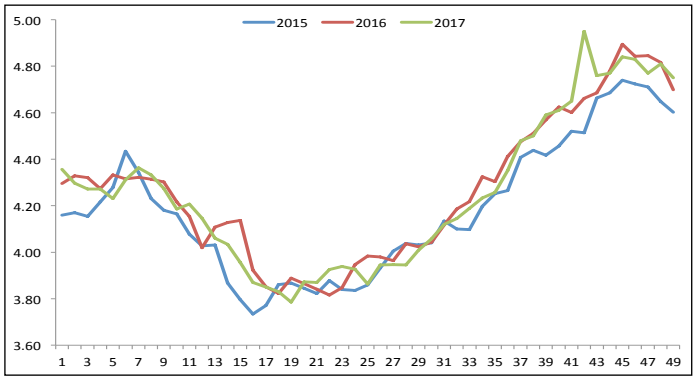
**Milk production figures are averages based on ICBF dairy cow numbers in the Dairygold region. Individual farm yields will vary between farms.*

| | 2015 | 2016 YTD | 2017 |
|---|---|---|---|
| Milk Yield per cow in Dairygold (kg) | 5246 | 5138 | 5349 |
| Cumulative milk solids per cow in Dairygold (kg MS) | 401 | 394 | 411 |
| Average Protein % | 3.45 | 3.42 | 3.45 |
| Average Fat % | 4.05 | 4.12 | 4.10 |
| Average Lactose % | 4.84 | 4.87 | 4.86 |

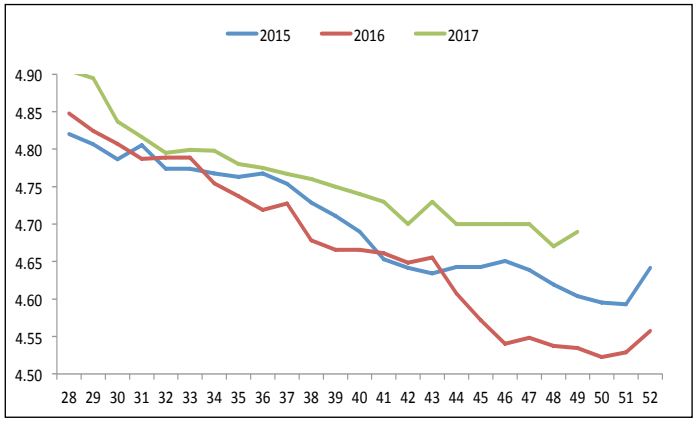
**Milk Protein**



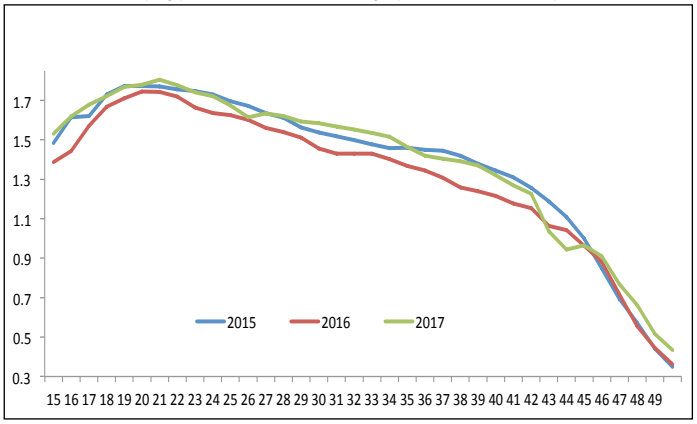

**Milk Fat %**




**Milk Lactose % (week 29 to Year end)**




**Milk Solids (kg) per cow per day (weeks 15-49)**



# FEEDING COWS IN EARLY LACTATION

By LIAM STACK, M.Agr.Sc, Ruminant Technical Manager

## Aims:

1. Produce milk
2. Minimise body condition score (BCS) loss
3. Get your cows back in calf

Your feeding decisions are going to be made around milk yield and forage quality. Feeding better quality forage leads to lower concentrate requirements for the same levels of production.

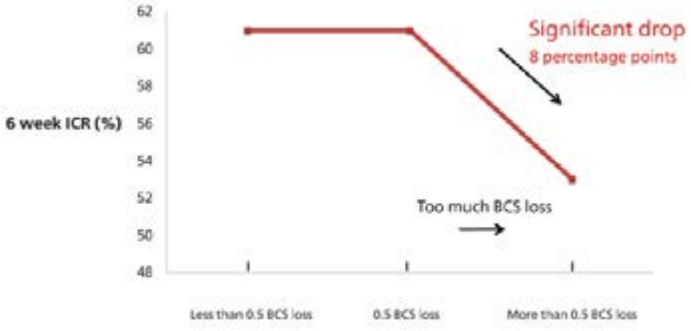
| | UFL | Concentrates for 25 Ltrs |
|---|---|---|
| Grass Silage (72 DMD) | 0.81 | 6.5 |
| Grass Silage (68 DMD) | 0.76 | 8 |
| Maize Silage (30DM, 30 Starch) | 0.87 | 5 |
| Grazed Grass | 1 | 1 |

From an economic and production stand point we must prioritise the feeding of our highest energy forages to our freshly calved cows.

## Energy Nutrition and Fertility

Excessive BCS loss in early lactation from underfeeding your cows leads to poor fertility performance

**Relationship between body condition loss post calving and 6 week in calf**




## Energy Nutrition and Lameness

Controlling negative energy balance in early lactation is one of the best ways to prevent lameness caused by sole ulcers, haemorrhages and white line disease, according to new research.

When cows lose body condition they begin mobilising fat from all areas of the body, including the fat pad that exists in the feet of cows. Cows have three cylinders of fat lying under the hoof, which acts like gel cushioning in trainers – a shock absorber. Research has shown cows with thinner fat cushions are more likely to have sole lesions.

Again to help in the prevention of lameness we need to limit BCS loss after calving to 0.5 max.

### How much concentrates should I feed my cows?

| Concentrates required to sustain differing levels of milk production will vary depending on forage quality | | | | | |
|---|---|---|---|---|---|
| | Yield | | | | |
| | 23ltrs | 25ltrs | 28ltrs | 33ltrs | 37ltrs |
| Silage DMD | 5 gals | 5.5 gals | 6 gals | 7 gals | 8 gals |
| 60 | 9kg | 10kg | 11kg | | |
| 65 | 7.5kg | 8.5kg | 9.5kg | 11kg | |
| 70 | 6kg | 7kg | 8kg | 9.5kg | 11kg |
| 75 | 5kg | 6kg | 7kg | 8kg | 10kg |

| Feeding recommendations for Good Maize silage + grass silage and 28ltrs (6gals) | |
|---|---|
| 25% Maize Silage : 75% Grass Silage | 7.5 kg Dairy balancer gold 6 25% |
| 50% Maize Silage : 50% Grass Silage | 6.5 kg Dairy balancer gold 6 29% |
| 25% Maize Silage : 75% Grass Silage | 5.5 kg Dairy balancer gold 4 32% |

## Protein:

The amount of energy in your cows diet dictates how much protein she can utilise.

An excess of protein to energy leads to high milk urea nitrogen and has been shown to;

- delay first ovulation or oestrus;
- lower/reduce conception rate and
- lead to a greater amount of post calving weight loss.

Protein requirements of a dairy cow (450kg MS or 6000ltrs) at peak yield is 95 to 105g PDI/KG DM (1800-2000 g PDI/day) or 16 % crude protein.

# Hi-Pro *ECO LAC* Dairy

By LIAM STACK, M.Agr.Sc, Ruminant Technical Manager

From January 2018, Dairygold Quality Feeds will bring a new and improved Hi Pro range to our customers.

Hi-Pro ***ECO LAC*** is designed around the core values that extend right throughout the Dairygold quality feeds range. It is:

- High in UFL, energy is the first limiting factor in animal nutrition.
- Has a high inclusion of maize meal and digestible fibres, to complement grazed grass, maintaining rumen function and maximise the levels of milk protein produced.
- Has a good PDI balance to maximise milk production
- Has a high inclusion of trace minerals and vitamins included pro-rata with the calmag
- Contains Agolin, a natural rumen modifier that increases yield.

## Agolin

Agolin is a blend of high quality plant active ingredients that alters the rumen bacterial population to:

- lower the levels of dietary energy lost from the rumen as methane by 25%
- lower the amount of dietary protein converted to ammonia by 10%

**KEY POINT:** Methane lost is energy lost, Ammonia lost is protein lost

Less energy lost as methane results in:

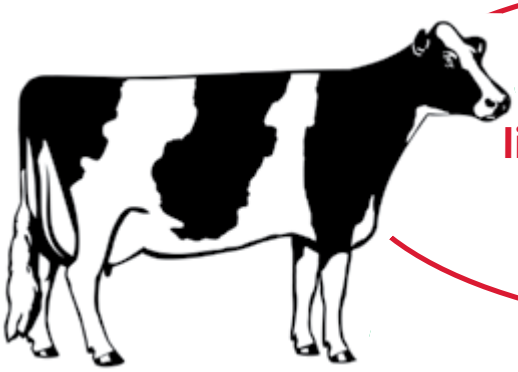
- Less BCS losses in early lactation
- More energy available for production
- Increased yield
- Better fertility performance

Less protein lost as ammonia results in:

- Better balance of PDI
- Lower levels of milk urea nitrogen
- Increased production
- Better fertility performance

Independent Published Research with Agolin has shown:

- Increase FCE. Range 4 – 6%
- Increased intakes. Average increase 3%
- Increased milk yield. Range +1-3 ltr depending on the initial yield (yield potential) of your herd
- Higher back-fat measure (BCS). Average 21%
- Higher pregnancy rate. Range 15 – 24%



**One cow can produce between 500 and 600 litres of methane per day**

*The equivalent to almost 1000 pints of beer*

Methane and ammonia losses are all too often ignored as only being of concern to the greens and politicians. However, methane lost is energy lost, Ammonia lost is protein lost.

A cow's milk yield response is dependent on her genetics. When you supply higher yielding cows with more dietary energy or release more dietary energy from their diets, as Hi Pro ECO LAC does, they generally give this back to you in milk. Lower yielding cows tend to keep this energy for body weight. **Therefore, you can expect higher yield responses from milkier type cows.**

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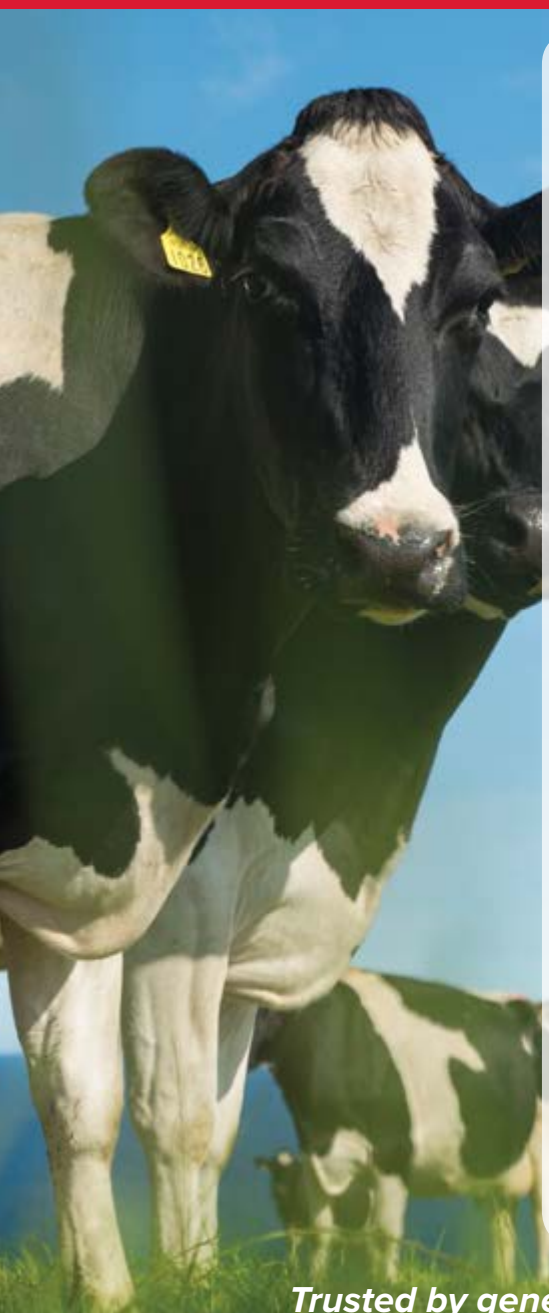
QUALITY FEEDS

# DAIRY FEEDS RANGE



## Benefits of the Dairygold Feed Range:

1. **Native grains**
   - Maximum inclusions in all our rations
2. **High energy**
   - high levels of bypass starch coming from maize meal and a blend of high energy digestible fibre resulting in good rumen function
   - maximum milk yield and protein %.
3. **Only good quality protein used**
   - high levels of PDI
   - good protein efficiency
   - maximum yield and protein %.
4. **YEA-SACC Inclusion**
   - to aid rumen function and efficiency
   - lower levels of digestive upset
   - higher milk volume
   - better fertility performance
5. **Agolin**
   - limit energy lost as methane
   - help the cow utilise all her dietary protein
   - resulting in increased milk yield
   - less body condition score loss
   - improved fertility performance
6. **Bioplex Copper, Bioplex Zinc and Selplex & elevated levels of Vitamin E**
   - better fertility performance
   - lower SCC and mastitis
   - reduced lameness
   - improved immune function
7. **Biotin**
   - prevent lameness
   - increase milk yield.

*Trusted by generations of farmers, Dairygold Agri Business, puts your animal's nutrition first.*

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**Easy to Order via;**

- Inside Sales & your Area Sales Manager
- Our Co-Op Stores
- Your Dairygold Online Services Account
- And through Lombardstown Mill Customer Service at 022-47275

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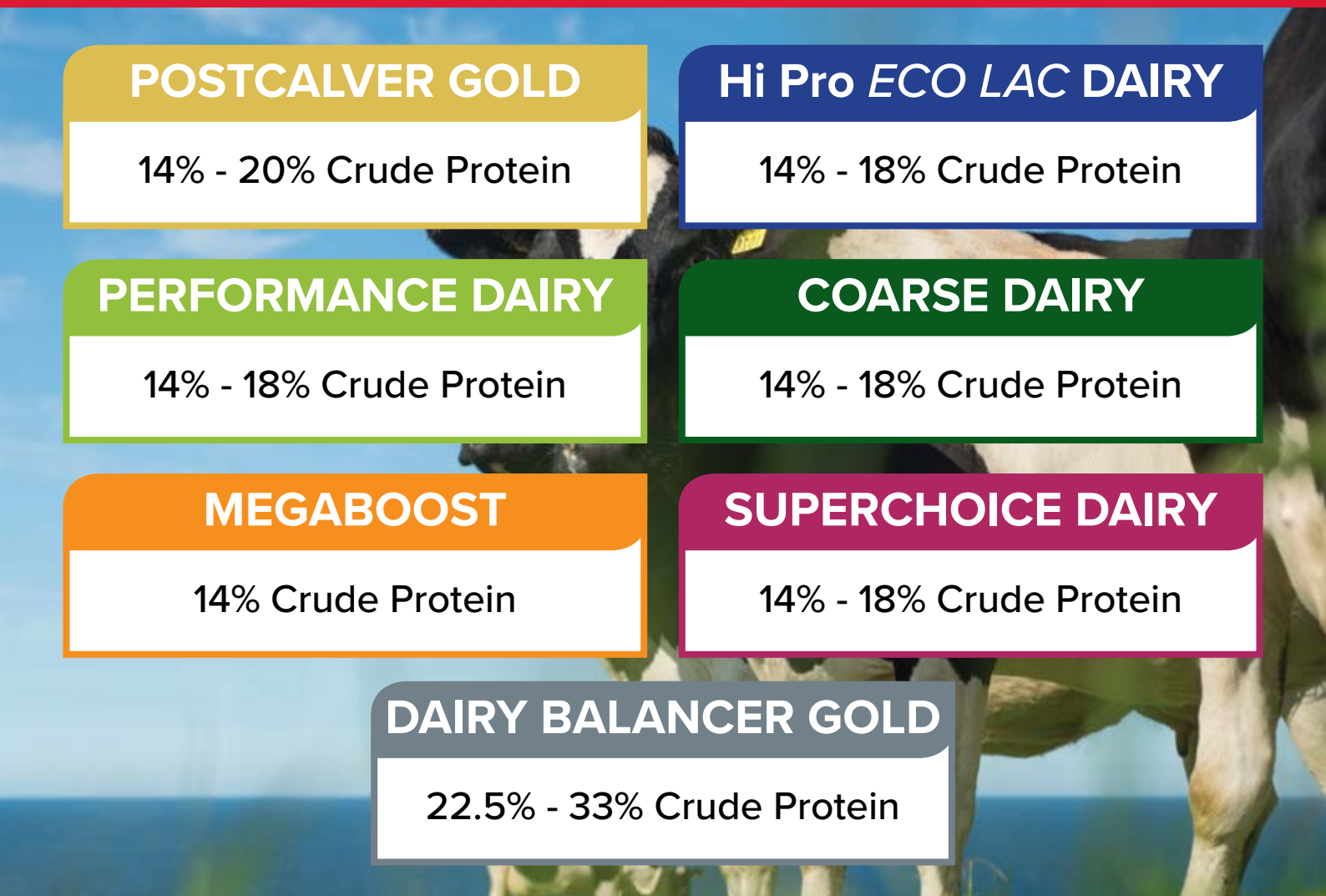
QUALITY FEEDS

# DAIRY FEEDS RANGE



## POSTCALVER GOLD
14% - 20% Crude Protein

## Hi Pro *ECO LAC* DAIRY
14% - 18% Crude Protein

## PERFORMANCE DAIRY
14% - 18% Crude Protein

## COARSE DAIRY
14% - 18% Crude Protein

## MEGABOOST
14% Crude Protein

## SUPERCHOICE DAIRY
14% - 18% Crude Protein

## DAIRY BALANCER GOLD
22.5% - 33% Crude Protein

**Recommended Cal Mag Inclusion in Dairy Feeds for Different Feeding Levels**

| 3.125% Cal Mag | 1.8% Cal Mag | 1.05% Cal Mag |
|---|---|---|
| 1.8 - 2.7 kg/head/day | 3.2 - 5.0 kg/head/day | 5.4 - 8.2 kg/head/day |
| 4 - 6 lbs/head/day | 7 - 11 lbs/head/day | 12 - 18 lbs/head/day |

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# FEEDING YOUR DRY COWS AT THE POINT OF CALVING

By LIAM STACK, M.Agr.Sc, Ruminant Technical Manager

**KEY POINT:** The most stressful time for your cows is around calving with over 50% of dairy cow metabolic problems occurring within three weeks of calving.

**Your cows will start calving within the next 3 weeks.** In the last month before calving the growing calves energy requirements peaks while the cow's intake starts to drop. It is therefore very difficult to adjust your cows BCS from here on.

**KEY POINT:** Our key goal in the month of January is to meet the energy requirement of the cow and growing calf.

***Failure to do this will lead to:***

- Ketosis before and after calving
- Milk fevers
- Retained cleansing
- Poor immune function: i.e SCC after calving
- Poor milk volume at calving
- Poor colostrum quality for your new born calves

**Can an all grass silage diet meet your cows energy requirement leading up to calving?**

| Energy Requirement (UFL) January | 8.5 |
|---|---|
| **Proportion of the cows energy requirement supplied by an all grass silage diet** | |
| Grass Silage 60 DMD | 67% |
| Grass Silage 65 DMD | 83% |
| Grass Silage 70 DMD | 95% |

**KEY POINT:** Even on good quality grass silage a dry cow cannot meet her energy requirements at the point of calving.

**The economics of filling the energy gap**

| | Feeding Rate | Cost (€/hd/day) | Total Cost (€/hd/day) |
|---|---|---|---|
| Beef Feed | 2kg | 0.56 | |
| Pre-calver gold mineral | 120grms | 0.16 | 0.72 |
| Pre-calver gold feed | 2kg | | 0.63 |

## Mineral Feeding Pre-Calving

*The objectives of a Dry Cow Management Program are for the cow to calve:*

1. In an optimum calcium status; This is a function of the silage mineral status and the level of Magnesium and Vitamin D3 in the mineral.

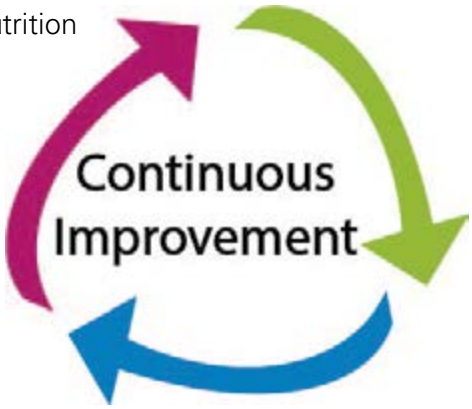
2. With reduced metabolic disorders; This is influenced by the mineral Magnesium, Iodine, Selenium and Vitamin E & A levels.

3. In an optimum immune status; This is influenced by the minerals, vitamins and trace elements (Selenium and Vitamins A & E).

4. Producing high quality colostrum; This is influenced by the mineral and vitamin supplementation.

# DAIRYGOLD PRE-CAVLER MINERAL OFFERING

To ensure we are delivering the best possible dry cow mineral and vitamin nutrition to your cows we have made a significant adjustment to our already gold standard pre-calver mineral range for 2017. ***Talk to your ASM or our Inside Sales team for details on our updated specification.***




These additions, are on top of our continued commitment to the use of Selpex, Bioplex copper, zinc and manganese. These additions will ensure your superchoice pre-calver range remains the market leader for mineral nutrition.

When buying a pre-calver mineral please ensure that your mineral is meeting the requirements as laid out in the table.

**KEY POINT:** For 2017 we are upping the levels of; Magnesium, Phosphorus, Vitamin A, Vitamin D, Vitamin E; used across the range.

A mineral formulated to these specifications will results in (assuming correct BCS, energy and protein nutrition at calving down):

- Reduced subclinical milk fever
- Less retained placentas
- Reduced calf mortality and morbidity
- Enhanced immunity and thrift
- Improved cow fertility

| ELEMENT | WHAT IT EFFECTS | COMMENT |
|---|---|---|
| **Mg** | Milk Fever | Minerals must supply 30+ grms as a minimum. |
| **Cu (Copper)** | Cow mineral status, fertility, immune system, production | Mineral should supply c. 400mg/day. To avoid potential losses a proportion of the Cu should be in the bioplex form |
| **Zn (Zinc)** | Lameness, SCC, Mastitis, Production | Mineral should supply c. 480mg/day. To avoid potential losses a proportion of the Zn should be in the bioplex form |
| **Se (Selenium)** | Retained Cleansings, Colostrum quality, SCC, Mastitis, Calf growth, calf scours | Mineral should supply c. 5mg/day. To avoid potential losses a proportion of the Se should be organic eg Selplex |
| **Iodine** | Weak Calves, Embryonic Death | Mineral cannot supply more than 60mg/day |
| **Vitamin A** | Retained Placenta | Mineral should supply >70,000 iu/day |
| **Vitamin D** | Milk Fever | Mineral should supply >20,000 iu/day |
| **Vitamin E** | Retained Cleansings, Colostrum quality, SCC, Mastitis, Calf growth, calf scours | Mineral should supply >500 iu/day |

# 2017 PRE-CALVER GOLD MINERAL OFFER

## BUY 1 TONNE AND GET 4 BAGS FREE.
## BUY 0.5 TONNE AND GET 2 BAGS FREE.
## SEE IN-STORE FOR OTHER OFFERS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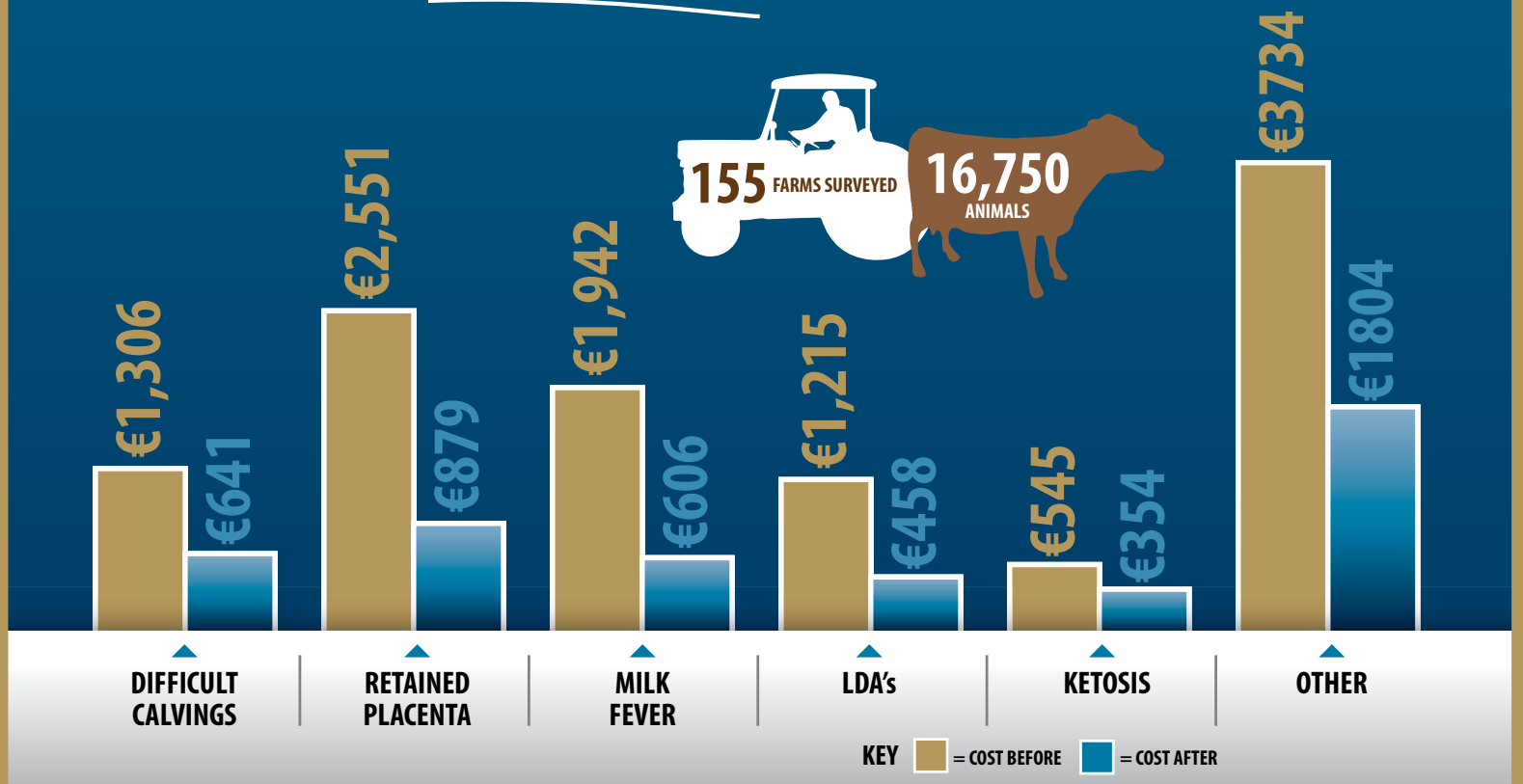
**Please contact your local Agri Branch Lead, your local Area Sales Manager or Inside Sales on 022-31644 for more details**

# Have you had an issue with Metabolic Disorders on your farm ?

In a recent survey of 155 Irish Farms, a dramatic decrease was shown in the incidences of metabolic disorders following the use of the correct Pre-calver mineral. This can give annual savings of up to €810 per farm.

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If you would like free independent advice from a highly experienced team of qualified advisors, simply let us know in Branch or by contacting your local Dairygold representative.

| | |
|---|---|
| Inside sales | 022 31644 |
| Alan Ryan | 086 2621952 |
| Jim Canty | 086 2461648 |
| Tom Mee | 086 8098582 |
| Rachel McCarthy | 086 7930240 |
| Diarmuid O Riordan | 086 2461821 |
| Michael Smith | 086 2470403 |
| Denis McCarthy | 086 2461647 |
| Sean Ryan | 086 2461639 |
| Kieran Creed | 086 1728335 |
| Amie Coonan | 085 8001089 |
| Edmond Curtin | 086 2441369 |
| Ivan Vallance | 086 7930237 |

# DAIRYGOLD FERTILIZER PROGRAMME

By LIAM STACK, M.Agr.Sc, Ruminant Technical Manager

Fertilisers have often been seen as a commodity, and our use of this commodity from a sustainability standpoint has been questionable. Dairygold, through Dairy Sustainability Ireland, has joined up with some of the country's largest dairy processors to promote and encourage sustainable dairy farming.

Fertilisers must be used properly to drive grass growth. This cannot happen without knowing our soil fertility and using the correct fertilisers within an overall farm plan to drive efficiency. With this in mind, in 2016 Dairygold launched its soil testing campaign. We now take the sample, analyse these samples and formulate a custom fertiliser programme for your farm from €16.50 + VAT per sample.

Fertilisers are moving away from a commodity and moving into value-add. Fertilisers can be much more than simply N, P and K.

*We now have fertilisers:*

- based on treated urea which increase annual grass growth while decreasing ammonia and greenhouse gas (GHG) emissions.
- that contain selenium which increases the selenium status of the grass and the cows that eat it, resulting in improved animal health and fertility performance.
- with a specialised form of Phosphorus that work best in low pH soils
- with a chemically unique Phosphorus that increases plant availability by avoiding soil lockup

Our fertiliser package for 2018 will as always be built on a competitive price, while also offering you the latest in innovation. Innovation that will drive environmental sustainability and productivity.

## Dairygolds / Gouldings Selenium Fertiliser Range


Using 4 bags per acre of any combination of these products across the year has been shown to increase grass and silage selenium levels. Cows that eat these forages have shown an immediate jump in blood selenium.

*Selenium Deficiency is a BIG Issue*

Selenium deficiency symptoms include:

- Fertility problems
- White muscle disease
- Irregular repeats
- Retained placenta
- Weight loss
- Cystic Ovaries

***Products available:***

Simply Substitute Selenium into your existing fertiliser programme:

| Replacement Product | Selenium Enriched Product |
|---|---|
| Urea | Selenistart (42% N) (Urea based) |
| CAN | Selenigrass (25% N + 2% Mg) |
| 18:6:12 | 18's + Selenium (18-6-10 +S) |
| 27:2½:5 | Selenigraze (24½ : 2½ : 5) |
| 24:2½:10 | Selenicut (20 : 2 : 12 + 2% S) |

**On-Farm Results:**

For the past 3 years Gouldings have been validating the product on farm with some very welcome results:

| | 3 year average before Selenium fertiliser use (2011-2013) | 3 year average during Selenium fertiliser use (2014-2016) | % Difference |
|---|---|---|---|
| 1st service conception rate | 47% | 66% | +41% |
| 6 week Pregnancy rate | 65% | 82% | +26% |
| Overall pregnancy Rate | 92% | 95% | +3% |
| Normal Repeat Intervals | 59% | 72% | +23% |
| Prolonged Repeat intervals | 28% | 14% | -51% |

***Independent international validation:***

A recent Canadian study published in July 2016 edition of the Journal of Dairy Science found that:

1. Organic Se, either as mineral supplement or as forage enriched with selenium fertiliser was more available and more effective at increasing blood and milk Se concentrations than inorganic selenium supplementation
2. Forage enriched with selenium fertiliser had higher absorption, retention and lower excretion rates of selenium than Organic Se as mineral supplement.
3. Cows fed inorganic selenium had lower milk protein concentration (3.44%) than cows fed organic selenium in a mineral (3.58%) and cows fed forage enriched with selenium fertiliser (3.51%).
4. Cows fed Se-supplemented diets (no matter the form) had a lower milk somatic cell count than cows fed no selenium.

***Dairygold Protected Urea products:***

Urea is a cheaper form of Nitrogen than CAN. However Urea is more susceptible to loses than CAN in adverse conditions. Therefore, the use of urea has been limited to the early spring. However there are products available that are formulated around a protected urea, these products can be used all year round without the fear of nitrogen loss. They are generally cheaper than CAN and result in lower levels of ammonia and GHG loses while growing more grass. Dairygold are delighted to have 2 products contain such technologies available in 2018.

1. KAN is a nitrogen fertiliser based on urea, treated with AGROTAIN stabiliser. Agrotain reduces volatilisation (N loss) to ensure that the Nitrogen is available to fuel crop growth all season long.

***Reasons to Use:***

| | |
|---|---|
| Economics Benefits | Generally KAN costs less per unit of Nitrogen compared to CAN. |
| Logistical & Time Saving | KAN has a higher N concentration with 70% more N than CAN. This means you have less haulage, storage and reduced product to spread; saving you time, fuel and money. |
| Reliable Performance | KAN has been independently trialled by Teagasc. The trials have shown yield to match and better CAN in all site types. |
| High Nitrogen Use Efficiency | In Teagasc trials KAN has been proven to have the highest Nitrogen use efficiency when compared to CAN/Urea. This means more of the N you put out is available to fuel grass growth |
| Environmentally Stable | KAN is stable in the soil and has lower carbon footprint than other Nitrogen sources. In Teagasc trials, KAN has been shown to reduce ammonia emmisions by 84% and GHG emissions by 73% |

***Products:*** KAN 46% N • KAN 38% N + S • KAN 29-0-14 +3.8 S

2.

## PASTURE BOOST
### GEN 28-2.5-5 +5%S +1%Mg +3%Ca

Dairygolds specifically formulated Greengrow Pasture Boost contains 2 forms of Nitrogen; GEN and Ammonium. The ammonium is in a readily available form for the plant while the GEN is Urea coated with a urease and denitrification inhibitor so it can be used all throughout the season without fear of losses.

The product also contains 5% Sulphur – Sulphur is proven to increase grass yield and protein.

Increases of 2t/ha and 3.3t/ha have been seen where Sulphur is applied to grazing and silage ground respectively.

GEN
GOULDING ENHANCED NITROGEN

***Product available:***

- Greengrow Pasture Boost 28-2.5-5+5% sulphur+1%Mg+3%Ca

**KEY POINT:** Based on the current market prices for nitrogen, phosphorus, potassium and sulphur and the formulations of the different products there is **€**20 more fertiliser in Greengrow Pasture Boost than 27-2.5-5.

*Pasture Boost is protected from Nitrogen losses by using NutriSphere-N, a dual action urease and nitrification inhibitor.*

# GET MORE FROM SPRING GRASS IN 2018 WITH TOP PHOS

By Dr. P.J. O'CONNOR, Grassland Agro

*Each additional day at grass in the spring is worth €2.70 additional profit per cow.*

## So How Can We Increase Spring Grass?

Phosphorus (P) is one of the major elements in driving spring grass.

Having sufficient phosphorus in the spring fertiliser programme is essential for two reasons:

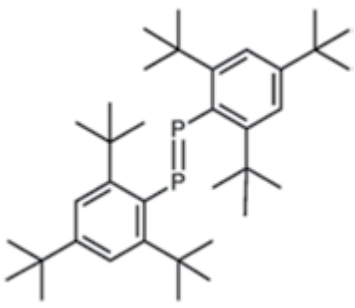
1) Phosphorus is critical to kickstart grass growth in spring

2) Phosphorus availability in soil is lower in cooler soil temperatures in spring

*Teagasc recommends applying a minimum of between 50 – 75% of the total P for the year in the early spring period in advance of spring growth.*

For years, traditional phosphorus fertiliser ingredients being used in NPK blends have remained very similar, with little advancement in improving the efficiency of fertiliser phosphorus. These traditional forms of phosphorus fertilisers help to drive this spring growth, but the efficiency of their use by the grass can be affected by high levels of lock-up by the soil, especially in low P Index soils, low pH soils, and soils with high iron and aluminium levels.

A new form of phosphorus, called TOP PHOS, is now available that can help overcome these issues to grow more grass in spring.




## So what is TOP PHOS?

TOP PHOS is a brand new form of Phosphorus fertiliser that will be available in 2018. It is a revolutionary new Phosphorus technology that has been developed by Groupe Roullier and available in Ireland from Grassland AGRO. TOP PHOS is a new and unique chemical form of phosphorus compared to standard P fertilisers, and has been recognised within the EU REACH regulations as being different to the traditional forms of P used in standard fertilisers.

TOP PHOS is a new fertiliser ingredient called Complex Super Phosphate (CSP). It is a water soluble phosphorus fertiliser, and is therefore available quickly for uptake by the grass. However, unlike standard forms of phosphorus, the chemical make-up of TOP PHOS protects it from being locked up by the soil. This maximises the availability of P to the grass. TOP PHOS also contains stimulants that are designed to increase root mass to improve P efficiency and to increase soil microbial activity to release P from the soil reserves.

## So How Does TOP PHOS Help Spring Grass?

Phosphorus availability in soils is always challenging, particularly in the cooler soil temperatures in spring. TOP PHOS increases the availability of P will therefore increase spring grass growth, as more of the P applied can get to the grass faster to kickstart growth.

On-farm trials in 2017 have shown an extra 0.4 tonnes of grass DM per hectare in the Jan to early April period where TOP PHOS was used as the source of

P compared to standard P fertiliser. This results in a return of €72/ha of spring grass grown by using TOP PHOS.

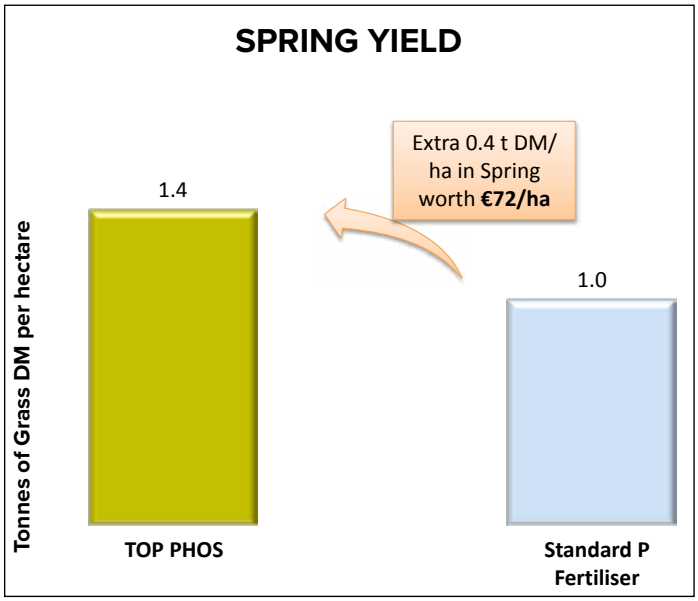



**Figure 1.** The effect of using TOP PHOS compared to standard P fertiliser on spring grass yield.

## Flexibility

TOP PHOS also has the advantage of allowing greater flexibility when designing a spring fertiliser plan as it is a fertiliser containing both phosphorus and sulphur in the same product. A single application of TOP PHOS in early spring can help to simplify the overall spring fertiliser programme by getting both phosphorus and sulphur out together, thereby simplifying the remainder of the spring fertiliser rounds to straight nitrogen (e.g. Urea or CAN). This has the advantage making fertiliser management in spring more simple and straightforward.

**Products available:**
Top Phos 23 (0-10-0+9% S)
Nutrigrass P (20-4.4-0 + 7.2 S + 4.5 Na)

***For more information on how TOP PHOS can help you grow more grass this spring, contact your local Dairygold Area Sales Manager or Grassland AGRO technical advisor.***

# GRASS MATTERS

By JOHN MAHER, Dairy Specialist, Teagasc Moorepark

# Grazed Grass is the Green Platform for Sustainability!!!

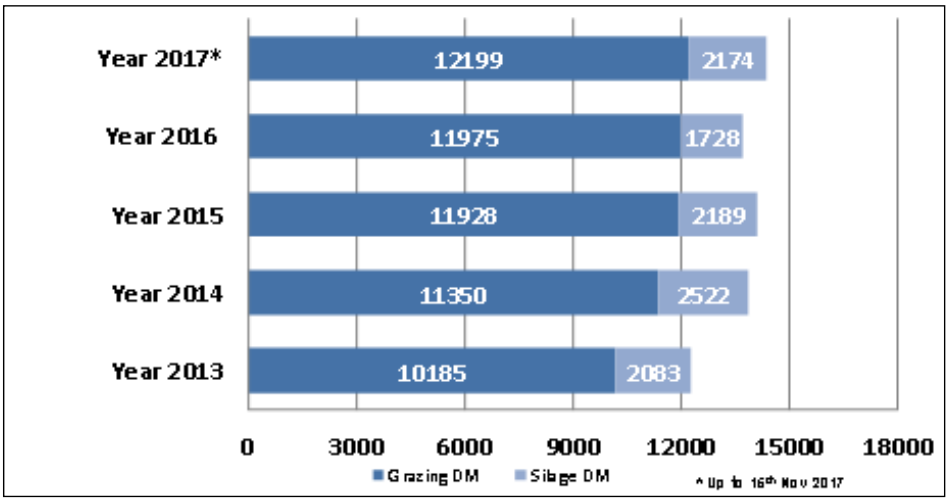
The year 2017 has been a very good year for grass production. The table below shows that over 14 ton DM/ha was grown on those farms who measure grass and use Pasturebase Ireland to record the measurements.

Year after year we are continuing to grow more grass than before. At the same time though we have to be guarded about how many cows we can sustainably carry on the farm. Sustainable systems of milk production are systems that:

- Remain profitable (even during periods of low milk price)
- Remain balanced in terms of working hours on the farm
- Produce milk that meets the requirements of the marketplace
- Produce milk that minimises environmental impact

It is this last point I want to develop further in this Article. I recently attended the Foodwise 2025 conference in Croke Park. It was obvious from this conference that we have to be more conscious now of the environmental challenges that are coming. The level of Greenhouse Gas (GHG) production is one of the primary concerns. The current trend (increase) in national livestock numbers (dairy, beef and sheep) is of concern from a Greenhouse Gas perspective. This trend in numbers may or may not change. However the basics of how we grow grass and what grass can do for reducing greenhouse gas emissions got missed. So let us look at this in more detail.

## PastureBase Ireland Dairy Farms DM Production




## Lime!! Lime!! Lime!!!

As the majority of agricultural soils in Ireland are naturally acidic (low soil pH) it is critical that lime is applied to restore more neutral pH conditions which are more favourable for P, K and N release and then increase grass production. Lime is a soil conditioner and corrects soils acidity by neutralising the acids present and allowing the micro-organisms and earthworms to thrive and break down plant residues, animal manures and organic matter. This helps to release stored soil nutrients such as nitrogen (N) phosphorus (P)

potassium (K) sulphur (S) and micro-nutrients for plant uptake. In addition, ryegrass and clover swards will persist for longer after reseeding where soil pH has been maintained close to the target levels through regular lime applications.

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

- Increased grass and crop production annually
- Increase the release of soil N by up to 60 units N/acre/year (75 kg N/ha)
- Increase the availability of soil P and K and micronutrients

However what is forgotten is the fact that about 25% of Nitrogen fertiliser will be lost (some as greenhouse gases) if soil pH is low (acidic) and lime is not applied.

*Too many farmers are trying to apply extra nitrogen fertiliser to grow grass when in actual fact in most cases it is lime that is required!!!!!*

## Longer Grazing Season

Increasing the grazing season length lowers GHG emissions in two ways. Having grazed grass in the diet of the animal early and late in year is a higher quality more digestible feed than grass silage – this leads to improvements in animal productivity and a reduction in the proportion of dietary energy lost as Methane ($CH_4$). The shorter housing season leads to reduced slurry, Methane ($CH_4$) and Nitrous Oxide ($N_2O$) emissions from slurry storage and spreading. Energy used spreading slurry is also reduced.

## Nitrogen Efficiency


Improved Nitrogen fertiliser use efficiency leads to improved utilisation of N by plants and lowers losses to the air and water. Improving grassland management

and matching crop requirements with fertiliser application are key factors. Urea fertiliser requires less energy and Carbon Dioxide ($CO_2$) to produce than CAN fertiliser and leads to lower GHG ($N_20$) emissions.

*It is important to remember that these technologies*

- Improve efficiency
- Improve profit
- Lower GHG emissions

## Early Nitrogen Fertiliser Application

It is obvious from the PastureBase Ireland database that those farmers who grow the most grass on the farm target early grazing. They get cows out to grass as soon as possible in February. However, they are also applying about a half bag of Urea/ac (23 units/ac) in the latter half of January to get grass moving. The response to early Nitrogen fertiliser application is about 10kg grass DM/ha per 1kg N/ha applied. Last year, the response to early Nitrogen application was almost double that.

Applying Nitrogen fertiliser from mid-January (weather permitting) will not only grow more grass but help the recovery of grass after grazing, so there will be more grass available for the next round of grazing also. Sometimes the weather in January is better for spreading fertiliser nitrogen than


February. You will also be a lot busier in February than you will be in late January.

## Spread Slurry

Once the closed period for slurry application is over in mid-January (Jan 12th in Cork, January 14th for Limerick and Tipperary) many farmers will want to get slurry out. Target fields with the lowest amount of grass (less than 600 kg DM/Ha). There will be a need for greater flexibility required to get slurry spread.

- Target the most watery slurry in the farmyard to be spread
- Target the outfarm if the fields have lower amounts of grass and are not too far away.
- Consider using a contractor to apply slurry as their systems of spreading slurry may be a better approach than your own machine (umbilical system)
- Consider the use of the trailing shoe etc. to apply slurry. This machine can apply slurry in a better way where the cover of grass is higher.

***Best wishes to all Grass Matters Readers!!***

# FERTILITY & BREEDING

By DOREEN CORRIDAN, MVB MRCVS PhD, Munster Cattle Breeding

## ANTIBIOTIC MICROBIAL RESISTANCE AMR.

**KEY POINT:**
Healthier animals = reduced antibiotic use = reduced AMR

**Keeping antibiotics effective for future generations – it's everyone's responsibility.**

In 2050 it is estimated that there will be 10 million deaths in humans attributed to antibiotic resistance. AMR will be then be the biggest cause of death in humans at 10 million, followed by cancer at 8.2 million, diabetes at 1.5 million, diarrhoeal disease at 1.4 million and road traffic accidents at 1.2 million.


**Antibiotic resistance happens when bacteria change and become resistant to the antibiotics used to treat the infections they cause.**

**AMR is a concern for you, your family, your animals and your community.**

AMR results in people and animals not responding to antibiotics. This then can lead to extended periods of recovery, longer stays in hospital, wound breakdown, complications in surgeries and death.

With the introduction of penicillin in 1926 the number of deaths in Ireland from infectious diseases dropped dramatically. Since then we have the development of a number of different classes of antibiotics. However as each new antibiotic class was introduced it has been followed in time by the development of bacterial resistance to it. As of now we have a limited number of antibiotic classes that are shared by both animals and humans.

**No new antibiotic classes have been developed since 2000. This is a major issue for us.**

Antibiotics are essential for the treatment and prevention of the resultant spread of infectious bacteria in both animals and humans. Every use increases the risk of selection for resistant bacteria. Responsible use optimises the beneficial treatment effects while minimising the risk of selection for resistant bacteria.

**Causes of antibiotic resistance in humans:**

1. Over prescribing of antibiotics
2. Use antibiotics for viral infections like common colds and flu's
3. Patients not finishing their treatment

4. Over use of antibiotics in livestock and fish farming
5. Poor infection control in hospitals and clinics
6. Lack of hygiene and poor sanitation
7. Lack of new antibiotics being developed

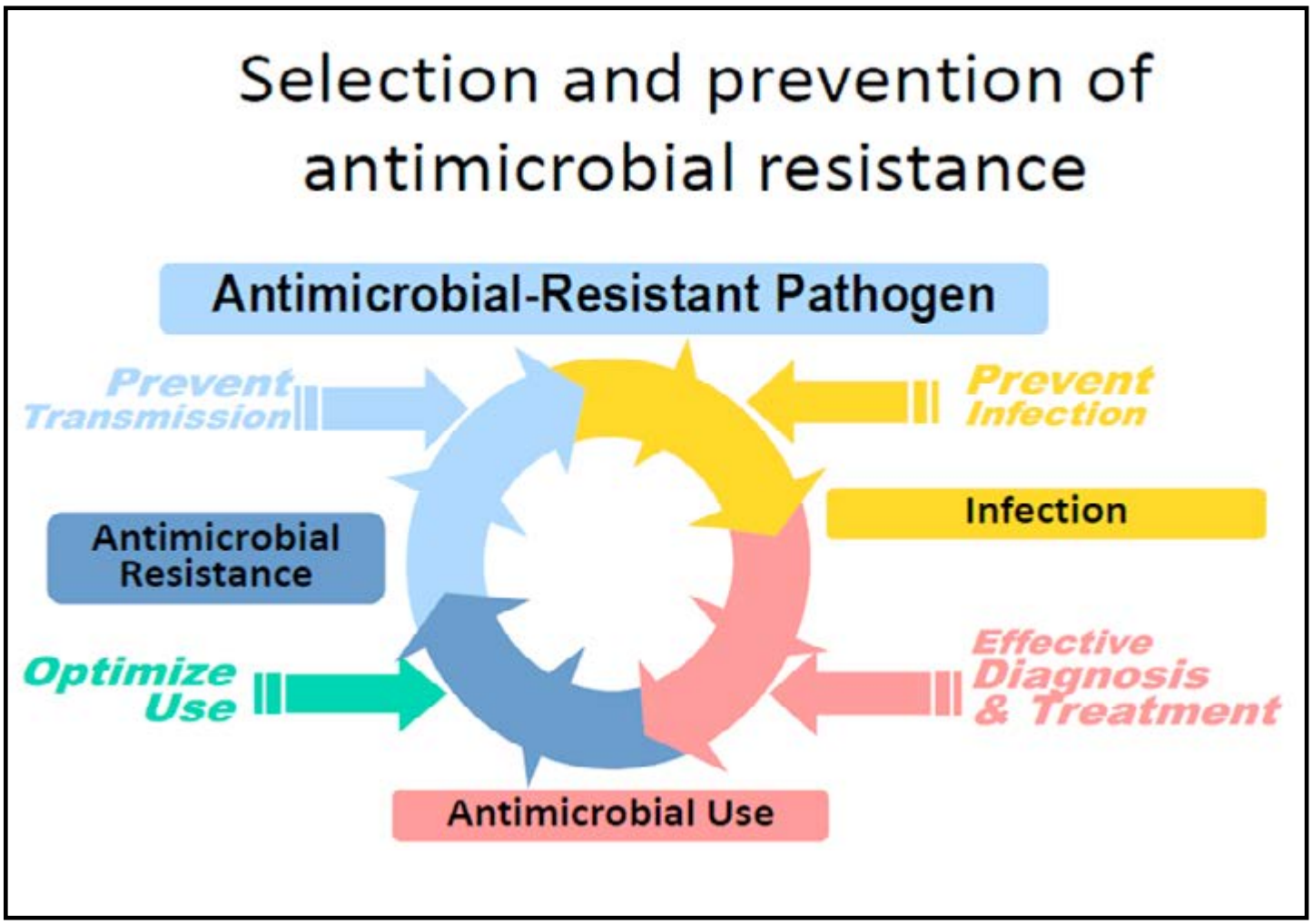
**How does antibiotic resistance spread?**

1. Antibiotics are given to food producing animals and crops.
2. Animals develop drug resistant bacteria in their gut
3. Drug resistant bacteria reaches humans through food, the environment water, soil, air or by direct human to animal contact.
4. Then drug resistant bacteria spreads to the general public

**What can the general public do to avoid AMR developing?**

1. Only use antibiotics when prescribed by a doctor.
2. Always take the full prescription even if you feel better.
3. Never use left over antibiotics.
4. Never share antibiotics with others.
5. Prevent infection by regularly washing your hands, avoiding contact with sick people and keeping vaccinations up to date.

Reflect before you inject. Follow the following steps to keep antibiotics working, it's right for your animals, right for you, right for your family, right for your farm and right for your community.



## Actions you can take to keep antibiotics working.

**Reduce antibiotic usage will reduce antibiotic resistance; this can be done reducing animal disease.**

1. Vaccinate animals to reduce the need for antibiotics.
2. Adapt sustainable systems with improved hygiene & biosecurity .
3. Reduce stress, correct space allocation and stress free handling of animals.
4. Adequate nutrition intake for energy, protein and minerals to avoid the immune system becoming depressed- immunosuppression
5. Disease prevention measures, enhanced biosecurity, vaccination and husbandry policy
6. Ensure that antibiotics given to animals both food producing and companion are only used to treat infectious diseases and are not used to control or prevent disease.
7. Do not use antibiotics to treat viral diseases.
8. Do not use a stronger antibiotic as a first line of treatment.
9. Always give the right dose for the correct number of treatments.

Right Animal → Right Drug → Right Dose → Right Duration

10. Always seek veterinary advice.

A comment I have heard John Mee say many times 'When you have your vet in the yard the value is in what comes out his/her mouth not what comes out the back of the van'.

## High Risk Antibiotics

The following 3 classes of antibiotics are considered high risk and should be reserved for cases that respond poorly to other antibiotic classes and where bacterial sensitivity and culture is carried out.

Avoid their use to groups of cattle except in severe cases and avoid off label use.

1. **Fluoroquinolones**
2. **3rd/4th generation Cephalosporins**
3. **Macrolides**

The easiest way to reduce antibiotic resistance is to reduce antibiotic usage on farms. Antibiotic usage can be reduced by reducing disease on farms.

## 2018 actions to Minimise Disease on Farm.

**1. Bio Security**
**2. Using Milk Recording Data**
**3. Vaccination Programme**
**4. Parasite Control- Dosing**
**5. Lameness prevention**
**6. Mineral supplementation**
**7. Calf rearing**

## 1. Bio Security – Improve

**A. Purchased Animals**

Purchased animals need to be minimised or else have a protocol in place for isolation, testing, vaccination and treatment. Talk to your vet.

1. **Disease - Johnes, Neospora, IBR, Salmonella, Lepto, Mycoplasma, BVD etc.** Need to isolate, test on farm of origin and after introduction, vaccinate or treat prior to introduction.
2. **Mortellaro -**
Need to check farm of origin and after introduction. Footbath, isolate and treat prior to introduction.
3. **Parasites - Liver fluke & Rumen Fluke etc. calves coccidian, cryptosporidia.**
Introduced animals bring with them parasites from the farm of origin, these may or may not be present on the new farm. Dung sample and treat. In sheep a concern is the introduction of sheep with parasites resistant to treatment.
4. **Milking animals the introduction of staph aureus etc.**

**B. Purchased Forages**

- Contamination with Neospora from dog and fox faeces.
- Contamination from heavy metals – Lead batteries etc.

**C. Entry of people and machinery onto your holding**

- Disinfection and clothing change or overalls.
- Restrict access.

## 2. Use Your Milk Recording Data

**Use your 2017 milk recording records to establish**

**A. What was your Cure rate in 2016?**

Why is it not greater than the minimum 85% target?
Application not correct?
Dry period too short?
Was teat sealer used?
Was the correct antibiotic used?

**B. How many new infections did you get across the dry period?**

Was the new infection rate greater than minimum 10% target?
This is a housing environment issue and also the calving area.
Stocking rate? Have you a cubicle per cow?
Risk periods for mastitis- 1st 21 days after dry off and the 2 weeks before calving.
Use these risk periods to improve space allocation at this time, liming of cubicles and scraper cleanings/ day.
Teat seal usage?

**C. How many heifers 1st calvers calved down with high SCC?**

Was the rate greater than minimum 15% target?
This is a housing environment issue and especially the calving area with heifers.
Stocking rate? Have you a cubicle per cow?
Risk periods for mastitis 2 weeks before calving.
Use this risk periods to improve space allocation at this time, liming of cubicles and scraper cleanings/ day.
Teat spray daily and while in the calving area

**D. Do an early milk recording in 2017.**

Identify those cows for immediate treatment.
Identify quarters for culture and sensitivity testing.
Identify those for culling.

**E. Assess teat end damage at dry off. Is your machine and liners functioning properly?**

## 3. Vaccinations

***Diagnostics crucial to know what is on the farm.***

- Bulk milk testing
- Young stock screen
- Pm on all deaths
- All abortions sent to the laboratory etc.

Often we cannot see or hear the biggest issue!

## 4. Parasite Control

***What parasites have you on farm?***

Liver fluke, Rumen Fluke, Lung worm, Stomac worm etc

Cows coughing are easily picked up by herdowners and response to treatment is accurately gauged.

Compare that with a heavy burden of liverfluke over a number of years resulting in reduced production and poor immunity. Not readily seen or heard!!

Diagnostics Key - Bulk milk testing, factory data and dung sampling.

Appropriate dosing programme in the dry period is key.

Suitable product, animals housed for the required period prior to dosing, correct amount for the weight KG.

Adhere to withdrawls.

All animals dosed on farm.

Cure rate assessed by diagnostics - Bulk milk testing, factory data and dung sampling.

## 5. Lameness Prevention

***What is the level of lameness on the farm?***

Most common causes of lameness are:

- Cows losing body condition after calving and in early lactation.
- Roadways especially in long walks.
- Lesions from inappropriate movements of cows, speed of movement, turns and twists in path, backing gates etc.

Within some herds mortellaro is a big issue- the dry period is an opportunity time to get it under control, treat infected cows and isolate them, cull the chronics and prevent the 1st calvers becoming infected.

## 6. Mineral Supplementation For Dry Cows

***For dry cow mineral specifications see page 10.***

## 7. Calf Management & Calf Rearing

***See pages 27 - 29.***


Animal Health Ireland
NOTES

# Is your milking machine good to go?

A new year, a new lactation.....is your milking machine good to go? Did you have it serviced during the dry period? If not, how can you be sure that you are heading into a new season with a perfectly functioning milking machine? To ensure it runs smoothly, most people will service their tractors after 500 hours of work, or their cars after about 250 hours of driving.....so why should your milking machine be any different? In fact, the milking machine earns you your money, by safely and efficiently harvesting the milk from your most important asset, your cows; shouldn't you make sure that it's running smoothly too and not contributing to a mastitis problem in your herd?

## Remember!

- CellCheck recommends that all milking machines are serviced twice a year by a IMQCS-registered technician. This equates to about 550 hours of work between services. If you haven't done this yet, get it done now before spring calving and milking start again. A list of registered technicians in your local area is available on http://www.milkquality.ie/TechnicianRegister.html.

- Get the service technician to go through the report fully with you – it is important to have an understanding of how the machine is functioning, and why certain recommendations may have been made.

- Carry out any repairs needed immediately.

- Start the season with a new set of liners, and change them after 2000 milkings or 6 months, whichever comes first. Remember that your cows' teats will spend an average of 60-80 hours every lactation in contact with the liners-making sure that the liners are in top condition will maximise productivity, and reduce the risk spreading bacteria and damaging teats.

Don't forget about the teat sprayers! Make sure these are serviced too and replace any nozzles that are blocked or faulty.

***More information is available online www.cellcheck.ie***
***and in the CellCheck Farm Guidelines for Mastitis Control***

# CHFC MATTERS

By IVOR BRYAN, CHFC Public Relations Officer

As 2017 ends we held our AGM in the Oriel House Hotel, Ballincollig. On the night Seamus Crowley was elected as our new club president, Seamus is heavily involved in the club, always willing to give a hand when there's help required, he's involved in many of the club's activities, we look forward to working with Seamus in his new role.

Also on the night the winners of the stock judging cups were presented to the three individuals who rose to the top from our three field evenings, they are:

- Under 18 winner: Emer Lehane
- 18-26 winner: Leslie Draper
- Over 26 winner: Margaret Murphy

***Under 18 winner: Emer Lehane***

***Over 26 winner: Margaret Murphy***

Also our club person of the year was awarded to John Kirby for his efforts in supporting both the Cork club and it's events and in the promoting the Holstein Friesian breed.

After the formalities and presentations at the AGM we had Prof Finbarr Mulligan of UCD & The Lyon's Estate give a very informative talk on Dairy cow nutrition and on some of the trial/research work been undertaken. His presentation was very interesting and thought provoking, he was very open and honest with the information he provided in both the talk and Q&A session afterwards.

Thank you to all who have helped to make 2017 such a successful and enjoyable year in the club, and we look forward to 2018. Happy Christmas to all and a prosperous and healthy New Year.

A Date for your diary when the new year arrives our Annual AI night will be held in The Oriel House Hotel on Tuesday the 16th of January, @ 8pm. All Welcome.

***Professor Finbarr Mulligan receiving a presentation from new club president Seamus Crowley.***

***John Kirby getting the club person of the year award from Seamus Crowley.***

# KEY PRINCIPES OF CALF REARING

By LIAM STACK, M.Agr.Sc, Ruminant Technical Manager


*First 24 hours critical for calf health*

## Colostrum

According to Animal Health Ireland, 35% of calves that die in the first year of life do so because of inadequate Colostrum absorption!

Colostrum is the first milk your cows produce after they calve. Your new-born calves are born without immunity to disease, and colostrum contains high levels of antibodies which build immunity in your calves as well as being a very nutritious feed.

Later milkings contain much lower levels of these antibodies and your calves' ability to absorb antibodies decreases dramatically within hours of birth and is virtually zero after 24 hours.

Fresh colostrum from the dam is the preferred option in the majority of cases and pooling of colostrum is not recommended due to the risk of spreading disease on your farm e.g. Johne's disease.


**COLOSTRUM FEEDING CAN BE SUMMARISED BY THE AHI 1,2,3 RECOMMENDATION:**

1. Use colostrum from the first milking for the first feed.


2. Give colostrum within two hours from the calf's birth.


3. Give at least three litres.


**KEY POINT:** Colostrum has the potential to save over 1 in 3 calves that die on your farm in their first year of life. Follow the AHI 1-2-3 recommendation to save these calves.

## What is the best way to get colostrum into your calves?

It is recommended that dairy calves are separated from their mothers and either bottle fed or stomach tubed colostrum. It is important to remember however, that stomach tubing is only recommended for the first colostrum feed, as repeated stomach tubing can cause digestive upsets.

**KEY POINT:** It is recommended you use a stomach tube for the first feed to ensure colostrum is received.

## Early Nutrition - Rumen Development

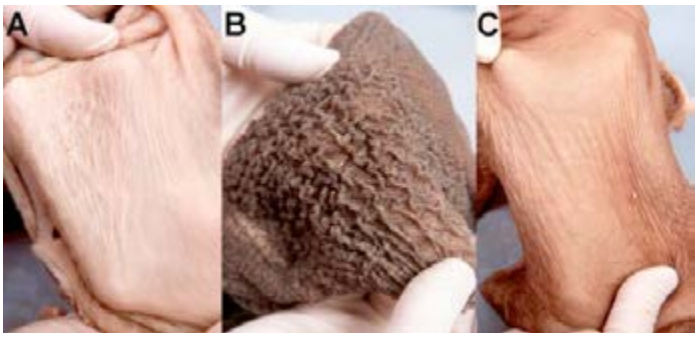
Early calf nutrition is focused on developing the calf's immature rumen, taking the calf from digesting milk to digesting concentrates and forage.

The development of the rumen is dependent on the chemical end-products of bacterial fermentation from concentrates. Most important is butyric acid which comes from starch digestion.

For this fermentation to take place the bacteria need water. Milk does not act as a water source.

For rumen development it's critical that the calf is fed a palatable concentrates made from cooked; flaked starchy raw materials; a roughage source and clean water. Allow calves access to fresh concentrates, water and straw from day 3.

### Rumen papillae development in 6 week old calves fed 3 different Diets




*A. Milk Only* *B. Milk and concentrates* *C. Milk and hay*

**KEY POINT:**
Milk and concentrates drives rumen development

## Straw NOT Hay.

Calves should be fed straw as opposed to hay. High intakes of hay can decrease concentrate intake, limiting butyric acid production, and lead to the calves developing "hay/pot bellies". The level of straw required will depend on the physical structure of the concentrate, with finely ground rations needing more.

*Hay is not recommended for calves.*

**Successful rearing of your calves requires proper colostrum management (see previous pages) and unrestricted access to:**

- Clean water (in addition to milk/milk replacer fed)
- Fresh, palatable starter concentrate (preferably coarse)
- Straw

**Allow access to fresh water, straw and Prime Elite Krispi Kaf from day 3**

# Whole Milk vs Milk Replacer

Milk replacer offers several advantages over whole milk as a feeding strategy for your calves:

**Economics:**

| | Cost/Bag (€) | Cost (c/ltr) | Cost to wean (€) |
|---|---|---|---|
| Milk Replacer | 43-48 | 27-30 | 90-101 |
| Whole Milk | | 32-36 | 108-121 |

Costs assume 6 ltrs of CMR at 12.5% solids for 56 days vs 6 ltrs of whole milk for 6 days

**Earlier Weaning:**

- Whey milk proteins stimulate earlier concentrate feed intake.
- Calves reach a daily concentrate feed intake suitable for weaning earlier.

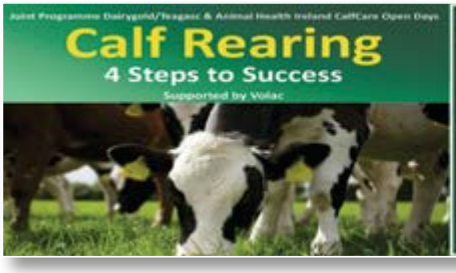
**Better Performance / Less Scour:**

- Consistent Milk replacer composition reduces the risk of nutritional scour. Cows milk butterfat and protein % change between morning and evening milking.
- Digesterom, blend of essential oils boost the calf immunity to scours and increases LWG.
- Acidification in milk replacer improves digestion and reduces scour.
- Gardion Plant extract (alliin) - Helps reduce colonisation by pathogenic bacteria.
- Elevated vitamin E and Selenium - promote the calf's natural defences (immunity) with improved antioxidant levels, helping it to fight disease.

**Reduces Johnes Disease risk:**

- Reduce Johnes Disease transfer risk from feeding cow's milk to heifers.

**Labour Saving:** Earlier weaning is facilitated.




| 2018 DATES | ON-FARM VENUE |
|---|---|
| 8th of January | Teagasc Research Farm, Kilworth, Fermoy, Co. Cork. |
| 18th of January | Liam Leahy, Bridelands, Crookstown, Co. Cork. |

START TIME: 11.00am

# CALF MILK REPLACER SPECIALIST

By REBECCA O'SULLIVAN, B.Ag.Sc


From 1st of January 2017, I will take up the role of Calf Milk replacer Specialist within Dairygold Agri Business. As part of the role I will be offering advice on feeding and managing the calf rearing process from birth to weaning.

I will undertake extensive training with our milk replacer suppliers and automatic calf feeder manufactures on; feeder set up and feeding curves, milk replacer manufacturing process, milk replacer formulations and optimum feeding rates and management practices to deliver maximum weight gain from birth to 1st calving.

From the 1st of January to the 1st of April, I will be available to offer advice and training through phone calls, farm visits and a number of events that will be organised to allow you to gain as much insight and understanding into maximising your calf rearing performance.

***Please contact me on 086-7938420 or on email at rosullivan@dairygold.ie with any queries.***

**Prime Elite 25 Plus®** promotes less calf scours and higher growth rate through:

**1. Acidification by Citric Acid**

Acidifications helps to maintain optimum gut conditions encouraging beneficial gut bacteria and discouraging the pathogens that cause scours and limit performance.

**2. Gardion®**

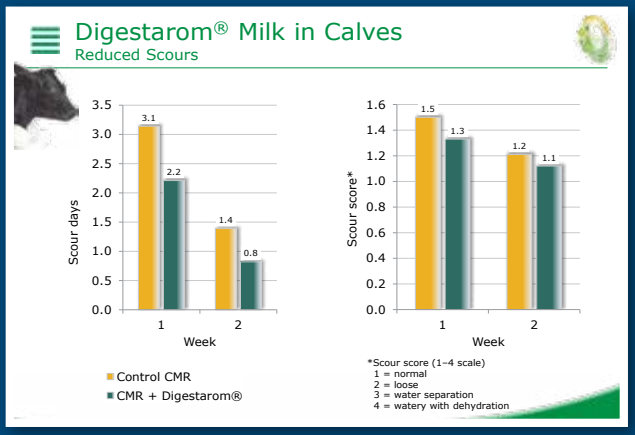
A garlic extract (Allin) helps to reduce the colonisation of pathogenic bacteria in the gut. Pathogenic bacteria cause scours and limit performance.

**3. Digesterom**


**Digestarom®** is a blend of essential oils coming from differing plants, principally caraway seeds, liquorice, oak bark and vanilla.

These oils have been shown in independent research trials and on-farm to:

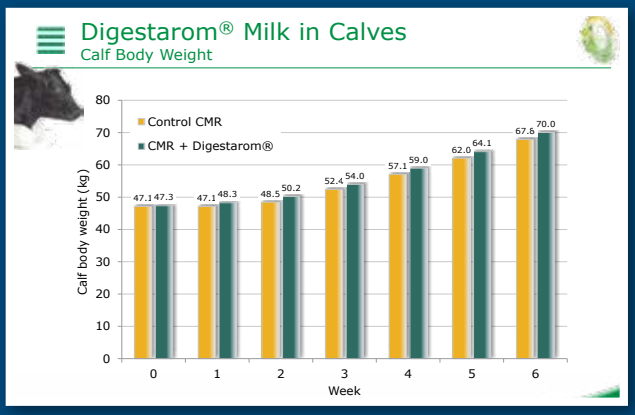
1. have antimicrobial and anti-inflammatory effects, decreasing scouring with calves and decreasing the numbers of days, it takes a calf to recover from a scour.

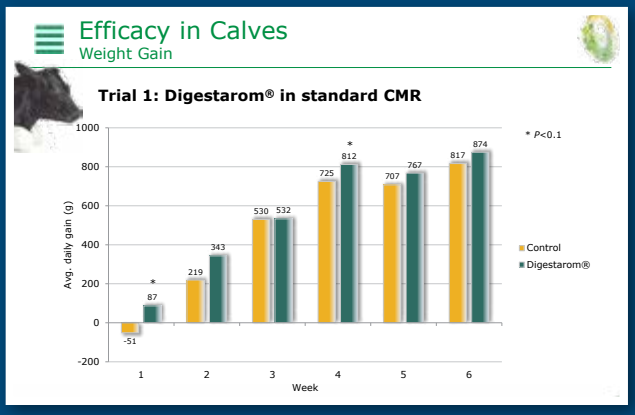



2. Increase nutrient digestibility by increase gastric secretions and increased micro villi growth

3. Increase CMR and starter calf intake, through increase palatability due to the vanilla extract

4. Increase pre-weaning calf LWG and weight at weaning



dairygold
Golden Valleys, Growing Naturally
AGRI BUSINESS

# DAIRY DAY 2018

## SETTING UP YOUR DAIRY FARM FOR SUCCESS THIS SPRING

**Location:** Corrin Mart, Fermoy
**Date:** 12th January, 2018
**Speakers From:** 12pm - 2pm

***Available from 11.00am on the day:***

- Nutritionist for Spring Feeding Strategies
- Fertiliser Planning and Advice
- Calf Feeder Demonstrations
- Animal Health Advisors
- Special Offers and Promotions
- Co-Op Superstores
- ICBF

*Refreshments available after the conference*

## AGENDA ON THE DAY

| TOPIC | SPEAKER |
|---|---|
| Calf Nutrition - Feed for Growth | Una Hickey, Volac |
| Getting Soil Fertility Right Through Strategic Fertiliser Use | Stan Lawlor, Grassland Agro |
| Managing A High Producing Spring Calving Herd, The Learning From 2017 | Karina Pierce, UCD |
| Managing And Employing Labour On Dairy Farms | Nollaig Heffernan, Heffernan Consultancy Ltd. |

www.dairygoldagri.ie

**Please contact your local ASM or our Inside Sales Team on 022 31644 to book your place at the event**

This is a DAFM approved Knowledge Transfer Dairy Event