Dear Milk Matters Reader,
Happy New Year to everyone.

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. The cow 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 examines how our country’s leading grass growers are planning to maximise production again this year.

In Ireland 40% of calf deaths in the first six weeks are scour related, with 38% of infectious calf scour cases from Cryptosporidiosis (DAFM, 2017). Antibiotics are ineffective and no vaccine exists against Cryptosporidia. Therefore, prevention is more effective than cure. On page 24 we outline a strategy to prevent Cryptosporidia.

Yours Sincerely,

Liam Stack

Liam Stack M.Agr.Sc
RUMINANT TECHNICAL MANAGER,
DAIRYGOLD AGRIBUSINESS

To contact the editor of MILK MATTERS
email: lstack@dairygold.ie
Grass Growth

### Grass DM Production - Dairy

<table>
<thead>
<tr>
<th>Year</th>
<th>Grass DM Production (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>11372</td>
</tr>
<tr>
<td>2018</td>
<td>10528</td>
</tr>
<tr>
<td>2017</td>
<td>12353</td>
</tr>
<tr>
<td>2016</td>
<td>11375</td>
</tr>
<tr>
<td>2015</td>
<td>11923</td>
</tr>
<tr>
<td>2014</td>
<td>11305</td>
</tr>
<tr>
<td>2013</td>
<td>10185</td>
</tr>
</tbody>
</table>

Milk production to week 50 (figures based on ICBF cow numbers):

<table>
<thead>
<tr>
<th>Year</th>
<th>Total annual Milk Yield per cow in Dairygold (kg)</th>
<th>Total annual Milk Solids per cow (kg)</th>
<th>YTD Average Protein %</th>
<th>YTD Average Fat %</th>
<th>YTD Average Lactose %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>5253</td>
<td>403</td>
<td>3.51</td>
<td>4.17</td>
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<tr>
<td>2017</td>
<td>5455</td>
<td>419</td>
<td>3.53</td>
<td>4.16</td>
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<tr>
<td>2018</td>
<td>5468</td>
<td>422</td>
<td>3.53</td>
<td>4.20</td>
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<td>5672</td>
<td>441</td>
<td>3.58</td>
<td>4.20</td>
<td>4.73</td>
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Milk Protein % (weeks 1-50)

<table>
<thead>
<tr>
<th>Year</th>
<th>Protein %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>3.75</td>
</tr>
<tr>
<td>2017</td>
<td>3.95</td>
</tr>
<tr>
<td>2018</td>
<td>4.15</td>
</tr>
<tr>
<td>2019</td>
<td>4.35</td>
</tr>
</tbody>
</table>

Milk Butterfat % (weeks 1-50)

<table>
<thead>
<tr>
<th>Year</th>
<th>Butterfat %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>4.40</td>
</tr>
<tr>
<td>2017</td>
<td>4.50</td>
</tr>
<tr>
<td>2018</td>
<td>4.60</td>
</tr>
<tr>
<td>2019</td>
<td>4.70</td>
</tr>
</tbody>
</table>

Milk Lactose % (weeks 1-50)

<table>
<thead>
<tr>
<th>Year</th>
<th>Lactose %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>3.10</td>
</tr>
<tr>
<td>2017</td>
<td>3.30</td>
</tr>
<tr>
<td>2018</td>
<td>3.50</td>
</tr>
<tr>
<td>2019</td>
<td>3.70</td>
</tr>
</tbody>
</table>
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.

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

Protein:
The amount of energy in your cow’s diet dictates how much protein she can utilise.

Feeding an excess of protein 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.

If you are experiencing fertility issues on your farm concentrate on your cows dietary energy not protein supply.

If you have any queries on early lactation feeding please contact our Inside Sales Department on 022 31644 or your local area sales manager
Dairygold PostCalver Gold helps you meet all the challenges

1. **High energy and good quality protein source:**
   PostCalver Gold is a high energy ration with a high inclusion of native cereals and a high inclusion of maize meal. This maximises the energy density of the feed making it easier for the cow to meet her energy requirements.

   Protein source: Some raw materials like sunflower are high in crude protein but low in available protein. PostCalver gold only contains raw materials that are high in both.

   The excellent raw material profile maximises milk yield, milk protein percentage and herd fertility performance

2. **Yea-sacc, from Alltech,** is proven to deliver more milk and better fertility in Irish feeding systems. Yea-sacc works in 2 ways:
   a. Stabilises rumen pH - a low rumen pH lowers feed digestion, feed intake and milk yield.
   b. Promotes the growth of fiber-digesting bacteria.

   Your cows diet contains c.15-17% protein. This protein is c.80% digestible. Your cows diet contains 8-20% starch. This starch is c.90% digestible. Your cows diet contains c. 40-50% NDF (fibre). This fibre is only 45-65% digestible.

   By stimulating fibre digesting bacteria, Yea-sacc releases more energy from the most undigestible fraction of your cows diet.

   By encouraging intakes and releasing more energy from the feed eaten, Yea-sacc is proven to:
   - increase milk yield by up to 1.6ltrs
   - improve fertility performance by up to 20%

3. **Bioplex copper, zinc and Selplex from Alltech**
   Minerals are available as inorganic or organic. Inorganic minerals are rock sourced minerals or they can be byproducts of industrial processes. Feeding inorganic minerals leads to mineral interaction and high levels of mineral losses from the cow. This has animal and environmental implications.

   In nature, organic minerals are plant based minerals. These minerals do not interact with other minerals, they are more available to the cow and therefore have a lower environmental impact.

   Bioplex copper, zinc and Selplex are minerals produced by Alltech which act the same as natural organic plant based minerals within the cow.
Through their higher level of animal availability, Bioplex copper, zinc and Selplex are proven to:
- Lower the amount of minerals excreted into the environment by the animal
- Improve immune status
- Improve fertility performance

4. Elevated levels of Vitamin E
The higher the Vitamin E status of the cow the better her overall immune system works. Low immunity leads to increased risk of mastitis, higher SCC and a greater vulnerability to any infectious organism that may attack.

Your cows Vitamin E status is lowest around the point of calving. Within PostCalver Gold (and pre-calver gold minerals) we feed elevated levels of Vitamin E to maximise your cows Vitamin E status.

KEY POINT: PostCalver Gold contains 500% more vitamin E than other post calver feeds we’ve seen on the market.

5. Biotin is added
Biotin is a water-soluble B-complex vitamin that is produced by the rumen microbes. Additional supplemented Biotin can improve hoof health, hoof hardness and milk yields.

Addition of Biotin to a dairy cow diet leads to:
1. Less lameness
Poor fertility, mastitis and lameness are some of the biggest costs on dairy farms. Every lame cow costs you between €280 - €300. Published research has shown that feeding c.20mg Biotin per day had positive effects on:
   - White line separation,
   - Digital and Inter-digital Dermatitis,
   - Healing of Sole Ulcer
   - Lameness in Seasonally Calved Dairy Cows

2. Increased milk yield
Published research has shown that feeding c.20mg Biotin per day increased milk production by between 1.3-1.6 ltrs per day. These trials also reported higher intakes (c.0.87kg).
**BENEFITS OF OUR DAIRY FEED RANGE**

✔ Dairygold is committed to maximising the use of native Irish cereals across its range of feed.

✔ High levels of bypass starch coming from the coarse processing of maize and a blend of high energy digestible fibre to stimulate rumen function.

✔ Contains YEA-SACC live yeast to promote an enhanced rumen through improved ration digestibility and the stabilisation of rumen function pH.

✔ Contains Agolin a natural plant extract designed to optimise rumen environment to increase feed efficiency, increase production, improve fertility and decrease daily methane emissions.

✔ BIOPLEX copper, zinc, manganese and SEL-PLEX organic selenium from Alltech to support the immune system and improve fertility parameters.

✔ Elevated levels of vitamin E to maximise cow immune status.

✔ Elevated levels of vitamin D to prevent milk fever post calving.

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Postcalver GOLD
Available in 14%, 16%, 18% and 20%

Hi-Pro Ecolac
Available in 14%, 16% and 18%

Super Choice
Available in 14%, 16% and 18%

Dairy Pride
Available in 14%, 16%, 18% and 20%

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For more Information please contact your local Area Sales Manager or our Inside Sales Team on 022 31644

www.dairygoldagri.ie
Your cows will start calving within the next 3 weeks. In the last month before calving the growing calves energy requirement peaks while the cow’s intake starts to drop.

Failure to meet your cows energy requirement at calving 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?

<table>
<thead>
<tr>
<th>Energy Requirement (UFL) January</th>
<th>8.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of the cows energy requirement supplied by an all grass silage diet</td>
<td></td>
</tr>
<tr>
<td>Grass Silage 60 DMD</td>
<td>67%</td>
</tr>
<tr>
<td>Grass Silage 65 DMD</td>
<td>83%</td>
</tr>
<tr>
<td>Grass Silage 70 DMD</td>
<td>95%</td>
</tr>
</tbody>
</table>

How much concentrates are required to fill the gap?

<table>
<thead>
<tr>
<th>Energy Requirement (UFL) January</th>
<th>8.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of the cows energy requirement supplied by an all grass silage diet</td>
<td></td>
</tr>
<tr>
<td>Grass Silage 60 DMD + 3kg of feed</td>
<td>100%</td>
</tr>
<tr>
<td>Grass Silage 65 DMD + 1.75kg of feed</td>
<td>100%</td>
</tr>
<tr>
<td>Grass Silage 70 DMD + 0.5kg of feed</td>
<td>100%</td>
</tr>
</tbody>
</table>

The economics of filling the energy gap

<table>
<thead>
<tr>
<th>Beef Feed + Pre-calver gold mineral</th>
<th>Total Daily Cost (€/hd/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-calver gold cube</td>
<td>c0.69</td>
</tr>
</tbody>
</table>

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 minerals 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.
MAKING THE MOST OF YOUR SLURRY STORAGE

By CIARA DONOVAN,
Farm Sustainability Advisor, Supply Chain Division

Over the past few months, while visiting farms for the Agriculture Sustainability, Support and Advisory Program (ASSAP), many farmers openly explain to me that slurry storage is an issue. But building a tank is expensive and often unaffordable. This is understandable however there is often many simple and inexpensive solutions to reduce the amount of slurry or dirty water being collected thereby reducing the storage burden. Putting these solutions in place should be prioritised and they are much more cost effective than the alternative!

The Cost of Slurry Storage

Slurry tanks are expensive to build. Teagasc estimated (2019 costings) that the cost of building a slurry tank is €70 per cubic meter (m³). In Cork, a cow required 5.28 m³ slurry storage over the closed period (0.33 m³/cow/week X 16- week period). This means that the cost to build an open slurry tank to store the slurry that one cow produces, would cost approx. €370 to build (€70 X 5.28 m³). If you add slats, a roof, cubicles, side sheeting, plumbing for water, electrics and other works to complete a build to house the cow, Teagasc estimate that the total cost comes to approximately €2200 per cow.

The cost of collecting Dirty Yards

Based on using the Teagasc cost of €70/m³, the below table shows the volume of slurry and the estimated cost of building a tank to collect an area of 10 m² or 30 ft². The calculations are based on the average amount of rain falling per county and the required storage period, as outlined in the Nitrates Regulations. If this dirty yard is being collected into the tank of the cubicle shed, the real cost is likely to be significantly more!

<table>
<thead>
<tr>
<th>County</th>
<th>Average net millimetres rain per Week</th>
<th>Amount of storage needed for a 10m²/30ft² area over the closed period</th>
<th>Estimated cost of slurry storage required for a 10m² or 30ft² area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cork</td>
<td>37</td>
<td>59.2 m³</td>
<td>€4,144</td>
</tr>
<tr>
<td>Kerry</td>
<td>45</td>
<td>81 m³</td>
<td>€5,670</td>
</tr>
<tr>
<td>Clare</td>
<td>32</td>
<td>57.6 m³</td>
<td>€4,032</td>
</tr>
<tr>
<td>Tipperary</td>
<td>27</td>
<td>43.2</td>
<td>€3,024</td>
</tr>
<tr>
<td>Limerick</td>
<td>26</td>
<td>46.8</td>
<td>€3,276</td>
</tr>
</tbody>
</table>

(Note in above calculations the regulatory requirement for storage is used -Cork and Tipp suppliers need 16 weeks storage, while Kerry, Limerick and Clare farmers need 18 weeks storage. Also, the above table relates to the collection of dirty yards where the run-of is deemed to be slurry or runs into a slurry tank and is therefore deemed to be slurry. Soiled water is required to be stored for a much shorter period of time)

Some Measures you can take to Reduce your Storage Requirement

- Is all your yard separated completely into a clean and dirty yard area? If clean water is flowing into a dirty yard area (or vice-a-versa), a lip of concrete or drain should be placed between these yards to separate them. Ensure that this separation is sufficient in flood conditions.

KEY POINT: It would cost between €3,024 to €5,670 to build a tank large enough to collect and store the run-off from a dirty yard only 10m² or 30 ft² in size!
and tanks can’t become flooded regardless of weather.

- Look at the dirty yard area you are collecting. Is it all actually a dirty yard or can some areas be cordoned off and diverted to a clean yard area? Again, often a lip of concrete along with a simple barrier can easily be put in place to reduce the area available to cattle and reduce the dirty area collected

_Below a lip of concrete and simple rope fence has been used to effectively separate the clean yard from the dirty yard_

- Make sure that all gutters and down-pipes are in good repair and check them when it is raining! This allows you to see if blockages are occurring and overflowing is taking place. All gutters should be cleaned and repairs made before the closed period each year

_Above left - Photo of broken down-pipe overflowing into a dirty yard. Above right - Photo of downpipe large enough to take water from original roof however when the new shed on the right was built, the increased volume of water causes the gutter to overflow at the point circled in red. If this clean water overflows into a dirty yard then storage is being wasted._
• Silage pits are a huge area and generally are designed to ensure that all effluent is collected, and all clean water is kept separate when the pit is closed. When open however, many pits are built in such a way that the clean water will flow off the feeding face and into the effluent tank or slurry tank. Remember to always shape your silage pit so that the clean water off the top flows to a clean water outlet even when opened.

• Cover external slatted tanks when not used. Even a tarpaulin would suffice. Free-board must be greater in an external tank 30cm rather and 20cm for an internal tank and rain water landing on a tank is also significant – estimated to be from 42 cm over the closed period in Tipperary (lowest amount) to 81 cm in Kerry (largest in Dairygold region).

If you can reduce the area of dirty yard that you must collect, even by a seemingly small area, you will save yourself potentially thousands of euros worth in storage tanks! By reducing the amount of dirty yard are you collect you are also saving time and money since this extra area does not have to be spread. There is also significant environmental and soil fertility benefits gained when you can afford to wait until weather conditions are as conducive as possible when spreading your slurry or dirty water. The cost of fixing gutters, down-pipes and putting lips of concrete in place where needed, is very cheap at the cost!

2020 PRE-CALVER GOLD MINERAL OFFER
BUY 10 AND GET 1 BAG FREE

Please contact your local Agri Branch Lead, your local Area Sales Manager or Inside Sales on 022-31644 for more details
NOW IS THE TIME TO SOIL SAMPLE
By LOUISE O’CONNOR, Agri Technical Graduate

Time is running out for soil sampling. From the 12th of January, weather and ground conditions permitting, we can spread chemical and organic fertilisers again.

For accurate results you must take soil samples before you apply fertiliser.

KEY POINT: The annual cost of soil sampling is roughly 50 cents/acre/year. This is the same cost as 0.5 units/acre of P fertiliser

Getting your soil tested is especially important for derogation farmers who are required to get theirs tested every four years. Having a Nutrient Management Plan with regular soil tests allows farmers to assess the current soil fertility status on the farm and to see how the soil fertility has changed since the last set of soil results.

Qualifying farmers with low soil P status on their farms can avail of extra P until 2021 under the Nitrates Action Plan (NAP). This has increased P build-up allowances for P index 1 and 2 soils which will allow an additional 30kg/ha on P index 1 soils and 20 kg's/ha for P index 2 soils. This only applies to farmers with a grassland stocking rate >130 kg N/ha. Farmers wishing to avail of these P build-up allowances must submit a nutrient management plan (NMP) to DAFM so it’s highly advised to consult with your area sales manager for help with a fertiliser plan and allow you to target any index 1 and 2 fields to increase fertility.

New applicants for derogation who do not have soil analysis results must assume Index 3 for 2019 but soil sample analysis, in respect of crop year 2020, must be available and the fertiliser plan amended accordingly and submitted online to the Department before 31st March 2020. It’s important to give the lab 3 weeks working time to process your samples.

KEY POINT: Soils with P Index 3 will yield more grass DM than a soil in P Index 1. Approximately 0.6t/acre (or 1.5t/ha) This extra grass could be worth approximately €180/acre (assuming all other nutrients are optimum). *smartfarming.ie

Even if you’re not in derogation, testing your silage yearly or every second year can have major benefits, both for your grass management and for your pocket. Knowing what P & K index each of your fields are, helps aid in management decisions such as where you’ll spread your farmyard manure, which fields to re-seed, which fields need lime and how much of it is needed. There’s also the potential for major financial savings on fertiliser as you may discover that you might be able to skip or use low P or K fertilisers on some fields. Or if your fields are at index 4 for both P and K, you may be able to completely skip spreading P
and K fertilisers on that field and only provide the field with lime if it’s needed to adjust the soil pH.

KEY POINT: By soil testing, you can save €23/acre on fertiliser. This is on land with high P and K levels (Index 4) and stocked at 2 dairy cows/ha (0.8 cows/acre) *smartfarming.ie

I understand that sampling your soil does take time, however we have a highly-trained team of over 15 samplers who are on call to help and complete the sampling and deliver the samples to the Agri-business analytical laboratory for you meaning all you have to do is wait for your results to be posted out to you.

Please contact our Inside Sales Team on 022-31644 if you’d like to request this service or have any questions about getting your soil tested.
STEPS TO IMPROVING YOUR SOIL FERTILITY

- **GET YOUR SOIL TESTED** - Soil testing and fertiliser planning are key requirements for any successful farm and should be carried out during the winter period in advance of fertiliser purchases. We provide a comprehensive sampling and testing service from our lab at competitive prices.

- **ADDRESS THE pH OF THE SOIL** - Farmers should aim to maintain mineral soils at pH levels of 6.3.

- **OPTIMAL P & K INDICES** - Aim for a target index of 3 for both P and K.

- **SLURRY & MANURES** – Target the fields that have yet to reach optimal P & K indexes first.

- **CHOOSE COMPOUND FERTILISERS WISELY**
  
  Our Inside Sales team are on hand to provide you with free advice on this. Call us on (022) 31644.

**BENEFITS**

- Environmental Sustainability
- Targeted application of organic & chemical fertilisers
- €
- Efficient use of nutrients by the plant
- Grass Yield

Every €1 spent in building up soil fertility gives a return on investment of €3.

Every extra tonne of grass grown increases profits by €173 per hectare.

Please contact your local Agri Branch Lead, your local Area Sales Manager or Inside Sales on 022 31644 for more details.
Our fertiliser world is a changing. We now need to focus more on nitrogen use efficiency, ammonia and nitrous oxide emissions. As part of their marginal abatement curve Teagasc have identified fertiliser type as a key weapon in our fight to lower ammonia and nitrous oxide emissions from agriculture.

Switching from CAN to urea-based fertilisers lowers nitrous oxide losses but increases the risk of ammonia losses. Protecting our urea fertilisers with a technology to lower ammonia loses allow us to limit both.

To maximise our nitrogen use efficiency, we also need to become more aware of soil temperature, grass cover and weather forecasts before we hook up the spreader. We also need to maximise our use of home-produced organic fertilisers in our early spring fertiliser plans.

Approximately 20% of our farms closed up with a lower than desired farm cover. A high response to early fertiliser application plus increased silage or concentrate feeding rate will be required to ensure our farm covers don’t drop below 450kgDM/ha this spring.

**KEY POINT:** The timing and rate of fertiliser N application are key decisions for every livestock farmer. Research has shown a large range in grass response to early N (between 5 to 18 kg DM/kg N applied). While the appropriate application of early N is beneficial, the incorrect application of early N is wasteful, costly, pollutes water and increases greenhouse gas emissions - Teagasc.

| Summary of Annual Grass DM yield (kg/ha) for CAN and protected urea evaluated across 2 growing seasons and 3 locations | Teagasc Marginal Abatement Cost Curve |
The following “Do’s & Don’ts” produced by Teagasc should guide your decisions around early N application.

Do:
1. Refer to Teagasc guidance on the application of early N.
2. Check weather forecast (www.met.ie) prior to making fertiliser N applications
   - Check the soil moisture deficits (SMD) for your area and only spread if SMD is greater than zero; and
   - Only apply fertiliser N when soil temperature is greater than 5°C and rising.
3. Target fields for early N that are most likely to respond to an early N application:
   - Perennial ryegrass / recently reseeded fields
   - Drier, free draining fields
   - Fields with a grass cover of greater than 400 kg DM/ha or 5 cm grass
   - Fields with optimum soil fertility, i.e. good P and K status, pH > 6.2
4. Replace chemical N fertiliser on approx. 1/3 of the farm with cattle slurry. Target slurry applications to fields with low P & K levels & low grass covers; 25 m³/ha (2,500 gals/ac) by low emission application will supply ~25 kg/ha (20 units/ac) of available N.
5. Use protected urea (NBPT) for early N applications
6. Apply up to 30 kg N/ha (24 units N/ac) in 1st split in late January or early February and avoid fields that have received an application of cattle slurry.
7. Link your early N application strategy with spring feed budget for the farm.
8. Calibrate and maintain your fertiliser spreader in good condition.

Don’t:
1. Don’t apply fertiliser N before the end of the prohibited spreading period (Table 1).
2. Never apply fertiliser on waterlogged or frozen soils.
3. Don’t apply fertiliser if a yellow rainfall warning is in place or is forecast within the next 48 hours.
4. Never apply fertiliser into buffer margins & know your buffer margins.
5. Delay N on bare fields (<400 kg DM/ha); instead spread on fields with 5 cm (cover of 400 kg DM/ha) grass cover or greater.
6. Don’t apply fertiliser N on fields that receive slurry in the first round.
7. Don’t apply more than 30 kg N/ha (24 units N/ac) in 1st split in late January/early February.
8. Don’t apply more than 90 kg N/ha (Slurry N + Chemical N) in total up to early April (Table 2).

Table 1: Closed Periods for the application of organic & chemical fertilisers

<table>
<thead>
<tr>
<th>Zone</th>
<th>Chemical Fertilisers</th>
<th>Organic Fertilisers</th>
<th>Farm Yard Manure</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15 Sept – 12 Jan</td>
<td>15 Oct – 12 Jan</td>
<td>1 Nov – 12 Jan</td>
</tr>
</tbody>
</table>

Table 2: Nitrogen fertiliser application plan for the spring period

<table>
<thead>
<tr>
<th>Month</th>
<th>Product</th>
<th>Rate</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>January / February ¹</td>
<td>Cattle Slurry</td>
<td>2,500 gals/ac (25 kg N/ha)</td>
<td>Remaining ¼ of grazing platform (&lt;400 kg DM/ha)</td>
</tr>
<tr>
<td>January / February ¹</td>
<td>Protected Urea</td>
<td>23 units/ac (29 kg N/ha)</td>
<td>Remaining ¼ of grazing platform</td>
</tr>
<tr>
<td>March</td>
<td>Protected Urea (NBPT)</td>
<td>46 units/ac (58 kg N/ha)</td>
<td>Entire grazing platform</td>
</tr>
<tr>
<td>February / March</td>
<td>Slurry</td>
<td>2,000 gals/ac (20 kg N/ha)</td>
<td>¼ of grazing platform (paddocks grazed first)</td>
</tr>
<tr>
<td>Total N by 1st April ²</td>
<td>Slurry + Fertiliser N</td>
<td>70 units/ac (88 kg N/ha)</td>
<td></td>
</tr>
</tbody>
</table>

¹ Slurry & chemical fertiliser should only be applied once the open period commences
² Combination of Protected Urea and cattle slurry available on farm

For several years, Dairygold has been leading the industry in offering fertilisers which are based on treated urea and you our customers have been leading the industry in your use of such products. These products increase annual grass growth while decreasing ammonia and greenhouse gas (GHG) emissions. In 2020 we will have an increased range of proven technologies that protect our urea fertilisers.

Please contact our Inside Sales Team on 022 31644, your local Area Sales Manager or your Branch Agri Lead for more information on these products.
GRASS MATTERS

By JOHN MAHER, Dairy Specialist, Teagasc Moorepark

BREAKFAST FOR GRASS: EARLY NITROGEN FERTILISER APPLICATION

Lack of Nitrogen supply in the soil can limit grass growth in early spring. As the winter months are generally wet and cold (with low soil temperatures), grass needs a welcome boost. The timing and where on the farm early N is applied are key decisions for every farmer. Most farmers are now carrying more cows and calving quicker so there are a lot of mouths to feed. Increasing early spring grass supply on the farm is necessary to reduce feed costs. The best response to early N application will be achieved when the soil temperature is above 5°C (and rising) and in paddocks that are:

- predominantly ryegrass
- recently reseeded
- drier, free draining
- with a grass cover over 400kg DM/ha
- with good soil fertility
- not receiving a slurry application

An application of UREA (23 units/acre or 30 kg N/ha) is the choice breakfast boost for grass that will respond to fertiliser N application. 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 often better for spreading fertiliser nitrogen than February. Farmers will also be a lot busier in February than they will be in late January.

The opportunities for spreading fertiliser N in January/February are often limited so the Urea fertiliser needs to be in the yard. Spreading 2 tons of Urea fertiliser will allow 80 acres (32 ha) of land to get fertiliser application. So order fertiliser early, get immediate delivery and avoid all the hassle that is associated with early spring fertiliser delivery.

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.

As we now move into an era of greater focus on sustainability of our dairy systems, many farmers will be applying Urea in the protected form. Almost all of ammonia emissions come from agricultural activity. Applying Urea in the protected form will greatly reduce ammonia gas losses. This form of Urea is also suitable for early N application. However turning animals out to grass reduces ammonia emissions by about 75%.

Slurry for spring grass

Sometimes there is a better response in grass growth from slurry application than N fertiliser application. This is often due to the fact that there is also P & K in slurry. Phosphorus (P) is crucial for early spring grass growth, particularly where soil P status is poor.

Once the closed period for slurry application is over in mid-January many farmers will want to get slurry out.
Slurry can be used to replace the nitrogen fertiliser application on about 33% of the farm. An application of about 2,500 gals of slurry/acre will supply about 20 units/acre (25 kg N/ha). If possible, the paddocks with lower P & K status should be targeted for slurry application.

Paddocks with the lowest amount of grass (less than 600 kg DM/Ha) should be targeted for slurry application. 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 out-farm 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, dribble bar, etc. to apply slurry. These machines can apply slurry in a better way and especially where the cover of grass is higher.

A summary of the fertiliser N & slurry application plan is outlined on page 16.

**Winter Grass Growth:**

Average grass growth over the winter period is about 3-4 kg DM/ha/day (only if there is some grass on the farm). Given a normal closing up strategy, many farms will have a closing cover of about 600 kg DM/ha on December 1st. PBI data shows us that the average closing cover on December 1st was 630 kg DM/ha. If growth is about 3-4 kg DM/ha/day during December & January, that would mean grass supply will be about 800-900 kg DM/ha on Feb 1st. That amount of grass would allow many herds turnout calved cows full time to grass during February provided ground conditions allow.

However, over 20% of farms have a closing grass cover of 500 kgDM/ha or less (from PastureBase Ireland Data). These farms will generally record a lower grass growth rate over the winter period and will have less grass available for grazing next spring. Early slurry application is essential to try to get these farms growing grass.
Most farmers growing grassland on heavy soils must be aware of the impact that this soil nature has on the grass growing potential of the farm. Heavy soils and peat soils both have a high waterholding capacity and this ability to retain water ensures that growing conditions are often excellent for many months of the year. However, in an extreme weather scenario or where the farm has on-going infrastructure problems, as was the case with the O’Brien farm in 2012, severe problems can arise during early spring when the in-field cover of grass is most needed. This problem was overcome on this farm by increasing the on/off grazing and using spruce roads to provide easy access to water for the cows. In this way the farmer could ensure that the most at-risk paddocks were not grazed during the driest spell of weather. Of course all this is very weather dependent. The driest paddocks with a moderate cover of grass are targeted first for grazing. Every effort is made to make grazing happen. Spur roadways help facilitate this. A lot of on-off grazing is practised, as is back-fencing of paddocks.

Ground conditions are often marginal on farms with heavy soils. It is inevitable that some damage will be done; therefore it is essential that when animals come off a damaged area, that they do not return there again until the next rotation. This cannot be achieved without having an adequate farm roadway system, easy to operate paddock system with multiple access/exit points and easy access to water for cows.

In addition using grazing practices or techniques that will limit damage to grass need to be considered.

The average farm cover was about 600 kg DM/ha in early December.

Urea fertiliser (23 units/ac) is targeted for January/February application assuming ground conditions allow. Slurry is targeted on the low grass cover paddocks.

Paudie Farms with his wife Pauline and their 2 children near Killarney, Co. Kerry. Recently Paudie was awarded the Grassland Farmer of the Year award for the Heavy Land category in this competition. Well done!!

Recently, Paudie O’Brien was awarded the Grassland Farmer of the Year award for the Heavy Land category in this competition.

Paudie farms in Firies, Killarney, Co. Kerry. He is a recent entrant to milk production which makes this achievement all the more remarkable. This land has a mix of mineral clay soils and some peat soils. Rainfall is about 1400mm (55 inches). The farm is split by a public road. Considerable investment in the farm grazing infrastructure (and farm yard) has been carried out over the last few years. A huge focus is placed on using spur roadways to gain access to grass.

Paudie is very keen to stress that he runs a grass based system of dairy farming despite the challenging nature of the soils and the level of rainfall. The farm grows about 14 tons DM/ha on average with over 15 tons grown/ha in 2019.

The 75 cow herd produced about 475kgMS/cow in 2018 (1200+/ha on the milking platform) and will do a similar level of production in 2019.

Spring Grazing Plan:
Turnout to grass is normally later on heavy soils, therefore the start of calving will generally be later also. On the O’Brien farm, cows are planned to start calving around Feb 7th to match the grass growth potential of the farm. Compactness of calving is more critical on heavy soils as the length of grazing season is shorter. The 6 week calving rate on this farm is high (95% in 2019). On-off grazing is practised in February if grazing is possible; however this is generally regarded as bonus territory. However turnout fulltime to grass is targeted for St. Patricks Day. This is targeted as the real kick-off to the grazing season. Of course all this is very weather dependent. The driest paddocks with a moderate cover of grass are targeted first for grazing. Every effort is made to make grazing happen. Spur roadways help facilitate this. A lot of on-off grazing is practised, as is back-fencing of paddocks.

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The 75 cow herd produced about 475kgMS/cow in 2018 (1200+/ha on the milking platform) and will do a similar level of production in 2019.
Pat Mulcahy is the high output grazing system focus farmer in the Teagasc/Dairygold joint program. Pat is milking 105 cows on his milking platform of 28ha near Killeagh Co Cork. Pat rears all own replacement heifers and takes silage from his nearby outside blocks made of of 26hectares. The system here is quite simple feeding high quality grass, meal and silage at the shoulders of the year. Pat purchased maize silage in 2018 and 2019 to build up a reserve of silage on this highly stocked dry farm after the 2018 drought, but he plans to keep it more simple and cost effective in future winters with cutting out maize silage in the diet again.

Soil fertility is excellent on this farm with 78% of the whole farm in optimum status in terms of soil pH, phosphorous and potassium. 100% of the farm is greater than 6.5 for soil pH, therefore, soils are very healthy and Pat gets an excellent response from nutrients such as nitrogen, phosphorous and potassium. The entire farm is in index 3 and 4 for phosphorous and 78% of the farm is in the optimum index for potassium. This is one of the main reasons that Pat can consistently make high quality grass silage. Because soil fertility is so good, silage crops bulk up quickly and Pat can cut silage early. He consistently makes silage with DMD% with 2019 grass silage averaging 77% DMD.

Up to the end of September the herd had produced 514kg milk solids/cow and Pat will achieve similar solids to 2018 of 612kg milk solids/cow. Pat estimates that he will feed a total of 2.1tonne meal/cow this year. Herd EBI is €120 which is weighted evenly between milk and fertility. Pat started calving in early January and had 70% of the cows calved in the first 6 weeks this spring.
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.

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 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.

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.

KEY PRINCIPLES OF CALF REARING

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

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

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
• 18% Protein
• Contains highly digestible ingredients such as flaked maize and barley
• Fully balanced for macro minerals, vitamins and trace elements
• Nustart – which contains:
  - Essential oils which stimulate appetite and kill bad bacteria
  - Prebiotics and probiotics to promote a healthy gut
  - Contains antioxidants to support the growing calf’s immune system
  - Functional fibres to promote rumen development

This promotes healthy rumen development and has been proven to increase intake

Dairygold maximises the use of quality Irish Grain across it’s ruminant feed

www.dairygoldagri.ie

Please contact your local ASM or our Inside Sales Team or Lombardstown Mill on 022 47275 to order
MAXIMISE THE EARLY SEASON SUPPLY BONUS BY USING MILK REPLACER THIS SPRING.

By TRISHA HAYES, B.Ag.Sc, Calf Milk Replacer Specialist

On average a Dairygold dairy farmer supplies 1%, 3% and 9% of their annual milk supply in the months of January, February and March respectively. Milk supplied in these months carries a 3c/kg, 2c/kg and 1c/kg premium over the base price paid. The premium is therefore worth an average of 1.4c/kg for every kg of milk supplied across these 3 months.

Prime Elite 25% Plus calf milk replacer is costing c.30c/kg mixed and ready to feed. If we assume an early spring milk price of 31.4c/kg (30c/kg based + the early season premium) that’s a saving of c.€4 per day if your feeding 50 calves across the 1st three months of the year.

However, cost is not the only reason you should be using prime elite 25% plus to feed your dairy cows this spring. Prime Elite 25% Plus contains the highly concentrated bio-active milk complex imunopro. Imunopro, a concentrated Whey Protein, is carefully balanced to ensure the optimum level of amino acids, fatty acids and milk sugars for growth, health and development of the calf.

Sugar levels are adjusted to ensure that the right amount of energy is present for the calf to reach its growth potential.

**Added Health Supplements**

- **Gardion** – which is derived from garlic, has the ability to enhance the immune system as garlic is linked to having antibacterial, antiviral and antifungal properties. This all helps to improve gut health in the calf which is important to maintain good growth and thrive.

- **Digesterom** – which is a plant-based feed additive, contains a unique blend of herbs, essential oils and functional flavours which help to increase the palatability of the milk replacer, increase intakes and nutrient digestion.

Digesterom has also been shown to reduce the incidence of scour in calves and reduce the number of days it takes calves to recover from scour.

These combined give the calf the best chance for growth and high performance.

**Prime Elite 25% plus** can be mixed in cold water because of the high-quality protein used and spray drying technique. When using an automatic feeder, the machine will mix it at a maximum of 42°C. It is important when mixing that the water temperature is not over 42°C as this could damage the proteins thus reducing the quality of the milk powder.

If you have any questions on Calf Milk Replacers please contact me on 087 949 9553, our Inside Sales Team on 022 31644 or your local area sales manager.
In Ireland 40% of calf deaths in the first six weeks are scour related, with 38% of infectious calf scour cases from Cryptosporidiosis (DAFM, 2017).

Cryptosporidium parvum is a parasite which causes damage to the gut lining of the calf. Infections are usually seen in the second week of life, although infection can start earlier. Cryptosporidium damages the intestines by weakening the cells in the gut lining making it easier for other infections to enter the blood system and reduces the calf’s ability to absorb nutrients. This results in the calf having a weakened immune system and a reduced growth potential. Scour can cause dehydration in calves and death in extreme cases.

Antibiotics are ineffective and no vaccine exists against Cryptosporidia. Therefore, prevention is more effective than cure.

Cryptosporidiosis Prevention strategy

1. Calf + Calving area hygiene.
   - Disinfect calving boxes + calf sheds at the start of the season and between calves with Kenocox.
   - Kenocox is highly effective against cryptosporidium, coccidiosis, and bacterial infections.
   - Kenocox is manufactured without using phenol which reduces its impact on the environment and makes the product safer for farmers and animals.

Cleaning and disinfection protocol for cryptosporidiosis:

A. Soak with Kensoan, foam cleaner at 1.5%:
   - remove manure and loose material from the calving area.
   - Use at 1.5% solution.
   - Leave for 30 min and then rinse under high pressure.

B. Disinfection with KENOCOX at 2% dilution (1 ltr of kenocox to 50 ltrs of water)
   - Use 0.4 L of the solution per m² of floor and wall.
   - EVERYTHING that comes in contact with the animal should be disinfected. Including drinking and feeding bin.
   - Leave 2 hours of contact time
   - Only rinse feeding and drinking bin.

2. Adequate good quality colostrum.
   - Feed 3 ltrs, within 2 hours from the cows 1st milking.

3. Feed Immuboost Cryptoguard.
   - The active ingredients within cryptoguard have been proven by independent research to control Cryptosporidium and E.Coli and to reduce the severity of infection in calves.
   - Cryptoguard must be fed form birth, including in the colostrum feed.
   - Feed 30g of the Cryptoguard for the first 1-5 days followed by 15g from day 6 to day 21.
HYGIENE AROUND CALVING

By TRISHA HAYES, B.Ag.Sc,
Calf Milk Replacer Specialist

Your heifer calves are the future of your milking herd and need to be given every opportunity to thrive. The first hour after calving “The Golden Hour” is the most critical period in the entire life of the calf.

A new born calf is born void of all immunity until it receives the protective antibodies from the mother’s colostrum and is vulnerable to infection from the minute it enters the birth canal. Once the calf is born it is at immediate risk of picking up infections via the naval, mouth and nostrils from the calving environment. Hygiene around calving is vital and you must be aware of the ways that infection can enter the unprotected calf, i.e. a hand wiping afterbirth from the calves’ mouth, dirty bedding, through the naval or even suckling on a dirty flank.

Make sure the calving areas are kept clean and with plenty of straw. It is vital that you prioritise cows which are going to calve if you are short on cubicle space. Cubicles should be regularly cleaned and topped up with lime. If not already done you may consider clipping the cow’s tails and try and keep cows as clean as possible around calving. If the new born calf gets up to suck it will go for the flank or tail area, if dirt gets into the calf before the colostrum that’s were infection occurs. In the early stages of life calves are particularly at risk of infection from cryptosporidium and rotavirus. Even if you have vaccinated for the virus if the calf ingests rotavirus before it gets colostrum containing the antibodies from the vaccine, it is too late.

Within the first hours of life you should aim to minimise the contact time between the cow and calf. This will help to minimise the potential transfer of disease. The calf should be placed in a clean, freshly bedded area where it can be fed clean good quality colostrum by bottle feeding or stomach tubing. I think most people will know the story with colostrum at this stage. You must feed a minimum of three litres from the first milking or 10% of bodyweight within two hours of birth. Colostrum will provide the calves with passive immunity, high energy and vital growth factors for the early stages of life.

Preventing naval ill is based on several farm hygiene and calf care/immunity principles that must be optimised at and shortly after birth. In the first few weeks of life the naval should be checked for excessive bleeding, pain, abnormal swelling, odour or pus and treated promptly. When handling the naval you should always be wearing clean, dry gloves and a 10% iodine solution should be used. The cause of naval ill is infection spreading from the environment into the calf via the naval cord. A “big picture” approach should be taken to naval ill. To prevent infection you will need to take account of all factors that lead to high contamination of the environment and low immunity of the calf.
AMR or Antimicrobial Resistance refers to the ability of bacteria, viruses and fungi to develop resistance to the drug’s used to treat them. The most relevant group here are bacteria and their ability to become resistant to antibiotics. This is termed antibiotic resistance.

The very first antibiotic was discovered in 1928 by Alexander Fleming. He accidently discovered that a mould called Penicillium notatum was killing the growth of Staphlococci bacteria in a petri dish. The production of the antibiotic Penicillin was eventually mastered in the 1940s and saved countless lives in World War 2 and millions since. Many other families and classes of antibiotics have been discovered and manufactured over the years.

In 1945 Fleming received a Nobel Prize for his achievement, during his speech he warned that the overuse of Penicillin might lead to resistance. His prophesy has come true with widespread resistance being encountered in diagnostic laboratories and in the field in both animal and human health.

**One Health**

Animals and people share the same environment and because of this, they can share bacteria from each other and their environment. Some of these bacteria can cause disease in both humans and in animals. These bacteria are referred to as being zoonotic. Salmonella, Leptospira, Tuberculosis fit into this category. This is the One Health concept.

Ireland’s National action plan on antimicrobial resistance (iNAP) is based on this one health concept and recognises that when antibiotics are used by people or animals they are excreted and end up in the environment that we all share, including waterways. Therefore, all three areas need to be worked on in order to make progress and limit the spread of antibiotic resistance.

**Usage of antibiotics in animal agriculture in Ireland.**

Table 1 shows the sales of veterinary antibiotics as tonnes sold in Ireland between 2013 and 2017. It is clear that little progress has been made in reducing overall antibiotic usage in that time.

<table>
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**Fig. 1. Pharmaceutical form breakdown of veterinary antibiotics in 2017 in Ireland**

Fig. 1 illustrates the usage of veterinary antibiotics in 2017 in Ireland. It is clear that oral and premix antibiotics constitute almost two thirds in terms of tonnes sold. While intramammary antibiotics account for a relatively small proportion in terms of tonnes sold, they are still very significant due to the number of animals treated and the high number of different antibiotics used, some of which are classified as critically important.

**Fig. 2. In-lactation intramammary antibiotic usage in Ireland (2003-2018), based on sales data.**

Fig. 2. above shows a 33% reduction in the number of in-lactation intramammary treatments used, between 2008 and 2015. This is a clear indication of the national progress made at reducing SCC levels in the last decade.

**Antibiotic use on dairy farms**

There are 4 main areas where antibiotics are used on Irish dairy farms.

1. Freshly calved cows
2. Calf rearing
3. Mastitis control
4. Lameness

Improving management and implementing best practice to minimise disease incidence in these key areas will reduce the requirement for antibiotic treatments. The best way to reduce the risk of antibiotic resistance developing on your farm is to minimise the use of antibiotics.
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1. Freshly calved cows.
   - 90% of sick cows occur in the first 6 weeks after calving and most of the conditions are related back to the dry period.
   - Fat cows are at more risk of metabolic diseases such as milk fever and ketosis while thin cows are more at risk of infections. Calving cows in the correct body condition of 3 - 3.25 is therefore crucial.
   - Dry cow silage should be tested for quality and minerals. This will aid in ensuring cows are fed appropriate to their body condition and also ensure mineral supplementation can be correctly assessed.
   - Milk fever and subclinical milk fever prevention is critical. Magnesium supplementation is the routine prevention strategy used but other options may be necessary depending on potassium levels in the silage and age or body condition of the individual cow.
   - Minimise retained afterbirths. Anything that affects the immune system of the cow precalving can trigger afterbirth retention for example negative energy balance precalving (fat cows), subclinical milk fever (low calcium) and inadequate antioxidants (selenium, vit E, Zinc etc.).
   - Ensure parasites are treated appropriately during the dry period and all necessary vaccinations are completed.
   - Cow comfort is critical – cubicle space, comfortable cubicles, shed space, barrier space. The dry period is for rest and regeneration, not just for the udder but also for the cow’s feet and metabolism.
   - Maximise intakes in early lactation to minimise the energy deficit. Excessive negative energy balance in early lactation will compromise immunity and subsequent fertility.

2. Calf rearing.
   - Scour, Pneumonia and navel infections are the main conditions affecting young calves and lead to increased antibiotic usage.
   - Maximising immunity and minimising exposure to infective agents is key to successful calf rearing.
   - Optimum hygiene around calving. Prompt removal of the newborn calf from the calving area to the clean warm neonatal area is indicated in most situations as the calving area is an adult area and poses an infection treat to newborn calves.
   - 3L of good quality colostrum should be fed within 2 hours. Good quality colostrum should be fed at the second feed.
   - Calves should be drinking 3L twice daily of whole milk or good quality milk replacer as soon as possible. Fresh calf creep and clean fresh water should be available from 1 week old at the latest. Clean fresh straw should be available as a source of roughage.
   - A high standard of hygiene in calf housing and around feeding equipment should be adhered to.
   - Beds should be well drained, and a clean dry straw bed should be available at all times.
   - Calf housing should be well ventilated but cosy and draught free. Calf jackets could be considered if housing is cold or in cold weather.
   - Vaccinating young calves against pneumonia can be very worthwhile. This is better practice than using antibiotics in feed or milk, which should no longer be practiced, their use is an indication that something is wrong with the calf rearing process.
   - Vaccinating dams against scour works extremely well where rotavirus has been diagnosed but its success is dependent on calves getting adequate colostrum and transition milk.
• Minimise stress around disbudding and weaning to prevent setbacks and dipping of immunity.
• Oral antibiotics are generally not indicated for the treatment of calf scour as most scours are not of bacterial origin i.e. cryptosporidium, rotavirus.

3. Mastitis Control.
• As mentioned previously significant gains have been made in the last decade in lowering herd SCC levels, however it is the area most in the spotlight regarding antibiotic usage, particularly the practice of blanket dry cow therapy.
• Before considering Selective dry cow therapy the focus should be on ensuring your herd and farm is suitable. Targets include - less than 10% new infections over the dry period in cows (less than 15% in heifers), herd SCC consistently less than 200,000, optimum housing, sufficient milk recordings etc.
• Contagious mastitis – stopping the spread during lactation is key to minimising new infections during lactation which lead to more antibiotic treatments and more spread. Correct post spraying, timely liner change and cluster dipping after high SCC cows or cow’s with clinical mastitis are all key.
• Environmental mastitis – suboptimal hygiene when cows are housed, mucky roadways or yards and cows lying down soon after milking before teat ends have closed can all be implicated. Minimising dirt on teats is key. Pre spraying and wiping when risk is highest is worthwhile.
• Treatment worthiness – treating quarters or cows that have a very poor chance of cure, is poor use of antibiotics, other avenues should be explored like drying offending quarters. Conversely, treating curable quarters or cows is appropriate use of antibiotics and will lead to favourable outcomes and reduced spread.

4. Lameness.
• Lameness can be broadly categorised into infectious and mechanical. Lameness can be a significant welfare issue as well as causing production losses.
• Mortellaro / digital dermatitis is an infectious lameness that is very contagious. Prevention revolves around keeping walking and standing areas free from excess manure build up. Foot bathing can be used to control infection. Antibiotics are no longer permitted to be used in footbaths and are no more effective than non-antibiotic products. Only individual cows should receive antibiotic treatment on a case by case basis.
• Foot rot or Foul of the foot – this is a bacterial infection causing swelling and does need antibiotic injections to resolve.
• Other causes of lameness such as bruising, sole ulcers, foot abscesses do not generally require antibiotics. Pairing, shoeing and draining the abscess are appropriate treatments.
• Prevention is paramount with lameness with roadway design and maintenance, housing and routine hoof care critical.

Antibiotic use – As little as possible and as much as necessary.
Improving Herd health and management practices on farm will lead to less antibiotic being used because they won’t be required. This is a good story from an antibiotic resistance perspective but will also lead to healthier, happier more productive animals which is a win win scenario. It will also improve consumer perception which is becoming ever more important.

However, extreme views on the use of antibiotics in food producing animals exist and promote antibiotic free food. This is a dangerous road and puts animal welfare at risk. We always want to be able to treat our sick animals.
Correct use of Antibiotics

Fig. 3. Correct use of antibiotics

Correct use of Antibiotics
Fig. 3. illustrates the six rights of prudent antibiotic use. The more often your vet is involved in making a correct diagnosis, the better the outcome will be and the more likely the correct antibiotic and protocol will be used.

Incorrect and inappropriate use of antibiotics such as those mentioned in the four key areas must be avoided.

Some common uses of antibiotics to be avoided.

- Oral antibiotics to treat calf scour or prevent pneumonia.
- Antibiotics in footbaths.
- Treating lame cows that don’t need antibiotic treatment.
- Treating chronic cases of mastitis or high SCC quarters that can’t be cured.
- Using antibiotic wash outs in cows with bad metritis when the volume of foul material in the uterus renders the treatment futile.
- Treating animals in the absence of any diagnosis and where antibiotic treatment may not be required.

Highest priority critically important antibiotics
A list of the highest priority critically important antibiotics is listed in the Table 2. They are deemed critically important due to their importance in human medicine as a last line of defence. These antibiotics should

- Only be used by or in consultation with your vet
- Not be used as a first line treatment
- Not be used for prevention
- In cases of mastitis, only after culture and sensitivity and where no other drug is an option.

Conclusions

- Herd health planning, optimising management and excellent husbandry are essential to minimising the requirement for antibiotics on farm.
- Your Vet and advisors are key to helping you in achieving this goal which will lead to healthier more productive animals and more profitable and enjoyable farming.
- Antibiotics must be seen as a precious resource that are critical for animal and human health, and must be used with respect so that they can be preserved for as long as possible.
- Farmers must work closely with their vets who have the privilege of prescribing these drugs to ensure they are used correctly and not abused.

Table 2.
Happy New Year from everyone at the Cork Holstein Friesian Club. Thank you for making 2019 a successful and enjoyable year for all. We look forward to seeing you at our many club events in 2020.

CLUB AGM
The clubs AGM took place on the 4th December, in the Kingsley Hotel, Cork. The agenda for the night included a review of club activities and achievements during the year, election of club president and regional delegates, as well as presentation of stock judging cups and club person of the year. Pat Hayes was elected as club president. Pat has a vast knowledge of the Cork club and the Holstein Friesian breed in general. We wish Pat all the best in his new role. The club would also like to thank outgoing president, Seamus Crowley for his time and dedication over the past two years. On the night, the winners of this years stock judging cups were announced. These were presented to individuals based on results from the two field evenings during the year.

Also, the club person of the year was awarded to Ursula Forrest. This was decided by secret ballot by regional delegates. The unanimous decision highlights the dedication Ursula has show towards the club. A truly deserving winner, well done to Ursula and all other winners on the night.

After the club business had concluded, guest speaker, Prof. Pat Wall gave his presentation, "Connecting with consumers for a sustainable future". Some of the topics Prof. Pat covered included, the Chinese market, the power of social media and practices to meet today's challenges. The club would like to thank Prof. Pat for a very informative and entertaining presentation.

AI NIGHT
The new year kicks off again with the clubs annual AI night on Tuesday 14th January at 8pm in the Kingsley Hotel, Cork. All welcome.
Is your milking machine ready to go?

A new year, a new lactation.....is your milking machine ready 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.

For more information see the CellCheck Farm Guidelines for Mastitis Control
Postcalver Gold is a premium, high quality feed product, trusted by farmers. By delivering optimal cow health, you can maximise herd fertility, milk quality and solids providing you with peace of mind.

Henry and Ann Bailey milk 150 cows at Grange House Farm, near Douglas in Cork. The Baileys recognise the need to ensure that the diet provided for their cows is properly balanced in the run-up to and throughout the grazing season. “We ensure that all the cows are calved down in the best possible condition. This includes the feeding of top-up minerals and vitamins throughout the dry period.”

The performance of the Bailey herd is impressive with cows averaging 8,200 litres at 3.81% fat and 3.43% protein.