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ISSUE 75 - MAY 2019

www.dairygoldagri.ie

AGRI BUSINESS
Welcome to the May edition of

MILK MATTERS
DAIRYGOLD’S DAIRY ADVISORY BULLETIN

Dear Milk Matters Reader,

May has arrived. Grass growth has been strong this year to date. Our main goal now is to get our cows back in calf.

In this month’s Nutrition Matters we explore some of the nutritional aspects that affects your herd’s fertility performance. We also examine low butterfats at grass, are they of consequence and if so, can anything be done? This year we are launching a new concentrate range “Hi Pro Ecolac Buff” with an added buffer to help with rumen function and butterfat % as our grass quality maxes out. This year we also have a limited amount of Alfalfa available. Alfalfa as a rough source could prove more successful than straw when trying to hold butterfat % at grass.

Within Fertility and Breeding Matters, Doreen Corridan, looking at the management practices we should be utilising to ensure our breeding season gets off to a good start.

Within Grass Matters, John Maher outlines how to keep on top of grass quality while maximising mid-season growth. William Burchill also explores the fertiliser requirements when taking out surplus bales and how you can match that with a successful fertiliser plan.

Yours Sincerely,

Liam Stack
Liam Stack M.Agr.Sc
RUMINANT TECHNICAL MANAGER, DAIRYGOLD AGRIBUSINESS
THE YEAR TO DATE

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

Grass Growth

Milk production to week 16 (figures based on ICBF cow numbers):

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total annual Milk Yield per cow in Dairygold (kg)</td>
<td>1280</td>
<td>1278</td>
<td>1192</td>
<td>1294</td>
</tr>
<tr>
<td>Total annual Milk Solids per cow (kg)</td>
<td>95</td>
<td>95</td>
<td>90</td>
<td>98</td>
</tr>
<tr>
<td>YTD Average Protein %</td>
<td>3.29</td>
<td>3.33</td>
<td>3.29</td>
<td>3.40</td>
</tr>
<tr>
<td>YTD Average Fat %</td>
<td>4.16</td>
<td>4.12</td>
<td>4.26</td>
<td>4.17</td>
</tr>
<tr>
<td>YTD Average Lactose %</td>
<td>4.95</td>
<td>4.90</td>
<td>4.90</td>
<td>4.86</td>
</tr>
</tbody>
</table>

Milk Protein % (weeks 1-16)

Milk Butterfat % (weeks 1-16)

Milk Lactose % (weeks 1-16)
NUTRITION MATTERS

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

May has arrived. Grass growth is variable but trending strong. Our goal for now is to maximise grass intakes, feed a balanced level of concentrates and get our cows back in-calf.

NUTRITION, THE EBI AND GETTING YOUR COWS BACK IN-CALF

Your herd’s fertility performance is multifactorial. To achieve good fertility you need:

• To breed for a fertile cow
• To feed your cows correctly (energy, protein, minerals and vitamins)
• To ensure the health status of your herd is good (BVD, IBR, Lepto, SCC etc)
• To manage the breeding season correctly

Every effort must be taken to increase your herd’s genetic potential to go back in calf, by utilising the best genetics available, to drive your herds EBI for fertility.

High vs low fertility EBI cows

<table>
<thead>
<tr>
<th>Early Post Calving</th>
<th>At Breeding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Greater feed intake</strong></td>
<td><strong>Stronger oestrus expression (i.e., stronger heats and longer heats)</strong></td>
</tr>
<tr>
<td><strong>Better BCS</strong></td>
<td><strong>Fewer silent heats (i.e., occurrence of ovulation without showing signs of heat)</strong></td>
</tr>
<tr>
<td><strong>Earlier resumption of cyclicity</strong></td>
<td><strong>Lower rates of ovulation failure (i.e., shows signs of heat but fail to ovulate)</strong></td>
</tr>
<tr>
<td><strong>Superior uterine health</strong></td>
<td><strong>Higher levels of progesterone after ovulation (essential for successful establishment and maintenance of pregnancy)</strong></td>
</tr>
</tbody>
</table>

Feeding:

As cows approach the breeding season they need to be on a rising plane of nutrition i.e. not losing weight.

Signs that your cows are not on a rising plane of nutrition?

• Low milk proteins
• A milk butterfat to protein ratio of greater than 1.4:1
• Excessive BCS loss

Meeting your cow’s energy demand?

1. Grazed grass is the most economical way to feed a cow. You must maximise grass intake.

2. Feed an appropriate level of concentrates based on how much grass your cows are consuming and your herds milk yield

Kgs of concentrates required at differing grass intakes and milk yields

<table>
<thead>
<tr>
<th>Milk Yield (kg)</th>
<th>1.25</th>
<th>1.7</th>
<th>2</th>
<th>2.25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass DMI 18</td>
<td>2</td>
<td>5</td>
<td>6.5</td>
<td>8.5</td>
</tr>
<tr>
<td>12 kg DM</td>
<td>1*</td>
<td>2.5</td>
<td>4.5</td>
<td>6.5</td>
</tr>
<tr>
<td>14 kg DM</td>
<td>1*</td>
<td>2.5</td>
<td>4.5</td>
<td>6.5</td>
</tr>
<tr>
<td>16 kg DM</td>
<td>1*</td>
<td>1*</td>
<td>1*</td>
<td>1*</td>
</tr>
<tr>
<td>17kg DM</td>
<td>1*</td>
<td>1*</td>
<td>1*</td>
<td>1*</td>
</tr>
</tbody>
</table>

*grass alone does not meet a cow’s daily requirement for calcium, phosphorus, magnesium, zinc, iodine and selenium. Even though a cow’s energy demand might not require concentrates, feeding 1kg of concentrates at grass is the cheapest and most effective method of supplying these minerals.
3. Do not over-estimate grass intakes. Over estimating grass intake by 1kg dry matter is the same as lowering concentrate feeding rate by 1kg daily.

4. If your cows current BCS is less than 2.75 you can:
   a. Add 1 kg to feeding rates recommended in the above table
   b. Put these cows on once a day milking while holding concentrate feeding levels. This will negatively affect milk while improving BCS.

5. Be wary that the intake of late calving cows will be no where near that of your cows that calved in the first few week of the season. These cows will be eating lower levels of grass and will need extra concentrates to ensure their BCS stays in check.

BE WARY OF OVER ESTIMATING THE VOLUMES OF GRASS YOUR COWS ARE CONSUMING.

Mineral Nutrition:
Grass does not meet your cow’s Phosphorus, Calcium, Selenium, Iodine, Zinc requirements. Cows also need a daily intake of cal mag to prevent grass tetany.

Grass tetany:
Grass tetany is caused by a lack of magnesium (Mg) absorption. Grass tetany affects muscle function, hence the trembling/twitching/trashing. Death is caused by the heart (a muscle) giving up.

Factors causing grass tetany:
1. Not feeding magnesium: Magnesium is not stored by the cow. Daily supplementation is required.
2. Anything that affects intake: Bad weather, stress, poor grass covers, cows in heat
3. Decreased rumen function

Magnesium is absorbed by the cow in the rumen. Lush highly digestible grass passes through the rumen quicker than lower digestibility forages. The cow has less chance to absorb the magnesium. Magnesium is stored in the grasses stem. Lush covers have a higher leaf to stem ratio and therefore it has a lower magnesium content.

4. High grass potassium decreases magnesium absorption,
5. High grass Nitrogen. High levels of ammonia breakdown in the rumen decreases magnesium absorption
6. Low sodium (Na) content decreases magnesium absorption
7. Milk yield. Higher yielding cows need more daily magnesium

MINERAL FEEDING OPTIONS?
When assessing your options, remember you need to supply magnesium, phosphorus and trace elements. If you’re not using a concentrate this can require a combination of products.

Boluses only supply trace elements:
- How much are they supplying daily?
- What form is the mineral in?
- You need to supply magnesium separately

Minerals in the water are available in all combinations:
- Magnesium only
- Magnesium + Iodine and selenium

Dietary deficiencies of copper, selenium and iodine are linked to:
- poor fertility,
- cystic ovaries,
- anoestrous,
- irregular or supressed oestrus
- and early embryonic death.
• Magnesium + all trace elements
• Can you guarantee intake?

The cost of feeding magnesium through concentrates is dependent on the milk yield response. Yield responses are typically 0.6kg milk per kg of concentrates. Higher yielding cows that struggle to maximise their intakes at grass will deliver a higher response of c.1kg milk per kg concentrates.

Mineral feeding costs net of milk yield response

<table>
<thead>
<tr>
<th>Milk Feeding Costs net of milk yield response</th>
<th>Milk Response</th>
<th>Ca + P</th>
<th>Net Cost (c/hd/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dusting Cal mag + trace element bolus</td>
<td>No</td>
<td>No</td>
<td>17</td>
</tr>
<tr>
<td>Mag chloride flakes + trace element bolus</td>
<td>No</td>
<td>No</td>
<td>16</td>
</tr>
<tr>
<td>Flow mag + trace element bolus</td>
<td>No</td>
<td>No</td>
<td>21</td>
</tr>
<tr>
<td>Flow mag fertility + trace elements</td>
<td>No</td>
<td>No</td>
<td>32</td>
</tr>
<tr>
<td>Supermag 5.6% @ 1kg/hd/day</td>
<td>Yes</td>
<td>Yes</td>
<td>8</td>
</tr>
<tr>
<td>Post Calver gold 14% @2kg/hd/day</td>
<td>Yes</td>
<td>Yes</td>
<td>26</td>
</tr>
<tr>
<td>Hi Pro ECO LAC 14% @ 2kg/hd/day</td>
<td>Yes</td>
<td>Yes</td>
<td>22</td>
</tr>
</tbody>
</table>

* assumes a milk yield response of 0.6kg milk/kg concentrates and a milk price of 30c/ltr
LOW LEVELS OF BUTTERFAT AT GRASS

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

Milk fat comes from:
1. fibre digestion by bacteria producing acetate,
2. fats, either dietary or from the cows back

Fibre in the diet
Grass is full of highly digestible fibre. So fibre itself is not a problem. The highly digestible nature of this fibre can lead to sub acute ruminal acidosis (SARA). SARA is characterised by a drop in rumen pH. This pH drop is not as dramatic as what will occur from over feeding starches and sugars in an indoor feeding situation but it is severe enough to interrupt the transformation (biohydrogenation) of the fats contained in fresh grass.

Fats in the diet
Fats are either saturated or unsaturated. Grass is full of polyunsaturated fats. These polyunsaturated fats are toxic to the cow’s rumen. In normal conditions the cow detoxifies these polyunsaturated fats by transforming them into saturated fats. Under conditions of lower rumen pH as is caused by SARA this detoxification process breaks down causing low milk butterfat percentages.

Can we have a positive effect on milk butterfat percentage?
We cannot alert the fatty acid profile of grass but we can have a positive influence on fibre digestion in the rumen while cows are out at grass by:

a. Feeding some Straw/Hay or Alfalfa:
Past experience with this will show that results are variable; a lot of work is required to ensure the cows will take in the straw. The best results I’ve seen are where farmers are willing to feed straw daily in the paddocks with the cows. You do not however want to be replacing large volumes of high energy leafy grass with lower digestibility forages. 0.25-0.33kg of straw daily is more than enough.
We do have a new weapon in this battle this year in the shape of Alfalfa. Alfalfa can reduce the milk fat depression at grass by reducing:

- the risk of sub-acute ruminal acidosis (SARA)
- improving the fatty acid profile of the cows diet.

In particular, including alfalfa reduces the amount of long-chain fatty acids coming from fresh grass that are responsible for CLA formation, which directly reduces mammary synthesis of milk fat. See page 32 for more information on Alfalfa and butterfat %.

b. Feed concentrates based around digestible fibres and maize, not wheat.

c. Use yea-sacc and / or an acid-buff within your concentrates, Dairygold have yea-sacc available within our post calver gold range and we have acid-buff available within our Hipro Ecolac 16% and 14%.

d. Feed a specific fatty acid designed to increase butterfat % eg our megaboost range.

What impact is this lower milk fat having on my cows?

Thoughts on this differ from none to substantial. My thoughts are that your butterfat % right now is not as important as your protein %. Milk protein % is the best avenue to access your cow’s energy status. Low energy status and poor fertility performance go hand in hand.

I would think the low levels of fat caused by SARA is leading to poorer energy, protein and mineral utilisation. However, if you’re feeding your cows the right grass, concentrates (based on rumen friendly raw materials with yea-sacc and/or an acidbuff added) and leaving a forage source like alfalfa available and your fats are still falling, then the issue may be beyond your control.

What level of butterfat is acceptable?

This is dependent on your herd’s genetic potential but I would say that independent of any potential health implications low butterfat has a real economic impact and that by maximising butterfat we are maximising the value of our milk output.

Financial Impact of low butterfat:
Fat is a valuable component within milk. Every 0.1% drop in milk fat is costing you 0.366c/ltr. At a 28 ltr yield a 0.2 fat drop is costing you c.20c per cow per day. For a 100 cow herd that’s €20 per day or €600 per month. At a 28 ltr yield a 0.3 fat drop is costing you c.30c per cow per day. For a 100 cow herd that’s €30 per day or €900 per month

Dairygold Agribusiness and SARA:
Within our feed range we have:

- **Post Calver Gold Range;** which has yea-sacc added. Yea-sacc has been proven at UCD to have a positive effect on the rumen pH while cows are grazing.
- **Hi pro EcoLac Buff;** which has acid-buff added. Acid-buff has been demonstrated in published trials to improve rumen buffering capacity and milk solids output.

Both these products will help rumen pH but won’t alter the fatty acid profile of the grass being eaten.

- **Megaboost feed range;** which has a very specific fat added has resulted in milk butterfat improvements of c.0.15-0.2% out on farm.

- **Alfalfa;** is a unique forage that can help rumen pH while altering the overall fatty acid profile of the forage being fed.
Stringent regulations for specific dairy products play a major part in our Irish Dairying Industry today. One of these regulations is the monitoring of Chlorine Residues such as Chlorates in dairy products, particularly IMF (Infant milk formula). Due to increased food safety concerns this needs to be addressed promptly. Failure to comply can result in loss of current and/or future contracts with customers.

Chlorates are produced by the degradation of sanitising agents such as Chlorine, Chlorine Dioxide or Hypochlorite. Intensive chlorate testing is currently being carried out across our members and sites. The maximum Chlorate limit in Milk is \(< 0.00375 \text{ mg/kg}\). Each member will be tested at least once in 2019 and if deemed necessary additional testing will be carried out. As per the Milk Purchasing Terms and Conditions (pg. 9, 2.13 Chlorates) any supplier who fails a Chlorate test will be requested to move to a Chlorine Free detergent. This move will safeguard our milk from exceeding Chlorine limits in milk concentrates/powder.

Excessive Chlorate residues can have serious health implications for vulnerable groups such as infants who have a mild to moderate iodine deficiency and individuals with low iodine uptake, hence why IMF products are of primary concern. The European Food Safety Authority (EFSA) and the EU Commission are currently carrying out extensive research on the risk of Chlorates levels in foods on public health.

**TOP TIPS TO AVOID CHLORATE RESIDUES IN YOUR MILK**

- **Use Chlorine Free products**, – consult your Milk Quality Advisor to discuss further.
- **Choose detergents from the Teagasc list** - full listing of registered Detergents [www.teagasc.ie](http://www.teagasc.ie)
- **Avoid Stock piling or Forward buying** of detergents.
- **Store** Detergents inside in a cool dark room and out of direct sunlight.
- **Always check Expiry Date** before purchasing and use within Three Months of purchase.
- **Ensure Correct Detergent usage rates**.
- **Adaptate Hot Water** is essential for both milking machine & bulk tank washing.
- **Adapte Rinsing before and after milking and do NOT reuse Rinse Water**.
- **Detergent cycle** – 9L (2 gallons) of water with detergent/milking unit.
- **Rinsing cycle** – 14L (3 gallons) of water/milking unit.
- **Make sure the Wash settings** in the Bulk Tank for Rinse water and Detergent usage is correct. Discuss this with your Bulk Tank Service Technician.
- **Peracetic Acid** should be used instead of Chlorine for Cluster Dipping, Water Sterilisation or for the Final Rinse in the Milking Machine/ Bulk Tank.
- **If using Peracetic acid in the “final rinse”**, it should be added to an additional rinse to that used to rinse out the detergent solution.
- **Some teat dips may contain Chloride or Chlorine Dioxide**, care needs to be taken if pre-dipping cows with these dips and always follow manufacturer’s instructions on the label. Always wipe the product off the teats before attaching the cluster.

**Chlorine Free products available in Co-Op Superstores shops in Dairygold**

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>LIQUID/POWDER</th>
<th>AVAILABLE SIZES</th>
<th>USAGE RATE</th>
<th>USAGE RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>COLD</td>
<td>HOT</td>
</tr>
<tr>
<td>GOLD ASSURE UNIVERSAN CF</td>
<td>LIQUID</td>
<td>20L/200L</td>
<td>450ml/45L</td>
<td>300ml/45L @ 70°C</td>
</tr>
<tr>
<td>CIRCODINE CF</td>
<td>POWDER</td>
<td>10Kg/20Kg</td>
<td>320g/45L</td>
<td>180g45L @ 70-75°C</td>
</tr>
<tr>
<td>AVALKSAN CF</td>
<td>LIQUID</td>
<td>25L/205L/1000L</td>
<td>400ml/45L</td>
<td>350ml/45L @ 70°C</td>
</tr>
<tr>
<td>DEOSAN OSA-N</td>
<td>LIQUID</td>
<td>20L/200L</td>
<td>280ml/40L</td>
<td>280ml/40L @ 70-80°C</td>
</tr>
<tr>
<td>DEOSAN LIQUID CIP</td>
<td>LIQUID</td>
<td>20L</td>
<td>200ml/40L</td>
<td>200ml/40L @ 70-80°C</td>
</tr>
</tbody>
</table>
MICHEAL SAVED €3,500 ON HIS FARM INSURANCE.

Special Offer

Switch to Zurich and like Michael, you too, can avail of our exclusive farm insurance deal and preferential pricing for Dairygold members.

“I switched my farm insurance to Zurich and saved €3,500 with better building and animal cover too. That’s extra money in my back pocket.”

TO SEE HOW MUCH YOU COULD SAVE, CALL JP AHERNE ON 086 411 37 97 OR CALL OUR FARM TEAM ON 053 915 76 77.
MAINTAINING DRINKING WATER QUALITY THROUGH BEST PRACTICE PESTICIDE APPLICATION

By JAMES BOURKE, B.Ag.Sc Technical Sales Advisor

Surface waters such as rivers and lakes, account for 80% of drinking water supplies in Ireland. Low level detections of grassland herbicides have been found in drinking water supplies in the last number of years. Exceedance level: 1 part in 10 billion. The equivalent of one drop in an Olympic-sized swimming pool or 1 second in 317 years.

Thankfully 2018 saw a significant drop nationally in the number of exceedances, in treated water, of the pesticide in drinking water quality standard, according to the Department of Agriculture, Food and the Marine. This decrease has been particularly marked in the priority catchment areas, which were outlined and monitored more regularly under the industry-led product stewardship scheme.

The four catchment areas are:
1. Longford Central (Lough Forbes);
2. Troyswood, Co. Kilkenny (River Nore);
3. Abbeyfeale Co. Limerick (River Feale)
4. Newcastlewest, Co. Limerick (River Deel)

As an industry we have already implemented some changes to reduce the levels found in drinking water. But it is important that we continue to improve our pesticide spraying management so we can safeguard MCPA as a vital weapon in our chemical armory.

Actions already taken to reduce levels:
- Rates of all “straight” herbicides based on MCPA were reduced from 3.3 ltrs per ha to 2.7 ltrs per ha
- A 5m buffer strip along all water courses was made mandatory
- It was made illegal to apply a “straight” MCPA based product between the months of October and February
- Use of MCPA in a knapsack sprayer or weed-wiper was also made illegal
- Good Plant Protection Practice guidelines were also amended to make it illegal to fill sprayers directly from water courses
- The Sustainable Use of pesticides Directive was introduced.
CONTROL OF RAGWORT AND RUSHES

By JAMES BOURKE, B.Agr.Sc., Dairygold Grassland Specialist and Technical Sales Advisor Mobile: 086 793 8408

RAGWORT IN GRASSLAND

Ragwort is poisonous when consumed by cattle and has been responsible for many animal fatalities. An animal must consume up to 12% of the animal’s body weight in the weed to cause severe problems.

While alive ragwort is unpalatable and cattle don’t generally eat it unless grass availability is extremely restricted.

After spraying Ragwort becomes more palatable. Cattle must be kept out of fields and silage should not be cut until the dying plant has rotted away. Ragwort eaten in hay or silage is also poisonous.

The best time to spray ragwort is at the rosette stage, roughly around half the size of a rugby ball. For larger infestations, sprays such as Lupo and Forefront T provide good control. For larger infestations, sprays such as Lupo and Forefront T provide good control.

Spray Control

Ragwort is biannual meaning it goes to the rosette stage in year 1 and will flower in year 2. To successfully control it you need to stop the weed going to seed over a 2 year period. At smaller infestation levels, pulling of ragwort before flowering can be a successful control option. For larger infestations, sprays such as Lupo and Forefront T provide good control.

Spray in the Spring (February to Mid-March) or late Autumn (September to Mid-November)
- Ensure that the plant is fully decayed into the soil before grazing again (usually 5 to 6 weeks).

The best spray options are in the table below, note no spray control option is clover safe and forefront T can only be used on grazing ground.

<table>
<thead>
<tr>
<th>Spray</th>
<th>Rate L/ha (l/ac)</th>
<th>Water L/ha (l/ac)</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forefront T</td>
<td>2.0L/ha (0.8 l/ac)</td>
<td>300L/Ha (120 l/ac)</td>
<td>To be sprayed on grazing ground only</td>
</tr>
<tr>
<td>Lupo</td>
<td>4.0L/ha (1.6 l/ac)</td>
<td>200L/Ha (80 l/ac)</td>
<td>best control</td>
</tr>
</tbody>
</table>

Rushes : Grassland Management:
Rushes can produce up to 8,500 seeds per fertile shoot every year. Maintaining a fertile, dense, leafy, highly productive grass sward is the best method to prevent rushes establishing and spreading. Maintaining soil fertility at optimum levels for pH, phosphorus and potassium is critical to this, as is applying sufficient levels of nitrogen. Avoid any poaching, overgrazing or damage to grass swards.

Control:
This needs to be a combination of:
- improving drainage
- grazing management
- fertiliser application
- topping
- chemical control

Chemical Control:
1. Top or mow existing rushes
Whether you are licking or spraying the rushes, top/mow the mature rushes 3 weeks prior to spray application. Remove any mown rushes before spraying.

2. Products:
Apply MCPA in June or July when growth conditions are good. A wetting agent, such as Torpedo, will help the spray sticking to the slender rush ‘target’.

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate (Ltrs/ha)</th>
<th>Water Volume (ltrs/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCPA</td>
<td>2.7</td>
<td>250-400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Torpedo</td>
<td>0.2 ltrs/ha</td>
<td></td>
</tr>
</tbody>
</table>
When it comes to grassland weed control, I have noticed farmers rank it in varying degrees of importance on their farms. Some are meticulous and are constantly monitoring and controlling, some are vigilant and never allow grassland weeds become a major problem and others seem to have thrown their hat at it, and given up. Which ever way you rank it on your farm the fact is, where ever you have a weed within a grass sward it is taking up space and nutrients and reducing you grass yield potential which in turn results in less money going to the back pocket.

In fact, controlling a field with 20% docks can grow 2t/ha extra grass worth €360/ha. In my view the decision whether to control grassland weeds or not is an easy one, it simply must be done. When it comes to deciding how and when it should be done is a little less simple. Having decided to control your grassland weeds there are a number of factors to be considered when deciding how to go about it, when to go about it and which product is best suited to do the job at a competitive cost.

FACTORS YOU NEED TO CONSIDER
What type of grass field are you spraying, is it permanent grass or is it a new ley
- Is it a grazing sward or a silage field?
- How close to grazing or cutting is it?
- Is now the best time to control these weeds?
- Weather conditions.
- Is there clover present? If so do you want to keep it
- What are the main weeds you need to kill?
- Are you looking for short or long term control, this is a cost factor.
- Is this field owned or rented. This may influence your spend.
- Do you know if there is chickweed present?
- Is it common chickweed or mouse ear chickweed?
- Are there Dandelions or buttercup present?
- Is there any Ragwort in the field or under wires?

Our Area Sales Managers and grassland specialist are available to help you decide on a course of action best suited to your situation, based on establishing your individual needs through discussion on this list of factors. I have outlined below a summary of some products and rates which you can use based on the different field scenarios.

NEW LEYS/ UNDERSOWN WEED CONTROL...
Two chances to control weeds
1. **Burn-off:** Do not skimp on rates (6L/ha of standard products).
   - Roundup Flex highly recommended (4.5L/ha) better uptake.
   - Allow enough time after spraying before ploughing (7-10 days standard)
   - Key to control difficult weeds before tap roots develop

2. **Post Emergence:**
   - New leys 5 to 6 weeks after sowing with no clover....
     - Hurler or Reaper: @ .75L/ha,
     - Envy: @ 1.5 l/ha Use from 1st Feb to end of November
     - Pastor Trio: @1L/Ha. Use from the 1st Feb to 31st Oct.

In this case I would let swards get well established as these sprays have a wide weed spectrum and can handle strong weeds.

Envy & Pasture Trio have a 7 day grazing interval so sometimes works in better as you may need to graze sooner. Use only from 1st Feb to end of October.

New leys 6 weeks after sowing with clover but no Chickweed...
- Mastercrop Undersown/Legumex DB or any undersown spray in stock.
- Rate 7 litres per Hectare
• Need to spray when weeds are small but clover must have one trifoliate leaf.
• Generally will do a good job, on target weeds, docks, thistles, etc. timing importing.
• Will not kill chickweed.
• Will not kill Mayweed. Common in compacted ground

Chickweed

New leys 6 weeks after sowing with Clover and Chickweed...
• More difficult situation as clover safe products are poor on chickweed.
• Undersown: @ 5L/ha plus Triad @ One Tablet to .75 Ha
• Clovers need to be strong, 2 to 3 trifoliate leaves. This leads to stronger weeds at spraying.
• If chickweed is very bad you may need to discuss using products like Hurler, Envy or PastorTrio which will take out the clover.
• Fields with history of Chickweed, you should consider using non clover grass seeds, and establish the clover after weed control.

Dock Root

No Clover, Docks & Chickweed...
• **Doxstar Pro:** Single application @ 2L/Ha in 300 to 400 litres of water per hectare 28 days before cutting or split applications of 2x1L/Ha.
• **Hurler/Reaper:** 1.25 to 1.5L/Ha (short term control)
• **Trust:** @ 3.5L/Ha. Cost effective treatment for the control of Docks, Thistles, Ragwort and many other weeds
• **Envy:** @ 2L/Ha in 200 to 400 litres of water 28 days before cutting. Use from 1st Feb to end of November
• **PastorTrio:** @ 2L/Ha in 200 to 400 Litres of water/28 days before cutting. Use from the 1st Feb to 31st Oct.
• **Forefront.** @ 2L/Ha can also be used after the last Silage cut has been taken. Best available control on a wide range of grassland weeds.

ESTABLISHED SILAGE FIELD...
**Important in Silage fields to get good weed control, best to use products that give long term control and spray early.**

With Clover - Docks & ChickWeed.....
There is really no good option here that will kill the chickweed and keep the clover. You must decide if it’s more important to kill the chickweed or keep the clover.
With Clover & Docks Only....

- **Eagle**: @ 60g/Ha. 21 days pre-cutting in 300+ L/Ha of water.
- **Prospect**: One pack to 2 Ha, generally not used until the autumn as can be hard on grass.

ESTABLISHED GRAZING FIELDS..

No Clover - Docks & Chickweed....

- **Hurler /Reaper**: @ 1.25 L/Ha 7 Day Grazing Interval.
- **Trust**: @ 3.5L/Ha. 14 day grazing interval. Cost effective treatment for the control of Docks Thistles Ragwort and many other weeds.
- **Doxstar Pro**: @ 2 litre /Ha in 300+ litres Water/Ha or split application of 2x1L/Ha. 7 day grazing interval.
- **Envy**: @ 2L/Ha in 300 to 400 litres of water/Ha. 7 day Grazing Interval. Use from 1st Feb to end of November.
- **PastorTrio**: @2L/Ha in 300 To 400 litres of Water/Ha. 7 Day Grazing Interval. Use from 1st Feb to 31st Oct.

No Clover - Docks, Chickweed, & Thistles...

- **PastorTrio**: @ 2L/Ha 300+L/Ha water, Grazing interval 7 days. Use from 1st Feb to 31st Oct.

No Clover – Thistles & Nettles only...

- **Thistlex**: @ 1L/Ha, 7 days grazing interval.

Clover Swards with Docks Only....

- **Eagle**: @ 60g/Ha in 300+L/Ha of water. 7 days pre Grazing.
- **Prospect can be used but is hard on grass.**

Where Dandelion & Buttercup are a problem....

- **D50**: @ 3.3L/Ha, 14 day grazing interval.
- **Envy**: @ 2L/Ha, 7 day grazing interval.
- **Pasture Trio**: @ 2 L/Ha, 7 day grazing interval.
- **Forefront**: @ 2L/Ha. Expensive would only use if need to kill Ragwort & Nettles at the same time. Good long term control

Where Dandelion & Buttercup are a problem along with Docks & Chickweed

- **Forefront**: @ 2 L/Ha Grazing interval 7 days.
- **Envy**: @ 2L/ha Grazing Interval 7 days cutting interval 28days.
- **Pasture Trio**: @ 2L/Ha, 7 day Grazing interval cutting interval 28 days.

When controlling these weeds clover will always be killed.

---

**RESEEDING EVENT**

A reseeding event will be held on the farm of

**Kieran Ryan, Ballnagally, Old Pallas, Co. Limerick. V94 EOK6**

on **Wednesday the 25th of May. Time: 11am-1pm**

The event will focus on weed control in new sown leys and creating the optimal conditions for germination at sowing.

For more information on the event please follow the link

[https://www.dairygoldagri.ie/farm_focus/reseeding-event](https://www.dairygoldagri.ie/farm_focus/reseeding-event)
Jimmy Cotter from outside Coachford Co Cork is a monitor farmer in the Dairygold/Teagasc Joint Programme with a focus on labour efficiency.

In conjunction with Munster Bovine, the joint program held a walk on Jimmy’s farm on April 17th which highlighted his herd excellent breeding and production performance in a highly efficient dairy system. Jimmy’s herd has an EBI of €164 which ranks as number 140th in the top EBI herds in the country.

The high genetics of this herd is being realised on the ground with a consistent calving interval of 365 days and a 6 week calving rate of nearly 90%. With a compact calving pattern and high solids bred into the herd, Jimmy’s herd sold 577kgs milk solids/cow to the co-op in 2018 with 1.5tonnes meal fed per cow, previous years the herd consistently produced 520-530kgs solids/cow on 700kgs meal.

The key practices that make this farm labour efficient include contract rearing out replacement heifers from 12 weeks old until calving down – therefore, Jimmy is only managing one group of animals.

Good farm facilities including automatic calf feeders, drafting and heat detection systems all reduce workload on the farm.

But the key to labour efficiency on this farm is the simplicity of the farm system – high EBI cows which achieves a compact calving herd and high grass utilisation.

### Current average Performance of Monitor Farmers: 17th April 2019

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stocking rate on milking platform:</td>
<td>3.6</td>
</tr>
<tr>
<td>Average Farm Cover kgDM/ha</td>
<td>680</td>
</tr>
<tr>
<td>Grass Demand kgDM/ha</td>
<td>48</td>
</tr>
<tr>
<td>Grass growth rate kgDM/ha</td>
<td>43</td>
</tr>
<tr>
<td>Milk litres/cow</td>
<td>29.6</td>
</tr>
<tr>
<td>Fat %</td>
<td>4.02</td>
</tr>
<tr>
<td>Protein %</td>
<td>3.49</td>
</tr>
<tr>
<td>Milk solids/cow/day</td>
<td>2.29</td>
</tr>
<tr>
<td>Meal kg/cow</td>
<td>4.2</td>
</tr>
<tr>
<td>Other Feeds kg/cow</td>
<td>0.4</td>
</tr>
<tr>
<td>Mating Start Date</td>
<td>25th April</td>
</tr>
<tr>
<td>Units nitrogen/acre this rotation</td>
<td>28</td>
</tr>
</tbody>
</table>
PUTTING BACK IN WHAT YOU TAKE OFF
By WILLIAM BURCHILL, Teagasc Moorepark

During periods of high grass growth removing surplus grass as baled silage will:
- help to keep good quality grass in front of livestock
- make some valuable reserves of good quality silage

When cutting a paddock for surplus baled silage it is important to consider the amount of nutrients we are removing in the silage from this paddock. A typical bale of silage weighing 800kg fresh (200 kg Dry matter) contains 10 units of nitrogen (N), 1.6 units of phosphorus (P) and 10 units of potash (K). Depending on the amount of bales/acre that are harvested the amount of N, P and K removed can be substantial (Table 1).

Table 1: Units of N, P and K removed per acre depending on number of bales per acre.

<table>
<thead>
<tr>
<th>Pre-cutting yield kg/dry matter/ha</th>
<th>Bales/acre</th>
<th>N units/acre</th>
<th>P units/acre</th>
<th>K units/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,500</td>
<td>3</td>
<td>30</td>
<td>4.8</td>
<td>30</td>
</tr>
<tr>
<td>2,000</td>
<td>4</td>
<td>40</td>
<td>6.4</td>
<td>40</td>
</tr>
<tr>
<td>2,500</td>
<td>5</td>
<td>50</td>
<td>8</td>
<td>50</td>
</tr>
</tbody>
</table>

In general, the N removed in the bales is not a problem. The P and K removed is what needs to be considered.

As a rough rule of thumb, 50 units K/ac is enough to change a soil K index i.e. to go from index 2 to index 3 or vice versa. If no slurry and only straight N such as CAN or protected urea was applied before and after cutting the surplus bales there will be a large shortage of P and K in this paddock.

Farmers have found soil K indexes to be low on individual paddocks where a lot of surplus bales are removed and K is not replenished. Best practice is to apply slurry to these paddocks after cutting. The slurry application rates and slurry thickness in Table 2 can be used as a guide. Where slurry is not available a P and K compound could be used but you must ensure you have a P allowance before you spread P. Where you have no P allowance and no slurry is available to spread on these paddocks a compound like 19:0:15 or KaN 27-0-11 is an option. When making a choice to select one paddock among three or four paddocks to take out for bales some farmers are selecting the paddock with the highest K index when everything else is equal.

Table 2: Units of N, P and K applied per acre in slurry depending on slurry thickness and application rate

<table>
<thead>
<tr>
<th>Slurry application rate</th>
<th>Dairy cow slurry units/acre</th>
<th>Thick slatted unit slurry units/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>P</td>
</tr>
<tr>
<td>1500 gal/acre</td>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td>2000 gal/acre</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>2500 gal/acre</td>
<td>15</td>
<td>7.5</td>
</tr>
<tr>
<td>3000 gal/acre</td>
<td>18</td>
<td>9</td>
</tr>
</tbody>
</table>

KEY POINT: As a rule of thumb: 3-4 bales per acre requires 1,000 gallons of thick slurry or 2,000 gal of watery slurry to replace the P and K removed.

KEY POINT: 4-5 bales/acre will remove around 6-8 units of P/ac and 40-50 units of K/ac.
Within Dairygold we have a range of fertiliser options that can be used to:
- replace the nutrients removed as bales as outlined by William Burchill on page 17
- meet the requirements of your rotation paddocks and 2nd cut silage

Of particular value to your enterprise at present are the products outlined in the table below. These match excellent value with the best nutrients for your grass.

<table>
<thead>
<tr>
<th>Product</th>
<th>Avail P</th>
<th>Sulphur</th>
<th>Sodium</th>
<th>When to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protected Urea: 46% N</td>
<td></td>
<td></td>
<td></td>
<td>Grazing Rotation. Silage ground that is getting slurry</td>
</tr>
<tr>
<td>Protected Urea: 38% N + S</td>
<td></td>
<td>7</td>
<td></td>
<td>Grazing Rotation. Silage ground that is getting slurry</td>
</tr>
<tr>
<td>Protected Urea: 27-0-11</td>
<td></td>
<td>3½</td>
<td></td>
<td>Grazing Rotation on low K but high P soils. Silage ground getting little slurry or only watery slurry</td>
</tr>
<tr>
<td>Pasture Boost: 28-2.5-5+S</td>
<td></td>
<td>5</td>
<td></td>
<td>Grazing Rotation. Silage ground that is getting little or 0 slurry</td>
</tr>
<tr>
<td>Sweet 18's: 18-6-10+S+Na</td>
<td></td>
<td>3</td>
<td>4</td>
<td>Grazing Rotation to build P and K indexes</td>
</tr>
<tr>
<td>Silage Boost: 21-2-10-2</td>
<td>Yes</td>
<td>2</td>
<td></td>
<td>Silage ground getting little slurry or only watery slurry</td>
</tr>
<tr>
<td>Sweetgrass:23 + S + Na</td>
<td></td>
<td>2</td>
<td>5</td>
<td>Grazing Rotation to improve overall sward palatability</td>
</tr>
</tbody>
</table>

Advantages to the Range:

1. Protected Ureas:
   Protected Urea products are c.10% cheaper by kg of N when compared to CAN. Teagasc research is shown that they grow the same levels of grass as CAN and Urea throughout the year while:
   - decreasing ammonia emissions by 80% when compared to Urea
   - decreasing greenhouse gas emission by 74% when compared to CAN.
   Green on the environment and green on your pocket.

2. Avail Phosphorus
   Avail® Phosphorus is a water-soluble additive for granular phosphorus fertiliser that enables phosphate to remain free in the soil, allow for greater plant uptake.

3. Sulphur
   Sulphur is an essential nutrient for grass growth and is closely associated with Nitrogen uptake and efficiency. Sulphur application has been shown to:
   - Increase grass silage protein content by 22%
   - Increase grass silage sugar content by 20%
   - Increase grass yield by 2t/ha/yr (€500/ha) and silage yields by over 3t/ha/yr (€750/ha).

4. Sodium
   Sodium increases the palatability of grazing grass – especially where slurry is being spread. Sweeter grass means tighter grazing and higher % grass utilisation.
The grass plant is right for grazing when it is at the 2-3 leaf stage. The performance of the plant and the performance of the cow grazing the plant are ideal. Of course if grass starts growing the ‘fourth’ leaf – the rotation is getting too long – then this field/paddock should be removed as surplus grass for silage. Try to keep to a 20 day rotation and graze the magic 1400 kg DM/ha. A growth rate of 65-70 kg DM/ha/Day for 20 days = 1300-1400 kg DM/ha.

\[
i.e. \text{ 20 days multiplied by 65kg DM/ha/day} = 1300 \text{ kg DM/ha}
\]

Longer rotations result in:
- less grass grown/ha
- poorer cow performance
- less grass utilised per ha
- grass of poorer digestibility

**Every 4% reduction in grass digestibility will reduce milk solids yield by 5%**

May is generally the month when the rate of grass growth reaches its peak for the year. So grass supply can change fast. How you respond to grass growth is the key. You have to be aware as to what is happening on the farm in terms of grass growth. **Walk the farm!**

For those who measure grass, the average farm cover should be at 160-180kg DM/cow. This is the average farm cover divided by the stocking rate on the milking platform. Once the cover/cow is established, the key thing is to make a decision and act upon it.

**Continuous topping is wasting feed!!**

If we can grow extra grass on the farm, this can be harvested as surplus grass and made into silage (either pit or bales). For this to happen though, the level of grassland management needs to improve and farmers must focus on this by putting in greater effort to target the “right grass” to enter (1300-1600 kg DM/ha) into with their animals. Farmers must ask the question – If I am continually topping, am I wasting feed? Could the paddock/field be skipped as it is too strong for grazing and nicer grass grazed so the paddock to be topped goes for round bales of silage instead? It makes more sense that this “wasted” feed is in a bale than let it rot after topping. Trying to keep to a 20 day rotation will help this process.

**Stocking Rate for summer months**

A stocking rate of 4 cows/ha is suggested for the summer months as growth is about 65 kg DM/ha/day on average (See Table 1 below). This is based on the cow eating about 16 kg DM/cow/day of grass (plus 1-2 kg meal) stocked at 4 cows/ha (4 x 16 = 64). This will enable grass to be managed well and in many cases, surplus grass to be taken out for high quality silage.

**Table 1. Average grass growth rate (kg DM/ha/day) for May to September. (From PastureBase Ireland).**

<table>
<thead>
<tr>
<th>Date</th>
<th>Average Growth</th>
<th>Date</th>
<th>Average Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td></td>
<td>Jul</td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>56</td>
<td>07</td>
<td>70</td>
</tr>
<tr>
<td>12</td>
<td>60</td>
<td>14</td>
<td>73</td>
</tr>
<tr>
<td>19</td>
<td>79</td>
<td>21</td>
<td>69</td>
</tr>
<tr>
<td>26</td>
<td>78</td>
<td>28</td>
<td>66</td>
</tr>
<tr>
<td>Jun</td>
<td></td>
<td>Aug</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>79</td>
<td>04</td>
<td>65</td>
</tr>
<tr>
<td>09</td>
<td>73</td>
<td>11</td>
<td>65</td>
</tr>
<tr>
<td>16</td>
<td>75</td>
<td>18</td>
<td>63</td>
</tr>
<tr>
<td>23</td>
<td>75</td>
<td>25</td>
<td>63</td>
</tr>
<tr>
<td>30</td>
<td>70</td>
<td>Sept</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>01</td>
<td>63</td>
</tr>
</tbody>
</table>
Keeping Soil Fertility on Track!!

Recent analysis of trends in soil fertility has shown improvements in soil P and particularly in Lime requirements (soil pH). However, the trends in soil K are not as positive. The capability of grass to grow starts below the surface. If the major elements of P and K are compromised – less grass will be grown. Sulphur is also essential for grass growth and N uptake. Outlined in the table below are broad fertiliser targets for most dairy farms in terms of N, P, K & S requirements. This chart is taken from the Open Day at the Grassland Farmer of the Year event held in Limerick recently.

The P & K requirements are to "balance the books" from a milk production perspective and thereby grow grass. The N and S targets are to grow grass well for the year. These targets don’t account for build-up of soil fertility in P & K. The P allowance for the farm also needs to be considered in relation to the P targets outlined in the table.

Yearly Fertiliser Plan for 200uN, 20uP, 40uK and 20uS

<table>
<thead>
<tr>
<th>Timing</th>
<th>Nutrient(s) Required</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan/Feb</td>
<td>N</td>
<td>23</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>March</td>
<td>N/P/(K)/S</td>
<td>36</td>
<td>12</td>
<td>(24)</td>
<td>8</td>
</tr>
<tr>
<td>April</td>
<td>N</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>May</td>
<td>N+S</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>June</td>
<td>NPK</td>
<td>20</td>
<td>4</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>July</td>
<td>N+S</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>August</td>
<td>NPK</td>
<td>20</td>
<td>4</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>September</td>
<td>N</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>200</td>
<td>20</td>
<td>40</td>
<td>20</td>
</tr>
</tbody>
</table>

1. Grass utilised drives requirement for P and K
2. Front load P in the spring to stimulate early grass growth
3. Apply K late in the year where high K applications are required
4. Slurry is best suited to low K soils, silage and paddock cuts for surplus grass
5. Balance N with S at a ratio 12 N : 1 S
6. Early N will drive spring grass. Target the right fields & soils conditions
Danny farms in Doonbeg, Co. Clare. The land has a mix of mineral clay soils and peat soils. Rainfall is about 1250mm (50 Inches). The farm is split by the Doonbeg river. Considerable investment in the farm grazing infrastructure (and farm yard) has been carried out over the last 20 years.

Soil Fertility: This is a priority on Danny’s farm.

“This is the most important investment of all. It gives a fast return and doesn’t cost that much. Last year I spent almost 4c/litre on fixing lime, P and K. I will continue on this road until soil fertility is where it should be.”

The farm has improved enormously in terms of soil fertility. There is only about 40% of the farm deficient in P & K (mostly index 2) in 2019. In 2017, the farm was almost 80% deficient. The farm is now only about 33% deficient in lime. Again this has halved over the last few years.

Drainage:

Different drainage systems have been installed on the farm. The heavy clay soils have a shallow drainage system in tandem with collector drains installed. Collector drains were installed at 15m spacing and mole drains installed at 1.5m spacing. However a deep drain system is in operation on some of the peat soils.

“The draining of fields has enabled me to increase grass production by 6-7 tons DM/ha. This is something I will continue to do but does cost money. Almost €2,500/acre. I don’t carry out drainage every year, but when I can I will.”

Danny is very keen to stress that “we are a grass based system of dairy farming” despite the challenging nature of the soils and the level of rainfall. The farm grows about 11+ tons DM/ha on average over the last 5 years and the 100+ cow herd produced about 525kgMS/cow in 2018.

Grazing infrastructure:

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.

“I try to upgrade the roadways, water and paddock systems every year. While it is not the cheapest investment, a new farm roadway is planned in 2019. I have installed some spur roadways on parts of the farm which allow me to get cows on and off grazing quickly. They allow me to get to drier parts of paddocks and avoid wet patches. Most of the paddocks on the farm have multiple entrances and exits to get cows out grazing and off the paddock easily”

Reseeding:

New grass is in the plan for Danny, but his first priority is to tackle soil fertility.

“In recent years my approach to reseeding is to work it in with the drainage programme. However I want to finish off improving soil fertility first before beginning a more serious reseeding programme. I now use some tetraploid varieties with a high PPI index in the mix as the cows graze them better.”

Danny farms with his wife Yvonne and their 3 children near Doonbeg, in West Clare. Danny was awarded the Grassland Farmer of the Year award for the Heavy Land category in December 2018. Well done!!
FERTILITY & BREEDING

By DOREEN CORRIDAN, MVB MRCVS PhD, Munster Bovine

PLANNING THE BREEDING SEASON

| Plan mating start date = 29th April for 1st of February calving | Example Herd of 100 cows and 20 maidens | Your Herd |
| Number of heifers required? 18-20% for maintenance | 20 replacements required |
| Dairy straws needed? No.replacements x 4.5 | 90 straws required |
| How many dairy straws will I use on the maiden heifers | 90-20=70 straws |
| How many cows are calved prior to the 30th of March? Calved 30 days at the start of mating | 80 cows |
| Breeding dairy sires for the 1st 4 weeks, How many dairy straws can I use? | 95 dairy straws in 4 weeks |
| Can I afford to be selective in which cows I use dairy straws in? | Yes, need to use 70 straws in cows to have 95 mating available to use |
| Select the bottom 15% of cows and use beef on them from the start and dairy on the remainder. Select cows that have the highest EBI and calved prior to March 30th for the dairy straws | 15 cows selected for beef and will not receive any dairy straws |

Objective of the breeding season

1. Get cows incalf in time - 90% calved in 6 weeks in 2020. Need 90 out of 100 cows calved in the spring 2020 from 1st Feb to 17th March. This 90% is made up of all the replacements and 70% of the herd milking in 2019. 70 cows and 20 replacement heifers calving in the 1st 6 weeks before 17th March in a 100-cow herd. The remaining 10 cows calving as early as possible before the end of April.
2. Breed an adequate number of replacements (18-20%) from the best dams and have them calving before 1st March 2020. Breed from the highest EBI cows and maiden heifers. Multiply the number of replacements required by 4 or 5 depending on herd fertility - if you need 20 replacements milking into the parlour in 2022 then 90 dairy straws should be used.
3. Maximise calf value by breeding beef sires of the highest beef value while not compromising on calving ease or gestation length. The more maidens bred for dairy replacements the more cows available for a quality beef bull.

During the Breeding season

| 29th April -20th May | Example Herd | Number incalf to date |
| 1st 3 Weeks | 100 cows need 90 bred, 30 per week for the 1st 3 weeks. 4 per day on heat. All heifers synchronised and bred. | 80 cows bred. All 20 Heifers bred |
| 44 cows incalf & 7 heifers incalf |

| Actions 20th May | All heifers and cows calved 35 days not bred and heifers not bred are checked and synchronised | 15 cows to synchronize |
**Example Herd**

<table>
<thead>
<tr>
<th>Date</th>
<th>Heat Activity</th>
<th>Synchronised Cows</th>
<th>Number in calf to date</th>
</tr>
</thead>
<tbody>
<tr>
<td>20th May - 10th June</td>
<td>Heat activity halved, of 90 bred 41 will return. 2 per day on heat</td>
<td>15</td>
<td>72 cows in calf &amp; 20 heifers in calf</td>
</tr>
<tr>
<td>10th June - 1st July</td>
<td>Heat activity halved, of 41 bred 18 will return. 1 per day on heat</td>
<td>5</td>
<td>87 cows in calf &amp; 20 heifers in calf</td>
</tr>
<tr>
<td>1st July - 22nd July</td>
<td>Bull released and monitored</td>
<td>13</td>
<td>94 cows in calf &amp; 20 heifers in calf</td>
</tr>
</tbody>
</table>

**Nutrition & Maximising the chances of pregnancy for each cow by giving her the opportunity of 3 serves.**

**May is all about Intakes and Heat Detection.**
The 2020 Milking herd = 80% of current milking herd + Maiden heifers
90% cows calved in 6 weeks in 2020 = 70% of current herd + All maidens heifers.
Aim is to give each cow a minimum of 3 serves to maximise her opportunity of going in calf.

**Nutrition - See Nutrition Matters on page 4**

**Cow not cycling**
If you have done a pre breeding heat check, it is apparent which cows have not yet cycled.
Otherwise prior to the breeding season identify the cows that are less than 2.75 BCS, those that retained the afterbirth, had milk fever, had a left displaced abomasum etc. and get them checked by your vet.
Need to get non cycling cows cycling.
Need to give each cow the opportunity of 3 services to maximise her chances of going in calf.

**Interventions for cows not detected in heat, calved 35 days.**

<table>
<thead>
<tr>
<th>Pre-Breeding</th>
<th>Veterinary Check.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 weeks breeding completed</td>
<td>Ensure she is clean and put them on the following synchronisation programme</td>
</tr>
<tr>
<td>6 weeks breeding completed</td>
<td>Ensure she is clean and put them on the following synchronisation programme</td>
</tr>
<tr>
<td>9 weeks breeding completed</td>
<td>Ensure she is clean and put them on the following synchronisation programme</td>
</tr>
</tbody>
</table>
Dairy Cow - Synchronisation for cows Fixed time AI at a Predetermined Time. No Heat Detection
For herds that wish to tighten and advance the mean calving date and maximise pregnancy rates as 100% submission is achieved Superb for late calvers. Ensure cows are calved 35 days, at a BCS of 2.75+ and on a rising plane of nutrition. Cost approximately €25 equivalent to 6Kgs of milk solids- 3 days milk.

<table>
<thead>
<tr>
<th>Monday 22nd April</th>
<th>AM</th>
<th>Day 0</th>
<th>Insert PRID or CIDR and inject GnRH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday 29th April</td>
<td>AM</td>
<td>Day 7</td>
<td>Inject PG &amp; remove PRID/CIDR</td>
</tr>
<tr>
<td>Wednesday 1st May</td>
<td>PM</td>
<td>Day 9</td>
<td>Inject GnRH (56 hours post PG)</td>
</tr>
<tr>
<td>Thursdays 2nd May</td>
<td>AM to Noon</td>
<td>Day 10</td>
<td>AI all cows (16-20 hrs post GnRH)</td>
</tr>
</tbody>
</table>

**Top Tips**
1. Ensure cows are fully fed- Watch the bulk tank protein % and volume – both excellent indicators of energy.
2. Thin cows in BCS of less than 2.75 need to go on once a day milking and be fed twice a day until bred or BCS improves
3. Cows not cycling prebreeding, 3 weeks, 6 weeks & 9 weeks into the season calved 35 days need to be synchronised.

Late Calvers - The forgotten ladies Programme - 5 Point Plan!

The forgotten ladies! Ensure a calving date after St Patricks Day does not define the life span of cows in a herd. Ensure these cows go in calf and it is possible to gain a month with them.

Give them an opportunity of 2-3 serves in 2019, to maximise their chances of remaining in the herd in 2020 and perhaps gain 3- 4 weeks.

We need cows to last for an average of 5.5 lactations in the herd to maximise profitability.

1. **Nutrition.** Late calvers need an extra 3-5Kgs of concentrate per day than the early calving cows for the 1st 6 weeks of lactation. Secondly putting these cows on once a day milking and feeding them extra, twice a day will allow them to commence cycling earlier. Ensure these cows are gaining or maintaining weight, avoid any further loss of weight.

Cows do not reach their peak intakes of grass until they are calved 6 weeks. Therefore, late calving cows will be consuming between 10 and 12Kgs of grass DM in early lactation as opposed to 16-18Kgs for the February calving cows.

Cows that calved 10th April should receive extra feeding until the end of May.

2. **Metricheck.** Metricheck at 28 days calved to ensure no endometritis present. If present insert a Meticure (zero milk withdrawal). A cow calved early February has had over 80 days and possibly 2-3 cycles to repair and cleanse her uterus – in late calvers we are continually aiming to gain time.

Cows that calved 10th April should receive a metricheck on 8th May.

3. **Synchronisation.** Synchronisation at 35 days calved and check to ensure any uterine infection is cleared prior to synchronisation. See Dairy cow synchronisation programme.
Cows that calved 10th April should be synchronised on the 15th of May, inseminated on 25th May. Will have some calving the 1st week of March 2020.

4. **Inseminate.** Inseminate the late calving cows with easy calving short gestation bulls. These bulls will gain you 7-10 days next year.

5. **Scan.** Scan once 30 days has passed and the cow has not repeated. These late calvers are repeating at a time when activity is decreased, and it can be more difficult to detect them.

Cows that calved 10th April should be synchronised on 15th May, AI’d on 25th May and scanned the 25th June to ensure she is in calf or identify if she is empty. This will give her an opportunity of 2 more cycles before breeding ends in July.

**Top Tips**
1. 5 Point Plan for late calvers- OAD milking, Metricheck/Metricure, Synchronisation, Insemination & Scanning.
2. €50 cost to keep these cows in the herd, reduce replacement rate and keep mature herd to maximise production. 6 days milk production covers the cost of the programme.

**Maiden Heifers**

**Pre-Breeding**
Ideally have the maiden heifers at grass 3-4 weeks pre breeding. This will ensure that they are on a stable diet at breeding and are gaining weight. Heifers can gain 1kg/day at grass.

At breeding, heifers need to be 60% of their mature body weight. For 600kg mature cow weight, heifers need to be 350-360kg without being fat. Heifers that are less than 320kg need supplementary feeding.

Ensure all vaccinations are received 3-4 weeks pre breeding.

In the last week pre breeding familiarise the heifers with the yard and crush by bringing them in daily and for encouragement feed them 1Kg per day of feed.

Watch the weather forecast before applying scratch cards as the heifers need to be completely dry.

Introduce the vasectomised bull to them and fit him with a chin ball, if he is a first season bull fit him with a chin ball without any paint in it for a week. It will be lighter on his head and he will be less likely to damage it.

**Breeding**
Ensure heifers are on a rising plane of nutrition and are gaining weight. Avoid any reduction in intakes at this time, avoid keeping them in bare paddocks near the crush or housing them on silage. This will reduce heat activity and conception rates.

**Heifers 50Kg or less under target weight.**

Breed these heifers in the 1st 3 weeks of the breeding season, avoid delaying them by 3 weeks, as delaying by 3 weeks will result in March & April calvers and an early exit from the herd.

When grass quality begins to decrease in July start feeding these heifers up to target weight to ensure that at
housing, they are at target weight. Avoid delaying the supplementation of these heifers until November.

**Heat Detection**

Decide which method or combination of heat detection you are going to use. Ideally for heifers use two methods as they can be difficult to detect accurately. Vasectomised bulls, scratch cards or paint sticks are superior to tail paint in heifers, as heifers are not heavy enough to rub off the paint unlike cows.

<table>
<thead>
<tr>
<th>Vasectomised Bull &amp; Scratch Cards or Paint sticks</th>
<th>Scratch Cards &amp; Paint sticks</th>
</tr>
</thead>
</table>

**Familiarise the heifers with the crush and yard**

Familiarise the heifers with the yard and crush by bringing them in daily and for encouragement feed them 1Kg per day of feed. This will ensure when you need to bring them in it will be easy and without delays.

In option 1 on synchronisation the heifers will be in the yard daily for 12 days.

In option 2 or 3 they will be in the yard for 3 or 4 days.

**Scanning**

This is an extremely worthwhile exercise in heifers. Scan the heifers 30 days after the majority have been served and place scratch cards on the empty heifers and watch them carefully for repeats.

**Monitor stock bull when released**

In maiden heifers it is crucial to monitor the stock bull throughout the season either with a chinball or scratch cards on the heifers. Repeats are not as evident in maidens; they are usually checked mid-day and activity is greatest early in the morning after daybreak or very late in the evening.

Following synchronisation, the stock bull can be left with the heifers the following day. Al’ing the repeats ensures that the bulls are not overworked, fertility is maximised, and it avoids bulls getting injured ensuring we will have them when we need them. Al each day when more than 1 repeat is presented to a young bull or 2 to a mature bull. Periods of low conception rate can occur when an increased number of repeats are presented to the bull.

**Synchronisation for Maiden heifers**

Objective with maiden heifers is to have them all calved by the end of February 2020 and to have them calving to easy calving sires of high genetic merit.

Calving the maidens in February gives them the best opportunity to remain in the herd for 5.5 lactations. Select the most appropriate option based on time available for heat detection, location of heifers and ability to accurately detect heats in heifers.

**Option 1 - Heat Detection for 12 Days - All bred once- €4 per heifer bred (est.).**

This is a cost effective regime and achieves very good conception rates. There is a requirement for 12 days heat detection to get all the heifers bred. Cost is approximately €4 for each heifer bred.

<table>
<thead>
<tr>
<th>Monday 22nd April</th>
<th>Day 0 - 6</th>
<th>Al on observed heat – should have 1/3 detected by end of week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday 29th April or Tuesday or Wednesday or Thursday</td>
<td>Day 6 or 7 or 8 or 9</td>
<td>PG to heifers not detected in heat. Only inject if 1/3 bred. Otherwise investigate</td>
</tr>
<tr>
<td>Wednesday 1st May to Thursday 2nd</td>
<td>Day 7 - 12</td>
<td>Al on detected heat. Majority on 48-72 hours post PG injection</td>
</tr>
</tbody>
</table>

If close to a 1/3 of the heifers are not detected in the 1st week avoid injecting with PG and investigate what is the issue. The heifers may not be cycling because they are under target weight of 340 kg, have reduced intakes, they are already pregnant or there may be an issue with heat detection.
Ensure you are available for heat detection and drafting for AI 48-72 hours after PG injection. You can decide to inject on day 6, 7, 8 or 9 depending on your availability 48-72 hours later. Depending on the size of the group if more than 3 heifers coming in heat each day remove the vasectomised bull for the 2-4 days to avoid him getting injured and use scratch cards and Paint sticks.

Any heifer not detected in heat may be reinjected 11 days after the 1st PG injection- 1st injection on 29th April give the 2nd on 10th May.

If releasing a bull after one round of AI, watch carefully for repeats to ensure he is not overworked in those 2-4 days, if more than 2 repeats per day use insemination. An overworked bull will result in reduced fertility and an injured bull.

**Option 2 & 3 - All heifers bred once with no heat detection required and most repeats occur over 4 days. Achieve two services per heifer if required with 4 days heat detection.**

**Extremely useful options for herdowners with limited time for heat detection or where heifers are in an outside place.**

Decide at the beginning of the protocol whether it is AM or PM that is convenient for you and remain with it. Talk to your AI technician before commencing.

Then you can let bulls run with them for 17 days (Wed 1st to Fri 17th)- remove the bulls and AI repeats day 18 to 24 (Sat 18th to Fri 24th) or watch for repeats and if there are more than 2 repeats per day use insemination for 2-4 days.

AI’ing the repeats ensures that the bulls are not overworked, fertility is maximised, and it avoids bulls getting injured ensuring we will have them when we need them.

**Option 2 - Cost Effective - No heat Detection- All Bred once at a Predetermined Time– 3 Crush Visits –€22 per heifer bred (est.).**

<table>
<thead>
<tr>
<th>Monday 22nd April</th>
<th>Am or PM</th>
<th>Day 0</th>
<th>Insert PRID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday 27th April</td>
<td>Am or PM</td>
<td>Day 5</td>
<td>Inject PG &amp; remove PRID</td>
</tr>
<tr>
<td>Tuesday 30th April</td>
<td>AM or Pm</td>
<td>Day 8</td>
<td>Inject GnRH and fixed time Al (72 hours post PG injection)</td>
</tr>
</tbody>
</table>

May get 10-15% early heats on Monday that can be inseminated then.

**Option 3**

**No Heat Detection - All Bred once at a Predetermined Time. Early heats eliminated- 4 Crush Visits – €32 per heifer bred (est.).**

<table>
<thead>
<tr>
<th>Monday 22nd April</th>
<th>Am or PM</th>
<th>Day 0</th>
<th>Insert PRID &amp; inject GnRH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday 27th April</td>
<td>Am or PM</td>
<td>Day 5</td>
<td>Inject PG</td>
</tr>
<tr>
<td>Sunday 28th April</td>
<td>AM or Pm</td>
<td>Day 6</td>
<td>Inject PG &amp; remove PRID</td>
</tr>
<tr>
<td>Tuesday 30th April</td>
<td>AM or Pm</td>
<td>Day 8</td>
<td>Inject GnRH and fixed time Al (72 hours post PG injection)</td>
</tr>
</tbody>
</table>

Synchronisation Drugs - All are POM and are available from your veterinary practitioner. Zero milk withdrawal on all these products.

<table>
<thead>
<tr>
<th>PG</th>
<th>GnRH</th>
<th>P4 device</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estrumate</td>
<td>Receptal</td>
<td>CIDR</td>
</tr>
<tr>
<td>Lutalyse</td>
<td>Ovarelin</td>
<td>PRID</td>
</tr>
<tr>
<td>Enzaprost</td>
<td>Acegon</td>
<td></td>
</tr>
<tr>
<td>Alfaglandin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Measuring Time and Distance on Farm

The measurement of motion (movement and distance travelled) is a key element of the lean farm principle of TIMWOOD. The M in TIMWOOD stands for Motion and is concerned with identifying and removing waste from the tasks and processes that are carried.

One of the key outcomes of the Lean Farm Pilot Programme was that farmers who measured the distance they walked noted a saving of 116 km in walking distance having adapted some of the Lean Farm Principles.

There are notable health benefits in reducing the distance walked on a daily basis in terms of energy and time savings given to routine tasks around the farm. This will be particularly of value to the farmer in times of peak workload. There are also knock on benefits in terms of enhanced work life balance and less stress.

Key Message: Remember cutting minutes off jobs can result in significant savings on a weekly basis!

Methods of measuring your movement on farm

The Health App available on all Android and iPhones provides daily reports on steps walked

Fitbit allows you to track activity, exercise steps and sleep. Useful also as it can allow you to time the length it takes to carry out a task.

Farmer Testimonials

Following Lean training John Walsh (Ballylomasna, Clogheen) recorded approx. 19,000 steps per day at Spring.

The following are examples of some of the changes that were implemented following Lean Training

1. Tools at point of use e.g. Fork and a brush in each shed.
2. Move new born calves from nursery to calf shed with the quad and calf box once a day

“The result is reduced TIME spent searching and lifting”

Sean Moher (Croughmore, Mitchelstown) had a similar experience whereby he reduced his steps as per the Health App on his phone by 25% per day over the Spring 2019 versus Spring 2018 19,000 (steps) with further reductions planned.

The result is more energy for family time and essential paperwork in the evening

“19,000 steps during the day is not sustainable”

COMPUTITION

We are now accepting entries for the Dairygold Lean Farm Competition. Prize on offer is €200. Please forward your ideas or improvements by photo to:

(1) leanfarmcomp@dairygold.ie OR
(2) by post to Lean Farm Competition, Dairygold Cooperative Society Limited, Clonmel, Mitchelstown, Co. Cork
MAKING THE BEST QUALITY GRASS SILAGE

1. Cutting
• Cut at the correct stage for optimum quality and yield – before heading
• If cut late, protein and digestibility decline
• Avoid cutting too low – the stem base has lower digestibility

2. Wilting
• Wilt to 28-32% DM quickly
• Ted within two hours to maximise drying
• Avoid contaminating with soil

3. Harvesting
• Use the optimum chop length for the %DM
• Avoid over-filling trailers to minimise grass loss

4. Treating
• Control the fermentation using a proven additive
• Ecosyl has also retained better silage quantity and quality
• Across different forages in 15 trials, Ecosyl treatment also achieved an average extra 1.2 litres/cow/day of milk

5. Clamping
• Fill clamps in 15 cm layers – the maximum that can be consolidated efficiently
• Use an oxygen barrier film, side sheets, and at least one black plastic top sheet
• Weigh down

They don’t understand the science but they do know fine forage when they’re fed it

Containing MTD/1, the world’s most proven Lactobacillus strain, Ecosyl ensures more consistently reliable silage, whatever the weather.
• Reduces fermentation dry matter losses by 50%
• Enhanced milk production (average 1.2 litres/cow/day over 15 trials)
• Increased digestibility and improved palatability

For further information:
Freephone | 00800 86522522 Email | enquire@volac.com Visit | www.ecosyl.com

For consistently better silage
CHFC MATTERS

By ALAN BUTTIMER, CHFC Public Relations Officer

BULL SHOW AND SALE
The Cork Holstein Friesian Club held its annual bull show and sale on Wednesday 3rd April at Bandon mart. There was a great selection of bulls on show, with a total of 29 for sale. Champion bull on the day was bred by John O’Callaghan with his bull, Mountfarna Futuristic, which received the top price of €3,600. Reserve champion went to Roovesmore Iris Miracle, bred by Donal Murphy.

Of the 29 bulls entered, 23 sold, representing a clearance rate of 79%. The average price paid was €2,102. A special thank you to Rickey Barrett for judging on the day. We wish the new owners all the best with their purchases.

European Championships
Congratulations to Cork YMA member, Claire Kirby. Claire was one of two people selected to represent Ireland at Holstein Libramont 2019 in Belgium recently. Not only did Claire finish 2nd in her class, she also received ‘Honorable Mention’ in the final. A great achievement and very well deserved.

Summer Program
The CHFC summer program is now available. Highlights include, the Dairygold herds competition, field evenings, club tour, and the IHFA open day. This year it will be held at the Radney Herd of club member, Henry O’Keeffe, Freemount. For more, check out our Facebook page, Cork Holstein.
It’s All About The Teats!

Preventing mastitis is very simple - it’s all about keeping bacteria out of teat! That doesn’t mean mastitis isn’t challenging, but there are two key things to aim for:

1. Keep the teat ends as healthy as possible, so that they act as a good barrier and stop bacteria entering the teat canal i.e. Shut the door!
2. Fewer bacteria on the teat skin means the risk of bacteria getting “in through the door” is lower.

Good teat disinfection after milking is essential - it reduces new mastitis infections by 50%. It does this by killing the bacteria that are left behind after milking. It also improves teat skin condition, which means there are fewer cracks and areas for bacteria to lurk in. Teat skin doesn’t possess any glands, which means there are no protective oils produced. This is why the skin can become dry and damaged quite easily, and why the emollient in teat disinfectant is so important.

The goal should be to cover all the skin, on all of the teats, of all of the cows, all of the time! The only part of the milking machine that comes in contact with the cow is the liner, so the whole teat surface touched by the cluster liner needs to be disinfected - a drop of teat disinfectant at the end of the teat is not enough! How do you know if you’re getting good coverage?

- look at teats after spraying – it can help if you use a product that’s clearly visible on the teat skin after it’s been sprayed on. All sides of the teat barrel should be covered.
- calculate the volume used per milking - you need to allow at least 15 mL/cow/milking. So for example, if you’re milking 100 cows you should be using at least 1.5L of teat spray at each milking.
- wrap a paper towel around the barrel of the teat, then carefully remove and examine the pattern. A patchy picture indicates poor coverage of the teat, while a ‘solid’ block means teats have been well covered.

For more information, see CellCheck Farm Guidelines for Mastitis Control-Guideline 7, 26 & Management Note I.
Fintan McSweeney’s milk butterfat % had been dropping steadily from the end of March until the 8th of April, when he added alfalfa to the diet. This is a recurring yearly issue “with 2nd round grass” according to Fintan. Butterfats on the farm had dropped from 4.26% to 3.58%.

The cows have been given access to the alfalfa at milking time only and are consuming c.3 bales weekly (c.3kg alfalfa per cow). Immediately after the introduction of the alfalfa butterfat started to rise. Fintan is “delighted with the response”, butterfat is now at 4.19%.

When you add a roughage source like alfalfa to a diet replacing grazed grass milk proteins % may be negatively affected. Milk protein % on Fintan’s farm have dropped back, from 3.43% to 3.35%. However, overall milk solids production has increased by the equivalent of 0.16kg of milk solids per cow. Milk value has also increased by c.0.18c/ltr or by €176 for every 10,000 ltrs of milk supplied.

Milk Protein % must be kept as high as possible as it is a reflection of energy supplied in a cow’s diet and is directly linked to herd fertility. When feeding alfalfa be mindful not to replace too much grass and drop the cows energy intake overly. As always you must keep on top of grassland management while using the alfalfa.

Butterfat to protein ratio on Fintan farm has increased from 1.04:1, SARA levels to 1.25:1. This is ideal ratio for Holstein cows and does not indicate that the cows are under pressure from an energy standpoint.

If any of you are having issues with butterfat levels and would like to consider the use of Alfalfa on your farm please contact your area sales manager, our inside sales team on 022 31644 or call to your local Dairygold branch for further information or to organise delivery of alfalfa.