



# DAIRY

December 2022

## Nutrition and forage to prevent calving problems

Edited by  
**Joe Patton,**  
Head of Dairy Knowledge Transfer

Having cows in the correct mineral status in the dry period will help to prevent milk fever and associated problems such as slow calving, retained placenta, ketosis and displaced abomasum. The mineral profile of both the forage and the mineral supplement need to be considered.

### Dry cow forage

High levels of potassium (K) in forages make cattle more susceptible to milk fever around calving time. Levels of 2.5% or more in dry matter (DM) in the three weeks pre calving are high risk (there is no issue at this level with milking cows, young stock or indeed dry cows more than three weeks from calving). Where there has been a history of metabolic issues at calving:

- test silage mineral content from different pits/bales in the yard;

- keep the lowest-K silage for feeding in the immediate period pre calving – about 250kg DM per cow is needed (one bale);
- source some low-K feed for this purpose if needed – stemmy silage and hay tend to be lower in K but best to test also;
- increase magnesium supplementation to 25g per head per day; and,
- ensure cows do not become over fat in the dry period.

### Dry cow minerals

Source a high-quality mineral and feed at the correct rate for at least six weeks pre calving. Many problems on farms occur when minerals are fed at the wrong rate or for too short a period, so make sure to get these simple things right. In terms of mineral spec, the main points are:

- low calcium (<1.1%);

- 20-25% magnesium;
- 2-5% phosphorus (P) (feed at higher rate if forage P content is low);
- vitamin D – at least 12,000 units per 100g; and,
- trace minerals – copper, zinc, selenium, manganese, iodine and cobalt with protected sources included where required.

Remember, boluses are appropriate for trace minerals but will not deliver the required amount of magnesium and P. These will have to be added to feed or water every day. Speak to your Teagasc advisor if you have a specific query on mineral spec or forage analysis results.

---

## Calf housing – are you ready for spring?

Current EU specifications require a minimum space allowance of 1.5m<sup>2</sup> for calves <150kg and under 19 weeks old. However, current Irish recommendations are 2m<sup>2</sup>/calf to promote growth and good welfare. In a recent on-farm study where farmers had sufficient housing space (both space allowance and cubic air capacity), calves were much more likely to be healthy. Smaller group sizes (12 or less) are encouraged, as they are associated with reduced respiratory issues and improved welfare. Airspace should not be shared with older animals, as older animals tend to carry and transfer pathogens to young stock.

Another key component of calf management is hygiene and maintaining clean and dry bedding areas. A slope of one in 20 is recommended for calf house flooring; however, very few Irish farms have a sufficient floor slope. Poor drainage can lead to increased infection load, which causes higher rates of calf illness and compromises welfare.

Inadequate cleaning of feeding equipment is a huge issue in calf rearing. Additional survey

work carried out by Teagasc Moorepark showed that the two dirtiest pieces of feeding equipment on farms were teated bottles and stomach tubes.

Colostrum is generally fed to newborn calves with this equipment, exposing them to a higher risk of infection at a critical time. Here are some guidelines, which can help improve calf health and welfare with regard to housing:

- space allowance of 2m<sup>2</sup>/calf;
- no sharing of airspace with older animals, i.e., keep calves in a separate house;
- well-ventilated, but draught-free house;
- solid divisions between pens – minimise disease spread;
- 12 calves/pen – promotes better health and welfare;
- one in 20 slope on floors; and,
- deep bed of clean straw to allow calves to keep warm.

*With these in mind, take some time before calving starts to review your housing and hygiene plan.*

---

## Winter milk and concentrate feeding rates

At the recent Teagasc winter milk events, the issue of milk responses to concentrate was addressed, in the context of strong base milk prices. While 1kg of concentrate has enough energy (UFL) on paper for 2kg of milk, this two to one response to extra feed is never seen in practice. This is because the extra concentrate reduces forage intake and lowers whole diet digestibility, limiting the yield response. The scale of this effect depends on cow type, forage quality and days in milk. **Table 1** shows the typical milk response expected for each additional kg of meal fed (mature autumn-calving cow, 60 days in lactation delivering >7,500kg of milk annually). Feed responses appear better with low dry matter digestibility (DMD) silage due to lower initial dry matter intake (DMI); however, total feed cost will

be higher and margins will be lower. Note also the declining response for each additional kg of meal fed. When it comes to determining the return on an extra concentrate feeding rate for a given herd situation, the decision cannot be made on milk price alone, but must also factor in this declining milk response rate. Overall, high-quality silage (75 DMD) and more moderate concentrate feeding (8kg) deliver the best economic return.

**Table 1: Milk response per kg of meal fed.**

| Meal kg             | 6 | 7   | 8   | 9    | 10   |
|---------------------|---|-----|-----|------|------|
| Low-quality silage  | - | 1.5 | 1.3 | 1.0* | 0.7* |
| High-quality silage | - | 1.2 | 0.9 | 0.7  | 0.4* |

\*Acidosis risk.

## 12 STEPS TO REDUCING EMISSIONS



Over 12 months, the Teagasc advisory newsletters will outline one action per month farmers can take to reduce their emissions.

### Step 2: Apply protected urea

#### How does protected urea reduce greenhouse gas emissions?

Nitrogen (N) fertilisers release nitrous oxide ( $N_2O$ ).  $N_2O$  is one of the main greenhouse gases we are concerned about. Protected urea has 70% less  $N_2O$  emissions than CAN. Of the tools assessed by Teagasc, using protected urea N fertiliser offers the single largest emissions reduction potential to Irish farmers. On a dairy farm, switching to protected urea has the potential to reduce total emissions by up to 7-8%.

#### Is there a gain for the farmer?

Protected urea is substantially cheaper than CAN. For every five tonnes of CAN purchased, you will need just three tonnes of protected urea (because of its higher N content), and you will save €1,000 at current fertiliser prices. For example, if you use 20 tonnes of CAN every year, a switch to protected urea will save you €4,000 annually. Protected urea will grow the same amount of grass as CAN and straight urea, and it can be spread at any time during the permitted spreading periods.

#### What action needs to be taken?

Order protected urea for 2023 instead of CAN and straight urea. Use low-nitrate compounds such as 18:6:12.

## Fertiliser outlook for 2023

Signals from the EU, Government and the Department of Agriculture, Food and the Marine (DAFM) indicate a reduction in fertiliser input (particularly nitrogen (N)) on dairy farms over the next few years. Signals from the marketplace suggest fertiliser N will be much more expensive next year. Chemical N fertiliser input can be reduced if some of the following steps are taken.

1. Increase lime application (we are only applying 50% of what is required). About 20-25% of fertiliser N is lost to the atmosphere if the soil pH is too low.
2. Improve soil P and K status – P and K status automatically improves on most farms if the lime status is good.
3. Make better use of slurry and soiled water. Slurry and soiled water are sources of N and should be counted and utilised. Low-emission slurry spreading (LESS) technology is part of that solution.

4. Use GPS to spread fertiliser more accurately.
5. Have the fertiliser spreader operating well. Set it at the right height above the ground (75cm above ground level to the base of the plate/spout for most models) and replace worn veins/spouts on the fertiliser spreader. Chemical N is now going to be monitored more intensely and is expensive to purchase.
6. Substitute clover for chemical fertiliser. This has enormous potential to reduce chemical N input during the second half of the grazing season if adequate levels of clover are present in the sward.

***These points will need to be addressed in 2023. Take some time over the closed period to plan out the priorities for your farm. Discuss with your group or advisor.***

## HEALTH & SAFETY



### Child and fire safety over Christmas

It is important to be mindful of the safety of children during this time. Ensure there is a safe secure play area in place when children are outside. When children are in the farmyard they must always be supervised. Easy-to-read danger signs should be in place and these signs should be explained to children.

Give preventing fires in your home and on your farm your attention. Irish research has shown that

farmers and agricultural workers account for 20% of all fire deaths. Almost all fires occur in dwelling houses. This level is proportionately higher than other sectors. Contributory factors include smoking, high alcohol consumption, plugged in or faulty electrical devices, open fires, frying or chip pans, and a small number of fires are linked to candles. Fire safety advice is available at: <http://firesafetyweek.ie/>.