

Newsletter 2021, Q2

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Reducing bloat risk in grazing cattle

Inclusion of clover and other legumes in the grazing sward has been shown to have **significant benefits for Dry Matter and forage intakes**, with associated improvements in milk yield and animal performance. Nitrogen-fixation by legumes will also reduce nitrogen fertilizer requirements, resulting in improved grassland management and lower input costs.

However, grazing pasture with high levels of clover (50% of the sward) can be associated with the development of **frothy bloat**. Specific proteins and carbohydrates present in the clover leaves result in the development of a stable foam in the rumen, which prevents the coalescence of gas in the rumen to be belched up. The rumen gas builds up, putting pressure on breathing and resulting in death within 2 – 4 hours.

White clover and **lucerne** are regarded as the highest risk for the development of bloat, whereas **red clover** is thought to be lower risk. The main risk is considered to be from rapidly growing immature legumes in the pre-flowering stages, and therefore **spring pasture and silage aftermaths present the greatest risk**. Climate conditions (frosts and excess moisture) may contribute to the risk by increasing levels of the proteins present in the legume leaves. There may also be associations with low pasture sodium levels, and anecdotal evidence suggests that supplementation with salt reduces bloat.

Work in New Zealand has also found a **genetic link** to frothy or pasture bloat, and some animals appear predisposed. However, genetic selection for bloat is not currently available in the UK.

Given that bloat is a life-threatening condition, management and prevention are key to preventing losses:

- **Introduce animals slowly to high risk pastures** and/or reduce intakes by **strip grazing**.
- Animals should be **buffer fed with hay or silage prior to turnout** onto high legume pastures, so that grazing intakes are limited. Cows that go out to pasture hungry will gorge on clover, increasing the risk of bloat.
- Closely observe cattle during high risk periods, and seek veterinary advice immediately if cases of bloat occur.
- If an outbreak of bloat does occur, remove animals from the affected pasture, and drench any cows with evidence of bloat with a suitable anti-foaming agent.
- There are a number of **anti-foaming agents** that can be administered during high risk periods, although ensuring good intakes can be difficult with animals at grass. It is recommended that they are started 3 days prior to introduction to high risk pastures. The most common product is **poloxalene** (Bloat Guard™) which is highly effective, and available in feed blocks or mixed with molasses. A number of other products are available including **vegetable and mineral oils**, which can be administered by oral drenches or sprayed onto the pasture.
- Other legumes with high levels of **condensed tannins** (such as chicory and sainfoin) can actually reduce the risk of bloat, and so may be worth considering as part of a mixed ley.
- Longer-term when re-seeding, use mixtures to avoid excessive levels of clover in the pasture that might result in bloat.

Although bloat can be a concern at specific times, clover and other legumes have more advantages than disadvantages for grassland management. Bloat can be controlled by knowledge of the risk factors, and strategic use of anti-foaming agents when the risk is high.



Blood testing in dairy cows – a brief overview

We have recently seen an increase in enquiries relating to best practice when metabolic profiling dairy cows. We therefore thought it would be useful to include a few of the most common questions we receive in this newsletter.

How long should I wait after a major ration change before blood sampling?

Blood sampling should be carried out two weeks after a significant dietary change, for example, feeding of a newly opened forage clamp, or cows going out to spring grass.

Which cows should I sample and why is cow selection important? A maximum of 17 cows can be sampled at each test:

- **Seven cows in early lactation** calved between 10-20 days
- **Five cows in mid lactation** 80-120 days in milk
- **Five dry cows** within 10 days of calving (try to avoid sampling cows within 36 hours of calving as their intakes are likely to be considerably reduced)

Cows more than 3-4 weeks calved may have already experienced a nutritional constraint and subsequently reduced their yields to bring their biochemistry back in to balance - i.e. their blood test results may be normal, despite having suffered with negative energy balance. This is why **the ideal sampling window is 10-20 days calved for early lactation cows**. A group of mid lactation cows should be included if possible, as they provide an essential within herd comparison, which enables more detailed interpretation of the blood test results.

What is the minimum number of cows that should be sampled in each group? No group should contain fewer than five cows. Smaller group sizes are very difficult, if not impossible, to interpret. For example, if only two “close-up” dry cows were sampled, and one was in good energy balance and the other was in negative energy balance, what does this mean at group level?

Sampled cows should also be typical of their group, try to avoid sampling the very best and the very worst cows in any group.

What information is required?

We appreciate that accurate details may not always be available, but any information you can provide is better than our estimates.

Accurate and detailed information submitted with the samples helps us to provide a tailored interpretation of the metabolic blood results, which is specific to the farm tested.

When submitted with the samples, it also allows for optimum turnaround time of the results and report:

- **Calving date** (and expected calving dates for dry cows), **body weight** and **Body Condition Score (BCS)**
- Current and expected **individual cow daily milk yields** (please enter the most recently recorded daily milk yield)
- If concentrate is being fed through the milking parlour, robot or out of parlour feeders, **individual cow concentrate allocations should be given (please provide actual amounts fed, not theoretical values e.g. 0.4 kg/l)**

If the farm is feeding a TMR copies of ration sheets from the farm’s nutritionist are often the simplest way to present the ration information to us.

If you have them, forage analyses of any forages fed are also useful.

Do not forget to include accurate dry cow ration details: This group are every bit as important as the milking herd. Many tests received in the DHHPS lab are missing the dry cow ration.

Please also let us know the contact details including email addresses of anyone who should be getting a copy of the blood test results and report.

DHHPS services during COVID-19

We continue to operate as close to normal a service as possible during the current coronavirus situation, including blood sample analysis and reporting. DHHPS@ed.ac.uk is the best way to contact us, as this email address is monitored daily.