

DAIRY

May 2021

Factors affecting milk fat content in May

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Questions on milk fat frequently arise for spring-calving herds fed high-quality grass during April and May. The common assumption is that low milk fat indicates rumen acidosis, with negative consequences for herd health.

Low milk fat in the context of rumen acidosis would be as low as 3.25%. On a high-starch/low-fibre indoor diet, this would be cause for concern. It indicates the production of excess lactic acid by the rumen bacteria. On the other hand, low milk fat percentage as an indicator of rumen health problems does not directly translate for a grazing diet.

This is because the cause of reduced milk fat in grazing cows may be somewhat different than that associated with classical acidosis on grain diets. It is likely that the mechanism involves specific fatty acids (CLA) derived from the digestion of quality grass in the rumen. CLA

alter milk fat by reducing the activity of a key enzyme controlling fat synthesis in the udder. High-quality second rotation grass increases the effect, as some of this grass can contain quite high levels of lipid.

Fibre digestion and rumen health are generally not affected once grass intake is on target. For this reason, it is not the case that rumen health must be poor if milk fat is low. Studies have shown rumen pH to be similar for herds at 3.90% or 3.40% milk fat grazing high-quality pasture – differences were due to lipid content (added to the diet) not fibre in the diet. This is not to say that good management of rumen pH and adequate fibre at grass are not important, however.

Some key management points on summer milk fat are:

- Genetics – we have looked at data from a



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number of herds across the country and there is a strong association between cow genetics for milk fat and milk fat percentage in May. A herd with zero to negative PD for fat percentage on its economic breeding index (EBI) report could expect milk fat to be around 3.55-3.60% in May. This might look low if compared to a neighbouring herd with high solids for example, but it could actually be quite normal given the genetics of the herd.

■ Stage of lactation – milk fat percentage at peak yield is generally expected to be 0.4-0.5% lower than the lactation average. So, a herd delivering 4.3% fat for the year will usually be expected to be at 3.80-3.90% in May.

■ Diet guidelines:

- ▶ high intakes (17kg+ DM) of quality grass on 24-hour allocations in good grazing conditions;
- ▶ high-quality grass is typically 37-42% neutral detergent fibre (NDF), providing adequate fibre – adding long fibre where grass is plentiful is unlikely to improve rumen health – ensure minimum fibre requirement is met where grass is in deficit (33-35% NDF), however;

- ▶ maintain pre-grazing covers >1,300kg DM and post-grazing residuals of 4.0-4.5cm;
- ▶ feed concentrates with slowly digested ingredients when feed deficits arise – maize or barley are preferred to wheat because the starch is degraded more slowly – soya hulls/beet pulp are good sources of energy and NDF, while citrus has low fibre content and increases acidosis risk at high inclusions;
- ▶ limit the inclusion of high oil content feed ingredients in concentrates;
- ▶ controlled research in Ireland has shown relatively little effect of feeding yeast on milk fat content if grazing is well managed; and,
- ▶ ensure cows are well covered for macro minerals in the diet – salt, phosphorus, magnesium, calcium.

When all these conditions are met and milk fat still is low, it is likely a CLA/grass composition effect. What to do? Continue to meet the points listed above. Experience has shown that such cases resolve themselves in two to three weeks when rumen conditions adapt and/or grass composition changes but cows remain healthy throughout.

RESEARCH UPDATE

Early nutrition critical

Teagasc research has shown that early nutrition is critical for high fertility in replacement heifers.

Early embryo loss is the major cause of reproductive failure in cattle. The effects of short-term changes in energy intake pre and post insemination on embryo survival have been investigated at Teagasc Athenry in beef heifers (see **Table 1**). The low-nutrition treatment was a grass allowance equivalent to 0.8 times maintenance, while the high-nutrition treatment was a grass allowance equivalent to twice maintenance. Animals were placed on

either nutrition treatment for a period of two weeks before and two weeks after artificial insemination.

Maintaining the plane of nutrition or increasing the plane of nutrition results in high embryo survival rates in replacement heifers. Short-term (two-week) reduction in energy intake after AI severely reduces embryo survival rate in heifers. Clearly, maintaining dry matter intakes during the early pregnancy period by avoiding sudden grass shortages is critical in achieving a high pregnancy rate in such animals. If you run short of grass after heifers are bred, consider supplementing them to support higher embryo survival rates.

Table 1: The effect of nutrition treatment on embryo survival rate (%) in beef heifers.

Nutrition before breeding	Low		High	
Nutrition after breeding	High	Low	High	Low
Embryo survival rate (%)	71	70	65	38

HEALTH & SAFETY

Silage safety

May is the month when grass growth ramps up and silage is made. It is a high-risk month and it is important to give safety your first priority.

Silage making involves a lot of machinery movement, both in farmyards and on public roads. Make sure that there is a clear view for drivers at entrances/exits to public roads. Warn oncoming traffic of dangers, but warning



devices such as signs and bollards should not be placed on a road surface.

Farmers and contractors should discuss safety matters in advance. Say “stop” immediately if any dangerous work takes place. Keep family members, particularly children and elderly farmers, well away from moving machinery. Ensure that farmyards are tidy to allow efficient machinery movement. Speed kills – make sure that machinery movement occurs at a steady pace.

Ensure safety with silage.



Lameness focus

This month we return to our lameness focus with Waterford-based Ned Dunphy, Farm Relief Services and veterinary surgeon Ger Cusack of Comeragh Veterinary Practice. In the spring-calving dairy herd, May is the most important month of the year for breeding activity. To achieve the best expression of heat and the best conception rates, we need to do everything we can to ensure cows are in good body condition and their feed requirements are met. Research shows that cows that are lame graze for shorter periods of time and spend longer periods lying down. Their dry matter intake is reduced and they tend to lose body condition. Lame cows are less likely to come into heat and those that do are likely to have a lower conception rate. There is a real risk that a cow that is lame during the early part of the breeding season will not conceive until later in the breeding period or may even end up empty. It is therefore important that cows that are even mildly lame get treated promptly. At this time of year because of heat behaviors, there is also greater risk of hoof traumas leading



to sole bruising and white line disease. The key message here is to keep yard standing time and roadway standing time to a minimum. Allow cows to return to the paddock immediately after exiting the milking parlour. Consider using a timed or text-activated gap opener, such as Batt Latch, to allow cows to exit the paddock in an unhurried manner, at their own pace. This will

help reduce the risk of sole bruising and white line damage.

Measures that are put into place that can help to reduce the incidences of lameness in the herd:

- keep roadways even and smooth to minimise the risk of lameness;
- minimise the amount of heavy machinery traffic on farm roadways to minimise surface damage;
- where roadways meet concrete (e.g., yard) put in a raised lip (e.g., concrete, board) to reduce the level of stone and grit brought onto the yard; and,
- identify and correct cow flow issues such as sharp turns, narrow passages or overcrowding in collecting yards.