

# Failing to support grazing butterfats could lose up to 1pppl

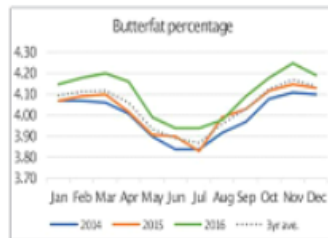
**Low butterfats can significantly cut milk income for much of the grazing season. However, the impact can be reduced with the correct approach to feeding, suggests KW's Dr Anna Sutcliffe.**

With Defra figures for the national herd showing an average drop in butterfats of 0.1 to 0.3 percentage points between April and July, and full recovery not happening until September or October. Therefore many milk producers could be losing another 0.3 to 1.0pppl, claims KW nutritionist Dr Anna Sutcliffe.

"The actual amount lost will depend on whether it's a liquid or manufacturing supply contract," she says. "But more importantly, this drop-off can largely be avoided if the right feeding and herd management practices are put into place through the summer."

## Dropping milk quality

Figure 1 shows the clear summer dip in national milk fat content over the past four years, with low rumen pH—sub-acute ruminal acidosis



Variation in national herd average butterfat percentage. (Source: Defra)

(SARA)—and insufficient fibre digestion the key factors responsible. The main causes include low fibre and excess free oil in the overall diet, plus the additional impact from heat stress dur-

ing the hotter months, all of which can increase rumen acidity and reduce fibre digestion.

## Free oil and fibre fermentation

"For example, excess free oil in the diet can coat fibre in the rumen and limit access for the fibre-fermenting microbes," Dr Sutcliffe explains. "The result is a significant disruption to fibre digestion, which in turn reduces the supply of key building blocks for milk fat synthesis—such as the volatile fatty acid acetate—which are produced in the rumen and transported to the udder via the cow's bloodstream.

"In addition, the activity of fibre-fermenting microbes and the production of acetate is negatively affected any time the rumen drops below pH 5.8, the point at which cows are deemed to be suffering from SARA. Typically seen when

feeding insufficient fibre or excess rapidly fermentable energy, usually starch, a low rumen pH will also alter the processing of fats in the rumen.

"The net effect is that many of the unsaturated fats found in feeds, and especially those in grazed grass, are only partially processed, resulting in a form that inhibits milk fat synthesis when it reaches the udder," she explains.

## Heat stress impact

Another significant risk factor responsible for lowering milk fat content is heat stress. Due to high humidity levels exacerbating the impact of actual temperature, this can occur in the UK any time temperatures are above 22°C, or even 20°C in direct sunshine. The cow's response is to both cut feed intake (especially of fibre) and reduce rumination, which then lowers production of rumen buffering saliva.

"Respiration rate is also increased in an attempt to lower body temperature, leading to a loss of bicarbonate ions from the bloodstream which increases the acidity of the whole body," adds Dr Sutcliffe. "All these factors lower rumen pH, exacerbate the risk of SARA and compromise milk fat production.

## Avoiding SARA

Avoiding SARA is therefore critical to supporting grazing butterfat production, so ensure at least 35% digestible fibre in the overall diet by including feeds like sugar beet feed and soya hulls in any buffer feed.

Adding a minimum of one to two kg/cow/day of fibrous forage from hay, baled silage, straw or whole crop cereal silage—ideally

chopped to 5cm length to minimise sorting—will promote good rumen function and rumination.

## Stabilising the rumen

"Including a live yeast and a slow-release rumen conditioner can further stabilise rumen pH, with the former also promoting anaerobic conditions in the rumen that encourage proliferation of fibre digesting microbes. Both can help reduce the negative effects of heat stress, which can also be mitigated by housing cows during the day and grazing at night, particularly where buildings are well-ventilated.

"Finally, take great care to keep free oil levels below 5%," Dr Sutcliffe advises. "With Frank Wright Trow data showing grass oil levels of between 4.3 and 7.3% during the 2014 grazing season, it's clear that feeds included in buffer feeds will need to be chosen carefully."

## Low oil feeds

The table highlights a range of feeds with low oil content, that contain a high proportion of energy from digestible fibre. Extracted co-product feeds will contain less oil than those that are expelled, while barley has a higher fibre content than wheat.

"Care is also needed to ensure any fat supplements won't release additional fats or oils into the rumen," she adds. "100% rumen-protected fat products are the safest option, with high C-16 fats boosting the supply of key fatty acids that can't be synthesised by the cow.

"Just be careful with some 50% fats, which contain large amounts of free oil."

## Example low oil feeds suitable for inclusion in grazing buffer\*

	Dry matter (%)	Energy (MJ ME/kg DM)	NDF (g/kg DM)	Oil (% of DM)
Sugar beet feed	89	12.5	43.0	1.0
Soya hulls	89	11.8	61.0	2.5
Wheat-gluten moist feed	50	13.4	21.0	5.0
British wheat distillers' feed	92	13.4	31.5	7.0

\* Overall dietary oil levels will also be diluted by inclusion of low oil, high fibre forages.