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Supplement with fatty acids to increase butterfat at grass

Dairy cows at grazing will need supplementation with fatty acids if butterfat and milk prices are to be maintained as UFAC UKs Mark Townsend explains.

Over 50% of the milk in the UK is produced on constituent based contracts so maximising milk composition is essential. With as much as 75% of butterfat directly derived from the fatty acids in the diet, it is essential that dairy cows are fed sufficient levels of dietary fatty acids. The table shows the total dietary requirement to supplement rumen produced fatty acids for different yield and fat percentage combinations.

If you don't provide adequate fatty acids in the diet you won't get the fat yield and fat percentage. You also increase the risk of cow's mobilising body fat leading to condition score loss. This is a particular challenge when grazing.

Grazing is a poor source of fatty acids and the type of fatty acids in spring grazed grass contribute to the RUFAL (rumen unsaturated fatty acid loading) of the diet which can compromise rumen fermentation leading to reduced butterfat. It is therefore essential to balance the diet with the correct fatty acids.

A 32-litre cow at 4.0% butterfat outputs 1280g/day of fat in the milk. As 25% of this come from the rumen, she will need an additional 960g of dietary fatty acids. The most effective way to ensure sufficient supplementation is to include balanced dietary fatty acids in the buffer feed. When doing this, you need to ensure the fat products added are highly digestible rumen inert blends of essential fatty acids plus C16:0, C18:1, EPA and DHA.

It is now widely accepted that when adding C16:0 to rations it should be balanced with the addition of C18:1 to maintain cow body condition.

UFAC's Supacream and Omega Cream, fed at 300-600g/cow/day, are proven to supply the fatty acids required to support higher butterfat, whilst maintaining overall herd health. Being rumen – inert they help reduce the risk of acidosis and will improve the digestion of the rest of the diet.

By paying close attention to the total diet it should be possible for many farmers to maintain milk prices and margins this summer by pursuing a strategy of improving butterfat percent. But it will be essential to monitor performance, costs and returns closely to make sure that you are making a worthwhile return.

Dietary fat (g/cow/day) requirement in addition to rumen produced fatty acids for different yields and fat percent

Litres	28	32	36
B Fat %			
3.80	798	912	1026
3.90	819	936	1053
4.00	840	960	1080
4.10	861	984	1107
4.20	882	1008	1134

e.g. cow producing 36 litres @4.0% fat requires the addition of 1080g of balanced fatty acids per day



Welcome from Managing Director Robert Jones



Following a period of unprecedented political turmoil, we still don't know exactly how and when we will be leaving the EU which makes any form of sensible business planning

impossible. And this is undoubtedly true in farming!

What we have to remember is that people need to eat, which makes agriculture an indispensable industry, which I believe presents the UK's farmers with a huge opportunity.

The best way to protect the UK from volatile exchange rates, tariffs and potentially disadvantageous trade deals is to increase the level of self-sufficiency in food. The UK is only around 60% self-sufficient in food and this proportion has been in steady decline.

While I accept, we will always need to import food like avocados, rice and quinoa, I also know that we can produce fantastic quality beef, lamb, pork and poultry meat to the world's leading standards. Also our milk and dairy products are equally exceptional.

So, we should grasp the opportunity to produce more of what we need and produce it with increased efficiency so we can remain globally competitive. In this issue of Feed 4 Thought we look at how optimum fatty acid supplementation can help improve efficiency which in turn can help us increase self-sufficiency and global competitiveness.

With proper planning and attention to detail, it will be possible to formulate cost effective diets to support high levels of efficient production. Our team will be happy to assess your diets for you.

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Good fertility key to production efficiency

With more milk buyers looking for a milk production profile based on last year actual, getting cows in calf quickly is even more challenging as UFAC's Mike Chown explains.

Achieving good fertility is important to maximise feed efficiency, annual milk yield and calf income. But it is taking on a new importance this year. To reduce spring milk production, many dairy companies are writing to producers explaining that a lower price will be paid for increased production in the spring. This makes it essential to ensure calving pattern does not slip.

Achieving good levels of fertility at grazing can be a challenge as intakes can vary due to grass DM changes and availability. Also, cows are possibly not observed as well. In addition, grazed grass does not contain the principal Omega 3's fatty acids, EPA and DHA, which play a central role in fertility.

These specific Omega 3 fatty acids play two vital roles in dairy cow fertility particularly with regard to progesterone. The first role is ensuring a strong follicle which results in larger, more viable eggs with increased strength of bulling behaviour.

The second role is in reducing early embryo mortality. Early embryo loss is a major contributor to extended calving to conception intervals, reduced pregnancy rates and increased culling.

Dietary omega 3 fatty acids reduce levels of prostaglandin and stimulate higher levels of progesterone which reduces early embryo mortality. Ensuring cows are receiving the optimum levels of these specific fatty acids (15-20g/cow/day) will help reduce calving to conception interval.

Cows need to receive sufficient levels of these key fatty acids and in the correct ratio. To maximise fertility, the diet should contain omega 6: omega 3 in the ratio of 4:1.

The source of omega 3 is also very important. If the omega 3 is from vegetable sources (i.e. Alpha Linoleic acid - ALA) it has to be converted by the cow to EPA and DHA. This process is very inefficient and wastes energy. Best practice is to supply the cow directly with the EPA and DHA omega 3 fatty acids from marine sources in a rumen inert form.

UFAC Omega 3 Supplement is specially formulated to supply sufficient omega 3 EPA and DHA to rebalance omega 6 and omega 3 to an optimum 4:1 ratio. It is fed at 100g/day which is significantly lower than the feed rates required with supplements containing vegetable omega 3 fatty acids (ALA).

Supplementing your cows with EPA and DHA from marine sources will help ensure fertility remains at high levels while cows are at grazing, therefore, helping maintain more consistent milk production profiles.



Mike Chown

Feeding fats to beef delivers excellent returns



For beef producers, achieving the twin goals of adequate carcass finish and target weight in the optimum time is a major driver of profitability. Feeding rumen-inert fatty acids to growing and finishing cattle can have a big impact on both growth rates and feed efficiency which together will boost margins.

"To maximise margins, cattle need to finish quickly whilst hitting the specification for age, weight and fat class," David Bonsall from UFAC explains. *"Central to achieving this is feeding adequate fat in the diet of both growing and finishing animals."*

AHDB Better Returns Programme (BRP) recommendations are that growing cattle diets contain a maximum of 3% fat, while for finishers this increases up to 6% alongside higher sugar and starch levels and reduced protein. In reality, many diets fail to achieve these levels, resulting in poorer performance.

Increase energy density

"While all beef producers understand the importance of increasing energy intakes and energy density in finishing cattle, the crucial role of fats and in particular specific fatty acids are not so well understood."

"With finishing weights being reduced, many farmers are struggling to get cattle to finish on high starch diets. At the same time, higher starch brings an increased risk of acidosis which will reduce dry matter intakes and growth rates. The correct fat sources can have a tremendous role to play here."

"Fats are higher in energy than any other feed ingredient for beef diets, with over two and a half times the net energy content of cereals, and so will increase energy density. When rumen inert fats are used there is acid loading meaning they support higher total energy and dry matter intakes."

"But this is only half the story. Different fatty acids carry out different roles in the animal and to optimise performance it is about feeding enough of the right fats."

Feed efficiency is a major measure of beef systems. Oleic acid (C18:1) increases the efficiency of digestion of all the fat in the diet in the small intestine, increasing overall feed efficiency, making more energy available for use by the animal and supporting higher feed conversion.

Strong immune system

The other fatty acids which have a big impact on the performance of both growing and finishing cattle are EPA and DHA. They have an active role in strengthening the immune system. Whenever an animal experiences a health challenge, large amounts of energy are diverted to the immune system and away from growth. If the immune system is stronger, fewer health challenges will occur meaning more energy for growth.

The other reason for feeding optimum levels of dietary fat is improving carcass grading.

While there is less demand for marbling, processors still require a level of sub-cutaneous fat.

Balanced blend

UFAC Megajule is a unique blend of specially selected rumen-inert fatty acids, which are perfect for beef cattle. It contains the essential fatty acids Linoleic and Linolenic, plus EPA and DHA from marine, along with Oleic acid, which ensure a balanced fatty acid profile to maximise feed conversion, DLWG and total energy supply.

Results from farm studies show the impact of adding Megajule to the diets of growing and finishing cattle as a straight replacement for some of the cereals in the diet.

"By driving growth rates and improving carcass grading margin per animal is increased by £52, giving nearly a 2:1 Return on Investment."



Use milk records to drive efficiency at grazing



Mike Chown

Making full use of the individual cow fatty acid profiles on your milk records can help keep cows milking well when out at grass. Mike Chown from UFAC explains two easy things you can do.

At grass, dry matter intakes will vary from day to day. This will affect cow health, milk production and body condition changes, which will often not become apparent immediately.

The good news is that individual cow fatty acid information is now widely available at little or no cost if you milk record. The information can help you understand how your cows are performing and correct any problems quickly and cost-effectively.



Are cows losing condition?

It can take as long as a month before body condition loss becomes apparent, by which time reproductive performance will have been affected. Looking at the total mono-unsaturated fat and C18:1 Oleic Acid levels in the milk, can tell you quickly how your early lactation cows are managing.

For a normal healthy cow in early lactation, mono-unsaturated fats will be less than 30% and C18:1 will be less than 25% of total milk fat. If levels are higher than these it means your cows are energy deficient and are mobilising too much body fat and tissue to make up the energy shortfall. Left uncorrected this can lead to reduced milk yield, lower milk protein content and milk prices, along with poorer fertility.

If cows have high levels of these milk fatty acids, then you need to check dry matter intakes as this will be the single biggest cause of energy deficit in high yielding cows at grass. Quite simply they aren't eating enough.

Measuring grass growth and allowing for grass DM variations is critical to understand how much dry matter from grazing the cows are actually consuming daily. If grass DMI levels are low then introduce or increase the buffer feed available.

Should I be feeding C16:0 fatty acid at grazing?

Butterfats at grass often decline and in an attempt to improve milk quality and milk price it may be tempting to add C16:0 fatty acid to the diet. This is a common question I am asked. In most cases the answer is no.

To understand what is happening in the cow, look at the C16:0 and short chain fatty acid levels in milk records. There is a biological maximum of C16:0 in cow's milk of 40% of milk fat, so if C16:0 content is more than 32-35% there will be no economic response to adding any dietary C16:0. Furthermore C16:0 feed in isolation can have negative impact on body condition score and fertility, as it partitions nutrients to milk.

If you want to promote high butterfat content, and if C16:0 is low, it is more cost effective to increase the structural fibre in the diet. This can be achieved by adding more forage to the buffer feed or by adding high digestible fibre concentrates like sugar beet, soya hulls or palm kernel.

The way to check adequacy of rumen function is to look at the content of the short chain fatty acids, which are the fatty acids produced from rumen fermentation. If this level is less than 9% then the rumen is not working as effectively as it could and the diet needs to be assessed.

If we have good rumen function and the C16:0 content of butterfat is below 32% then look at adding a balanced fat like Omega Cream, which contains C16:0, C18:1, EPA & DHA fatty acids, this will optimise milk yield & fat, while keeping the cow healthy.

If C16:0 levels are above 35%, there is no point adding more C16:0 to the diet, you will be better advised to increase energy density of the ration by using a balanced fatty acid product such as Supa-Cream or Dynalac and look to drive dry matter intakes.