

# Breaking Down Milk Fat

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After years of focusing on low fat, fat free, and other “health” trends, fat has made a comeback. There is renewed favor for full fat milk, cheeses, and butter. Now is the time to key in on milk components, with special focus on fat.

Milk fat comes from preformed fat (dietary fat or body reserves) and de novo fat (“new” fat synthesized in the udder). Laboratories can take milk samples and distinguish these milk fat fractions from one another. When looking at milk fat composition, preformed fat makes up 30 – 45%, de novo makes up 18 – 30%, and a mixed fraction makes up the balance. The information from these assays can then be used to make nutrition and management decisions to maximize milk fat production.

## *Preformed Fat*

A low concentration of preformed fat may indicate a need for supplemental fat in the diet, like saturated fats (palm oil), rumen-protected fat products, or tallow. These products do come at a premium so return on investment should be considered. When choosing a protected fat product, blends tend to be more digestible than single fatty acid products (palmitic and stearic acid blends vs palm alone).

## *De Novo Fat*

Increasing de novo fatty acids is by far the cheaper route. Instead of adding a fat product, alternatively we influence rumen fermentation. We can modify rumen fermentation by following management strategies such as:

- ✓ Increasing feeding frequency
- ✓ Pushing up feed multiple times/day
- ✓ Avoid overcrowding
- ✓ Providing sufficient bunk space (24 in/cow)
- ✓ Consistent feed schedule

Milk fat synthesis within the udder is negatively affected by the production of one specific fatty acid. This particular fatty acid (trans-10, cis-12 C18:2) is produced by rumen microbes under certain conditions:

- ✓ Low rumen pH (often occurring when feeding highly fermentable grains with insufficient effective fiber)
- ✓ Feeding high amounts of unsaturated fatty acids
- ✓ Poor bunk management
- ✓ Inconsistent feeding

Maximizing milk fat production can be accomplished in a number of ways. While fat supplementation is one option, boosting de novo synthesis tends to be the lower cost approach. Make sure cows are fed consistently and provided enough physically effective fiber to support a healthy rumen environment. Take advantage of fat being back in fashion and maximize your milk components.