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The flour market

- Grain Fortification
- optical sorting
- The African Milling School
- Loading bulk solids with explosive characteristics
- VIV Asia 2015
  Show review

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BergaFat:
a fat powder with value added

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Berg + Schmidt is one of the pioneers in the development of fat powders without a carrier. Its "BergaFat" brand has become synonymous with fat powder around the globe. BergaFat is based entirely on palm oil, a valuable and purely vegetable raw material. Thanks to its high palmitic acid content it is readily digestible and also offers a number of advantages over Ca soaps.

More and more, in modern animal production, it is a question of optimising the individual components of the feed in order to offer consumers healthy, high-quality products at competitive prices. In this connection the feed is extremely important as a source of energy. That applies especially to feed fats, since they supply over twice as much energy as carbohydrates.

So fats in powder form are a valuable and at the same time practical alternative. They are easy to dose, to store and to handle.

Pure energy for cows in early lactation and high-performance cows

In order to make modern milk production profitable it is essential to provide additional energy, since high-performance cows in the early phase of lactation expend more energy on milk production than they can take in with their feed.

The animals' organism draws the energy it lacks from the body's own fat reserves. This may result in metabolic disorders and reduced fertility. To prevent this and at the same time ensure a high milk yield the cows must be provided with extra energy through their feed. The only way to offer the animals additional energy is to provide fat in a rumen-stable form, either as a top dressing or in the concentrate. The BergaFat range from Berg + Schmidt ensures that high-performance cows are given the extra energy they need. For ruminants the company offers the products BergaFat F-100 / BergaFat F-100 HP and BergaFat T-300.

Only rumen-stable fats are ideal for the environment in the rumen

Normal feed fats consist of saturated and unsaturated fatty acids. Above a certain level, unsaturated fatty acids have a damaging effect on the bacteria of the rumen. This results in poor utilisation of the entire ration or even reduced performance. The bacteria defend themselves against unsaturated fatty acids by hydrogenating them to form saturated fatty acids. They use such hydrogenation as a kind of "detoxification mechanism", but this only works up to a total of about 4 percent fat in the feed. If the ration is to contain more than this 4 percent fat, the added fat must remain stable in the rumen in order to avoid damage to the rumen bacteria.

Rumen-protected or rumen-stable: an important difference

To prevent damage to the rumen bacteria from unsaturated fatty acids, these fats used to be saponified with calcium in a process involving a chemical reaction. This provides artificial protection for the micro-organisms in the rumen. However, these "rumen-protected" calcium soaps are only stable in the rumen under certain conditions. As soon as the pH drops, Ca soaps are split up into calcium and unsaturated fatty acids. And this applies to their behaviour in the TMR as well as in the rumen. Saponification of the fat also impairs the odour and taste of the feed fats. This

lowers the animals' acceptance of the feed and thus their overall performance.

Sophisticated technology makes BergaFat unique

Unlike the soaps, BergaFat works without any synthetic protection at all. In the production process, high-melting fat fractions that are rumen-stable by nature are isolated by physical separation. The fatty acids in BergaFat are saturated to the point where they no longer damage the microbes of the rumen. On the contrary: the saturated fatty acids in BergaFat F-100, BergaFat T-300 and BergaFat F-100 HP relieve the burden on the rumen; they do not have to be hydrogenated and therefore meet the nutritional requirements of the high-performance cows. These fats reach the small intestine unchanged, where they are broken down enzymatically and used as energy. In other words: fat-powder products without carriers are the new generation of rumen-stable (bypass) fats. With its 100 percent fat content, BergaFat provides more energy than calcium soaps, for these may contain as much as 20 percent non-fat substances such as calcium, ash and water, and therefore correspondingly less energy. Moreover, the BergaFat products are free from trans fatty acids.

Feeding trials with BergaFat

BergaFat increases the quantity and fat content of the milk. The quantity of protein and fat is increased, while the percentage of protein remains the same. Cows that were given BergaFat T-300 in the trials lost less weight and picked up weight again more quickly than the animals in the control group. This resulted in 26 percent better fertility.

Results from the USA are similar:

- 7.6 percent increase in the milk fat content
- 8.1 percent more milk fat
- 1.7 kg more FCM milk (3.5 percent)
- 0.7 percent less feed uptake
- 7.5 percent better feed conversion

The above figures prove that dairy cows need less feed and nevertheless perform better with the addition of BergaFat.

Feeding trials reveal advantages over Ca soaps

The superiority of BergaFat F-100 over Ca soaps has also been demonstrated in feeding trials. At the same amount of fat (2 percent BergaFat F-100 versus 2.4 percent Ca soap in the dry matter of the feed) BergaFat achieved an increase of 3.1 percent as compared to the control for fat corrected milk, whereas the Ca soap only achieved an increase of 0.8 percent. The economic evaluation of this trial revealed additional proceeds of 10 US cents per cow and day with the use of BergaFat as compared to the control group, whereas the Ca soap caused a daily loss of 18 US cents per cow. In a further trial conducted to verify the comparison with Ca soap, Bergafat achieved an increase of at least 3 percent in the milk performance parameters.

Rumen-stable fat powder with palmitic acid for dairy cows

In order to compensate for the energy deficit in early lactation, the metabolic system of dairy cows is programmed to mobilise energy for milk production from the body's own reserves; this may result in metabolic disorders. In order to prevent this it is necessary to provide additional energy through the feed. Energy supplementation is best carried out with BergaFat, which is rich in C16:0, because the palmitic acid necessary for milk production is then absorbed directly out of the bloodstream as well as being synthesised by the animal itself.

Dosage of BergaFat

Dairy cow rations normally contain about 4 to 5 percent fat in the solid matter. In order to feed a higher proportion of fat, rumen-stable BergaFat must be added as extra energy. The dosage of BergaFat depends on the cows' performance. In the case of exceptionally high-yielding cows, up to 1,000 g per animal and day may be given. BergaFat can be mixed easily with a pelleted concentrate or given directly as a top dressing.