

Vitfoss newsletter

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Natural vitamin E for dairy cows and calves

By Nutritional adviser Knud Lykke Christensen, Vitfoss.

Alpha-tocopherol derived from a natural source is a single stereoisomer (i.e. RRR- α tocopherol) while synthetic α -tocopherol consists of a mixture of eight stereoisomers. Not all of the different stereoisomers have the same level of bioavailability, which can be explained by the differences in the rate of degradation, transportation and retention. In humans and livestock the RRR- α -tocopherol stereoisomer has the highest bioavailability compared to other stereoisomers.

The beginning of using natural E vitamins in Denmark

At Vitfoss we recognised the benefits of natural E vitamins and started to use this knowledge more than six years ago; in the beginning with the product “Suplex d-alfa E-50000” and later with the Gold mineral “Gold d-alfa”, both products were supplying vitamin E solely using natural E vitamins. Since then a whole range of mineral mixtures have been developed for dry cows as well as lactating cows, where the synthetic vitamin E has been replaced with natural vitamin E.

The benefits of natural E vitamins were quickly confirmed after putting knowledge into practice

For several years Danish cattle production has experienced problems which have resulted in the similar symptoms that can be seen when there is a lack of selenium. The signs were weak-born or stillborn calves, retained placenta and mastitis in the beginning of lactation.

At the time these herds started to replace the synthetic vitamin E which they had been using until now, with natural vitamin E and the problems were slowly resolved. The veterinarians, who earlier gave selenium injections to down-calvers, quickly noticed and were convinced by the benefits of the natural vitamin E.

Research has shown that natural vitamin E can provide approximately 5 – 6 times better effects compared to using synthetic vitamin E in lactating cows.

Tests with calves

The researchers Jensen and Lauridsen have observed that calves fed with milk replacers containing natural vitamin E had a significantly larger concentration of RRR- α -tocopherol in the meat and liver. In the examined tissue 30 – 43 % was found as RRR – α -tocopherol.

Tests with lactating cows

Lactating cows distinguish intensely between the different types of vitamin E. The RRR- α -tocopherol represented more than 85 % of all tocopherols in the milk and more than 90 % in the plasma (Jensen and Lauridsen, 2003) when feeding lactating cows with natural vitamin E.

Practice in Denmark

Today we use almost entirely natural vitamin E in mineral mixtures for dry cows and we are also continuing to use natural vitamin E to a larger extent for lactating cows. Our knowledge of the benefits of natural vitamin E has also meant that over time it has been a logical step for us to introduce natural vitamin E in milk replacers for calves.

Recommendation

Recommendations for dry cows are a minimum of 2000 mg natural vitamin E per cow per day and recommendations for lactating cows are between 500 – 800 mg natural vitamin E per cow per day.

