

# Locally produced protein feeds and vitamin supply to dairy cows

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## Conclusions

We did not find any large differences in milk production between the two protein treatments “peas” and “field beans”. Because of less kg field beans than peas in the diet resulting in the same production, the ration with field beans should be most profitable. Milk from cows fed field beans had a higher fat percentage, which also contributes to a better profitability. Organic rations with a high proportion of silage, oilseeds and locally produced protein feeds potentially can maintain sufficient concentrations of  $\alpha$ -tocopherol in blood and milk of dairy cows throughout their lactation. However, concentrations of  $\alpha$ -tocopherol in forages vary and the diets may not be reliable in providing dairy cows with sufficient concentrations of  $\alpha$ -tocopherol around calving, when the demand is high. Supplementation with a high dose of natural vitamin E, and vitamin A, around calving, could secure the vitamin E supply for organic dairy cows in Sweden. Diets for organic dairy cows shall be of 100% organic origin and the use of oilseeds probably will increase. The amount of unsaturated fatty acids in feeds can lead to a high proportion of unsaturated fatty acids in milk. As vitamin E is an important antioxidant and, consequently, limits oxidation of fatty acids in milk, it is another reason to supply vitamin E to cows in organic production. High proportions of unsaturated fatty acids in milk and simultaneous lack of  $\alpha$ -tocopherol and  $\beta$ -carotene increase the risks of oxidative off-flavours in milk. Vitamin E also protects vitamin A against oxidation.