

# Use of a rumen-stable combination of fat, lecithin and methionine in dairy cows in practice.

Hendrik Stenkamp and Michael Hovenjürgen  
BEWITAL agri GmbH & Co. KG, Südlohn-Oeding, Germany

## Introduction

The use of rumen-stable fats can increase the energy density of the dairy cow ration and increase feed efficiency. In the literature, the supply of available methionine and choline resulted in increased metabolic health and improved milk yield traits (Arshad et al., 2020). The objective of the present study was to evaluate the effects on milk yield traits of the rumen-stable combination of hydrogenated palm oil, lecithin, and methionine compared to a fractionated palmitic acid combined with the isopropyl ester of a methionine analog (HMBi) in a feeding trial.

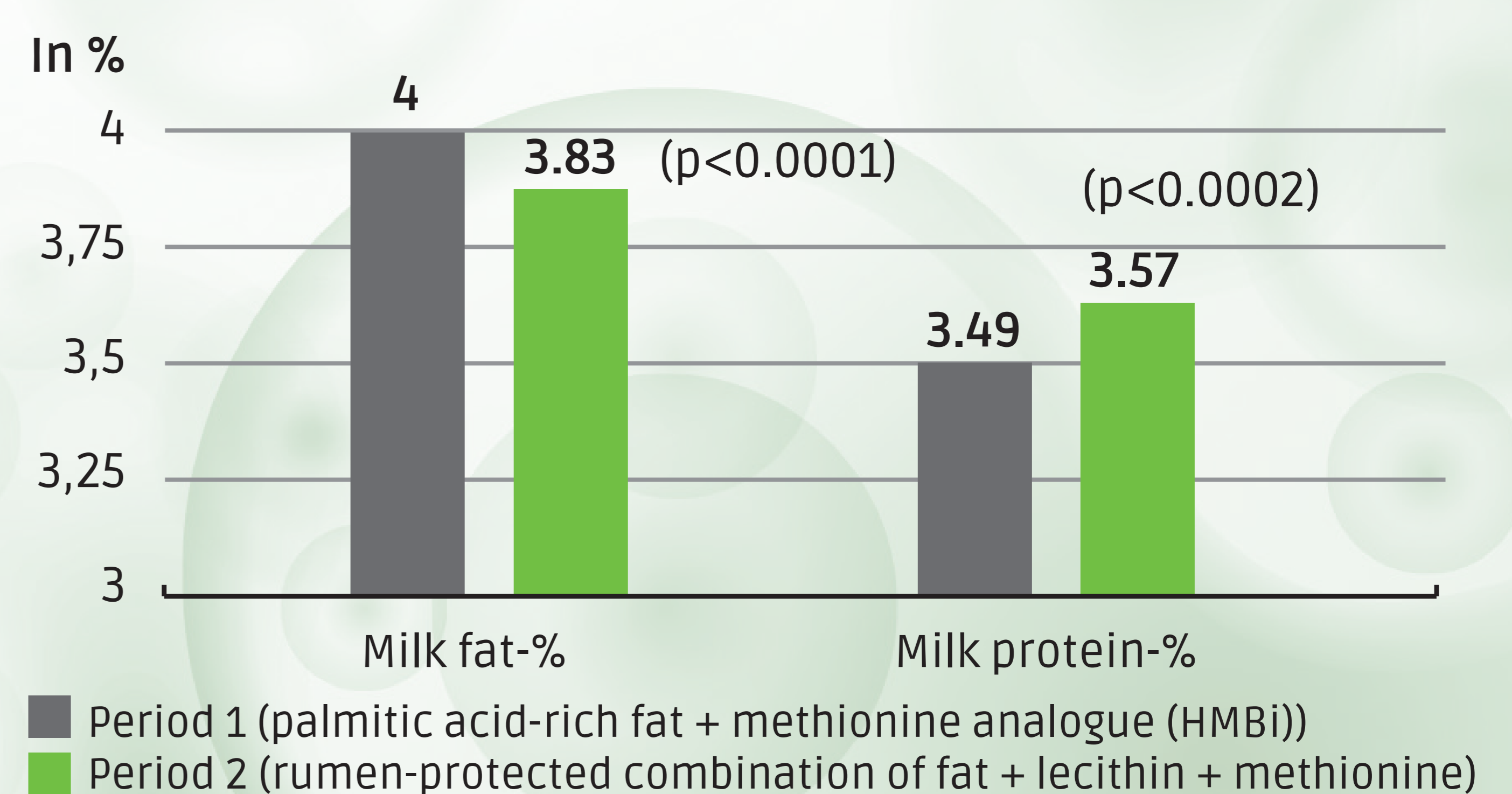
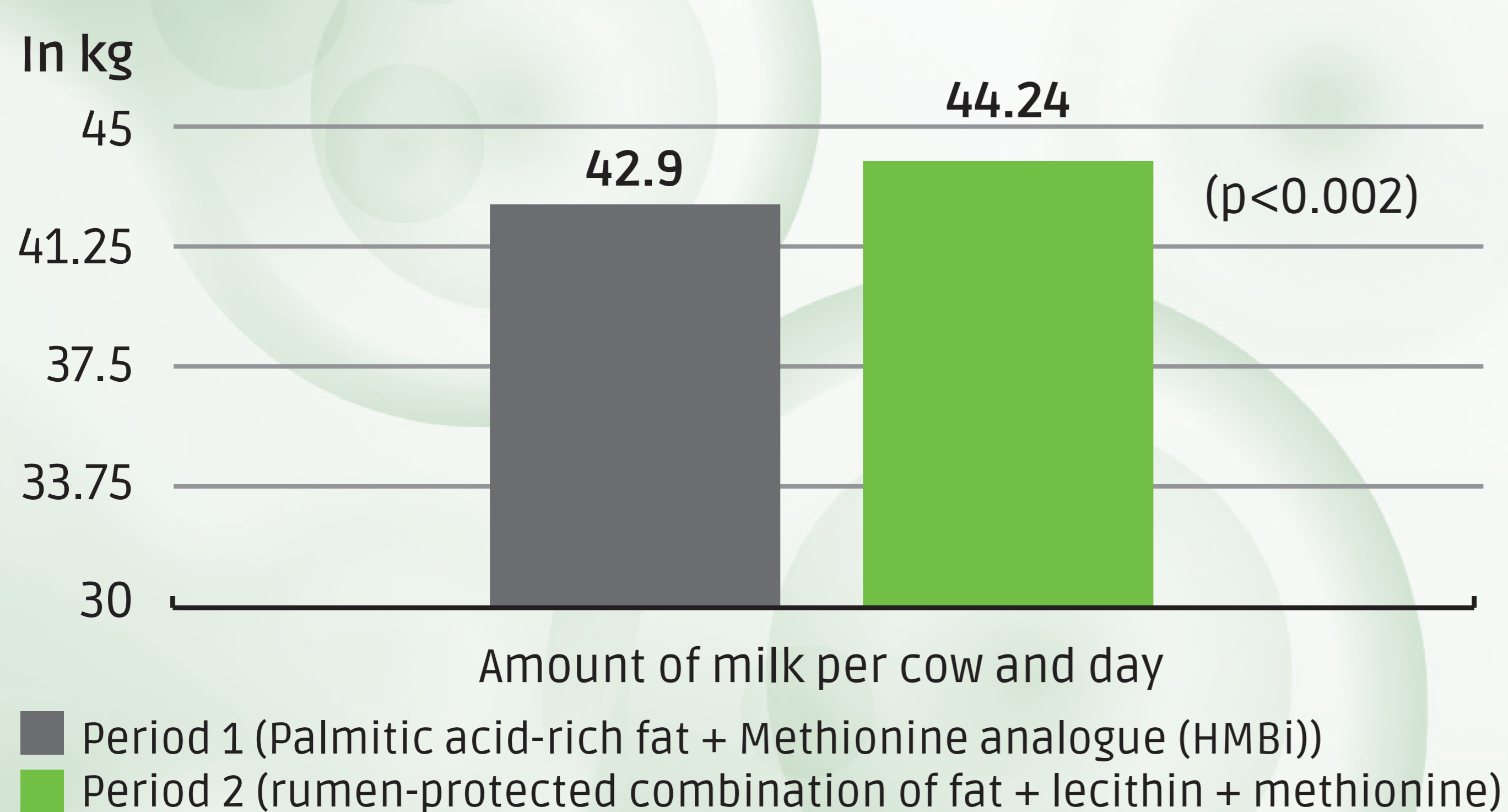
## Material and Methods:

- Practical farm in NRW with approx. 146 Holstein cows with an average lactation performance of approx. 13,000 kg/cow/year.
- In the test period (May-June), no feed changes were made.
- All animals received the same TMR (composition in Table 1).
- The animals were kept in a group-housed stable, milked twice a day and had free access to an outside yard.
- A milk check was carried out after every 28 days
- In the 1st test month, a combination of palmitic acid (>85 % C16:0) and a methionine analogue (HMBi) was fed.
- In the 2nd test month, a rumen-stable combination of fat, lecithin (7.4 %) and methionine (3 %) was fed.
- Individual animal data for milk quantity and milk constituents were recorded from the milk controls and the daily milk fat and milk protein quantity was calculated
- Data from 74 dairy cows were included in the analysis.
- the lactation days (DIM) were 159.5 days in the 1st test month and 187.5 days in the 2nd test month

Component	kg dry matter per cow and day (1st month)	kg dry matter per cow and day (2nd month)
Corn silage (7.3 MJ NEL/kg DM))	8.0	8.0
Grass silage (7.4 MJ NEL/kg DM)	6.0	6.0
Lucerne hay	1.4	1.4
Rapeseed extraction meal	2.8	2.8
Soya extraction meal	1.1	1.1
Grain corn	3.4	3.4
Roggen	1.4	1.4
Mineral feed Yeast + salt + calcium carbonate	0.4	0.4
<b>BEWI-LACTO+® Leci-M</b>		300 g per cow and day (9 g Methionine)
Rumen stable fat (C16) (>85 % C16:0)	300 g per cow and day	
Methionine analogue (HMBi)	25 g per cow and day	

Table 1: Composition and contents of the TMR submitted

## Results:



## Conclusion:

- The use of 300 g of a rumen-stable combination of fat, lecithin and methionine (**BEWI-LACTO+® Leci-M**) significantly increased the daily milk yield by 1.34 kg; at the same time, milk fat synthesis decreased by 0.03 kg/day (p < 0.13); milk protein synthesis was significantly increased by 0.08 kg/day (p < 0.0001).
- The results indicate that at performances above 40 kg per cow per day, not only the selection of rumen-stable fat, but also the use of lecithin as a natural choline source in combination with rumen-stable methionine have positive effects. Positive effects on metabolic health are to be expected.
- The milk fat contents were higher due to the use of C16-rich rumen-stable fat, even if the milk quantity was lower compared to the use with **BEWI-LACTO+® Leci-M**. The daily amount of milk fat per cow and day showed no significant difference.

## Literature:

Arshad, U.; Zenobi, M.; Staples, C.; Santos, J. (2020): Meta-analysis of the effects of supplemental rumen-protected choline during the transition period on performance and health of parous dairy cows. Veröffentlicht in: Journal of Dairy Science (103), S. 282-300

## Authors:

Hendrik Stenkamp and Dr. Michael Hovenjürgen  
BEWITAL agri GmbH & Co. KG  
Industriestraße 10  
Germany 46354 Südlohn-Oeding  
E-Mail: h.stenkamp@bewital.de / m.hovenjuergen@bewital.de