



# Influence of a combination of rumenstable lysine and rumenstable methionine on dairy cows in practice

(Michael Hovenjuergen / BEWITAL agri GmbH & Co. KG, DE)

## Introduction

During the last decades, methionine has shown to be the first limiting amino acid in dairy production, especially in corn based rations (Schuba and Südekum, 2012). Furthermore, the amino acid has an effect in the metabolism of the cow. However, increasing inclusion of rapeseed meal and/or several by-products as e.g. brewer's grains, grain distillers or corn gluten feed, lysine is getting more and more into the focus.

The present research therefore aimed to assess the influence of rumenstable methionine and rumenstable lysine on milk yield and milk ingredients on dairy farms in practice.

## Material and methods

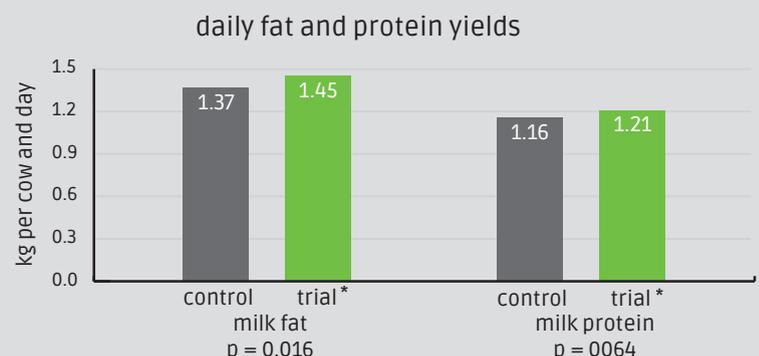
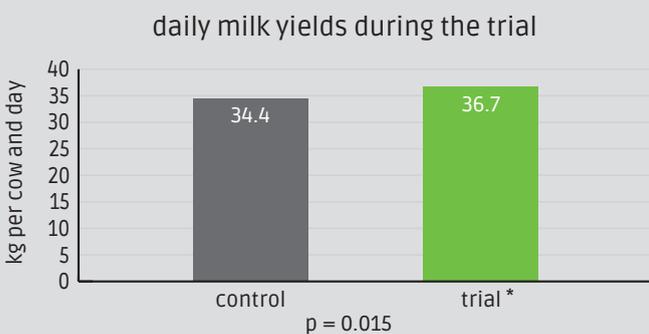
- Approx. 130 Holstein-Friesian cows on a dairy farm in Northern Germany were kept in 2 groups, with one milking robot available for each group
- Average milk yield of the herd was 10.500 kg/cow/year
- There was no change in ration or silage during the test period (spring until autumn 2019)
- All animals received their enhanced partly mixed ration at the feed fence as well as a concentrate feed at the milking robots (Ø 4.8 kg/animal/day) (see table 1)
- After first milk control (week 0), the cows were paired according to their calving date (+/- 1 day) and observed between day 15 and 280 in milk, for the following seven milk controls (week 5 until 32)
- The proportion of heifers was 41% for both groups
- Cows calving during the trial were paired and included into the group results according to their calving dates
- The calculated supply of the intestinal available amino acids (according to Schuba and Südekum 2012) was 85% (methionine) and 95% (lysine) respectively, based on the relevant recommendation
- The trial group received a concentrate feed added with 2,5% of a combination product out of rumenstable methionine and rumenstable lysine (**BEWI-FATRIX**® LM 101) (see table 2)
- Hence, the cows of the trial group received approx. 14 g absorbable methionine and 14 g absorbable lysine/cow/day

Component	kg fresh matter per cow and day	analysed content
Corn silage	32	Dry matter: 364 g/kg
Grass silage	10	Crude protein: 150 g/kg DM
Brewer's grains, ensiled	5	Crude fibre: 207 g/kg DM
Barley straw	0.3	Starch: 268 g/kg DM
corn (dried)	1.4	Calculated content:
Rapeseed meal	1	nXP: 145 g/kg DM
Soybean meal (HP)	1	NEL: 6,7 MJ/kg DM
Dried pulp	0.3	
Minerals and vitamins	0.2	

Table 1: Composition and contents of the part-TMR

Component (%)	Control group	Trial group
corn (dried)	25.6	25.0
Rapeseed meal	23.8	23.2
Distiller's grains and solubles (DDGS)	13.3	13.0
Corn gluten feed	10.3	10.0
Palm expeller	12.3	12.0
Bran	7.2	7.0
Minerals/vitamins etc.	4.2	4.1
<b>BEWI-FATRIX</b> ® LM 101	-	2.5
Calculated content:		
Crude protein	198 g/kg	200 g/kg
NEL	6.9 MJ/kg	7.2 MJ/kg

Table 2: Composition and contents of the concentrates



\*with the addition of rumenstable methionine and rumenstable lysine (**BEWI-FATRIX**® LM 101)

## Results

- The addition of rumenstable methionine and rumenstable lysine led to a significant increase in milk performance of 2.3 kg while milk fat synthesis was increased by 80 g/day; milk protein synthesis was tendentially increased
- The effects of additional rumenstable amino acids (methionine + lysine) in this trial confirm the importance of amino acid supply in dairy cow rations with increased proportions of by-products

## Literature

SCHUBA, J. u. K.-H. SÜDEKUM (2012): Pansengeschützte Aminosäuren in der Milchkuhfütterung unter besonderer Berücksichtigung von Methionin und Lysin. Übers. Tierernähr. 40, 113-149

Author: Dr. Michael Hovenjuergen  
BEWITAL agri GmbH & Co. KG  
Industriestraße 10  
DE-46354 Südlohn-Oeding  
E-Mail: m.hovenjuergen@bewital.de