

Research Notes

Arm & Hammer Animal and Food Production



FERMENTEN delivers more metabolizable protein (MP) to dairy cattle diets, translating to improved feed efficiency and increased milk and component production.

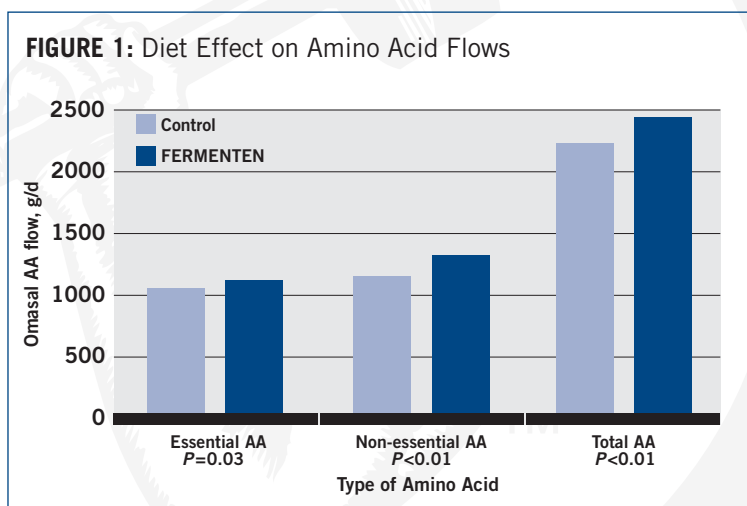
New research provides additional insight on how FERMENTEN™ works and reinforces the performance benefits of FERMENTEN in dairy rations using soybean meal as a protein source.

STUDY 1: TRIAL DESIGN¹

- Researchers conducted a concept test study to confirm FERMENTEN mode-of-action in the animal.
- Eight cannulated cows were assigned one of two treatments in switchback design.
- Treatment diets contained a mix of corn silage, alfalfa silage, ground corn and protein premix containing either a control mix of urea and wheat middlings or FERMENTEN.
- The trial involved three, 28-day experimental periods, each consisting of 21 days of diet adaptation and 7 days of data collection.

STUDY 1: RESULTS (FIGURE 1)

- Results confirmed the activity of FERMENTEN to reduce protein degradation in the rumen.
- Feed crude protein degradation reduced by 15 percent, resulting in a 260g increase in total amino acid (AA) flow from the rumen to the omasum.
- Feeding FERMENTEN reduced the ability of microbes to break down rumen available protein, leading to greater omasal AA flow.
- FERMENTEN also increased nonmicrobial AA flow.

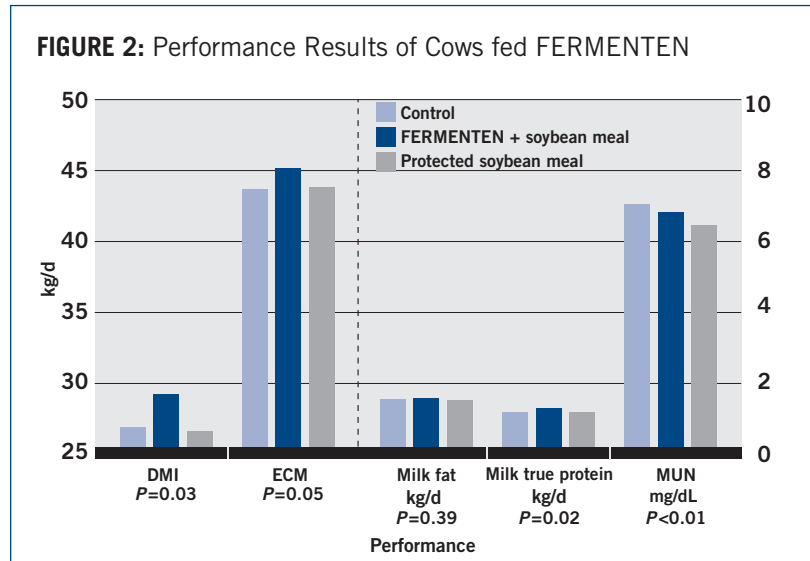


STUDY 2: TRIAL DESIGN²

- Based on the mode-of-action experimental study, researchers conducted a pen trial to evaluate milk performance and intake in lactating dairy cattle fed three different protein sources.
- 192 cows, grouped in 16-cow pens, received three diets equal in crude protein content with the same forage and corn grain base supplemented as follows:
 - Diet A: Soybean meal (control)
 - Diet B: FERMENTEN™ + soybean meal
 - Diet C: Protected soybean meal
- The trial consisted of a 2-week adaptation/covariate period where all cows received Diet C.
- Pens were then randomly allocated to treatments, with weekly measurements taken for 10 weeks.

STUDY 2: RESULTS (FIGURE 2)

- FERMENTEN increased performance of cows fed rumen degradable soybean meal compared with cows fed the control diet. Cows fed FERMENTEN with rumen degradable soybean meal also performed better than cows fed protected soybean meal.
- Cows fed FERMENTEN had higher dry matter intake (DMI), milk protein and fat yield. They also produced more energy-corrected milk (ECM).



CONCLUSION

- FERMENTEN in dairy diets reduced crude protein degradation in the rumen, delivering more metabolizable protein and better nitrogen utilization.
- Feeding FERMENTEN also led to improved cow performance, including higher feed intake and milk production.
- Results show that producers can feed a more economical, rumen degradable protein source and still gain the performance benefits of bypassing the rumen.



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1 Fessenden SW, Foskolos A, Hackmann TJ, Ross DA, Block E, Van Amburgh ME. Effects of a commercial fermentation byproduct or urea on milk production, rumen metabolism, and omasal flow of nutrients in lactating dairy cattle. *J Dairy Sci* 2019;102:3023-3035.

2 Fessenden SW, Ross DA, Block E, Van Amburgh ME. Effects of soybean meal, Fermenten, or expeller soybean meal on milk performance and intake in lactating dairy cattle. *J Anim Sci* 2016;94(Suppl. 5):777-778.

