

**Consistent energy,
consistent productivity.**



**ANIMALS FIRST.
PRODUCTIVITY ALWAYS.**

At Arm & Hammer Animal Nutrition we use science

to unlock the power of nature to create solutions that are designed to optimize animal productivity.

Our expert team can help troubleshoot challenges and translate science into an action plan, always remaining focused on **Animals First. Productivity Always.**

The industry's first bypass fat.

MEGALAC® helps enhance herd productivity by delivering rumen bypass fat to the small intestine. This provides the extra energy needed to achieve peak production levels.

MEGALAC is the first bypass fat and most efficient energy source on the market.¹ First introduced in 1986, MEGALAC remains the industry standard and is the only bypass fat with a USDA measured Net Energy for Lactation (NE_L) value, 2.96 Mcal/lb.²

The MEGALAC advantage:

- 1 Maintains consistent performance
- 2 Helps maintain body condition, reducing risk of metabolic disorders
- 3 Helps boost reproductive performance by delivering the additional energy needed

MEGALAC delivers better results.

A comprehensive meta-analysis¹ was conducted to determine the effect of supplementing lactating rations with various fat sources compared to feeding no supplemental fat.

- MEGALAC is the only Calcium Salt of Palm Fatty Acids with published research and, thus, was evaluated as an individual category
- MEGALAC provided exceptional results across the board, outperforming all others in milk volume, milk fat yield and feed efficiency

DIFFERENT FAT. DIFFERENT RESULTS.*

Fat Source	DMI (lb./d)	Milk Volume (lb./d)	Fat (%)	Protein (%)	Fat (lb./d)	Protein (lb./d)	Feed Efficiency
Overall	-1.93	2.31	-0.04	-0.08	0.06	NSD	↑
MEGALAC	-1.41	3.41	0.10	-0.05	0.18	NSD	↑
Tallow	-2.34	NSD	NSD	-0.09	NSD	NSD	↑
Fatty Acid Prills	NSD	NSD	NSD	NSD	NSD	NSD	NSD
Oilseeds	-1.22	NSD	-0.10	-0.10	0.10	NSD	NSD
Other Ca Salts	-4.64	2.02	-0.47	-0.18	-0.29	NSD	↓

NSD = No Significant Difference.

*Parameters with directional arrows and average response values are significantly different from control treatments of no fat supplementation ($P < 0.10$).

Consistently delivers the value you pay for.

MEGALAC supplies diets with a consistent level of fatty acids every time.

An analysis of 150 field samples showed MEGALAC had the highest level of total fatty acids³ with the lowest degree of variation between samples.

Feed efficiency: Particle size counts.

Not all commercial Calcium Salts are created equal, and particle size is an important reason why.

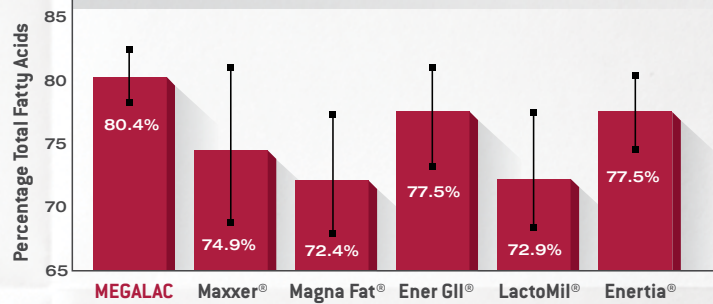
Larger particles perform better because they don't break down (biohydrogenate) in the rumen.^{4,5}

MEGALAC delivers consistently larger particle size, which means more of the original unsaturated fatty acids reach the small intestine for use by the cow.

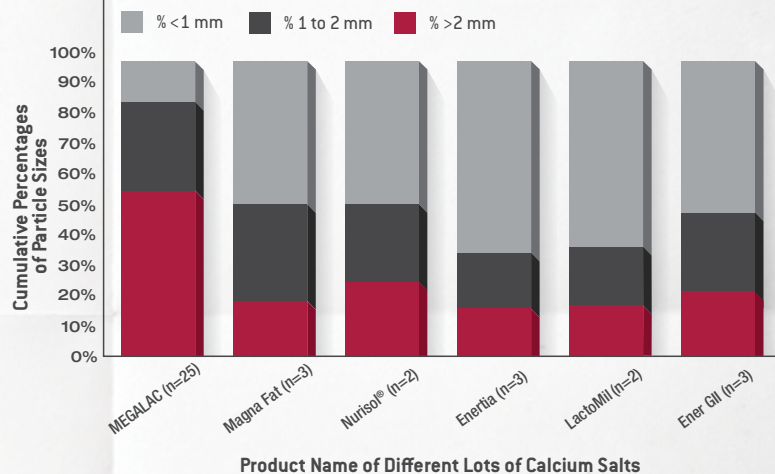
Smaller Calcium Salt particles dissolve faster and are known to reduce fat-corrected milk production.

MEGALAC is more than 85% digestible in the small intestine when included in the diet at 3% of ration dry matter⁶—published digestibility values are not available for all Calcium Salt products.

HISTORICAL AVERAGE FATTY ACID CONTENT (±SD) OF VARIOUS CALCIUM SALTS (N=25 PER PRODUCT) (2007 DATA)

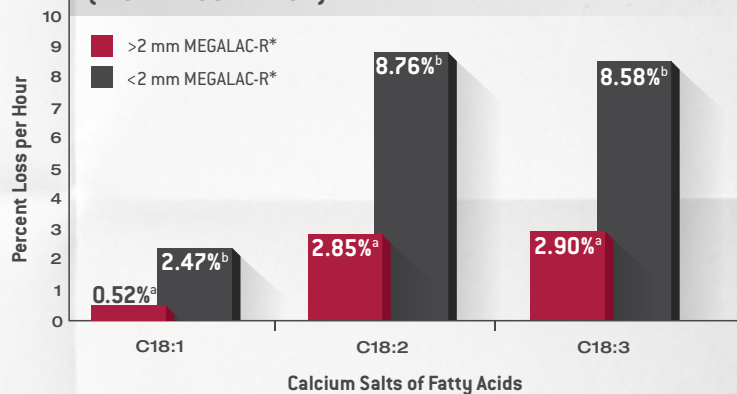


HISTORICAL PARTICLE SIZE DISTRIBUTION OF CALCIUM SALTS OF FATTY ACIDS BY MANUFACTURER (2008 DATA)⁴



*Data on file, 2008

RATE OF DISAPPEARANCE OF FATTY ACIDS (BIOHYDROGENATION)⁵



^{a,b} Indicate significant difference $P < 0.01$

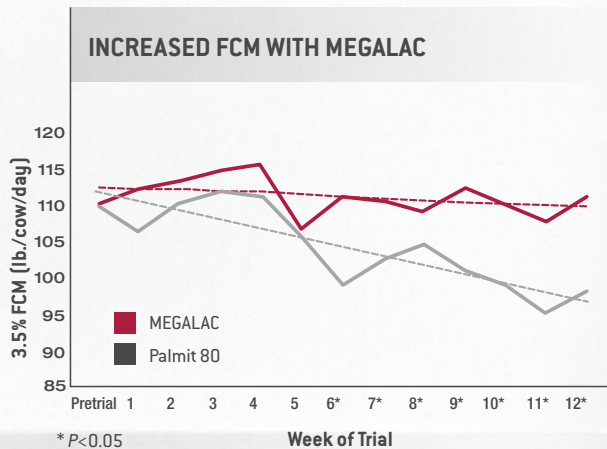
*MEGALAC and MEGALAC®-R contain the same bypass fat properties and particle size composition

Consistent performance with MEGALAC.

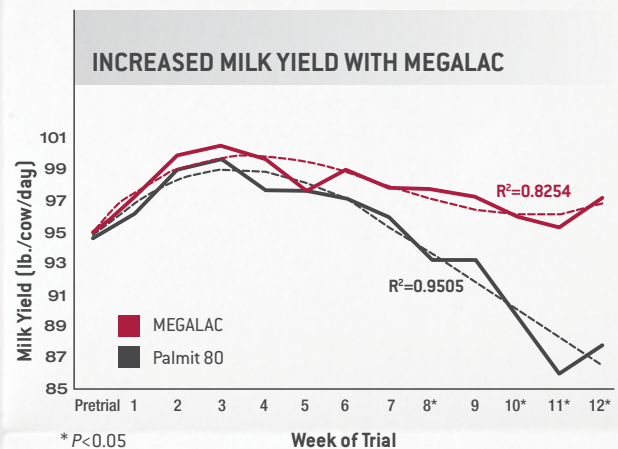
MEGALAC vs. C16:0.

A University of Delaware trial⁷ evaluated the performance of cows fed a diet supplemented with MEGALAC® or Palmit 80® a fatty acid prill containing high levels of palmitic acid (C16:0).

- Feeding MEGALAC resulted in increased milk production and greater feed efficiency
- Results suggest there is a high risk of reducing profitability by sacrificing persistency and FCM when feeding a high C16:0 fat supplement compared to MEGALAC
- Short-term feeding trials (less than six weeks) don't tell the whole story. Differences in performance are not always consistent or detectable in short-term trials.



- 10.5 lbs. more fat-corrected milk (FCM) on average over the 12 weeks of the study
 - Energy-corrected milk production also showed similar results



- 7.4 lbs. more milk on average over the 12 weeks of the study

Recommended feeding rates.

Feed MEGALAC at a rate of 1% – 2% ration dry matter to meet the energy requirements of high-producing cows. Feeding rates will depend on the stage of lactation and production levels.



We're a global, multi-species, animal nutrition team.

We use scientific research to unlock the power of nature to create products that focus on your **Animals First. Productivity Always.** To learn more about MEGALAC contact your nutritionist, veterinarian or Arm & Hammer Animal Nutrition representative or visit AHAnimalNutrition.com.

1 Rabiee AR, Breinhild K, Scott W, Golder HM, Block E, Lean IJ. Effect of fat additions to diets of dairy cattle on milk production and components: A meta-analysis and meta-regression. *J Dairy Sci* 2012;95:3225.
 2 Andrew SM, Tyrrell HF, Reynolds CK, Erdman RA. Net Energy Value for Lactation of Calcium Salts of Long-chain Fatty Acids for Cows Fed Silage-based Diets. *J Dairy Sci* 1991;74(8):2588.
 3 Data on file, 2007.
 4 Data on file, 2008.

5 Block E, Evans E, Sniffen C, Clark N. Effects of Particle Size of Fatty Acids on Biohydrogenation and Disappearance of Essential Fatty Acids *In Sacco*. Paper presented at: ADSA-ASAS Joint Annual Meeting; July 7 – 11, 2008; Indianapolis, Indiana.
 6 Sanchez WK. Energy Barrier Breaker® Research Summary. Church & Dwight Co., Inc., 2001. Page 10, Table 1 and Figure 5.
 7 Block E, Kung I, Merrill C. Production performance parameters of early lactation dairy cows fed a diet supplemented with MEGALAC or a fatty acid prill containing high levels of palmitic acid. *J Anim Sci Vol.* 91, E-Suppl. 2/*J Dairy Sci Vol.* 96, E-Suppl.