



ARM & HAMMER ANIMAL NUTRITION

Fast track for life.



ANIMALS FIRST.
PRODUCTIVITY ALWAYS.

OVERVIEW

- New Name, Same Formula
- The ESSENTIOM™ Advantage
- Next Lap: Omega Health
- Pregnancy Wins. Diseases Loses.
- Get the Job Done Right
- Fast Track to Increased Production
- Results Are In: Productivity Wins
- ESSENTIOM Drives On-Farm Results
- Fuel Up: Recommended Feeding Rates

NEW NAME, SAME FORMULA

- MEGALAC[®]-R is now ESSENTIOM
 - New name explains the product's true benefits: Essential Omegas
 - Creates greater distance from MEGALAC to avoid confusion around product characteristics and benefits
 - Same great product you know and trust
 - Benefits go beyond reproduction—also support immune function and uterine health



THE ESSENTIOM ADVANTAGE

- A bypass source of *both* Omega-3 and Omega-6 Essential Fatty Acids (EFAs)
- Concentrated energy direct to the intestine for absorption^{1 – 6}

1. Santos JEP, et al. Results of Feeding Different Fatty Acids on the Cow's Transition and Reproductive Cycle in Proceedings. *SW Nutri Conf* 2004;29-40.
2. Moate, et al. A Model to Describe Ruminal Metabolism and Intestinal Absorption of Long Chain Fatty Acids. *Anim Feed Sci Techn* 2004;112:79-105.
3. Bowen AJ. The Effects of Dietary Linoleic and Linolenic Acids on Reproductive Performance in Holstein Cows. [Master's thesis]. Department of Animal Sciences, University of Arizona; 2008.
4. Jones B, Fish RD, Martin A, Duff GC, Ax RL. Effects of Supplemental Linoleic and Linolenic Acids on Reproduction in Holstein Cows. *Prof Anim Sci* 2008;24:500-505.
5. Data on file, EFA Alert Research Summary, 2002, Church & Dwight Co., Inc. Pages 20-27.
6. Pankowski J, Noble J, Brennan P, Jarrett G, Block E. Effects of ruminally inert essential fatty acids on postpartum immune-related functions and productivity in lactating dairy cattle. *J Anim Sci* 2013;91:(Suppl.2)/*J Dairy Sci* 2013;96:(Suppl.1) Abstr.659. Presented at the ADSA Joint Annual Meeting 2013.

FINISH
FIRST
WITH

ESSENTIOM

START-UP MILK WINS

- Improves immune health and reproductive performance
- Minimizes postcalving recovery time and likelihood of postpartum health-related stress
- Reduces the incidence or risk of clinical and subclinical disorders like DAs, RPs, milk fever, ketosis and metritis
- Encourages easier start-up milk
- Helps cows return to cycling sooner for more timely breeding

OMEGAS GET THE JOB DONE

- Cows cannot naturally produce the Omega-3 and Omega-6 EFAs
- They must be supplemented through the diet
- When fed in combination, Omega-3 and Omega-6 are proven to improve:
 - Immune function
 - Uterine health
 - Reproductive success
 - Production performance

NEXT LAP: OMEGA HEALTH

OMEGA-3

- Aids production of prostaglandins
- Fosters embryonic survival
- Balances functions of Omega-6

OMEGA-6

- Aids production of prostaglandins
- Promotes ovulation and sperm capacitation
- Aids in oviduct contraction
- Maintains embryo development



**ROAD
TIP**

Absorption is the key.

The bypass properties and particle size[†] of ESSENTIOM allow more Omegas to reach and be absorbed in the small intestine.

[†] Block E, Evans E, Sniffen C, Clark N. Effects of Particle Size of Calcium Salts of Fatty Acids on Biohydrogenation and Disappearance of Essential Fatty Acids, *in sacco*. Presented at the 2008 ADSA Annual Meeting, Indianapolis, Indiana.

NEXT LAP: OMEGA HEALTH

ESSENTIOM™



WINNING PERFORMANCE

OMEGA-3 AND OMEGA-6 ARE THE ONLY EFAs PROVEN IN RESEARCH TO IMPROVE REPRODUCTION

CALCIUM SALTS OF FISH
OILS (DHA & EPA)



TAKES A WRONG TURN

HAVE BEEN SHOWN TO REDUCE
FEED INTAKE, MILK PRODUCTION
AND COMPONENTS^{†,‡,Δ,Ω}

ROASTED SOYBEANS,
WHOLE COTTONSEED,
FLAXSEED



BREAKS DOWN

ALTERED IN RUMEN (BIOHYDROGENATE);
MOST DO NOT REACH THE INTESTINE
FOR ABSORPTION[◇]

[†] Santos JEP, et al. Results of Feeding Different Fatty Acids on the Cow's Transition and Reproductive Cycle in Proceedings. *SW Nutr Conf* 2004;29-40.

[‡] Petit HV, et al. Milk Production and Composition, Ovarian Function, and Prostaglandin Secretion of Dairy Cows Fed Omega-3 Fats. *J Dairy Sci* 2002;85:889-899.

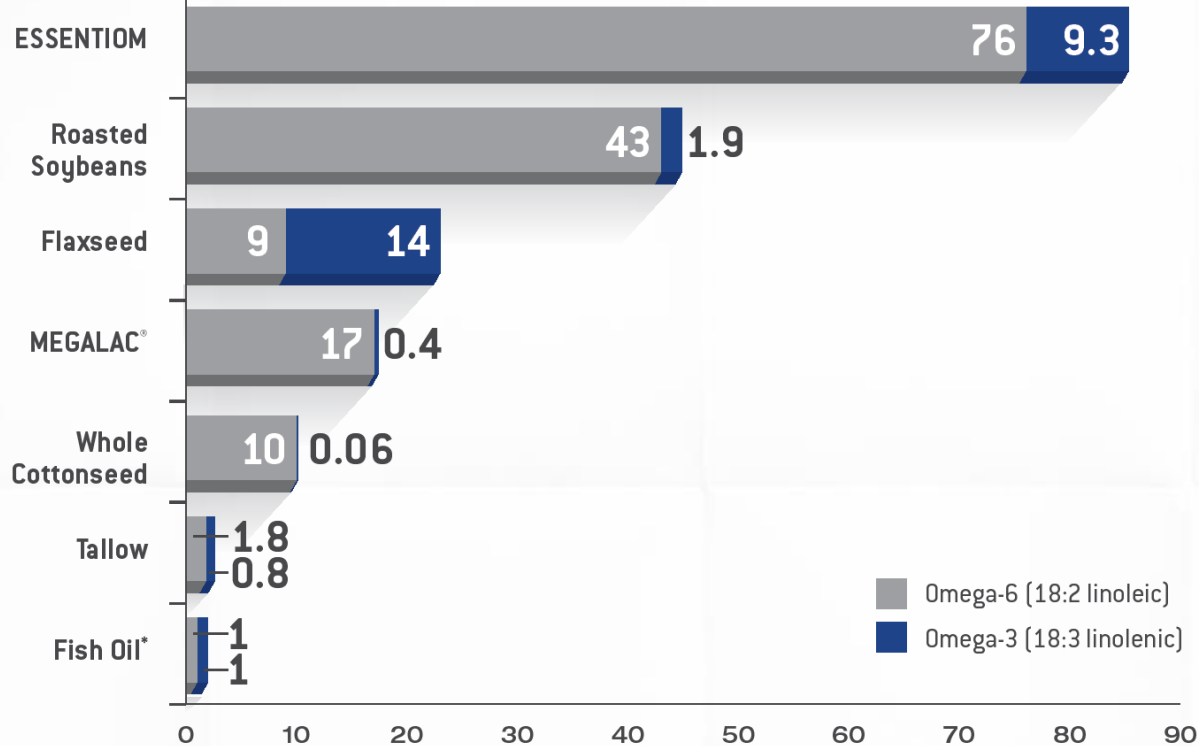
^Δ Whitlock LA, et al. Fish Oil and Extruded Soybeans Fed in Combination Increase Conjugated Linoleic Acids in Milk of Dairy Cows More Than When Fed Separately. *J Dairy Sci* 2002;85:234-243.

^Ω AbuGhazaleh AA, et al. Conjugated Linoleic Acid Increases in Milk When Cows Fed Fish Meal and Extruded Soybeans for an Extended Period of Time. *J Dairy Sci* 2004;87:1758-1766.

[◇] Moate, et al. Short Communication: Further Validation of the Fat Sub-Model in the Cornell-Penn-Miner Dairy Model. *J Dairy Sci* 2006;89:1052-1056.

ESSENTIOM™

ESSENTIOM DRIVES OMEGA RESULTS



Absorbed Omegas – Based on 450 G/Day of Fat from Listed Ingredients

*Calculated amounts based on CPM Dairy V.3.0.1.†‡

†Moate, et al. A Model to Describe Ruminant Metabolism and Intestinal Absorption of Long-chain Fatty Acids. *Anim Feed Sci Techn* 2004;112:79-105.
 ‡ Moate, et al. Short Communication: Further Validation of the Fat Sub-Model in the Cornell-Penn-Miner Dairy Model. *J Dairy Sci* 2006;89:1052-1056.





**ROAD
TIP**

Ask for ESSENTIOM by name.

Unlike competitors, ESSENTIOM is the only consistently formulated EFA source that delivers both Omega-3 and Omega-6 EFAs. When fed in combination, your herd is on the road to immune health and reproductive success.^{†‡}

[†] Moate, et al. A Model to Describe Ruminant Metabolism and Intestinal Absorption of Long Chain Fatty Acids. *Anim Feed Sci Techn* 2004;112:79-105.

[‡] Moate, et al. Short Communication: Further Validation of the Fat Sub-Model in the Cornell-Pen-Miner Dairy Model. *J Dairy Sci* 2006;89:1051-1056.

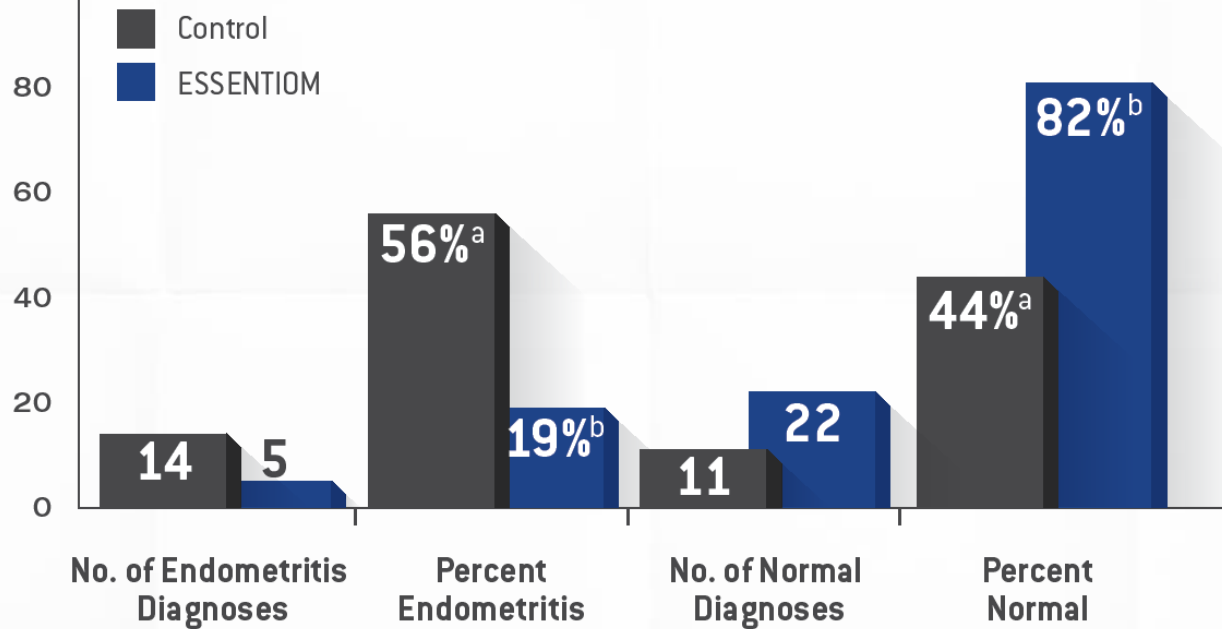
PREGNANCY WINS. DISEASE LOSES.

- University research^{†,‡} compared uterine health and reproductive performance between cows fed MEGALAC (control) and cows fed ESSENTIOM (treatment)
- Cows fed ESSENTIOM experience:
 - Improved uterine health
 - Increased ovarian activity
 - Better reproductive performance

[†] Bowen AJ. The Effects of Dietary Linoleic and Linolenic Acids on Reproductive Performance in Holstein Cows. [Master's thesis]. Department of Animal Sciences, University of Arizona; 2008.

[‡] Jones B, Fish RD, Martin A, Duff GC, Ax RL. Effects of Supplemental Linoleic and Linolenic Acids on Reproduction in Holstein Cows. *Prof Anim Sci* 2008;24:500-505.

REDUCED INCIDENCE OF CLINICAL AND SUBCLINICAL ENDOMETRITIS BY 30 DIM

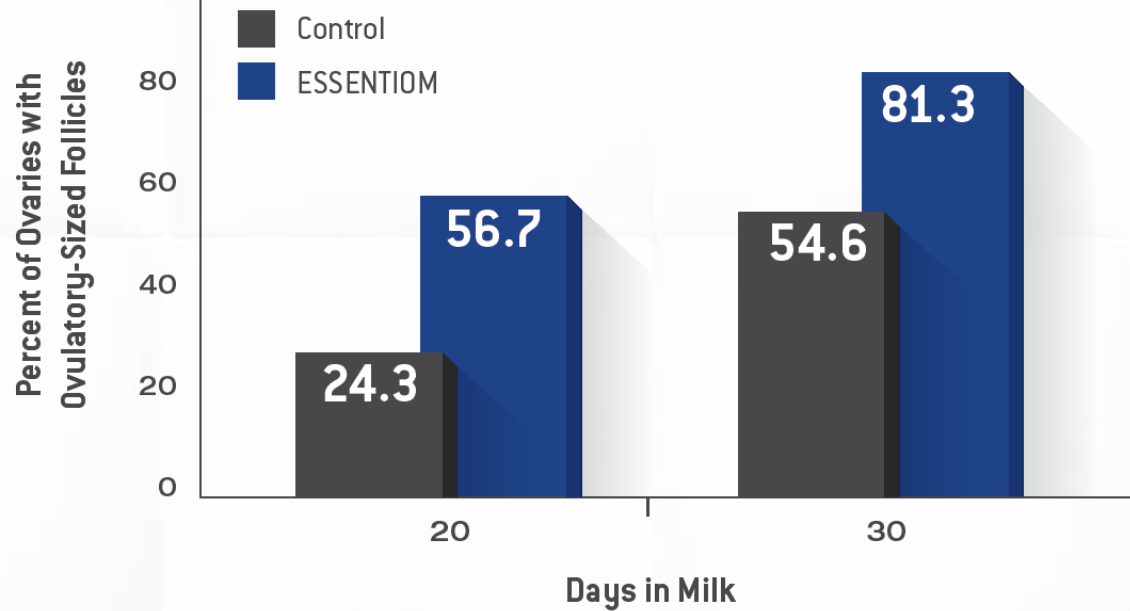


^{a,b} Superscripts differing within category indicate significant difference ($P < 0.05$)

Bowen AJ. The Effects of Dietary Linoleic and Linolenic Acids on Reproductive Performance in Holstein Cows. [Master's thesis]. Department of Animal Sciences, University of Arizona; 2008.



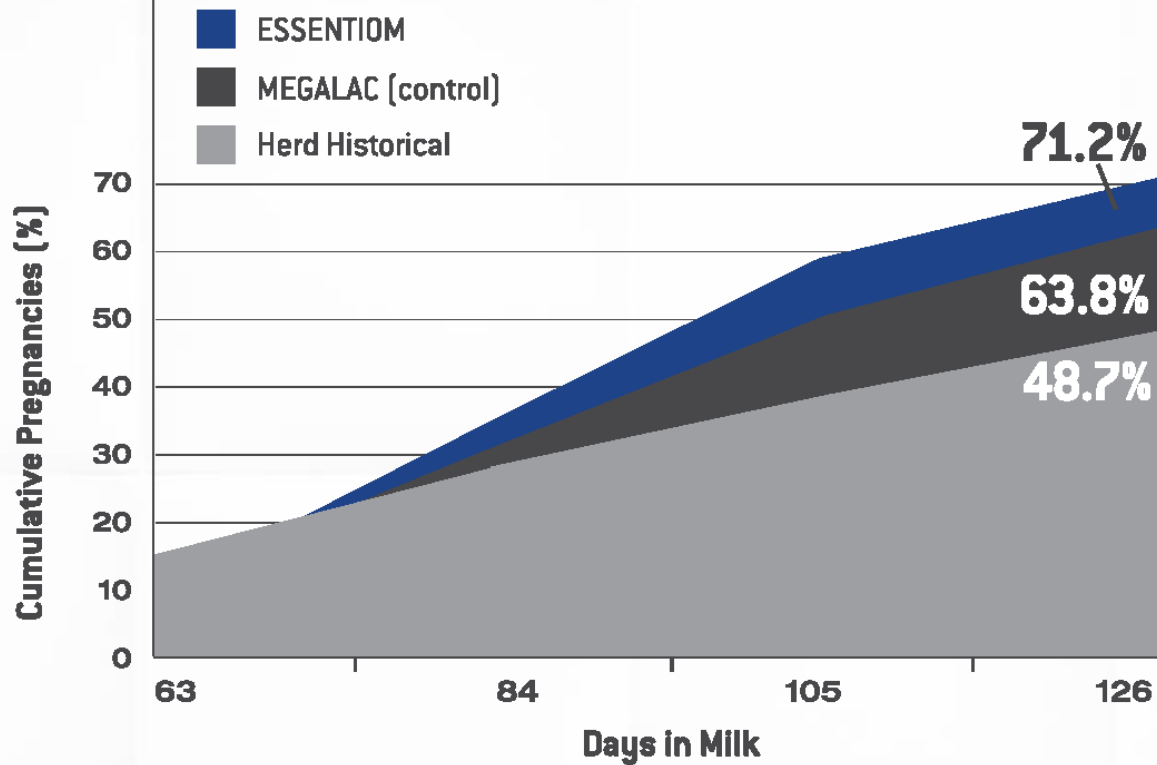
OVARIAN ACTIVITY VERIFIED VIA ULTRASONOGRAPHY



Bowen AJ. The Effects of Dietary Linoleic and Linolenic Acids on Reproductive Performance in Holstein Cows. [Master's thesis]. Department of Animal Sciences, University of Arizona; 2008.



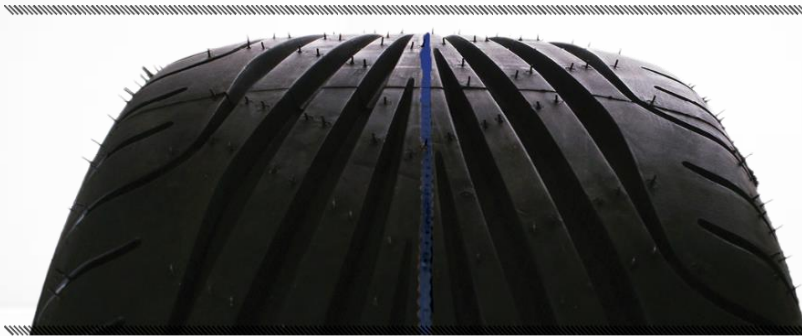
ESSENTIOM DRIVES PRODUCTION



- Improved pregnancies at 126 DIM compared to herd historical and the control group †

† Jones B, Fish RD, Martin A, Duff GC, Ax RL. Effects of Supplemental Linoleic and Linolenic Acids on Reproduction in Holstein Cows. *Prof Anim Sci* 2008;24:500-505.

PREGNANCY WINS. DISEASE LOSES.



Metritis: avoid this road expense.

Early culling	\$71
Lost milk	\$77
Treatment costs	\$58 – \$108
Breeding problems	\$98
TOTAL PER CASE	\$304 – 354

- Metritis is expensive, and can affect as much as 20% of the herd
- ESSENTIOM helps improve immune function, driving successful reproduction and minimizing the threat of postpartum metabolic issues

Overton M, Fetrow J. Metritis Costs Us a Bundle. *Hoard's Dairyman* July 2010;471.

ESSENTIOM™

GET THE JOB DONE RIGHT

- Cows fed ESSENTIOM can experience additional performance benefits:
 - Improved heat detection and conception[†]
 - Larger, higher-quality embryos[‡]
 - Fewer days to first service, services per conception and days open^Δ
 - Improved pregnancy maintenance[†]
 - Higher cumulative pregnancies^Δ
 - Fewer postcalving disorders^{†Ω}

[†] Data on file, EFA Alert Research Summary, 2002, Church & Dwight Co., Inc. Pages 20-27.

[‡] Jones B, Fish RD, Martin A, Duff GC, Ax RL. Effects of Supplemental Linoleic and Linolenic Acids on Reproduction in Holstein Cows. *Prof Anim Sci* 2008;24:500-505.

^Δ Bowen AJ. The Effects of Dietary Linoleic and Linolenic Acids on Reproductive Performance in Holstein Cows. [Master's thesis]. Department of Animal Sciences, University of Arizona; 2008.

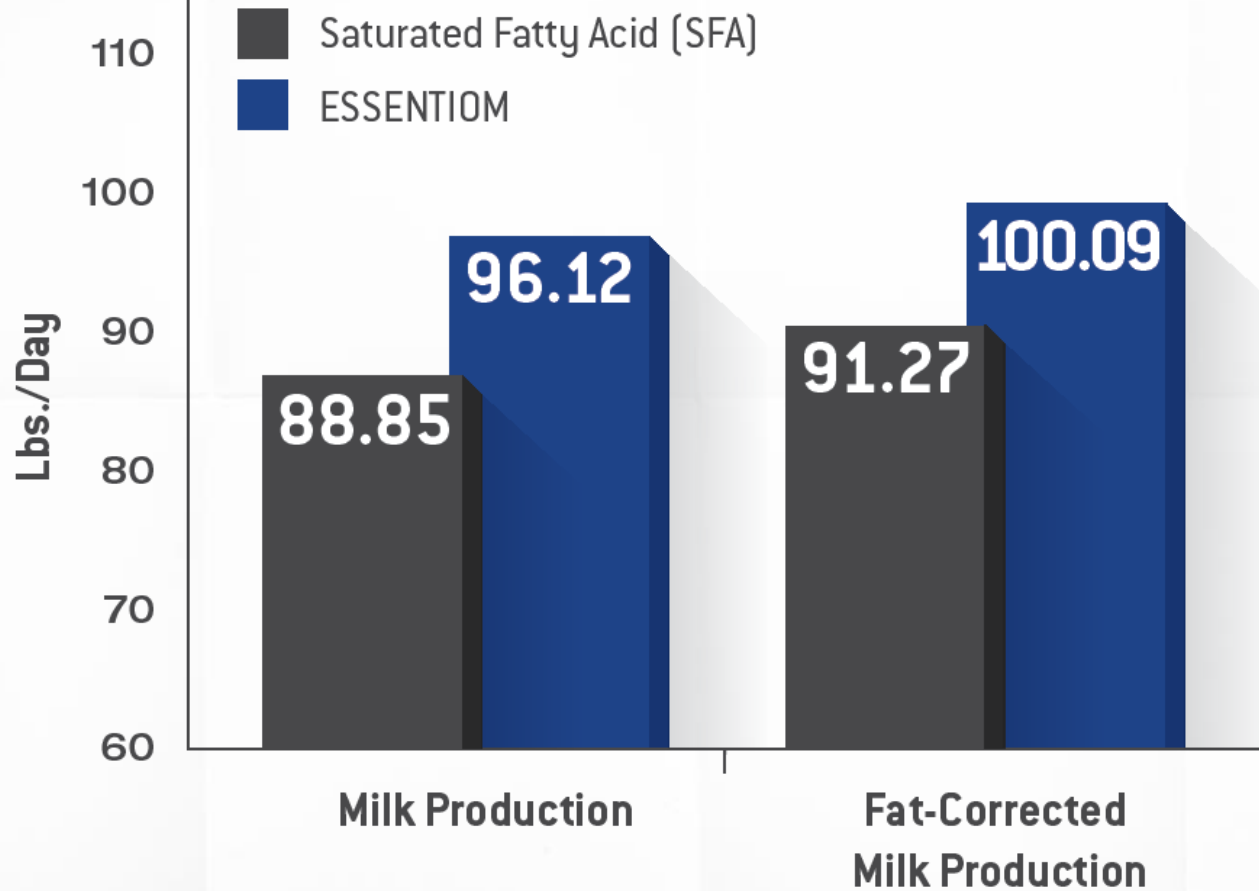
^Ω Data on file, MEGALAC-R Trial on Washington State Dairy, February – August 2007, Arm & Hammer.

FAST TRACK TO INCREASED PRODUCTION

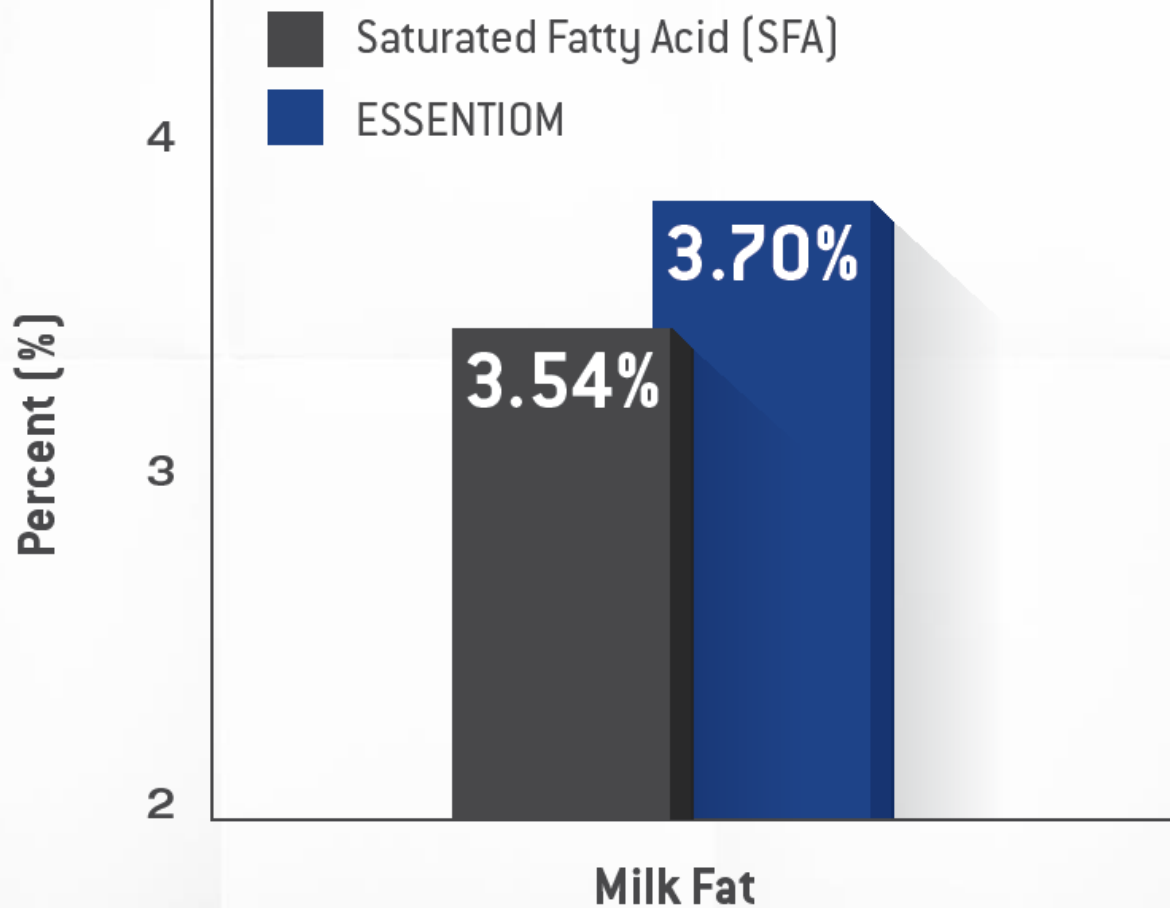
- A University of Florida trial[†] evaluated the impact of different fat sources on lactating cow performance
- Postfresh cows fed ESSENTIOM:
 - Produced 7.27 lbs. more milk and 8.82 lbs. additional fat-corrected milk compared to cows fed saturated fatty acids
 - Increased milk fat percent to 3.70% compared to 3.54% in the saturated fatty acid group

[†] Greco LF, Garcia M, Artiaga BL, Ganda EK, Bisinotto RS, Lima FS, Martines-Patino N, Ribeiro ES, Lock AL, Thatcher WW, Staples CR, Santos JEP. Effects of Supplemental fatty acids on production responses and hepatic fatty acid composition and gene expression of dairy cows fed diets containing low concentrations of fatty acids. *J Anim Sci* 2012;90:(Suppl.3)/*J Dairy Sci* 2012;95:(Suppl.2) Abstr.M277. Presented at the ADSA Joint Annual Meeting 2012.

MILK PRODUCTION IMPROVEMENT



MILK FAT IMPROVEMENT



RESULTS ARE IN: PRODUCTIVITY WINS

- Multiple on-farm demonstrations prove the value ESSENTIOM can deliver

ESSENTIOM On-Farm Herd Demonstrations, 2012 – 13

Parameter (n=)	New York		Idaho		California		Wisconsin		Wisconsin	
	Base 1,989	ESSENTIOM 2,219	Base 4,152	ESSENTIOM 3,807	Base 1,215	ESSENTIOM 1,414	Base 1,020	ESSENTIOM 1,660	Base 864	ESSENTIOM 847
1st Linear Score	3.09	2.73 [-12%]*	1.93	1.84 [-5%]*	2.58	2.24 [-13%]*	N/A	N/A	2.24	2.08 [-8%]*
First 305-d Proj. (lb.)	N/A	N/A	14,032	14,127 [1%]*	28,728	29,503 [3%]*	N/A	N/A	27,054	28,273 [5%]*
Monthly EED (n)	7.6	2.5 [-67%]*	11.5	4.6 [-60%]	13.6	3.0 [-78%]*	5.0	3.0 [-40%]*	6.6	4.3 [-53%]*
Conception Rate (%)	35.6	38.2 [7%]*	28.8	31.6 [10%]	26.9	30.9 [15%]	31.2	33.5 [7%]*	29.9	32.1 [7%]
Pregnancy Rate (%)	23.8	25.9 [9%]	18.1	19.7 [9%]*	17.4	20.1 [16%]	19.6	21.0 [7%]*	18.1	19.4 [7%]
Net Profit Per Cow		\$176		\$49		\$212		\$28		\$248

*Differing within category indicates significant difference ($P < 0.05$)

Pankowski J, Noble J, Brennan P, Jarrett G, Block E. Effects of ruminally inert essential fatty acids on postpartum immune-related functions and productivity in lactating dairy cattle. *J Anim Sci* 2013;91:(Suppl.2)/*J Dairy Sci* 2013;96:(Suppl.1) Abstr.659. Presented at the ADSA Joint Annual Meeting 2013.



ESSENTIOM DRIVES ON-FARM RESULTS

- Improved immune function:
 - Significant decrease in Somatic Cell Score (1st linear Score)
 - Reduced Early Embryonic Death (EED)[†]
 - BHBA[‡] reduced by 44% in one herd where it was measured
- Increased milk production:
 - First 305-day projected milk (lbs.) improved in the three herds that reported milk

[†] EED defined as animals returning to service at 35 days postinsemination following a diagnosis of pregnancy.

[‡] Measured at day 7 postpartum.

ESSENTIOM DRIVES ON-FARM RESULTS

- Reproduction improvements:
 - Conception rate improved from 7% – 15% across herds
 - Pregnancy rate increased from 7% – 16% across herds
- Net profit increased on all dairies,[†] ranging from \$28 to \$248 per cow per year based on improved performance

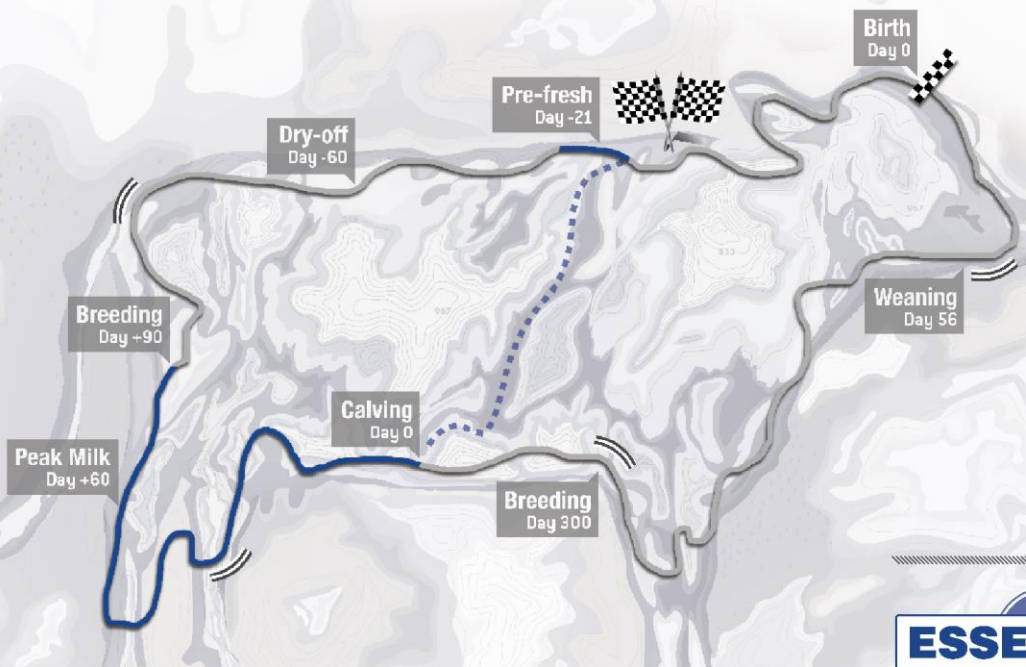
[†] Profit range due to inability to collect milk production data on all dairies.



FUEL UP: RECOMMENDED FEEDING RATES

- Three weeks prepartum
 - Feed 0.25 lbs. to 0.33 lbs. per day or 1.1 to 1.3% of ration dry matter
- Postpartum through confirmed pregnancy
 - Feed 0.75 lbs. to 1 lb. per day or 1.5 to 1.8% ration dry matter

Navigate the life cycle journey with ESSENTIOM.

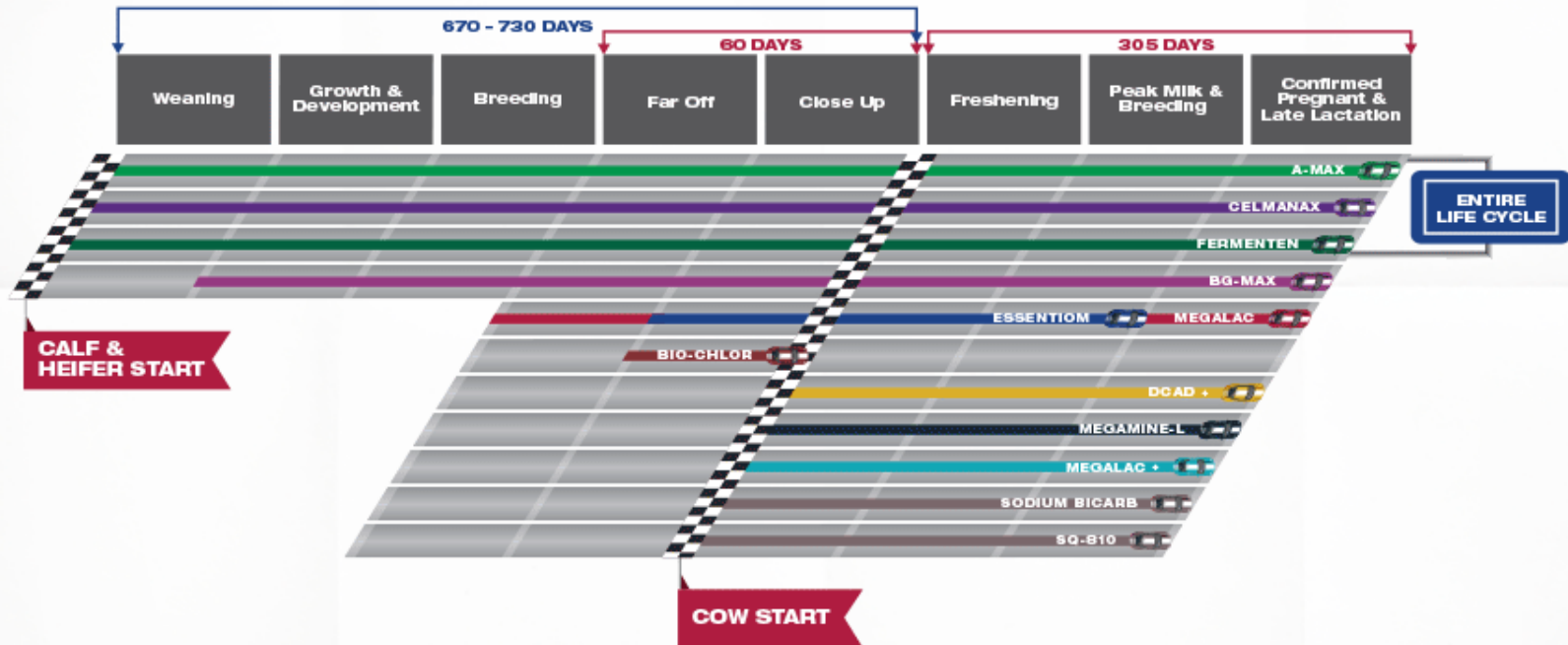


ESSENTIOM™

Navigate the life cycle journey with ESSENTIOM.

ESSENTIOM™

Day -21 to +60/+90 Days



More products to help you get the job done.

A-MAX™
Entire life cycle

BG-MAX™
Day 56 to Day 305

BIO-CHLOR™
Day -21 to Day 0

CELMANAX™
Entire life cycle

DCAD+™
Day 0 to Day 305

FERMENTEN™
Entire life cycle

MEGALAC®
+60/+90 Days to Day -21

MEGALAC+™
Day 0 to Day 305

MEGAMINE-L™
Day 0 to Day 305

SODIUM BICARB
Day 0 to Day 305

SQ-810™
Day 0 to Day 305

It's about ANIMALS FIRST. PRODUCTIVITY ALWAYS.
See more at AHAnimalNutrition.com

QUESTIONS?



To learn more about ESSENTIOM, your pit crew is standing by: contact your nutritionist, veterinarian or Arm & Hammer Animal Nutrition representative or fuel up at AHAnimalnutrition.com.

ESSENTIOM™

THANK YOU!
