

# Road Map to Fatty Acid Balancing

## Palmitic to Oleic Balance

Improve milk fat, milk & body condition

Palmitic  
**16:0**

↑ milk fat more than milk yield

Oleic  
**18:1**

↑ digestibility of all fatty acids, milk production & body condition

**1% Palmitic and 1% Oleic for balanced energy partitioning (%DM)**

## Manage 18:2 & Rumen Exposure

Too much 18:2 = ↓ milk fat production

Linoleic  
**18:2**

Found in corn, corn silage, distillers, cottonseed  
Too much unprotected 18:2 = ↓ milk fat

**300+ grams is considered a milk fat risk factor**

## Omega-6 to Omega-3 Balance

Improve immune health, milk & repro

Omega-6  
**18:2**

Inflammatory = lost energy to immune

Omega-3  
**EPA  
DHA**

Anti-inflammatory = ↑ milk & repro

**5:1 or ↓ ratio for optimal results in lactating cows**

# Take Steps to a Better Balance



## Balance is Key

Recent research from Michigan State suggests that feeding a more balanced approach (60:30 palmitic versus oleic) in early lactation results in:

- ➔ Significant gains in energy-corrected milk (ECM)
- ➔ Increases in dry matter intake (DMI)
- ➔ Reduced body weight loss versus the higher palmitic treatment (80:10)
- ✔ Be sure to assess the Palmitic:Oleic balance in the whole diet, as these fatty acids come from other feeds besides your fat supplement



## Manage Your Risk

Managing 18:2 risk is twofold: 1) How many grams are sent to the rumen? 2) How rumen-exposed are those grams? Too many 18:2 grams with high rumen exposure can increase trans fatty acids leaving the rumen that result in lowered milkfat percent.

- ➔ While many factors affect milk fat, 18:2 sits at the root of the mechanism for lowering milk fat
- ➔ 18:2 is highly prevalent in our dairy diets, including in corn, corn silage, distillers & cottonseed
- ✔ Monitor variability of 18:2 grams closely, especially in high volume sources (corn silage) or those with greater rumen exposure (ie. distillers and bakery) to minimize risk of losing milk fat



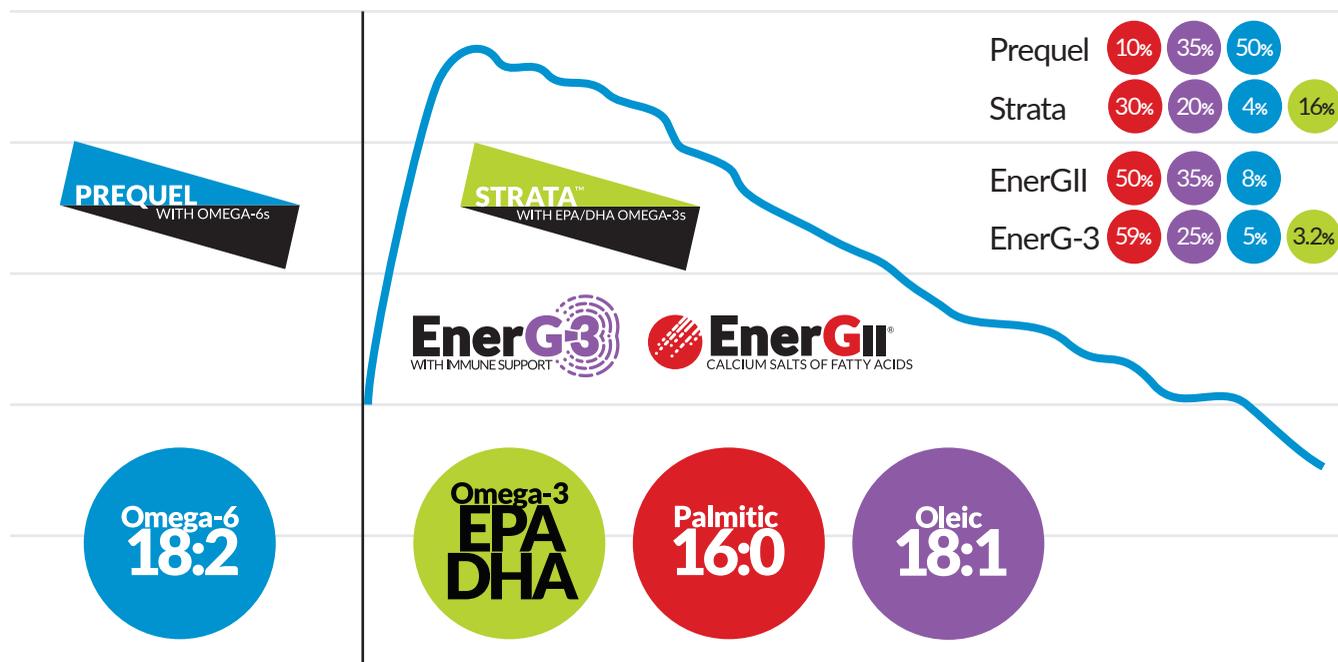
## A Whole New Healthy

Omega-6 and Omega-3 fatty acids are bioactive fatty acids that are highly involved in cell signaling within the immune system and reproductive processes. Let's remember that omega-6 is also 18:2. The same fatty acid that can wreak havoc on milk fat can also cause cellular inflammation, costing the cow energy that could have been used for production.

- ➔ Omega-6s are inflammatory, while Omega-3s are anti-inflammatory
- ➔ Omega-6:Omega-3 balance directly affects immune function and energy utilization due to inflammation, with most dairy diets heavily weighted to the omega-6 inflammatory side
- ✔ Consider adding EPA/DHA omega-3s to reduce early abortions and improve production efficiency by reducing inflammation in lactating cows
- ✔ Consider improving omega-6 levels in the prefresh period to enhance immune support during that critical transition period

# The Virtus Lineup

## Where they fit across the lactation



### Prequel

Target feed Omega-6s in the close-up pen to enhance immune health, leading to reduced transition disorders and improved 1st service.

Best for target feeding EPA/DHA Omega-3s early lactation for reducing inflammation that leads to increases in ECM and reduced early abortions.

### Strata

### EnerG-3

Higher Palmitic levels for milk fat support, combined with Oleic and EPA/DHA Omega-3s to deliver the key fatty acids all in one product.

Provides a balanced and proven approach with 50% Palmitic & 35% Oleic to support milk and milk fat, body condition and feed efficiency.

### EnerGII

**Note:** Strata is often fed in combination with EnerGII early lactation, with EnerGII fed to mid and later lactation cows as well. In contrast, EnerG-3 is designed to feed across stages of lactation and in one-group TMRs.

Visit [VirtusNutrition.com](http://VirtusNutrition.com) to see the many peer reviewed research studies that support the Virtus Nutrition lineup of fat supplements. Consult your nutritionist for specific feeding recommendations. All logos and trademarks are property of Virtus Nutrition, LLC



The Power of 3  
**Palmitic, Oleic & EPA/DHA Omega-3s**  
[VIRTUSNUTRITION.COM/ENERG-3](http://VIRTUSNUTRITION.COM/ENERG-3)