

THE POSITIVE IMPACT OF INCORPORATING FATTY ACIDS INTO ANIMAL DIETS

Animals require fatty acids to achieve better growth and survival rates, enhance body conditions and improve performance. For maximum effectiveness, free fatty acids are used to carry fatty acids to the liver for better digestion. The quality of both fatty acids and free fatty acids are of vital importance for safe animal health and production. For more than 25 years, Feed Energy has been the preferred choice for fatty acids for livestock and poultry production.

Fatty Acid Basics

Fatty acids are chains of carbon and hydrogen atoms that can be saturated or unsaturated. Free fatty acids are typically acids that have not linked to glycerols to form triglycerols. Free fatty acids carry the fatty acids to the liver for digestion. In products such as restaurant grease, free fatty acids can be formed due to oxidation. When this occurs, fatty acids can form, which are harmful to animal health and production. It is important that the required free fatty acids come from only high quality sources.

Top Six Reasons for Incorporating Fatty Acids into your Animals' Diets

1. Increase energy density (2.25 to 3.8 times the value of carbohydrates)
2. Enhance nutrient utilization
3. Improve animal performance
4. Improve feed palatability
5. Reduce dust levels
6. Reduce wear and maintenance on machinery

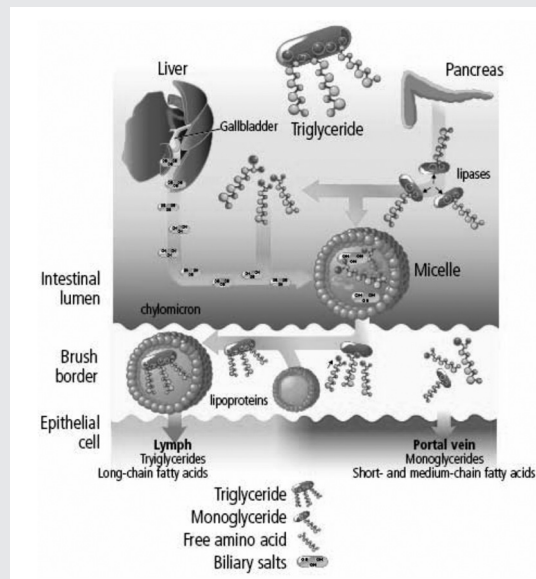
Achieving the Right Fatty Acid Profile

Increased animal performance is dependent on getting the right fatty acid profile. Feed Energy blends raw products based on customer specifications to achieve the right balance of the following fatty acids:

- Capric
- Linolenic
- Oleic
- Lauric
- Myristic
- Palmitic
- Linoleic
- Myristoleic
- Palmitolenic

Feed Energy's proprietary blending process incorporates the unsaturated to saturated ratio that is best suited for the specific needs and conditions of each customer's operation.

DIGESTION OF FAT



Iowa State University
 Dr. Michael E. Persia, Animal Science

No One Knows Fatty Acids Better than Feed Energy

In the early 1950s, Roger Garrett was on a mission to improve the quality and performance of livestock diets by formulating and blending animal and vegetable oils to specific caloric content. Today, the Garrett formula continues to set the standard in the calibration of energy value and is the foundation of Feed Energy's scientific approach to energy solutions based on specific fatty acid profiles and unsaturated to saturated ratios.

Feed Energy understands the importance of providing micronutrients to animals through fatty acids. Essential fatty acids are those that animals cannot produce on their own. Today, every load of Feed Energy products includes vitamins A, D and E, which are better absorbed by the animal when delivered with the right fatty acid profile.



High Quality Sources for High-Quality Fatty Acids

Sources of fatty acids vary greatly. This variability impacts the metabolizable energy that is available and the essential fatty acids provided to animals. The Garrett formula takes into account the factors that impact metabolizable energy when determining the quality of the fatty acid source.

Feed Energy also considers the role vegetable fatty acids can play in the final blend.

Vegetable fatty acids provide your animals:

- Carotenoids or Vitamin A— Play a necessary role in bone metabolism and antibody production
- Vitamin C— Allows for calcium absorption and utilization for increased egg production
- Vitamin E— Increases tocopherol content of muscle membranes, helping increase meat quality by reducing oxidation and deterioration during storage and alleviating heat stress
- Lecithin— Promotes the transportation of fatty acids to the liver, improves meat tenderness and increases egg yolk percentage and color

Feed Energy Delivers Science that Delivers Results

Providing high-quality fatty acids is just one way that Feed Energy understands the challenges you face and responds with energy solutions to improve your operation's efficiency. By continually developing innovative methods of formulating and blending fats and oils and providing exceptional customer service, Feed Energy has earned a reputation as the premier source of energy solutions to meet the evolving needs of livestock producers. For unparalleled levels of performance, safety, cost efficiencies and service, Feed Energy delivers science that delivers results.



“Factors that improve metabolizable energy value include unsaturated fatty acids. Factors that decrease metabolizable energy include M.I.U., saturated fatty acids, phospholipids, oxidation and polymerization products. The Garrett formula takes into account these factors when determining the metabolizable energy and quality of the fatty acid source.”

Dr. Mohan Dasari
Director of Research & Development, Feed Energy



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