



Lipo AMP

Multi-dimensional emulsifier

BENEFITS

- Developed to maximise profitability by reducing feed costs and maintaining performance
- Enhanced growth performance of monogastric animals
- Improved dry matter, lipid and protein digestibility
- Reduced waste output

“The combination of hydrophilic and lipophilic characteristics in one molecule gives it the distinctive property that the emulsifier can dissolve in fat as well as in water and can aid in mixing the two fractions.”

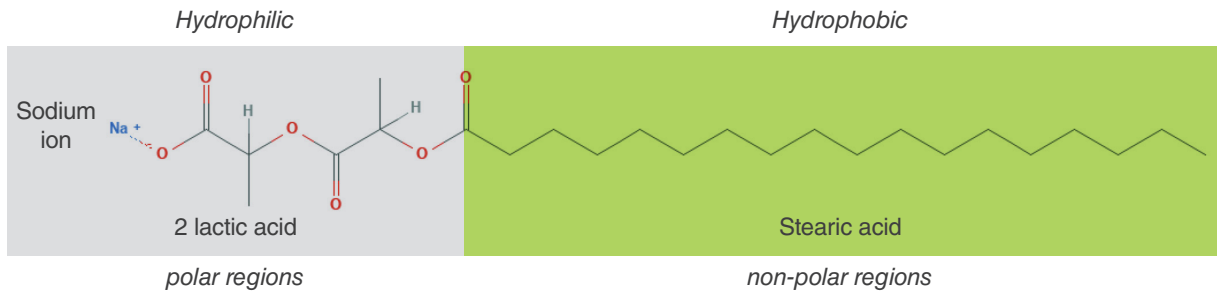
- Siyal et al, 2017

Lipo AMP is designed to encourage sustainable feeding, reducing overall feed costs whilst, maintaining performance of livestock. The utilisation of a multi-dimensional emulsifier in Lipo AMP, improves fat, protein and dry matter digestibility through enabling the feeding of low-energy diets. The improvements in nutrient digestibility caused by the addition of Lipo AMP in feed results in reduced greenhouse gas emissions and nitrogen waste output.

Lipo AMP also aids in lowering energy use during the feed production process which results in a reduction of the overall production cost.

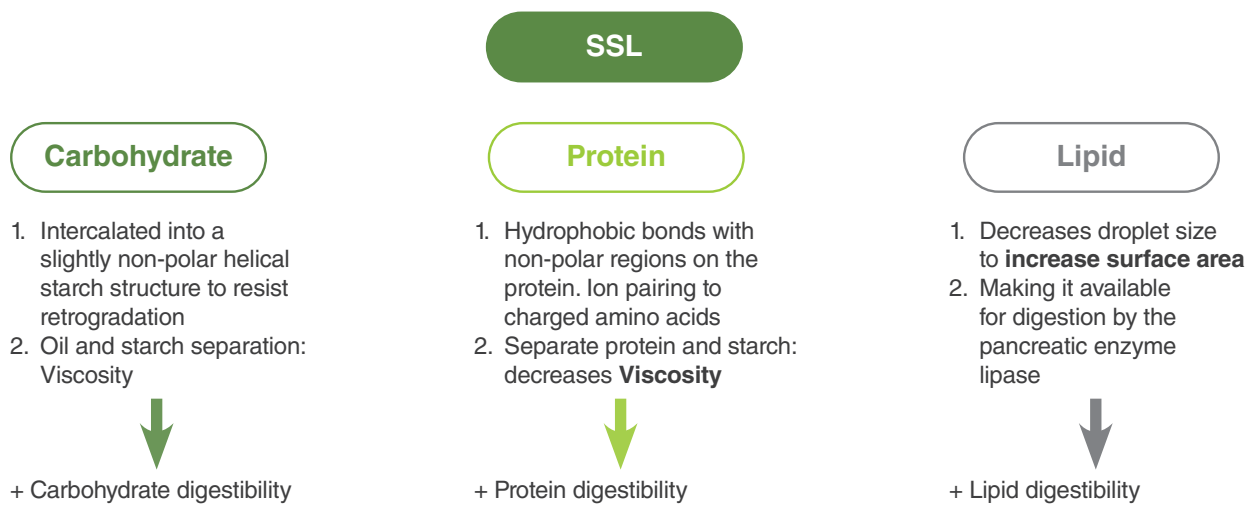
A key dimension of Lipo AMP is Sodium stearoyl-2-lactylate (SSL)

Sodium stearoyl-2-lactylate (SSL) is a combination of sodium salt and stearic acid with a lactic acid dimer. This ingredient is widely used as an emulsifier in the baking industry. This versatile, plant-derived ingredient has a white or yellowish hue, is brittle and solid, with a characteristic odour. Chemical Formula: $C_{24}H_{43}NaO_6$



How does SSL work in diet feed?

Unlike most commercial emulsifiers, SSL interacts with fat, carbohydrates and protein. The functional benefit of SSL in feed is primarily to improve digestibility and therefore livestock productivity. With the addition of SSL, viscosity decreases which helps with increasing protein, fat and dry matter digestibility. In addition to this, SSL also contains a key function which enables resistance to retrogradation.



Reducing feed costs by 2-4% in finishing pigs and broilers

Two broiler trials were conducted in 2020 and 2021 at the Bangkok Animal Research Center (BARC). The experiment was designed to research growth

performance when Lipo AMP was added to feed. The results are shown in the table below.

Table Bangkok Animal Research Center (Thailand)

	Lipo AMP 2020 Trial 1			Lipo AMP 2021 Trial 2				
Breed line	Cobb 500 (280 birds, 6 replications)			Ross 308 (384 birds, 6 replications)				
Main feedstuffs	Corn, soybean meal, palm oil, rice bran			Corn, soybean meal, soy oil, wheat bran				
Experimental Design	Phase	PC	NC +Lipo AMP 0.05%	Phase	PC	PC +Lipo AMP 0.05%	NC +Lipo AMP 0.05%	
		ME kcal/kg				ME kcal/kg		
	0-10 day	3000	2900	2900	0-10 day	3000	2900	2900
	11-21 day	3100	3000	3000	11-21 day	3100	3100	3000
21-35 day	3200	3100	3100	21-35 day	3200	3200	3100	
Main result								
Days	35 days			35 days				
Treatment	PC	NC	NC+ Lipo AMP	PC	PC+ Lipo AMP	NC	NC+ Lipo AMP	
Final weight (kg)	2.64	2.65	2.67	2.71	2.73	2.71	2.74	
Feed Intake (kg)	3.89	3.96	3.96	3.73	3.70	3.78	3.75	
FCR	1.500 ^b	1.522 ^a	1.507 ^b	1.401 ^{ab}	1.374 ^b	1.415 ^a	1.389 ^b	

Broiler outcomes

Supplementing 0.05% Lipo AMP to a low-energy diet (NC; reduced by 100 kcal/kg) resulted similar growth performance when compared with animals fed the control diet (PC) which was developed using NRC requirements. The PC with Lipo AMP added had improved growth performance in the 30 day period. Economic analysis demonstrates a reduction in feed cost by 2-3% in the NC + Lipo AMP diets.

Finishing pig outcomes

A trial was conducted assessing the addition of Lipo AMP to finishing pig diets, this study was conducted in

Taiwan, on a commercial pig farm. Treatments included a NRC finishing pig diet (NC) is to replace 1% soy oil and 1.5% soybean meal with 2.5% corn and a NC diet with 0.1% Lipo AMP. The nutrient composition was reduced by 50 kcal/kg and 0.5% CP in the NC diet. The trial was performed on pigs from 50kg to approximately 120kg.

Growth performance between PC and NC + Lipo AMP was similar, therefore, significant reductions in feed costs can be made through the addition of Lipo AMP to lower energy finisher pig diets. Economic analysis demonstrates a reduction in feed cost by 3-4%.

	Initial weight	Final weight	ADG kg/d	ADFI kg/d	FCR
PC	50.12	119.21	0.99	3.11	3.15
NC	50.16	117.61	0.96	3.15	3.27
NC + Lipo AMP	50.20	120.15	1.00	3.10	3.10

Conclusion

Lipo AMP is a multi-dimensional emulsifier that can be applied to all feedstuff. It is heat-stable and was created with the intention of easy handling. Lipo AMP optimises

the utilisation of feed to enhance farm profitability, allowing for improved business sustainability.



APPLICATIONS

- Used in feed additives in the production of complete diets



PACKAGING

- 25kg (55 lb) PP woven laminated paper bag.



FEEDING RECOMMENDATION

- An inclusion rate of 0.05-0.1% - in completed feed to enhance growth performance of livestock.

FOR BROILER AND LAYER

- Low-energy diet (reduce ME 100 kcal/kg, all period), inclusion rate of 0.05% in completed feed.

FOR FINISHING PIG

- (50-100 kg) low-energy diet (reduce ME 50 kcal/kg and 0.5 crude protein), inclusion rate of 0.1% in completed feed.



KEY BENEFITS

- Reduced feed costs to maximize farm profitability.
- Improved nutrient digestibility resulting in reduced nitrogen output.
- Increased cost savings on electricity and energy usage.
- Heat stable & easy handling which improves pellet quality, firmness and durability.
- Improved gelatinisation and resistance to retrogradation.



STORAGE

- Store in a cool and dry place, keep away from direct exposure to sunlight and heat. 12 months shelf life.

Disclaimer: The information and recommendations contained herein are to the best of our knowledge reliable. However, nothing herein is to be construed as a warranty of representation in respect of safety in use, suitability, efficacy or otherwise including freedom from patent infringement. Users should conduct their own tests to determine the suitability of our product for their own specific purposes and the legal status for their intended use of the product.

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