The Key Role of Essential Amino Acids in Complete Nutrition of Poultry.

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President



10 Countries in the World Produce Feed-grade Amino Acids



Amino Acids: Converting Carbohydrates into Proteins Through Fermentation industry

Million MT in 18/19



China to go for low protein diets

China's Low-Soy Fig Dict and the Impact on Soybean Use

19 Sep 2018 Source: Routers

19 Sep - China's agriculture industry and government are aiming to put the nation's vest pig herd on a low-seymeal dist to reduce the country's relance on U.S. soybean imports, a move that would send shudders across the U.S. farmbelt and beyond.

China's typical food recipe contains about 20 percent soymeal and 70 to 75 percent com.

That's a higher soymeal ratio than pig farmers use in the United States, where farmers have out the ratio of soymeal over time as other ingredients such as distiller's dried grains, a byproduct of making othanol and synthetic amino acids have become more available and dreaper.

European farmers also useless soymeal. In Gormany, protein accounts for about 20 to 26 percent feed meal content, but farmers use a wider variety of meals, including repeaced and sunflower meal.

Sclow is a table that shows the varying impact of outling seymeal rations in China's pighord on scybean use using 20 percent as the current standard.

The calculations are based on industry standards that pigs typically eat about 300-360 kilograms offeed to grow to 110-120 kg, which is the weight acceptable for market and an annual slaughter rate in China of 660 million pigs.

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Chinese producers: Large Corn Processors









Approx. 1.2 million tons of world's consumption of lysine

= saves approx. 14 million ha of arable land

(roughly a half of soybean land in the US or twice of arable land for overall agricultural products in Japan)

of corn production

Natural Resources



+70% Demand Animal Proteins





United Nations





Feed Additives



New products

On Feed ingredients/Nutrition

Formulation Flexibility

Feed Ingredients Diversity

Alleviate Deficiencies

Improve Digestibility

Balanced Diets



On Animals





Improve Feed Digestion

Improve Feed Conversion Ratio

Gut Health

Reduce Water Usage

Optimize Metabolism

Improve Animal Products Quality

At The Farm

Improve Farm Environment

ex: Ammonia, odors, reduce emissions

Reduction of Water Utilization

Precision Feeding Perspectives





On the Planet

Reduce Livestock Emissions

N, P, CO2, CH4, N2O

Reduction of Green House Gases Emissions Improve Water Quality Reduce Eutrophication Reduce Acidification

AMINO ACIDS

Reducing dietary Crude Protein and Using feed grade amino acids for sustainability



 Reduce FPD by improving litter quality
Improve gut health status



Reduce SBM inclusion Reduce feed cost and price volatility Improve breast meat yield and quality



 Reduce N excretion
Reduce NH₃ volatilization
Reduce the impact on the climate change



 \rightarrow Formulating low CP diets for animals allows to improve

overall sustainability of animal productions



O ANIMAL NUTRITION FUROP



AJINOMOTO ANIMAL NUTRITION EUROPE

Amino Acids are Key Strategic Ingredients for Animal Nutrition





One kg Lys + Corn replaces X kg SBM



Precision Nutrition for Feed formulation AA requirement expressed as %of Lys Accurate feedstuffs AA composition



AA Co-limitations Contextual Nutrition/animal conditions More than building blocks of protein



Feeding Cost + Animal Health (diarrhea)

+ Lower N-emissions

LCA / Environment AB-free / Welfare / Gut Health

Dietary Crude Protein Reduction in Broiler Diets with AAs



before Arginine and Isoleucine



SD Valine requirement in broilers



(Mack et al 1999)

Response :

- Varies with other BCAA ?
- Varles due to endogenous losses ?
- Varies due to Thr / Gly interactions ?





VALINE Market Fast Growth





Formulation on each AA allows to save feed costs,

- 2) to reduce the impact on the environment,
- 3) to improve health status of animals

2 As soon as amino acids are controlled, performance are not affected by dietary crude protein reduction

3 It is possible to reduce dietary CP in broilers (-1 to -2 points), it varies with the Lys level

Ideal amino acids profiles in growing pigs and broilers. *SID : Standardized Ileal Digestibility, SD: Standardized Digestible. Based on Gloaguen et al. (2014), van Milgen et al. (2012, 2013), Mack et al. (1999), Lambert et al. (2015) and Ajinomoto Eurolysine works (2011, 2013, 2015).

			Broilers
			0-44 days
	SD*		
	Thr:Lys	%	67
	Trp:Lys	%	17
	Met+Cys:Ly s	%	75
	Val:Lys	%	80
	lle:Lys	%	67
	Leu:lys	%	105
	Phe+Tyr:Lys	%	105
	His:Lys	%	36
	Arg:Lys	%	105

Latest development in lysine market



≥ 2.5 million tons World demand +6% in 2018

- Over-supply due to over-capacity
- 50% produced in China
- Extreme low prices / Producers at loss

LYSINE PRODUCTION (FY14 → FY18)





2014-2018 by region



Latest development in threonine market



Demand

 \geq 0.6 million tons demand Demand Growth 2018 = 9%

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Market controlled by 3 Chinese manufacturers /90% of world output.

Extreme low prices / Producers at loss

THREONINE PRODUCTION: Dominated by China





2014-2018 by region



SPASSIBA!!!

