AminoShure®-XL
Precision Release Lysine

balchem

AminoShure®-XL Research Highlights

AminoShure®-XL

Precision Release Lysine

AminoShure®-XL *Precision Release Lysine* is the latest advancement in rumen-protected lysine. Utilizing Balchem's revolutionary X-technology, AminoShure-XL contains approximately 35% more metabolizable lysine than the leading competitor and is designed to consistently, reliably, and economically meet the amino acid requirements of lactating dairy cattle, giving it a competitive edge over blood meal and other lysine sources.

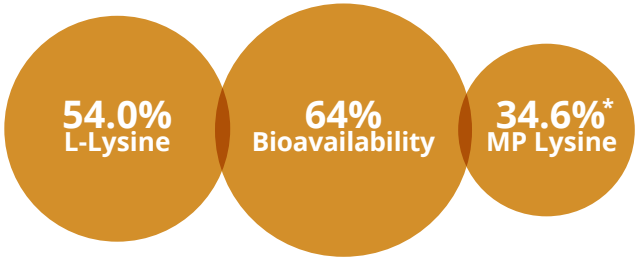
Accurately estimating the bioavailability of rumen-protected amino acids is crucial, as it significantly impacts the nutrient's effectiveness in the animal. *In vivo* stable isotope approaches have emerged as the preferred method for assessing the bioavailability of rumen-protected nutrients across multiple encapsulation technologies.

Recent research at Virginia Tech utilized the stable isotope method to determine the bioavailability of AminoShure-XL, a new rumen-protected lysine product. Studies were also conducted at the University of Delaware, Virginia Tech, and the University of Tennessee to measure the impact of AminoShure-XL on milk and component production.

Fernandes et al., 2024 – Virginia Tech *In Vivo* Stable Isotope Bioavailability Study

AminoShure-XL was determined to have:

- 64% bioavailability
- 34.6% MP lysine
- 35% more metabolizable lysine than claimed by the leading competitor

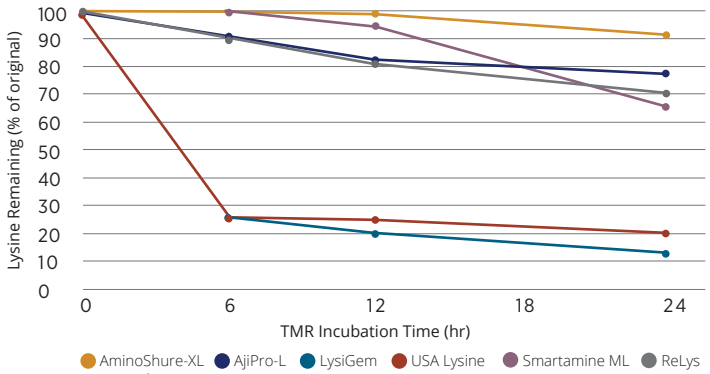


AminoShure-XL: Stable Isotope method, Fernandes et al., 2024

Estes et al., 2024 – Virginia Tech TMR Stability Study for RP lysine Products

- AminoShure-XL was the most stable product tested, retaining 100% of its initial lysine content through six hours and 91% through 24 hours
- AjiPro-L was the next most stable, but it lost 10% of its lysine content within the first six hours and lost 22% through 24 hours
- Smartamine ML remained relatively stable through 12 hours, but deteriorated rapidly after that, retaining only 65% its lysine content after 24 hours
- LysiGem and USA Lysine lost the majority (75%) of their lysine content after just six hours in the TMR

Figure 1 TMR stability of RP lysine products

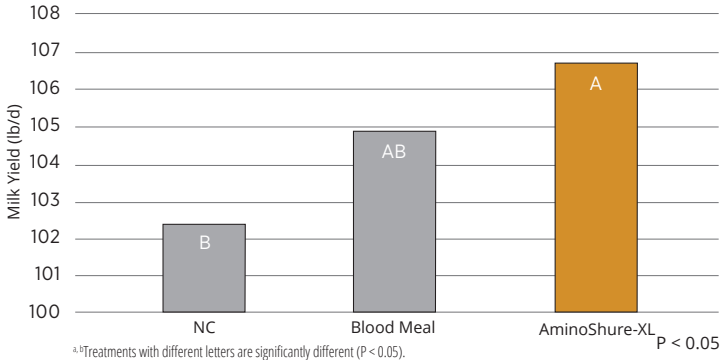


Estes et al., 2024

Barnard et al., 2016
University of Delaware Production Study

- Cows fed AminoShure-XL produced 4.3 lbs (1.95 kg) more milk per day compared to those on the control diet (P < 0.05)
- Cows fed AminoShure-XL produced 1.8 lbs (0.83 kg) more milk per day, numerically, compared to those supplemented with blood meal

Figure 2 Effects of supplemental RP lysine on milk yield in lactating dairy cows at the University of Delaware

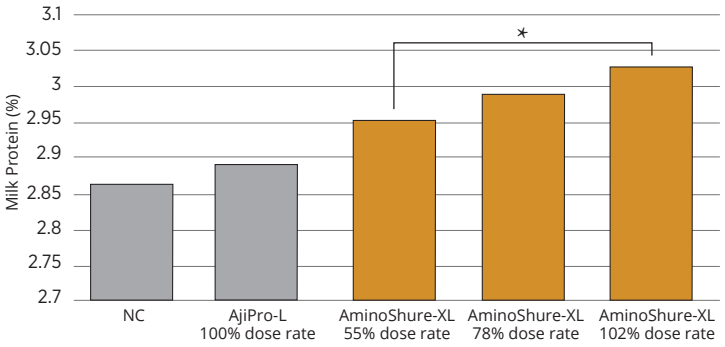


[a,b]Treatments with different letters are significantly different (P < 0.05).
[1]NC = Negative control diet; Blood Meal = NC supplemented with blood meal; AminoShure-XL = NC supplemented with AminoShure-XL.
Barnard et al., 2016

Fleming et al., 2019
Virginia Tech Production Study

- Cows fed increasing levels of AminoShure-XL had a significant (P = 0.025) linear increase in milk protein percent
- Cows fed a comparable dose of AminoShure-XL numerically produced a higher % of milk protein than AjiPro-L
- Cows fed a comparable dose of AminoShure-XL numerically produced 0.14 lbs (60 g) more milk protein per day compared to those fed AjiPro-L

Figure 3 Effects of supplemental RP lysine on milk protein concentration in lactating dairy cows at Virginia Tech

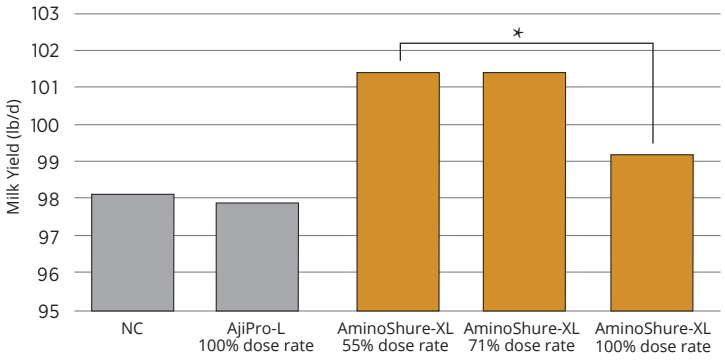


*Significant linear dose response (P = 0.025). For every 1 g of lysine fed from AminoShure-XL = 0.002% increase in milk protein (%).
[1]NC = Negative control diet; AjiPro-L = NC supplemented with AjiPro-L; AminoShure-XL 55% dose rate = NC supplemented with AminoShure-XL at 55% of the lysine content of AjiPro-L; AminoShure-XL 78% dose rate = NC supplemented with AminoShure-XL at 78% of the lysine content of AjiPro-L; AminoShure-XL 102% dose rate = NC supplemented with AminoShure-XL at 102% of the lysine content of AjiPro-L.
Fleming et al., 2019

Bailey et al., 2019
University of Tennessee Production Study

- In this experiment, an optimum dose of 17.9 g/d of lysine supplied from AminoShure-XL resulted in a 3.3 lb/d (1.51 kg/d) increase in milk yield over the control
- There was no statistical increase in milk yield with the addition of AjiPro-L to the control diet

Figure 4 Effects of supplemental RP lysine on milk yield in lactating dairy cows at the University of Tennessee



*Significant linear dose response (P = 0.03). In this experimental condition, an optimum dose of 17.9 g/d of lysine supplied from AminoShure-XL promoted an overall benefit of 3.3 lb/d (1.51 kg/d).
[1]NC = Negative control diet; AjiPro-L = NC supplemented with AjiPro-L; AminoShure-XL 55% dose rate = NC supplemented with AminoShure-XL at 71% of the lysine content of AjiPro-L; AminoShure-XL 100% dose rate = NC supplemented with AminoShure-XL at 100% of the lysine content of AjiPro-L.
Bailey et al., 2019

Summary

AminoShure®-XL represents over a decade of dedicated research and development designed to create a superior rumen-protected lysine product with exceptional bioavailability. Using the *in vivo* stable isotope approach, AminoShure-XL was determined to have an impressive 64% bioavailability and an exceptional 34.6% MP lysine value. Production studies at three different universities have further established AminoShure-XL as a consistent, reliable and cost-effective source of MP lysine.

Download the complete research summary by snapping the QR code.

AminoShure®-XL
Precision Release Lysine

THIS IS ANIMAL NUTRITION & HEALTH

RUMINANT

ReaShure®
Precision Release Choline

AminoShure®-XM
Precision Release Methionine

AminoShure®-XL
Precision Release Lysine

NiaShure™
Precision Release Niacin

NitroShure™
Precision Release Nitrogen

VitaShure®-C
Precision Release Vitamin C

KeyShure®
Chelated Minerals

KeyShure® Plus
Chelated Minerals

MONOGASTRIC

PuraChol
Choline Chloride

KeyShure®
Chelated Minerals

KeyShure® Plus
Chelated Minerals

COMPANION ANIMALS

OptiMSM®

PurforMSM®

PetShure®
TURNING IMAGINATION INTO REALITY

POROSITY & TEXTURE MANAGEMENT

pH CONTROL SYSTEMS

STRUCTURING & FORMING TECHNOLOGIES

CHOLINE

SENSORY SYSTEMS

Balchem Animal Nutrition and Health is the global leader in choline production, chelation and encapsulation technology. With a growing portfolio of nutrition products and a dedication to innovation and industry sustainability, Balchem is leading the charge to meet the nutritional needs of ruminants, monogastrics and companion animals.

WE ARE:

Real People

With a passion for animal nutrition, we are intense advocates for our customers and the animals they feed. You can count on us to provide honest, candid advice to address your toughest challenges.

Real Science

Balchem delivers proven science backed by years of success. Our products are some of the most extensively researched in the industry, further supported by documented, on-farm results.

Real Results

In the end, it all comes down to results. We deliver real results you can count on, results that exceed your expectations and deliver value to your customers and your bottom line.

balchem®

Balchem ANH – Americas Region
5 Paragon Drive
Montvale, NJ 07645

Phone 845-326-5608
E-mail anh.marketing@balchem.com
Website Balchem.com