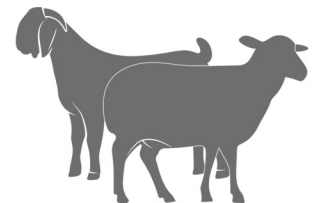


A^obiotics[®] MAFERM[®]

For Ruminants and Small Ruminants



WHAT IS RUMEN HEALTH?

The rumen is home to billions of microbes that are essential for ruminants to digest forages and feed. Maintaining a healthy rumen microbiome results in:

- Optimized feed digestibility
- Maximized nutrient absorption
- Efficient conversion of feed into energy and protein
- Keeping animals productive in the herd

WHAT THREATENS RUMEN HEALTH?

Common threats to rumen health include:

- Stress
- Diet transitions
- Illness and antibiotic use
- Improper feeding or intake (too much grain, moldy feed, etc.)
- Transportation

Threats can result in:

- Acidosis
- Lack of appetite
- Diarrhea/scours
- Compromised performance

WHAT

ARE SIGNS OF RUMEN HEALTH?

- Steady appetite
- Consistent and solid manure, clear of undigested feed
- Ability to maintain body condition
- Optimal performance

WHAT

ARE PREBIOTICS?

A prebiotic is a selectively fermented ingredient that promotes the growth and/or activity of the beneficial microbes that contribute to the wellbeing of the animal. Unlike probiotics, prebiotics are non-living, but are selectively utilized by rumen microbes to confer a benefit to the animal.

Prebiotics have several mode of actions, including:

- Supporting growth of beneficial microbes
- Provides more surface area for beneficial microbes to work
- Creates natural enzymatic activity



WHAT IS AO-BIOTICS® AMAFERM®?

AO-Biotics is a line of fermentation products derived from BioZyme's innovative fermentation of *Aspergillus oryzae* (AO) that promote resilience.

AO-Biotics Amaferm is a prebiotic research-proven to enhance digestibility.

HOW IT WORKS...

MORE FUNGAL GROWTH

4X INCREASE
IN RUMEN FUNGAL GROWTH CREATING MORE SURFACE AREA FOR DIGESTION

Study published in the Journal of Applied Microbiology (Chang et al., 1999)

MORE MICROBIAL ENZYMES

37% INCREASE
IN CELLULASE*

162% INCREASE
IN BETA-GLUCOSIDASE*

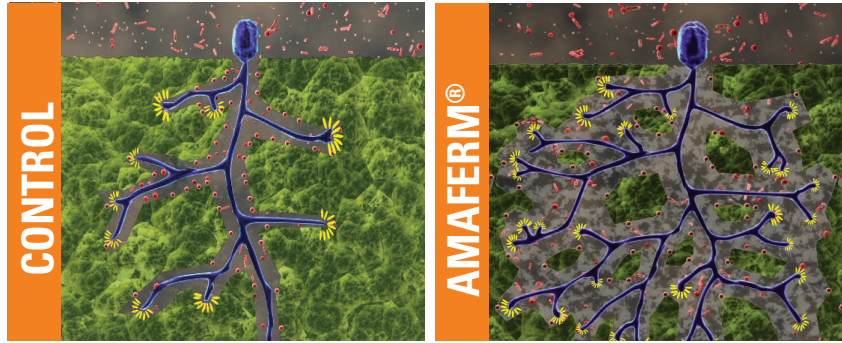
306% INCREASE
IN AMYLASE*

*Study published in Applied Microbiology and Biotechnology (Schmidt et al., 2004)

MORE BACTERIA GROWTH

79% INCREASE
IN TOTAL BACTERIA*

*Study published in the Journal of Agricultural Science (Frumholtz et al., 1989)



This illustration shows the branching of fungi (blue) to assist in the breakdown of the forage/fiber (green). The increase in fungal branching allows for more attachment sites (red) for the good bacteria to digest the provided nutrients.

Resulting In

MORE INTAKE

3% INCREASE IN DRY MATTER INTAKE



Summary of 4 published studies.

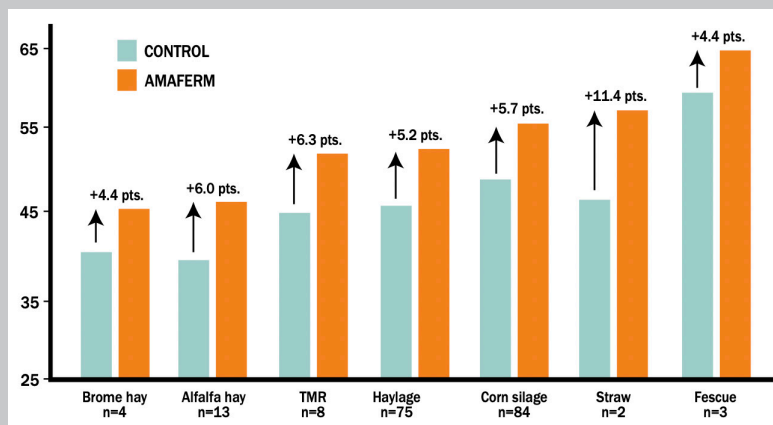
MORE DIGESTIBILITY

17% INCREASE IN NDFD¹



10% INCREASE IN PROTEIN DIGESTIBILITY

Gomez-Alarcon, R.A., 1991.



1. Summary of 8 published research studies: Nocek, J., 2011., Nocek, J., 2009., Chen, C.R., 2004., Varel, V.H., 1993., Beharka, A.A. and T.G. Nagaraja., 1993., Westvig, R.M., 1991., Gomez-Alarcon, R.A., 1991., Gomez-Alarcon, R.A., 1990.

WHAT

TO EXPECT WITH AMAFERM®?

16%

INCREASE IN VOLATILE FATTY ACIDS (ENERGY)

EQUAL TO 1 LB. OF CORN

Summary of 4 research studies published
in the Journal of Dairy Science
or Animal Science.

31%

INCREASE IN MICROBIAL PROTEIN OR ENOUGH ADDITIONAL PROTEIN EQUAL TO FEEDING 1 LB. OF SOYBEAN MEAL OR DDGS

Summary of 2 research
studies published in the Journal
of Dairy Science.

RESULTS YOU CAN SEE



**0.25 LBS
OR 16%**

MORE ADG
ACROSS ALL
LACTATION PHASES
Summary of 5 studies



BEEF

↑ 3.8%

MORE MILK
ACROSS ALL
LACTATION PHASES

Summary of 33 research
studies published in the Journal
of Dairy Science.



↑ 4%

MORE MILK
IN EARLY LACTATION

Summary of 22 research
studies published in the Journal
of Dairy Science.



↑ 4%

MORE MILK
DURING HEAT STRESS

Summary of 16 research
studies published in the Journal of
Dairy Science.

↑ 5%

INCREASE
IN MILK EFFICIENCY

Summary of 9 research
studies published in the
Journal of Dairy Science.

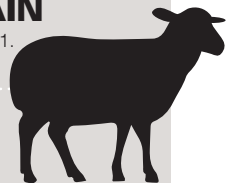


DAIRY

↑ 9%

MORE GAIN

Zerby, H.N., 2011.



↑ 5%

**MORE FEED
EFFICIENCY**

Zerby, H.N., 2011.



0.53 LBS

MORE MILK ↑

Abrahamse, S., 2012.

↑ 4%

MORE COMPONENTS

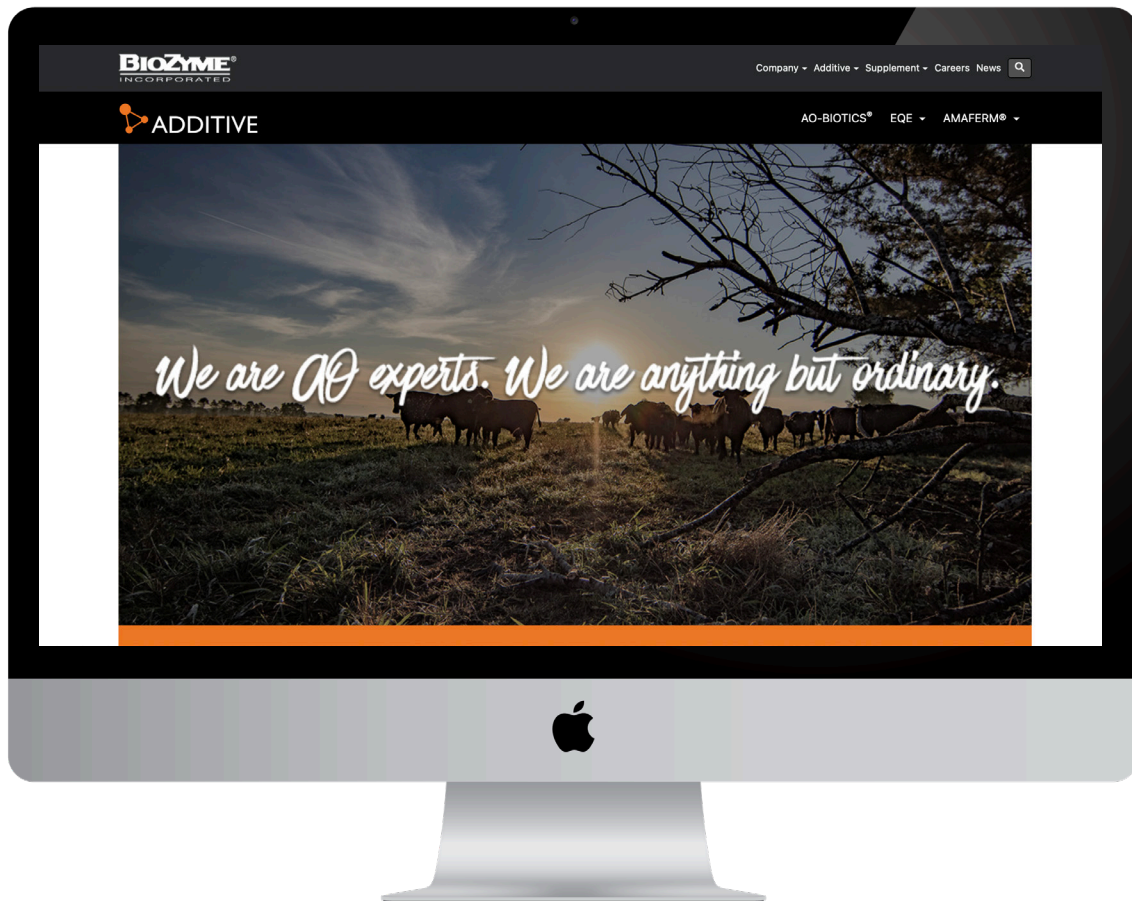
Abrahamse, S., 2012.

SHEEP/GOATS

THE DIFFERENCE • RESEARCH-BACKED

Amaferm is research proven with over 111+ published and/or presented research studies proving how it works, its internal impact and ultimately, its measure value to the animal. For more information on the research summarized below, visit the Research page on www.amaferm.com.

 x 10 + 1 =
111+



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WHAT

MAKES BIOZYME'S AO FERMENTATION PRODUCTS SPECIAL:

- Select Strain
- Specialized Growth Media
- Controlled Growth and Unique Harvest Process
- Research
- Specifically Manufactured for Animal Nutrition

FAMIqs