

TECH TALK

Insure Your Feed

AMAFERM®

Article Provided By:

BIOZYME[®]
INCORPORATED

What if you could ensure your feed would perform in any situation, under a wide variety of largely uncontrollable circumstances? Maybe you can. Insurance is a form of risk management, primarily used to hedge against the risk of damage or loss. For feed, this could present itself in various ways: loss of gain/body condition, loss of a customer, damage to the bottom line, etc.

In order to ensure your feed performs, it is advisable to try to mitigate several potential risks. First and foremost, that the animal reliably eats the feed (good intake). Second, that the feed is adequately digested. And third, that the nutrients released during the digestive process are absorbed.

Select feed additives produced via microbial fermentation are capable of enhancing the innate ability of animals to degrade feedstuffs and are valuable tools in modern animal production. Such additives can be considered to be prebiotics or to possess prebiotic-like action. The feed additive Amaferm, manufactured by BioZyme Inc. (St. Joseph, MO) via a proprietary fermentation of *Aspergillus oryzae*, fits such a definition. Research on Amaferm[®] shows it also improves intake and absorption, making it the best available “insurance” for your feed.

In ruminants, Amaferm has been documented to improve digestibility and thereby enhance the supply of energy (Frumholtz et al., 1989; Sun et al., 2017) and metabolizable protein (Gomez-Alarcon et al., 1990) to the animal via stimulation of gut microbiota. As expected, these improvements have been linked to increases in dry matter intake and milk yield production in dairy cattle (Denigan et al., 1992; Gomez-Alarcon et al., 1991; Yu et al., 1997), as well as better feed efficiency and average daily gain (ADG) in beef cattle (Hatfield et al., 1975; Dhuyvetter, 1995; Allison et al., 1989; Gray, 2013). Across multiple research efforts, the average response to Amaferm[®] is an additional 1.8 lbs. of milk per cow per day and an additional 0.25 lbs. of ADG.

In other animals, such as horses and swine, an improvement in digestibility and VFAs has also been documented (Delahay, 1998; McDaniel, 1993; Urriola et al., 2020). Giving these non-ruminant animals the energy and nutrients they need to perform. Furthermore, mechanistic research on Amaferm[®] using intestinal tissue in Ussing chambers, which measure the rate of nutrient transport across the tissue, has shown the additive increases nutrient absorption through increasing passive transport across the intestinal wall by up to 30% (Ipharraguerre et al., 2016).

Ensure your feed performs with a proven, precise prebiotic. For more information or to explore the breadth of Amaferm[®] research, visit www.amaferm.com or talk to a BioZyme sales representative today!

References

- Allison B.C., R.L. McCraw. 1989. Efficacy of Vita-Ferm formula for stocker calves. NC State University Animal Sci Dept. Newsletter (November).
- Gray H.C., P. Beck, K. Glaubius, and B. Stewart. 2013. Effect of Rumensin and Amaferm on Performance of Heifers Fed High Roughage Mixed Diets in Dry Lot and Grazed on High Quality Forage. The Plains Nutrition Council Annual Meeting, p.128.
- Delahay. 2008. Effect of Amaferm on Digestion of an Equine Diet, Controlled Field Trial.
- Denigan M. E., J. T. Huber, G. Alhadrami, and A. Al-Dehneh. 1992. Influence of feeding varying levels of Amaferm on performance of lactating dairy cows. J. Dairy Sci. 75; 1616–1621. DOI: 10.3168/jds.S0022-0302(92)77918-1
- Dhuyvetter, D. V., J. S. Caton, K. Ringwall and G. Ottmar. 1995. Effects of Gainpro (Bambermycins) and Amaferm (*Aspergillus oryzae*) Fed to Growing Heifer Calves in North Dakota. NDSU Beef Research Report. url: <http://www.ag.ndsu.nodak.edu/dickinso/research/1995/beef95a.htm>
- Frumholtz P. P., C. J. Newbold, and R. J. Wallace. 1989. Influence of *Aspergillus oryzae* fermentation extract on the fermentation of a basal ration in the rumen simulation technique (Rusitec). J. Agri. Sci. 113; 169 – 172. DOI: 10.1017/S002185960008672X
- Gomez-Alarcon R. A., C. Dudas, and J. T. Huber. 1990. Influence of cultures of *Aspergillus oryzae* on rumen and total tract digestibility of dietary components. J. Anim. Sci. 73; 703 – 710. DOI: 10.3168/jds.S0022-0302(90)78723-1
- Gomez-Alarcon R. A., J. T. Huber, G. E. Higginbotham, F. Wiersma, D. Ammon, and B. Taylor. 1991. Influence of feeding *Aspergillus oryzae* fermentation extract on the milk yields, eating patterns, and body temperatures of lactating cows. J. Anim Sci. 69; 1733– 1740.
- Hatfield, E.E. and DL Hixon. 1975. Dietary Additive for New Feeder Cattle. University of Illinois Beef Cattle Day Proceedings.
- Ipharraguerre, I.R. 2016. Impact of an *Aspergillus oryzae*-derived prebiotic on the absorptive capacity of the intestinal mucosa. Christian-Albrechts-University Final Report.
- McDaniel, A.L., S.A. Martin, J.S. McCann and A.H. Parks. 1991. Effects of *Aspergillus oryzae* Fermentation Extract on the In-Vitro Equine Cecal Fermentation. J. Anim Sci 1993. 71:2164-2172.
- Sun H., Y. Wu, Y. Wang, C. Wang, and J. Liu. 2017. Effects of addition of *Aspergillus oryzae* culture and 2-hydroxy-4-(methylthio) butanoic acid on milk performance and rumen fermentation of dairy cows. Anim. Sci. J. 88 (4); 602 – 609. DOI: 10.1111/asj.12646
- Yu P., J. T. Huber, C. B. Theurer, K. H. Chen, L. G. Nussio, and Z. Wu. 1997. Effect of steam-flaked or steam-rolled corn with or without *Aspergillus oryzae* in the diet on performance of dairy cows fed during hot weather. J. Dairy Sci. 80; 3293 – 3297. DOI: 10.3168/jds.S0022-0302(97)76304-5
- Zhu, J., G.C. Shurson, L.K. Whitacre, I.R. Ipharraguerre, P.E. Urriola. 2021. Effects of *Aspergillus oryzae* prebiotic on dietary energy and nutrient digestibility of growing pigs. Submitted.