

REVIEW

Yerby, S.; Warren, H.; Jonsson, N.N. **Review: fungal feed additives for dairy cattle: fermented fad or filamentous fortune?** *Journal of Dairy Research* 2026, 10.1017/S0022029925101866, 1-14, doi:10.1017/S0022029925101866.

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Abstract: Fungal feed additives offer a potential avenue to enhance dairy cattle health and productivity. This narrative review examines and consolidates literature investigating the effects of products containing, or derived from, anaerobic fungi (AF), obligately aerobic filamentous fungi and yeasts. There is a sparsity of research investigating supplemental AF in cattle, but existing literature demonstrates that AF can consistently increase the digestibility of feeds. Anaerobic fungal additives are limited by their oxygen vulnerability, although characterization of the resting stage of their lifecycle would aid in the development of products which could be used on farm. The majority of research investigating aerobic fungi in dairy cattle is based upon their fermentation products. These products often enhance digestibility variables in cattle, which sometimes benefits growth and production. Inconsistent responses, which are attributed to heterogenous product composition and rumen stability, hinder the industry utility of these additives, and further research is required to define the conditions required for efficacy. A large body of research exists examining the effects of active yeast and yeast derivatives in mature cattle and calves. In-depth examination of this research is beyond the scope of this review, but substantial evidence suggests that supplementing dairy cattle with yeast can be advantageous for gut health and development, production and stress tolerance. This review highlights the pathways through which exogenous fungi can enhance dairy production, and that further research is required to define the causes of inconsistent responses from treatments. This will increase the value of fungal additives to the dairy sector.

REVIEW

M Siva, S Senthilkumar, K Rajamanickam, G Ramesh Kumar and B Deepika. **Rumen microflora and their nutritional requirements: Implications for optimizing fermentation efficiency in ruminants.** *International Journal of Advanced Biochemistry Research*. 2026;10(6):418-423, doi: 10.33545/26174693.2026.v10.i6e.8654

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Abstract: The rumen, a vast and complex fermentation chamber, hosts a remarkably diverse and dense population of microorganisms, including bacteria, protozoa, fungi, and archaea. This symbiotic microflora is essential for the ruminant animal, as it breaks down complex fibrous plant materials, which the host cannot digest, into volatile fatty acids (VFAs) - the animal's primary energy source - and microbial protein. Understanding the distinct nutritional requirements and metabolic roles of these microbial groups is paramount for optimizing rumen fermentation efficiency. This review explores the composition of the rumen ecosystem, the specific nutrient needs (energy, nitrogen, minerals, vitamins) of its key microflora, and various dietary strategies and additives employed to manipulate this microbial community. Optimizing fermentation efficiency translates into improved animal performance (growth, milk yield), enhanced feed conversion, and a reduction in environmental impact, notably the mitigation of enteric methane emissions. Continued research in this area is crucial for sustainable and productive ruminant agriculture.