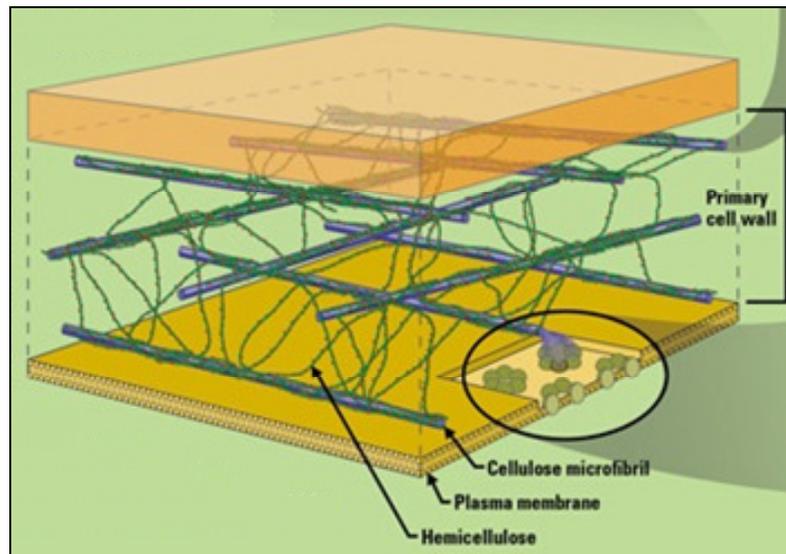


Fiberase

Hemicellulose-digesting enzymes

Fungal and bacterial organisms produce natural enzymes that digest fibrous materials that monogastric animals cannot. Hemicellulases are a key class of these enzymes, and Fiberase is an exceptional source of purified hemicellulase enzymes. Fiberase breaks down hemicellulose, which represents the largest fraction of fibrous cell walls. The diagram illustrates how hemicellulose is a network of sugar-based chains that crosslink to bind cellulose microfibrils and other nutrients together. Left intact, hemicellulose polymers reduce digestion because they create thick gels that encapsulate the otherwise digestible starches and proteins. Animals cannot digest hemicellulose or the nutrients trapped in it, so important feeding value escapes untapped.



Feedstuffs vary in hemicellulose content

The impact of Fiberase partly depends on the amount of hemicellulose in the diet. The higher the hemicellulose, the more viscous gels are present to interfere with digestion and the more benefit one would expect from Fiberase. The table below ranks common feedstuffs based on hemicellulose content. It is reasonable to expect more response in rations with high hemicellulose like wheat middlings, grass hay or cottonseed hulls than rations with corn, soy or citrus pulp.

Nature's Mill

Feedstuff	Hemicellulose
Wheat middlings	25%
Grass hay	17-22%
Cottonseed hulls	20%
Barley	14%
Legume hay	12-15%
Cottonseed meal	11%
Alfalfa meal	9%
Corn	7%
Soybean meal	4%
Citrus pulp	2%

Current high-priced commodities are pushing nutritionists to seek ingredients offering lower costs. These alternative ingredients almost always come with higher hemicellulose content, leading to reduced digestible energy and negative associative effects on the rest of the ingredients. Nature's Mill Fibrase employs the newest fermentation technologies to keep enzyme supplementation cost-effective. Its high hemicellulase activity helps improve the animal's access to fiber, boosting nutrient digestion and increasing energy production. The net result is more feeding value from both forages and grains.