



INNOVATIVE DEPENDABLE EFFECTIVE



BOVAZYME®

Our proprietary feed
enzyme additive for
dairy and grazing cattle.



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OUR PROPRIETARY FEED ENZYME ADDITIVE FOR DAIRY AND GRAZING CATTLE.

York Ag scientists designed our proprietary products **BOVAZYME®** and **BOVAZYME® ORGANIC**.

These all-natural feed enzyme additives were conceived to help ruminants digest more efficiently. **BOVAZYME** contains 7 food-grade enzymes that help break down less accessible nutrients to make them more readily available for further microbial action. Ultimately, **BOVAZYME** helps enhance microbial growth and microbial protein utilization while supporting nutrient digestion in a natural way.

The unique formulation in **BOVAZYME** is made of defined enzymes. Defined enzymes are identified and quantified, eliminating batch-to-batch variability. These defined enzymes are separated from the fermentation material after production.

Conversely, crude enzymes may not be separated from the fermentation material after production. This means that the fermentation material, yeast, and fungus (e.g. aspergillus) may remain in the final product. Therefore, typical crude enzymes lack accurate identification and quantification, causing potential batch-to-batch inconsistency.

Fiber and cellulose are difficult for beef and dairy cattle to digest. They can have difficulty digesting other nutrients as well. The enzymes in **BOVAZYME** make protein and fat digestion more efficient, and help facilitate the breakdown of less accessible carbohydrates, resulting in more profitable output with the same input.

BOVAZYME®

WHAT DOES BOVAZYME DO?

- Targets Fiber and Cellulose breakdown
- Makes Protein and Fat Digestion more efficient
- Generates more profitable output with the same input





WHY ARE ENZYMES BENEFICIAL?

ENZYMES ARE PROTEINS THAT FACILITATE CHEMICAL REACTIONS IN BIOLOGICAL SYSTEMS, BREAKING DOWN KEY NUTRIENTS TO AID IN DIGESTION.

However, not all enzymes are created equal.

BOVAZYME is made of 7 different **DEFINED** enzymes blended into a single package with a Guaranteed Analysis that assures consistency and quality from batch-to-batch:

- **Alpha Amylase** converts starch to simple sugars
- **Cellulase** converts cell wall fibers to simple sugars
- **Hemicellulase** converts cell wall fibers to simple sugars
- **Protease** converts proteins into amino acids and dipeptides
- **Lipase** converts fats into free fatty acids and glycerol
- **Pectinase** converts complex cell walls (pectins) to simple sugars
- **Beta-Glucanase** converts specific cell walls in wheat and barley to simple sugars

DEFINED vs. CRUDE ENZYMES

DEFINED ENZYMES (BOVAZYME)

- Designed to make less digestible food and fiber more easily available to the animal
- Purified enzyme extract allows addition of exact quantity needed to accomplish nutritional goal and reduce waste
- Grown under carefully controlled fermentation to ensure no pathogens or “wild molds” are also growing
- Each enzyme is identified and quantified
- Consistent performance from batch-to-batch
- Enzymes in **BOVAZYME** are from human-grade suppliers

CRUDE ENZYMES

- No quantification or guaranteed analysis; thus, uncertainty of actual enzyme content
- No consistency from batch-to-batch
- *Aspergillus* organism (mold) may be present
- Less stringent quality standards



BOVAZYME® **ORGANIC**

BOVAZYME ORGANIC offers the same high-quality, defined enzymes found in **BOVAZYME**, yet it utilizes an organic carrier to meet strict requirements in organic animal feed manufacturing and organic animal operation.

BRAND EVOLUTION

YORK AG HAS COMMERCIALIZED **BOVAZYME** IN THE ANIMAL NUTRITION INDUSTRY FOR MORE THAN TWO DECADES.

Our brand identity may evolve but our proprietary formulation remains exactly the same as we originally conceived it.

Our original **BOVAZYME** logo can still be found in feed labels from multiple feed manufacturers, so we share the new brand identity to easily identify our proprietary feed enzyme additive on current and new feed labels.



DIGESTIVE AID FOR BEEF AND DAIRY CATTLE

1. Original **BOVAZYME** logo



2. New **BOVAZYME** logo created in 2020

BOVAZYME®

3. New SIMPLIFIED **BOVAZYME** logo created in 2020

PACKAGING OPTIONS

BOVAZYME® and **BOVAZYME**® ORGANIC are available in 50 lb. bags or boxes in concentrate form that can be used in Total Mixed Rations (TMRs), liquid feeds, loose minerals, and feed tubs.

Recommended feed rate: 2.5 grams per head per day.

BOVAZYME FIELD TRIALS

BOVAZYME TRIAL 1

A five year grassroots grazing project to obtain reduction of hay feeding, increase breeding rates, and improve stocking rates comparing a Traditional Management System (TMS)-Continuous Grazing, and an Advanced Management System (AMS)-Rotational Grazing, was carried out by Oklahoma State University.

- Field observations conducted from 2014 to 2019
- TMS = 8 head/year on 22 acres (stocking rate)
- AMS = 12 head/year on 18 acres (stocking rate)
- AMS included **BOVAZYME** in mineral additive

RESULTS

- 5 year average showed that AMS provided a system advantage in comparison to TMS
- 5 year average showed 5% reduction in hay feed consumption, 41% increase in stocking rate, and 1% increase in pregnancy rate.
- In first year, AMS showed 36% reduction in hay consumption and 28% increase in stocking rate compared to TMS.
- Overall cost in an enterprise budget showed an advantage to AMS because the cost can be spread over more animals and improved grazing efficiencies.

Study led by Brian Freking, Area Livestock Specialist at Oklahoma State University, West Watkins Agriculture Research and Extension Center in Lane, OK.

BOVAZYME TRIAL 2

A fermenter trial conducted at West Virginia University supports field trial observations. A normal lactating dairy ration, balanced for 80 pounds of production, was run in triplicate vs. controls, using a 2.5 gram per head per day equivalent of **BOVAZYME**.

- Field observations were conducted on over 20,000 cows from over 150 herds.
- Positive profitability on 100% of herds
- Positive milk and/or components in over 70% of herds.

RESULTS

- Consistent Dry Matter Intake (DMI)
- More consistent rumen pH
- Improved manure consistency
- Increased microbial growth
- Increased microbial nitrogen
- 16.2 % improvement in ADF digestion
- 14.6% improvement in NDF digestion
- 12.86% improvement in protein digestion

Fermented trial conducted by T.K. Miller-Webster and W.H. Hoover, Rumen Fermentation Profiling Laboratory, West Virginia University.





BOVAZYME TRIAL 3

A field study in Bainbridge, GA, utilized **BOVAZYME** as an all-natural feed additive to aid in digestion.

- Sample size: 40 head
- Prior year used 6.3 oz/day of Brand X Mineral per pair
- Next year used 2.94 oz/day Brand Y Mineral with **BOVAZYME** per pair

RESULTS

- Average increases of ~70 lbs. for both steers and heifers
- Steers – 794 lbs. to 864 lbs. average weight
- Heifers – 704 lbs. to 773 lbs. average weight

BOVAZYME TRIAL 4

A field study in Putnam, OK, utilized **BOVAZYME** as an all-natural feed additive to aid in digestion.

- Sample size: 143 head
- 88 days on pasture with supplemental Mineral with **BOVAZYME** (1.27 oz/day intake)

RESULTS

- Starting weight: 620 lbs.
- Ending weight: 856 lbs.
- Average daily gain increased from 1.55 to 2.68 lbs. per day vs. prior year
- Average increase of ~120 lbs. vs. prior year

An All-Natural Feed Additive to Aid in Digestion

BOVAZYME TESTIMONIALS

"I run 1000 head of cattle on wheat pasture. Using the grazing mineral with BOVAZYME last year, I can say – we never had to pull one animal for bloat."

Cattle Company
Preston, Georgia

"I've used BOVAZYME on my wheat pasture cattle for the past two winters, and never had to pull one animal for bloat. One thing I always look for is a healthy hair coat. I've never had better looking animals, in addition to no bloat problems."

Cattle Company
Mobeetie, Texas

"My herds saw significant responses in milk and components. I have never seen any other feed additive produce the consistent response that I have seen with BOVAZYME."

Dairy Nutrition Consultant
Robeson, PA

WHO WE ARE

York Ag is a dynamic supplier of holistic ingredient solutions focused on supporting animal well-being.

WHY WE EXIST

York Ag lives to bring innovative, dependable, and effective feed ingredient solutions to feed manufacturers, livestock consultants, and animal producers.

HOW WE OPERATE

York Ag uses determination, curiosity, and a collaborative approach to recommend and supply functional products that deliver both performance and profitability in an increasingly transparent marketplace.

OUR HOPE

York Ag seeks to enrich the lives of animals, producers, and consumers.

Everyone Deserves
a Nutritious Meal®



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www.yorkag.com

York Ag creates holistic ingredient solutions that optimize animal well-being. BOVAZYME® and BOVAZYME® ORGANIC are registered trademarks of York Ag Products, Inc.

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