Bioluence®

Bioluence Products in Dairy Industry

Dairy Industry

Engineering Nature for a Brighter Future

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Bonda Faravar Company, operating under the brand name Bioluence, stands as the sole enzyme manufacturer in Iran and the largest production facility of its kind in the Middle East. Additionally, Bioluence is the leading probiotics manufacturer in the region, boasting an expansive production area of 8,000 square meters. This space is divided into two dedicated units for enzyme and probiotics production, complemented by 1,700 square meters of state-of-the-art clean rooms located in Safadasht Industrial Town.

Supported by a dedicated research and development team, strategic collaborations with experienced domestic and international consultants, and a workforce of over 300 highly skilled professionals across various disciplines, Bioluence has successfully delivered high-quality enzyme and probiotics products to meet the diverse needs of multiple industries; including but not limited to: detergents, food and dairy, meat processing, flour and bakery, feed for livestock and poultry, alcohol and starch production, as well as leather and textiles.

ISO 9001 ISO 14001 ISO 22000 ISO 45001

GMP HACCP FSSC 100% HALAL FOOD CERTIFIED HALAL CERTIFIED KOSHER

Reduction of Preservatives and Dry Matter Used while Increasing Quality and Preserving the Nutritional Value in Yogurt

The vital role of milk in human body and health is undeniable, as it contains valuable nutrients such as calcium and protein. Yogurt is produced by milk protein coagulation.

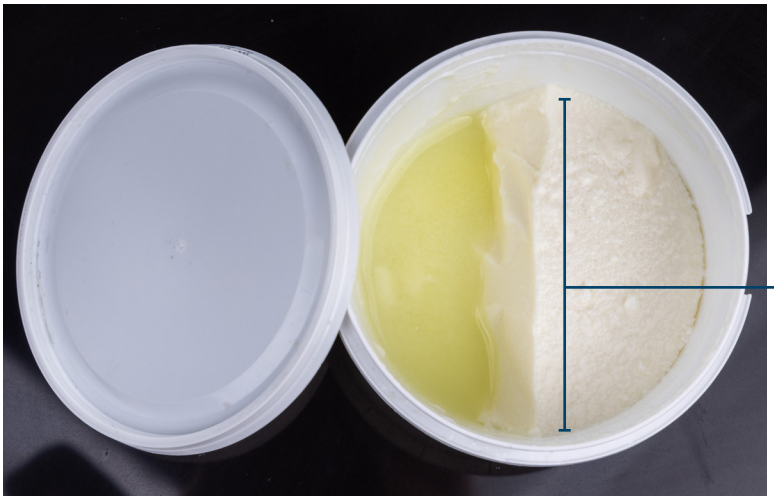
High-fat dairy products are more popular in terms of taste and appearance. However, with the growing demand for low-calorie, low-fat dairy products, efforts to achieve a desirable texture in low-fat products have increased.

The growing demand for low-calorie and low-fat dairy products.

Increasing efforts to achieve a low-fat product with a desirable texture

Reducing fat in yogurt changes its rheological, chemical, and sensory characteristics, such as:

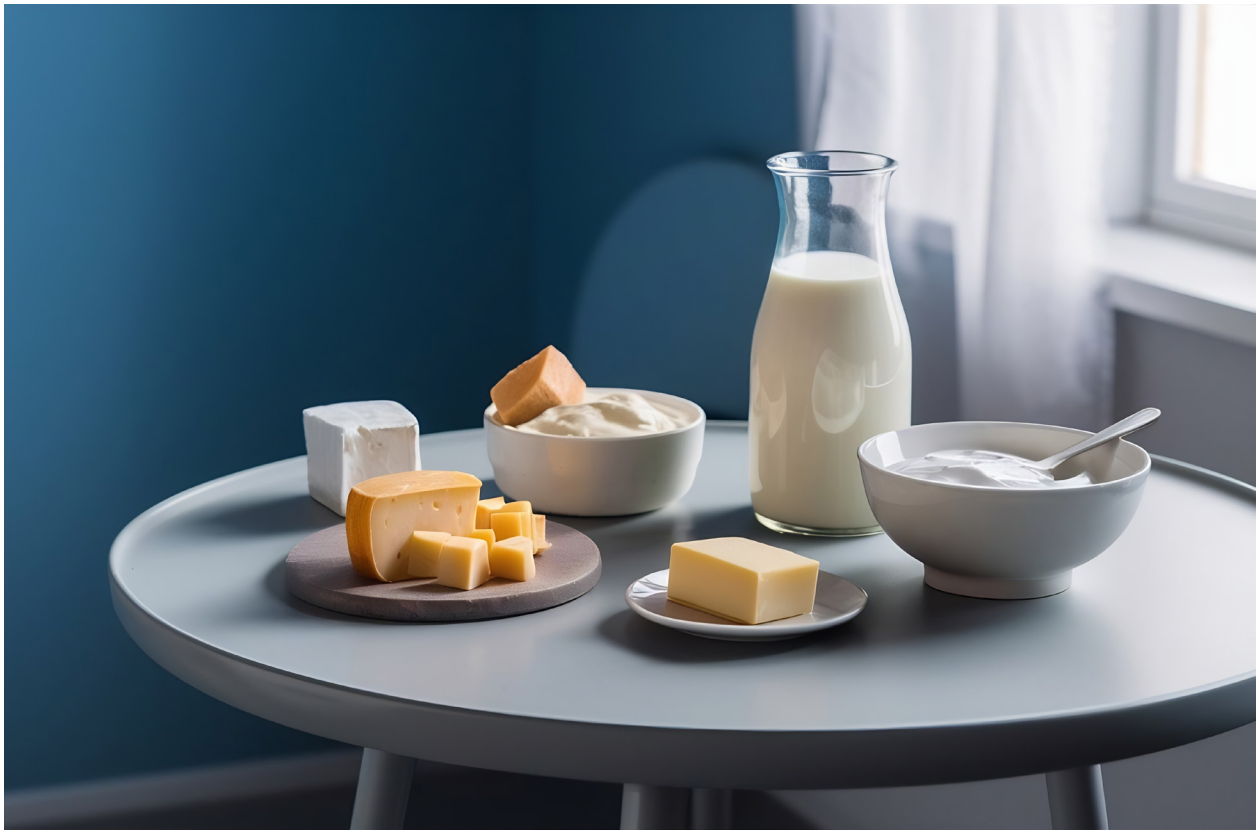
- Taste
- Appearance (color and syneresis)
- Mouthfeel texture
- Non-mouthfeel texture (scoopability and stirring)



- Changes in taste
- Changes in appearance (color and syneresis)
- Changes in mouthfeel texture
- Changes in non-mouthfeel texture (scoopability and stirring)

Solutions for a More Cohesive Texture

✗ Adding non-fat solids (milk powder)	Not cost-effective
✗ Increasing the dosage of stabilizers	Creating a gritty texture in the product
✗ Using gums	Can only be used in stirred yogurt in a standard dosage
✓ Using the Transglutaminase enzyme	*Cost-effective *Rich texture in low-fat yogurt



Transglutaminase Mechanism

Lysin-Glutamine Creates a Networked and Strong Structure in Yogurt Texture.

BONTAMIN DY Features

- Microbial Transglutaminase enzyme
- Formation of Cross-Links between Proteins
- Reduction in the Availability of Amino Acids
- Creation of a Stable Network Structure within Casein

BONTAMIN DY Benefits

- Optimal use and no need to add calcium ions to initiate activity
- Texture improvement (scoopability and stirring)
- Reduced production costs by lowering the volume of used dry matter
- Decreased syneresis (water separation) and increased consumer appeal
- Reduced surface water in set (molded) yogurts
- Extended product shelf life by preventing increased acidity and sourness
- Increased shear stress resistance and prevention of texture changes due to handling and transport (especially for exports)
- Enhanced perception of creaminess without increasing fat content in high-fat yogurts

How to Use BONTAMIN DY in Yogurt

01 Heat the milk to 42°C

02 Add milk powder to the milk

03 Homogenization

04 Pasteurization

05 Cool to 48°C

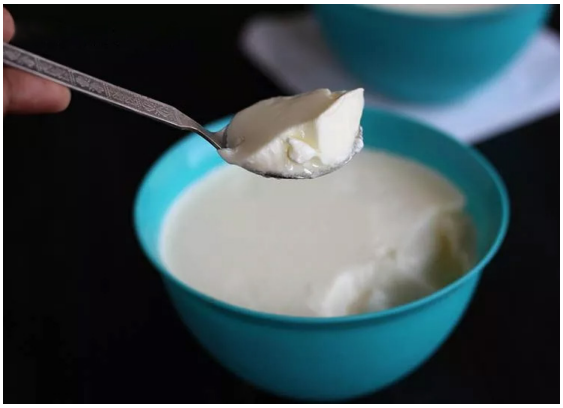
06 Add BONTAMIN DY enzyme and starter culture

07 Incubate until the desired acidity is reached

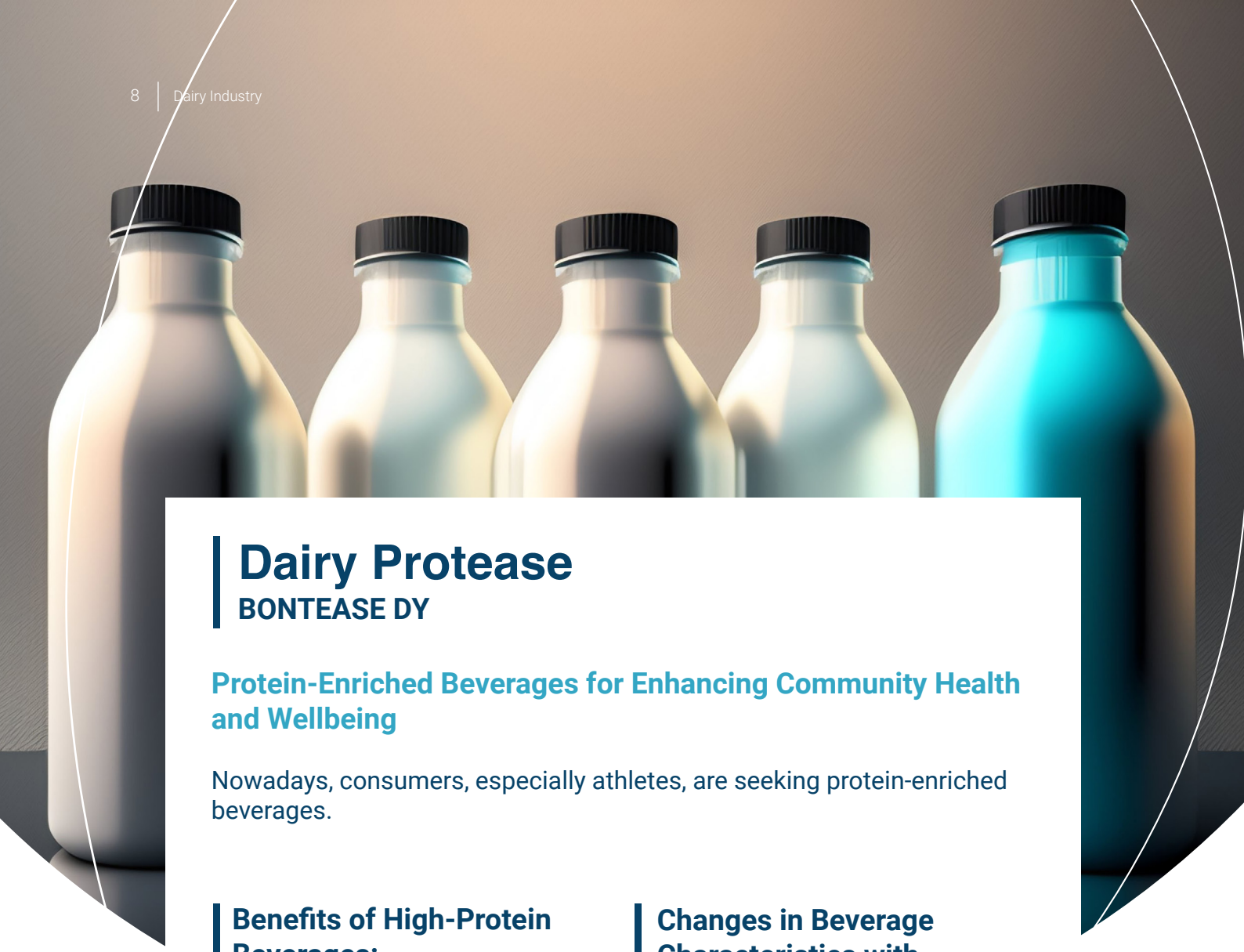
08 Cool to 4°C

09 Final Product

BONTAMIN DY Enzyme Suitable for Use in Various Types of Yogurt: Set, Stirred, Shallot, and Strained Yogurt



Types of Yogurt	
Low-fat set and stirred	80-100 g/ton
Full-fat set and stirred	60-80 g/ton
Shallot and strained	50-70 g/ton



Dairy Protease
BONTEASE DY

Protein-Enriched Beverages for Enhancing Community Health and Wellbeing

Nowadays, consumers, especially athletes, are seeking protein-enriched beverages.

Benefits of High-Protein Beverages:

- Improved body health
- Increased energy levels
- Enhanced muscle mass

Changes in Beverage Characteristics with Increased Protein Content

- Bitterness of the product
- Poor solubility and cloudiness
- Reduced shelf life

Benefits of Using BONTEASE DY -Dairy Protease:

- Eliminates product bitterness
- High solubility at high protein levels
- Higher nutritional value
- Partial removal of allergens for products suitable for infants
- Ideal for bodybuilding uses

Solutions for Protein Beverages:

- Adding protein to the texture: poor solubility, high cost
- Non-dairy protease: bitter taste

- **Using dairy protease: good taste, high solubility, reasonable cost, long shelf life**

Rennet, A Key Element in Cheesemaking

Preserve and Improve Cheese Quality with the Highest Industrial Standards

Cheese is recognized as one of the most valuable food sources, rich in protein, fats, minerals, and vitamins, and sometimes even having medicinal properties.
Milk is a natural emulsion consisting of fat, protein, sugar, and minerals suspended in water. Cheesemakers use various methods to initiate a chemical reaction that coagulates milk, transforming the liquid into a solid product. This coagulation occurs when the proteins in milk bond together, forming a uniform texture.

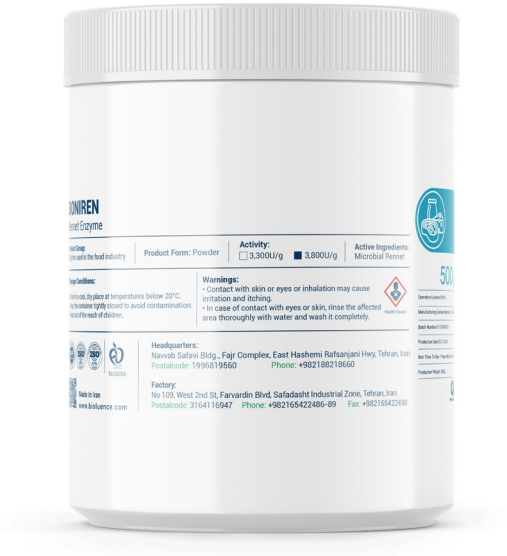
Challenges for Cheesemakers:

- Quality Requirements
- Production Optimization
- Flavor,Texture, and Sliceability of the Cheese
- Efficient and Sustainable Production

Using the right rennet allows cheesemakers to address all these needs, meet consumer demands, and produce a product with the highest industrial standards in terms of efficiency, flavor, and uniform texture.

Rennet in Cheesemaking

Rennet is a collection of microbial coagulants derived from the fungus Rhizomucor miehei, suitable for the production of various types of cheese.



BONIREN Advantages

- Controlled production of hydrolysis with the highest standards
- Enhancement and preservation of cheese texture quality
- Temperature resistance during the production process
- Benzonate-free

The use of rennet provides confidence for whey processing at a competitive price, offering a suitable taste without preservatives.

Bonlact
Lactobacillus acidophilus

Lactobacillus acidophilus is one of the most important and practical probiotic strains in the dairy industry, known for promoting health benefits.

Health Benefits of Lactobacillus acidophilus for Humans:

- Enhances digestive health by improving microbial balance in the gut and strengthening the intestinal mucosal lining.
- Boosts the immune system by increasing the production of Immunoglobulins (antibodies) and regulating the production of other Cytokines in the body.
- Reduces side effects associated with antibiotic use by restoring gut microbiota balance.
- Offers nutritional benefits by producing digestive enzymes.
- Prevents intestinal infections, including bacterial and viral infections.

Bifidobacterium spp.

Bifidobacterium spp. is a beneficial bacterium residing in human digestive system, widely used in producing probiotic dairy products such as yogurt, butter, buttermilk, and cheese.

Bifidobacterium Benefits:

- Supports digestive health by balancing gut microbial communities and reducing digestive issues.
- Enhances the immune system by interacting with immune responses, aiding in the prevention and treatment of infections, and reducing symptoms of food allergies.
- Provides nutritional advantages by producing digestive enzymes, aiding in food digestion, and generating proteins, vitamins, and other nutrients.
- Prevents antibiotic-associated diarrhea, traveler's diarrhea, and virus-related diarrhea.
- Helps reduce chronic inflammation, such as inflammation related to cardiovascular diseases or diabetes complications.
- Maintains brain health and cognitive function while reducing stress and depression.

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