

FOOD PROCESSING & DAIRY INDUSTRY

WASTEWATER TREATMENT SOLUTIONS

Advanced Nanozyme Bioculture Technology
for Efficient ETP Performance

*"Transforming Food & Dairy Wastewater
into Sustainable Solutions Through
Advanced Biological Innovation."*



ZERO SLUDGE



ECO-FRIENDLY



BIOLOGICAL
TREATMENT



CPCB
COMPLIANCE



COST
EFFECTIVE



SCIENTIFIC
MANUFACTURER



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SOURCES OF WASTEWATER & INDUSTRY CHALLENGES

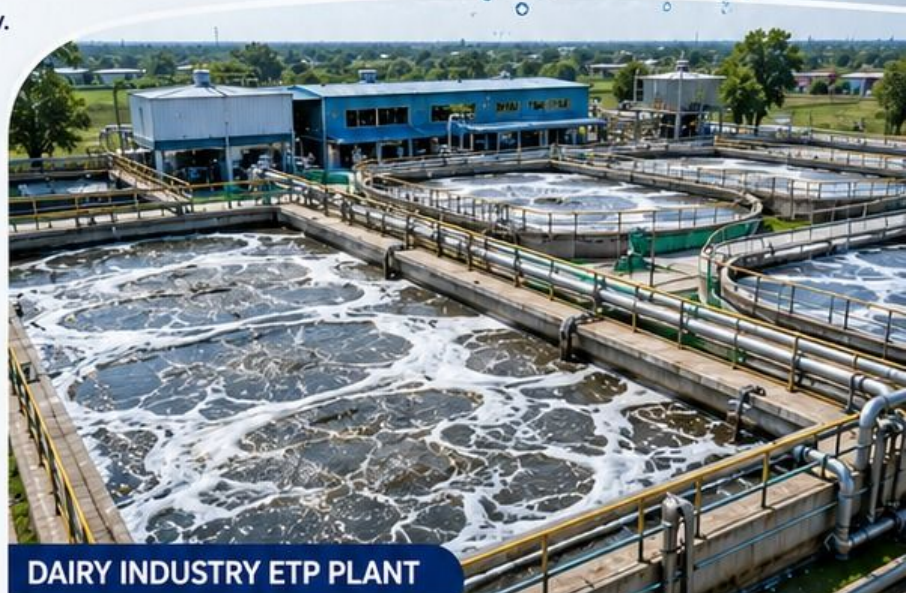
Understanding Wastewater. Solving Industry Problems.

Food & Dairy industries use large volumes of water in their processes, generating wastewater with high organic load, fats, proteins, lactose, suspended solids and chemicals. Effective treatment is essential for environmental compliance, operational efficiency and sustainability.

WASTEWATER GENERATION SOURCES

Food & Dairy industries generate wastewater from:

-  Milk Reception
-  Pasteurization
-  Homogenization
-  Cheese Production
-  Butter Production
-  Yogurt Processing
-  Ice Cream Manufacturing
-  CIP Cleaning
-  Equipment Washing
-  Packaging
-  Floor Cleaning
-  Boiler Blowdown
-  Cooling Systems



DAIRY INDUSTRY ETP PLANT

COMMON CHALLENGES

- | | |
|--|--|
|  High COD |  Foam Formation |
|  High BOD |  Odour Generation |
|  High Fat, Oil & Grease (FOG) |  Excess Sludge |
|  Protein & Lactose |  Shock Loading |
|  Suspended Solids |  Seasonal Production Variations |



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HIGH-STRENGTH DAIRY WASTEWATER STREAMS

Understanding the Strongest. Treating the Toughest.

Cheese & Whey Processing Wastewater

Cheese and whey manufacturing produce the highest-strength wastewater due to the presence of lactose, proteins, fats, and dissolved organic solids.

Process	BOD ₅ (mg/L)	COD (mg/L)	Key Pollutants
 Cheese	0.59–5	1–63.3	Protein & Fat
 Cottage Cheese	2.6	17.6	Whey Solids
 Cheese Whey	27–60	50–102.1	Lactose & Protein
 Hard Cheese Whey	9.48	73.45	High COD
 Soft Cheese Whey	26.77	58.55	Organic Matter
 Cottage Cheese Whey	–	79	Whey Solids

TREATMENT CHALLENGES



Very
High COD



High
BOD



High
Lactose



Rapid
Fermentation



Odour
Formation



Increased Aeration
Requirement



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CLEANING & UTILITY WASTEWATER

Effective Management. Clean Processes. Sustainable Future.

Cleaning and utility operations are essential in dairy industries, but they generate wastewater with varying pollutant loads. Understanding these streams is key to efficient treatment and water sustainability.



UTILITY WASTEWATER CHARACTERISTICS

Source	pH	COD (mg/L)	FOG (mg/L)	Remarks
 Washing Wastewater	10.37	14.64	3.11	Detergents & Milk Residues
 Milk Permeate	5.55–6.52	52.94–57.46	–	High Lactose
 Condensate	8.3	Very Low	–	Reusable After Treatment
 Whey Processing Effluent	5–9	1.07–2.18	–	Moderate Organic Load

WASTEWATER CLASSIFICATION

LOW STRENGTH WASTEWATER



Condensate



Milk Reception

- ✓ Low Organic Load
- ✓ Easy to Treat
- ✓ Higher Reusability Potential

MEDIUM STRENGTH WASTEWATER



Ice Cream



Butter



Washing Water

- ✓ Moderate Organic Load
- ⚙ Requires Proper Treatment
- 📈 Manageable with ETP

HIGH STRENGTH WASTEWATER



Cheese Whey



Cottage Cheese Whey



Milk Permeate

- ⚠ High Organic Load
- ⚠ Difficult to Treat
- ⚠ Requires Advanced Treatment



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NANOZYME BIOLOGICAL TREATMENT

Science Driven. Biologically Superior. Environmentally Sustainable.

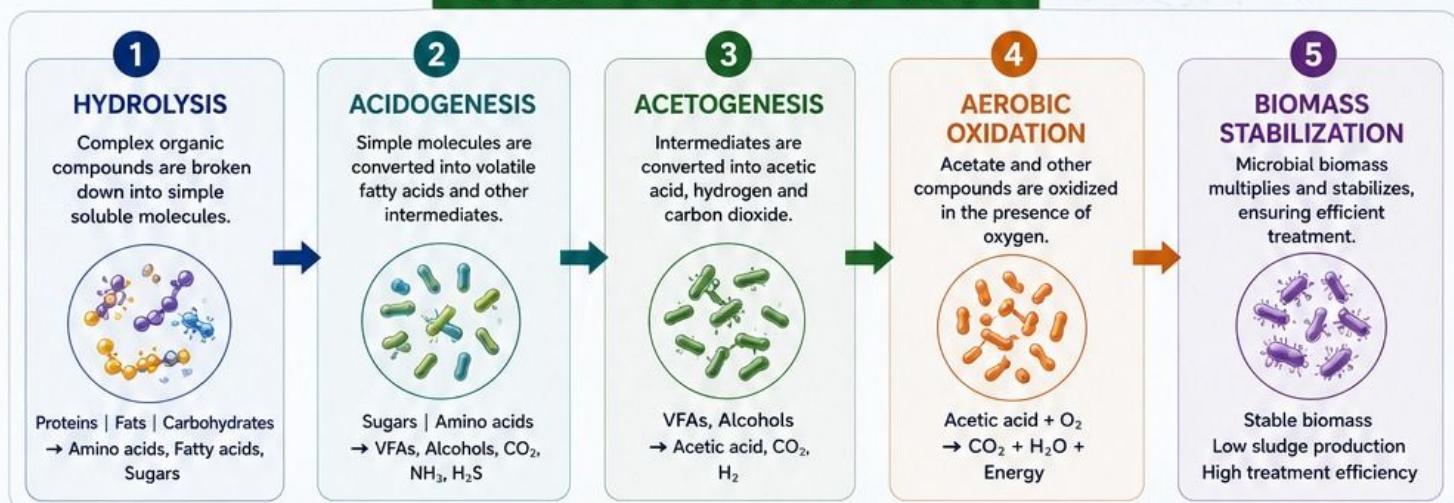


HOW NANOZYME WORKS

Nanozyme Bioculture is a specialized consortium of beneficial microorganisms developed using Solid-State Fermentation Technology.

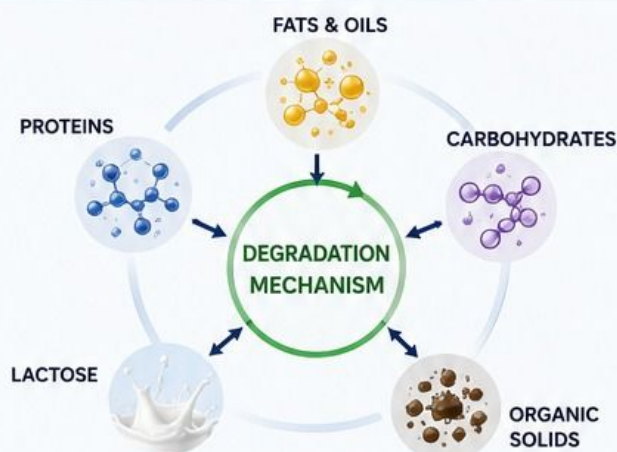


BIOLOGICAL DEGRADATION PROCESS



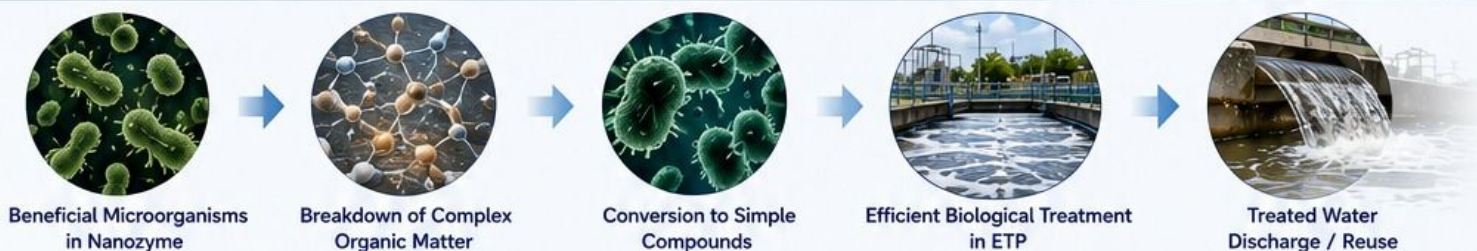
ENZYMES PRODUCED

-  Protease
-  Lipase
-  Amylase
-  Lactase
-  Cellulase



KEY BENEFITS

- ✓ Faster COD Reduction
- ✓ Efficient Fat Degradation
- ✓ Better Oxygen Transfer
- ✓ Improved Biomass
- ✓ Stable MLSS
- ✓ Reduced Sludge
- ✓ Eco-Friendly & Sustainable



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PRODUCT DETAILS

Advanced Biological Solution for Food & Dairy Industry

NANOZYME BET-ETP FOOD & DAIRY SERIES

Nanozyme BET-ETP Food & Dairy Series is a powerful biological formulation specially designed to treat high strength wastewater generated from Food Processing and Dairy industries.

PRODUCT SPECIFICATIONS

	Form	: Organic Semi-Solid Form
	Type	: Live Bacterial Culture
	Appearance	: Brownish / Greyish Semi-Solid
	Odour	: Earthy
	pH	: 6.5 – 7.5
	Moisture	: 20% – 30%
	CFU Count	: High (Billions CFU per gram)
	Shelf Life	: 1 Year from Date of Mfg.
	Storage	: Store in Cool, Dry Place. Avoid Direct Sunlight
	Packaging	: 25 Kg HDPE Drum / Bag
	Activation Time	: Rapid Activation in 2 – 4 Hours
	Application	: Suitable for ASP, MBBR, SBR, MBR & UASB Systems

KEY ADVANTAGES

	Highly Effective in High COD & BOD Reduction		Reduces Sludge Generation
	Excellent FOG Degradation		Improves MLSS and Settling
	Controls Odour and Ammonia		Enhances Overall ETP Performance

SUITABLE FOR TREATMENT SYSTEMS



100% Biological & Eco-Friendly



Zero Sludge Technology



Cost Effective



Safe for Environment



Made in India
Scientific
Manufacturer



DAIRY PROCESSING PLANT



WASTEWATER TREATMENT PLANT



CLEAN WATER OUTLET



SUSTAINABLE TOMORROW



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PERFORMANCE IMPROVEMENT

Proven Results. Reliable Performance. Sustainable Future.

Nanozyme Bioculture delivers exceptional results in
Food & Dairy Wastewater Treatment.

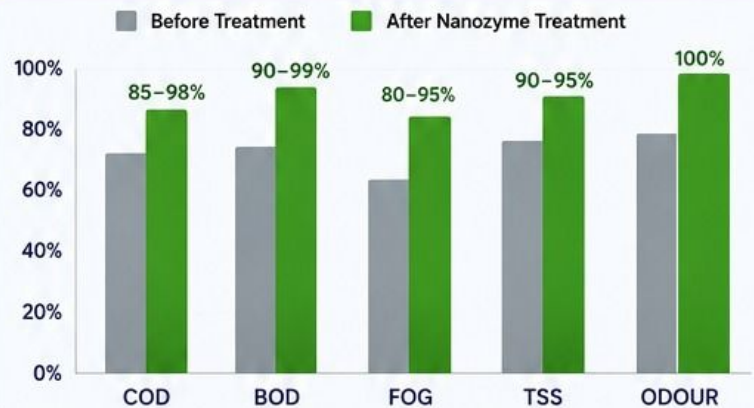
TYPICAL PERFORMANCE ACHIEVED

PARAMETER	TYPICAL REDUCTION
 COD	85 – 98% 
 BOD	90 – 99% 
 FOG	80 – 95% 
 TSS	90 – 95% 
 ODOUR	Up to 100% 
 SLUDGE	SIGNIFICANT REDUCTION
 DO	IMPROVED
 ELECTRICITY CONSUMPTION	REDUCED
 CHEMICAL CONSUMPTION	REDUCED

BEFORE vs AFTER TREATMENT



PERFORMANCE COMPARISON



KEY PERFORMANCE INDICATORS



OVERALL BENEFITS



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WHY BIONICS ENVIRO TECH?

Scientific. Sustainable. Superior.

WHY CHOOSE US?

-  **25+ Years of Experience**
-  **Scientific Manufacturer of Nanozyme Bioculture**
-  **Solid-State Fermentation Technology**
-  **Customized Industry-Specific Formulations**
-  **Pan-India Technical Support**
-  **ETP Commissioning Assistance**
-  **Process Optimization & Troubleshooting**
-  **Sustainable Biological Solutions**
-  **Proven Performance Across Industries**

25+
YEARS OF
EXPERIENCE

★★★★★



**100%
BIOLOGICAL**



**ECO
FRIENDLY**



**ZERO
SLUDGE**



**COST
EFFECTIVE**

CERTIFIED QUALITY. TRUSTED SOLUTIONS.



**CPCB
COMPLIANT**



**ISO
9001:2015
CERTIFIED**



**MAKE IN INDIA
SUPPORT**

INDUSTRIES WE SERVE



SUGAR



**TEXTILE &
DYEING**



PHARMACEUTICAL



**FOOD
PROCESSING**



DAIRY



CHEMICAL



**PAPER &
PULP**



DISTILLERY



HOSPITALITY



**MUNICIPAL
STPs**

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FOLLOW US ON



*Cleaner Tomorrow, Greener Future
Together for a Sustainable Environment*

MATERIAL PREPARATION & DOSAGE

Easy Preparation. Effective Treatment. Proven Results.

MATERIAL PREPARATION



INCUBATION



Mix Thoroughly



Keep Under Aeration for 7 Days



Ready for Dosing



BENEFITS OF PROPER PREPARATION



Active Microbial Culture



Higher Treatment Efficiency



Better COD & BOD Reduction



Stable & Healthy Biomass



Consistent Performance

RECOMMENDED DOSAGE

STAGE	DURATION	DOSE	PURPOSE
INITIAL DOSE	DAY 1 - 10	100 L / DAY	Rapid microbial activation & organic load reduction
STABILIZATION	DAY 11 - 20	100 L / DAY	Stabilize process, improve biomass and consistency
MAINTENANCE	DAY 21 - 30	100 L / DAY	Maintain efficiency and ensure long-term performance

DOSAGE GUIDELINES

- ✓ Shake well before use
- ✓ Dosage via dosing pump or manual addition
- ✓ Add to aeration tank / equalization tank
- ✓ Best results with continuous dosing

💡 Dosage may vary based on COD, BOD, TDS & Nutrient status of wastewater.

DOSING FLOW DIAGRAM



PREPARED NANOZYME SOLUTION



DOSING PUMP



EQUALIZATION TANK



AERATION TANK (ASP / MBBR / SBR)



CLARIFIER



TREATED WATER DISCHARGE / REUSE

WHY CHOOSE NANOZYME BIO-CULTURE?



100% BIOLOGICAL



FAST & EFFECTIVE RESULTS



REDUCES SLUDGE GENERATION



LOWERS OPERATING COST



ECO-FRIENDLY & SUSTAINABLE



IMPROVES ETP PERFORMANCE

INDUSTRIES WE SERVE



SUGAR



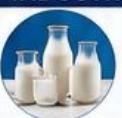
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