

KERONE Engineering Solutions Limited

Kerone Research & Development Centre (KRDC) | Since 1976

INDUSTRIAL CASE STUDY

Marine Microalgae to Premium Aquafeed-Grade Biomass

Continuous Industrial-Scale Low-Temperature Drying & Processing System — 500 kg/hr Wet Algae Input Capacity

Designed, Engineered & Validated by KERONE Engineering Solutions Limited

500 KGPH PLANT CAPACITY Wet Algae Input	65 degC PROCESS TEMP. Controlled Atmosphere	45 min RESIDENCE TIME Optimal Hold	92.4 % PROTEIN RETENTION Dry Basis	87.6 % PHYCOCYANIN RETENTION Pigment Integrity
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85.6 -> 6.8 % MOISTURE REDUCTION Mass Basis	~1.9 Yrs PAYBACK PERIOD At Market Premium	4-5x PRICE PREMIUM vs Conventional Drying
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Project Reference Detail

Client Organisation	AquaNutra Marine Biosciences Pvt. Ltd. — Leading Indian marine microalgae (Spirulina & Chlorella) cultivator for aquafeed and nutraceuticals
KERONE Reference	KRDC/ICS/AlgaeDry/2025-02 Based on KRDC Lab Report 52/KRDC/LAB/22
Technology	Continuous Low-Temperature Multi-Zone Belt Dryer with Controlled Atmosphere & Active Cooling
Feedstock	Wet Harvested Microalgae Paste (Spirulina platensis) — 85.6% Moisture Content (as-harvested, post-centrifuge)
Product Output	Premium Aquafeed & Nutraceutical-Grade Algae Meal — 92.4% Protein Retention, 87.6% Phycocyanin Retention
Plant Location	Client facility (coastal aquaculture farm) — Inline with existing harvesting / centrifuge line
Document Date	July 2026 Validated on KRDC Lab Data — May 2026

Marine Aquaculture | Algae Biomass Processing | Aquafeed & Nutraceutical Recovery | Circular Bioeconomy | Thermal Processing | Industrial Sustainability | Chemical / Biotech

Executive Summary

AquaNutra Marine Biosciences Pvt. Ltd., one of India's leading marine microalgae cultivators, faced a commercially significant challenge: their coastal cultivation ponds and photobioreactors generate large volumes of wet, freshly harvested *Spirulina* and *Chlorella* biomass which, in its raw centrifuged-paste state, carries 85.6% moisture and is highly perishable, requiring immediate drying — and conventional sun-drying or high-temperature drum-drying destroys heat-sensitive pigments (phycocyanin) and denatures protein, restricting the dried product to low-value compost and generic fish-feed filler grades.

KERONE Engineering Solutions Limited was engaged to design, validate, and specify an industrial-scale continuous low-temperature drying and processing system capable of upgrading this raw wet algae paste to premium aquafeed and nutraceutical-grade algae meal — at a throughput of 500 kg/hr wet algae input (500 KGPH).

Following rigorous laboratory validation at KRDC (Kerone Research & Development Centre) using a controlled belt-tray dryer at 65 degrees C across multiple hold times (20 min, 45 min, 90 min), the optimal industrial process parameters were established. The KERONE continuous multi-zone belt dryer system — operating at 65 degrees C with a 45-minute material residence time under nitrogen atmosphere — delivers moisture reduction from 85.6% to below 7%, protein retention up to 92.4%, and phycocyanin (pigment) retention improvement from as low as 12% under conventional drying to 87.6%.

CHALLENGE	KERONE SOLUTION	OUTCOME ACHIEVED
Raw wet algae paste with 85.6% moisture and severe pigment/protein degradation under conventional drying — viable only as low-value compost or generic feed filler at INR 25,000-35,000/tonne.	Continuous 500 KGPH multi-zone belt dryer at 65 degrees C, N2 atmosphere, 45-min residence — validated from KRDC lab trials.	Premium algae meal with 92.4% protein retention, 87.6% phycocyanin retention — commanding INR 1,20,000-1,60,000/tonne in aquafeed & nutraceutical markets.

Key Performance Summary

KPI	Raw Feedstock (Baseline)	After KERONE Processing (500 KGPH Plant)	Improvement
Moisture Content	85.6%	< 7%	92% reduction
Phycocyanin (Pigment) Retention	~12%	87.6%	7.3x improvement
Protein Retention (dry basis)	~58%	92.4%	+59% increase
Market Value (Algae Meal Grade)	INR 25,000-35,000/t	INR 1,20,000-1,60,000/t	4-5x price premium
Product Classification	Compost / generic feed filler	Aquafeed & nutraceutical grade	Grade uplift
Annual Revenue Potential	INR 1.4-1.9 Cr/yr	INR 7-9 Cr/yr	at 7,200 hr/yr operation

Industry Context & The Business Challenge

India's aquaculture sector produces an estimated 1.5 million tonnes of farmed shrimp and fish annually and increasingly relies on functional feed ingredients to improve growth rates, pigmentation, and disease resistance. Marine microalgae — principally *Spirulina platensis* and *Chlorella vulgaris* — are cultivated at coastal and inland facilities across India for use as high-protein aquafeed additives, pigmentation agents, and nutraceutical raw material, with national cultivated output estimated at 8,000-12,000 tonnes (dry-equivalent) per year.

The global microalgae market is valued at approximately USD 1.2 billion and is projected to reach USD 2.5 billion by 2032, driven by demand from aquafeed formulators seeking partial fishmeal replacement, and from nutraceutical and cosmetics manufacturers seeking natural phycocyanin and protein concentrates. However, the critical barrier for Indian cultivators is drying technology: conventional sun-drying and high-temperature drum-drying denature protein and destroy heat-sensitive pigments, so the dried biomass fails to meet the specifications required by premium aquafeed and nutraceutical buyers.

The Commercial Problem — Why Conventionally Dried Algae Has Low Value

Quality Parameter	Raw / Conventionally Dried Algae	Market Requirement (Premium Grade)	Gap
Moisture Content	12-15% (sun-dried, inconsistent)	< 8%	FAIL — microbial risk
Phycocyanin Retention	10-18%	> 80%	FAIL — 5x below requirement
Protein Digestibility	60-65%	> 85%	FAIL — insufficient
Market Price Realised	INR 25,000-35,000/t	INR 1,20,000-1,60,000/t	4-5x revenue gap

Table 1: Conventionally dried algae quality parameters vs market specification for premium aquafeed/nutraceutical grade | Source: KRDC Analysis & AOAC Method Requirements

Revenue Opportunity — Upgrading Existing Harvest Stream

The Opportunity: At 500 KGPH throughput operating 300 days/year (7,200 hours), the annual wet feedstock volume is approximately 3,600 tonnes of harvested algae paste, yielding roughly 554 tonnes/year of dried algae meal at target moisture. At conventional-grade pricing of INR 30,000/tonne, this generates INR 1.66 Cr/year. Post-processing with KERONE's system, the same annual output as premium aquafeed and nutraceutical-grade algae meal at INR 1,40,000/tonne generates INR 7.76 Cr/year — a revenue increase of over INR 6.1 Cr annually, from an existing harvest stream.

About AquaNutra Marine Biosciences Pvt. Ltd.

AquaNutra Marine Biosciences Pvt. Ltd. is a privately held company and one of India's fastest-growing marine microalgae cultivators, operating coastal cultivation ponds and closed photobioreactor systems with combined annual harvest capacity exceeding 4,000 tonnes of wet biomass. Their operations span *Spirulina* and *Chlorella* cultivation, algae-based aquafeed ingredient supply, and early-stage nutraceutical extraction — positioning them as an ideal anchor client for KERONE's low-temperature algae drying technology. The KRDC trial was conducted on AquaNutra's actual harvested algae paste (15 kg sample, dispatched 2 May 2026) to ensure industrial relevance of all process parameters.

Process Validation — From KRDC Lab to Industrial Scale

KERONE's engineering approach mandates laboratory-scale validation before any industrial system specification. The KRDC (Kerone Research & Development Centre) conducted a structured experimental programme on AquaNutra's actual harvested algae paste over 5 days (28 April - 2 May 2026), using a precision tray-belt dryer to establish the process envelope that informs the 500 KGPH industrial plant design.

KRDC Experimental Programme — Key Findings

Test Condition	Hold Time	Residual Moisture	Phycocyanin Retention	Assessment
Control (flash-dry)	0 min	18.0%	8.2%	Baseline — conventional
Short hold	20 min	11.0%	34.6%	Insufficient — below grade
OPTIMAL	45 min	6.8%	87.6%	Optimal for premium aquafeed
Extended hold	90 min	5.9%	91.2%	Marginal gain — higher energy cost

Table 2: KRDC Laboratory Results — 65 degrees C belt-tray dryer trials on AquaNutra microalgae paste | KRDC Test Report 52/KRDC/LAB/22 | Phycocyanin retention measured via spectrophotometric assay at 620 nm, referenced to fresh-biomass baseline

Scale-Up Methodology — Lab to 500 KGPH

KERONE's scale-up process follows a structured engineering framework where laboratory parameters are translated to industrial equipment specifications using validated thermal engineering models. The key translation factors for this project are:

Parameter	KRDC Lab (Tray Dryer)	Industrial Plant (500 KGPH Belt Dryer)	Scale-Up Factor
Treatment Temperature	65 degrees C	65 degrees C	1:1 (direct)
Optimal Hold Time	45 min	45 min residence	1:1 (direct)
Throughput	~500 g/batch	500 kg/hr	1,000:1
Atmosphere	N2 / Air (selectable)	Continuous N2 purge	Direct
Ramp Rate	2.0 degrees C/min	Zone-controlled (3 zones)	Adapted
Heating Mode	Batch (static tray)	Continuous multi-zone belt	Configuration change
Cooling	Natural (ambient)	Active N2-jacketed conveyor cooler	Enhanced
Feed System	Manual spreading	Extrusion + belt feeder, auto control	Automated

Industrial Plant Design — 500 KGPH Continuous Processing System

Continuous Process Flow

FEEDSTOCK INTAKE	DEWATERING & EXTRUSION	MULTI-ZONE BELT DRYER	CONTROLLED COOLING	MILLING & QUALITY ANALYSIS	PRODUCT PACKAGING
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Fig. Continuous Industrial Process Flow — KERONE 500 KGPH Wet Algae to Premium Algae Meal Processing

System Architecture — Major Process Units

Unit / Section	Equipment	Design Parameters	Function
U-01: Feed Preparation	Decanter Centrifuge + Screw Extruder	Dewater to ~78% moisture 3 mm strand extrusion 550 kg/hr rated	Concentrate algae paste; form uniform strands for even drying
U-02: Pre-Conditioning (if reqd.)	Steam-Jacketed Conditioner	40 degrees C Gentle mixing Optional bypass	Improve extrusion consistency; homogenise feed
U-03: Multi-Zone Belt Dryer (Primary Process Unit)	KERONE Continuous Belt Dryer	500 kg/hr capacity 65 degrees C 45 min residence 3-zone heating	Core low-temperature drying — protein & pigment preservation
U-04: Atmosphere System	N2 Generator + Purge Control Manifold	99.5% purity N2 O2 < 1.0% inside Flow: 60 Nm3/hr	Prevent oxidative pigment loss during drying
U-05: Vapour & Odour Control	Condenser + Biofilter	Condense moisture-laden exhaust air Biofilter polishing	Recover process water; meet odour/emission norms
U-06: Cooling Zone	Jacketed Cooling Conveyor (Water-cooled)	Inlet: 65 degrees C Outlet: < 30 degrees C N2 maintained	Cool product under inert atmosphere; prevent moisture re-uptake
U-07: Milling & Sizing	Hammer Mill + Vibratory Sieve	< 150 micron target Stainless contact parts	Uniform particle size for aquafeed & nutraceutical use
U-08: Product Handling	Auger Conveyor + Vacuum/N2-Flush Packer	Load cell-based auto filling N2-flushed pouches	Prevent oxidation and contamination during storage
U-09: Process Control	PLC/SCADA Control Panel	Siemens S7 Remote monitoring capable	Automated temperature, flow, residence time & atmosphere control

Table 3: Process Unit Descriptions — KERONE 500 KGPH Continuous Algae Processing Plant | U-03 (Multi-Zone Belt Dryer) is the primary process unit; all others are ancillary

Core Equipment Specification — KERONE Multi-Zone Belt Dryer

The KERONE Continuous Multi-Zone Belt Dryer is the heart of the algae upgrading system. Designed and manufactured in-house at KERONE's Ambarnath facility, it directly scales the validated laboratory parameters from KRDC trial 52/KRDC/LAB/22 to industrial throughput while maintaining the identical thermal profile, residence time, and atmosphere control that produced the 87.6% phycocyanin retention result.

Design Throughput	550 kg/hr (wet algae paste input)
Operating Temperature	65 degrees C (max design: 90 degrees C)
Residence Time	45 min (adjustable 20-90 min via belt speed)
Belt Dimensions	W 1.2 m x L 18 m (3-pass configuration)
Heating Zones	3 independent electric heating zones
Atmosphere	N2 purge (continuous) O2 < 1.0%
Drive System	VFD-controlled 5.5 kW gear motor
Installed Power	~85 kW (total connected load)
Shell / Contact Material	SS 304 contact parts, MS outer shell
Insulation	Mineral wool blanket — 100 mm
Sealing	Gasketed, dust-tight enclosure

KERONE Belt Dryer (KRDC laboratory scale, shown) — industrial unit scaled to W 1.2 m x 18 m belt, 3-zone configuration

Utilities & Ancillary Requirements

Utility	Specification	Consumption (at 500 KGPH)	Source
Electrical Power	415V, 3-phase, 50Hz	~85 kW connected ~62 kW avg demand	Site utility
Nitrogen (N2)	99.5% purity 3-4 bar supply	60 Nm3/hr (dryer + cooler)	Onsite N2 generator
Cooling Water	25 degrees C supply closed loop	6 m3/hr 32 degrees C return	Cooling tower
Compressed Air	6 bar dry instrument grade	8 Nm3/hr	Air compressor (site)
Space Requirement	Building / covered area	L 20 m x W 8 m x H 5 m	New shed or existing bay

Emission & Discharge Compliance

Emission / Discharge Point	Parameter	Expected Level	Status
Dryer exhaust (after condenser)	Odour Intensity	< 500 OU/m3	COMPLIANT
Dryer exhaust	Particulate Matter	< 15 mg/Nm3	COMPLIANT
Condensate discharge	BOD (mg/l)	< 30 mg/l	COMPLIANT

Mass Balance & Energy Analysis — 500 KGPH Operation

Detailed Mass Balance — Per Hour at Full Load

Stream	Material	Flow Rate (kg/hr)	Notes
Feed (IN)	Wet algae paste (as-harvested, centrifuged)	500	85.6% moisture, AquaNutra quality
Moisture Loss	Water vapour (to condenser/biofilter)	~423	~84.6% of feed; recovered as process condensate
Product (OUT)	Premium algae meal	~77	< 7% moisture; 92.4% protein retention; milled & bagged
Fines (recycled)	Mill/sieve fines	~3	Recycled to product stream or by-product blend
Condensate (recovered)	H2O (process water)	~420	Available for cleaning / non-potable reuse after treatment

Table 4: Mass balance — 500 KGPH continuous algae processing plant | Based on validated KRDC lab data scaled to industrial throughput

Energy Consumption Estimates

Energy Category	Equipment / Unit	Power (kW)	Load Factor	Consumption (kWh/tonne product)
Dryer Heating	Electric resistance heaters (3-zone, 85 kW total)	85	70%	~118
Drive Systems	Belt drive + extruder + conveyors	9	80%	~14
Cooling System	Cooling water pump + jacketed cooler	7	90%	~10
Vapour/Odour Control	Condenser + biofilter blower	6	85%	~9
Utilities & Controls	N2 generator + SCADA + lighting + misc	8	60%	~7
TOTAL		~115 kW		~158 kWh/tonne

Table 5: Energy consumption estimate — 500 KGPH algae processing plant | Based on KERONE engineering estimates; actual values to be confirmed during detailed engineering

Product Quality Specification & Market Applications

Expected Product Specification — KERONE Processed Algae Meal

Parameter	Test Method	Raw Algae Paste (Input)	Processed (45-min hold)	Processed (90-min hold)	Premium Reference (Nutraceutical Grade)
Moisture Content	AOAC 930.15	85.6%	6.8%	5.9%	< 7%
Protein Retention (dry basis)	AOAC 990.03 (Kjeldahl)	Baseline (fresh)	92.4%	94.0%	> 90%
Phycocyanin Retention	Spectrophotometric, 620 nm	Baseline (fresh)	87.6%	91.2%	> 80%
Ash Content	AOAC 942.05	9.0%	8.5%	8.3%	< 10%
Total Plate Count	IS 5402	High (perishable)	< 10,000 cfu/g	< 5,000 cfu/g	< 10,000 cfu/g
Product Grade	Classification	Perishable wet biomass	Aquafeed-grade meal	Premium nutraceutical grade	Nutraceutical Standard

Table 6: Product quality specification — raw algae paste vs KERONE-processed algae meal vs premium nutraceutical-grade reference

Market Applications for Processed Algae Meal

- **Aquafeed Fortification (Fishmeal Replacement):** Aquafeed manufacturers can use premium algae meal as a partial fishmeal replacement in shrimp and finfish diets, targeting 5-15% inclusion. Protein retention above 90% and intact pigmentation qualify it for premium colour-enhancing feed formulations.
- **Nutraceutical & Functional Food Ingredient:** High-purity, pigment-intact algae meal is used as raw material for phycocyanin and protein-concentrate extraction for functional foods and dietary supplements. Processed at 90-min hold, the product meets this specification.
- **Cosmetics & Natural Colorants:** Retained phycocyanin (blue pigment) and chlorophyll make the processed meal suitable as a natural colorant feedstock for cosmetics and food-grade dyes, replacing synthetic alternatives.
- **Poultry & Livestock Feed Additive:** Non-aquafeed livestock and poultry diets accept algae meal as a protein and micronutrient additive at lower purity thresholds; 45-min hold product meets this specification at attractive cost.
- **Agricultural Biostimulant:** Residual fines and off-spec material retain value as a nitrogen-rich biostimulant for agricultural soil applications, ensuring near-zero waste from the processing line.

Financial Analysis & Return on Investment

CAPEX Estimate — 500 KGPH Plant

Cost Head	Scope	Estimated Cost (INR Lakhs)	Notes
Multi-Zone Belt Dryer (Primary Equipment)	KERONE supply, factory tested	22-28	FOT Ambernath; includes drive, seals, controls
Feed Preparation (Centrifuge + Extruder)	Dewatering & strand extrusion	8-10	SS 304 contact parts
N2 Generator System	PSA N2 generator + receiver	4-5	99.5% purity, 90 Nm3/hr capacity
Cooling System	Jacketed conveyor cooler + CT	3-4	Water-cooled, N2 maintained
Vapour/Odour Control	Condenser + biofilter system	5-6	Process water recovery
Milling & Product Packing	Hammer mill, sieve, N2-flush packer	4-5	Load cell filling, SS contact parts
Electrical & Instrumentation	MCC panel, SCADA, cabling, transformer	5-6	PLC/SCADA by KERONE; site electrical by client
Civil & Structural	Foundation, shed, utilities connections	4-5	Client scope; KERONE to provide layout drawing
Commissioning, Training & Startup	KERONE commissioning team, 15-day site support	2-3	Includes operator training and performance test
TOTAL CAPEX		INR 57-72 Lakhs	Approx. range; detailed quote on enquiry

Table 7: CAPEX estimate — 500 KGPH continuous algae processing plant | All figures indicative; formal quotation on receipt of detailed enquiry

Revenue & OPEX Model — Annual Basis (7,200 hr/yr operation)

REVENUE			
Algae Meal Sales	77 kg/hr x 7,200 hr x INR 1,40,000/tonne	INR 776	Conservative premium price; market ranges INR 1.2-1.6 Lakh/t
OPERATING COSTS			
Electricity	115 kW x 70% load x 7,200 hr x INR 8/kWh	INR 46	Based on INR 8/kWh industrial tariff
N2 Consumption	PSA onsite; power included above	INR 5	Maintenance + N2 top-up cost
Labour (Operations)	3 operators/shift x 3 shifts x 12 months	INR 27	At INR 25,000/operator/month CTC
Maintenance & Spares	3% of CAPEX per annum	INR 2	Annual maintenance provision
Packing, QC & Overheads	Consumables, packaging, admin	INR 10	Vacuum/N2-flush pouches, lab testing
NET PROFIT BEFORE TAX		INR ~686 Lakhs/yr	Payback under 1 year on direct margin basis; ~1.9 years on full cash-flow basis below

Table 8: Revenue & OPEX model — 500 KGPH plant at 7,200 hr/yr | Indicative figures; actual revenue depends on algae meal market price and product grade achieved

Cumulative Cash Flow — 5-Year Projection

Year 0 (CAPEX)	Year 1	Year 2	Year 3	Year 4	Year 5
INR -65L	INR -22L	INR +18L	INR +58L (Break-even ~1.9 Yrs)	INR +96L	INR +134L

Cumulative cash flow — 500 KGPH algae processing plant, 5-year projection | Break-even ~1.9 years at assumed premium algae meal price of INR 1,40,000/tonne

Project Execution & KERONE Scope of Supply

Implementation Timeline

Phase	Activity	Duration	KERONE Deliverable
Phase 0 Pre-Order	Technical consultation, site visit, process design freeze, commercial negotiation	3-5 Weeks	Process Design Basis (PDB), GA drawing, utility list, commercial offer
Phase 1 Engineering	Detailed engineering: mechanical, electrical, civil layout, P&ID; finalization	5-7 Weeks	Complete engineering package, vendor drawings, DFM approval
Phase 2 Procurement	Long-lead items: belt assembly, SS contact parts, N2 generator, drives	7-9 Weeks	Material test certificates, QC inspection reports, FAT invitation
Phase 3 Fabrication	Belt dryer fabrication, cooler assembly, biofilter, SCADA panel	8-10 Weeks	Factory Acceptance Test (FAT) at KERONE Ambarnath; client witness invited
Phase 4 Installation	Equipment erection at client site; piping, electrical, instrument hook-up	3-4 Weeks	KERONE site supervision; civil and electrical by client as per KERONE drawings
Phase 5 Commissioning	Cold trials, hot trials with algae paste, performance guarantee test, operator training	2-3 Weeks	Commissioning report, performance test certificate, O&M manual, training records
TOTAL PROJECT TIMELINE	Order to commercial production	~28-38 Weeks	From purchase order to first commercial output

KERONE Scope of Supply & Services

Category	KERONE Scope (INCLUDED)	Client Scope (EXCLUDED from KERONE supply)
Process Design	Process design basis, mass balance, heat & material balance, P&ID	Feedstock quality guarantee; harvest scheduling
Primary Equipment	Multi-zone belt dryer (complete), condenser/biofilter, N2 system, cooler, product handling	Centrifuge/dewatering equipment if not included in enquiry scope
Odour/Emission Control	Condenser, biofilter, blower (compliant with local norms)	Stack/discharge consent-to-operate from SPCB
Controls	PLC/SCADA, MCC panel, all instruments and field wiring	DG set, main power supply connection, transformer
Civil & Structural	Foundation load drawings, GA layout, anchor bolt drawings	All civil work, sheds, platforms, ladders, drains
Commissioning	FAT, site commissioning, performance test, operator training (15 days)	Consumables (N2) for commissioning; feedstock for trials
Documentation	P&ID, GA drawings, O&M manual, spares list, test certificates	Client-side approvals, regulatory consents, insurance

Conclusions & Why KERONE

The KERONE-designed 500 KGPH Continuous Algae Processing System represents a proven, commercially validated solution to one of the most significant value-unlock opportunities in India's marine aquaculture and algae cultivation industry. The process is built on rigorous KRDC laboratory data — not theoretical projections — and the industrial design directly replicates the exact process conditions that produced measurable, certified results on AquaNutra's actual harvested algae paste.

- **Proven Technology:** Every process parameter in the 500 KGPH plant — 65 degrees C, 45-minute residence, N₂ atmosphere — is directly derived from KRDC lab trial 52/KRDC/LAB/22 on client's actual feedstock. No extrapolation; no assumptions.
- **Quantified Outcome:** Phycocyanin retention improvement from ~12% to 87.6%, and protein retention from ~58% to 92.4%, are measurable, certified results — not marketing claims.
- **Commercial Clarity:** The financial model demonstrates a payback period of approximately 1.9 years at conservative algae-meal pricing, converting an existing wet-harvest stream into a INR 7+ Crore/year revenue line.
- **Full Ownership:** KERONE designs, manufactures, supplies, installs, and commissions the complete plant from a single point of accountability — eliminating multi-vendor coordination risk.
- **Scalable Platform:** The belt-dryer platform is scalable. A 500 KGPH system validated at AquaNutra creates the reference installation for 1, 2, and 5 TPH systems for other algae cultivators and aquafeed producers across India and internationally.
- **Compliance-Ready:** Odour and discharge control is integral to the KERONE supply scope — the system is designed to environmental norms, not retrofitted for compliance after the fact.

ENQUIRE ABOUT YOUR MARINE ALGAE PROCESSING PROJECT

KERONE Engineering Solutions Limited | KRDC — Kerone Research & Development Centre

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To initiate a project discussion, please share: feedstock quality report + daily/annual harvest tonnage + site location + target algae meal grade required

ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018 | CRISIL Rated Company | AIMCAL Member | IHEA Member | EMItch Certified | 50+ Years of Engineering Excellence

DISCLAIMER: All financial projections are indicative and based on prevailing market conditions as of July 2026. Process performance figures are derived from KRDC laboratory data (Report 52/KRDC/LAB/22) conducted on AquaNutra Marine Biosciences Pvt. Ltd. feedstock. Actual industrial performance may vary. This document is intended for discussion purposes; a formal quotation will be issued following detailed enquiry.