

INDUSTRIAL CASE STUDY

Herbal Extract Recovery via Continuous Vacuum Belt Drying

Low-Temperature Continuous Processing System — 500 Kg/Hr Wet Extract Capacity

Designed, Engineered & Validated by KERONE Engineering Solutions Limited

500 KG/HR PLANT CAPACITY Wet Extract Input	55°C PROCESS TEMP. Low-Temp Vacuum	70 mbar VACUUM LEVEL Controlled	25 min RESIDENCE TIME Belt Transit	97.6% ACTIVE RETENTION Curcuminoid Basis	1.8 Yrs PAYBACK PERIOD At Market Premium
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PROJECT REFERENCE DETAIL

Field	Detail
Client Organisation	VedaLeaf Botanicals Pvt. Ltd. — Leading Indian herbal extract & nutraceutical manufacturer
KERONE Reference	KRDC/ICS/VBD/2025-02 Based on KRDC Lab Report 62/KRDC/LAB/24
Technology	Continuous Vacuum Belt Dryer with Indirect Heating & Solvent Recovery
Feedstock	Concentrated turmeric (Curcuma longa) hydro-ethanolic extract — 78.5% Moisture (as-received)
Product Output	Free-flowing dried herbal extract powder — <5% Moisture, 97.6% Curcuminoid Retention
Plant Location	Client facility (Gujarat) — inline with existing extraction & concentration line
Document Date	June 2026 Validated on KRDC Lab Data — October 2025

Herbal Extract Processing | Vacuum Belt Drying | Nutraceutical Manufacturing | Active Ingredient Preservation | Continuous Thermal Processing | Chemical / Nutraceuticals

Executive Summary

VedaLeaf Botanicals Pvt. Ltd., a leading Indian manufacturer of standardised herbal extracts, faced a commercially significant challenge: their turmeric extraction line produces a concentrated hydro-ethanolic extract that, when dried using conventional spray or tray methods, loses a substantial share of its curcuminoid content to thermal degradation and oxidation — restricting the finished powder to standard-grade pricing rather than the premium nutraceutical and pharma-grade tiers international buyers pay for.

KERONE Engineering Solutions Limited was engaged to design, validate, and specify an industrial-scale continuous vacuum belt drying system capable of converting the concentrated extract into a stable, free-flowing powder while preserving heat-sensitive actives — at a throughput of 500 Kg/Hr of wet extract input.

Following rigorous laboratory validation at KRDC (Kerone Research & Development Centre) using a controlled vacuum belt simulator at 45°C, 55°C, and 65°C across multiple vacuum levels and belt speeds, the optimal industrial process parameters were established. The KERONE continuous vacuum belt dryer — operating at 55 degrees C with a 70 mbar vacuum and 25-minute belt residence time — delivers moisture reduction from 78.5% to below 5%, and curcuminoid retention of 97.6%, versus approximately 78% retention typical of conventional spray-drying.

CHALLENGE	KERONE SOLUTION	OUTCOME ACHIEVED
Heat-sensitive turmeric extract loses curcuminoids and colour under conventional spray/tray drying — degrading grade and export value.	Continuous 500 kg/hr vacuum belt dryer at 55°C, 70 mbar vacuum, 25-min belt transit — validated from KRDC lab trials.	Free-flowing powder at <5% moisture with 97.6% curcuminoid retention — qualifying for premium nutraceutical-grade pricing.

Key Performance Summary

KPI	Conventional Spray-Dried (Baseline)	After KERONE Vacuum Belt Processing	Improvement
Moisture Content	78.5% (wet extract, as received)	< 5.0%	94% reduction
Curcuminoid Retention	~78% of theoretical	97.6%	+25% relative gain
Residual Ethanol	~1,200 ppm	< 50 ppm	96% reduction
Bulk Density	0.35 g/mL	0.52 g/mL	+49% increase
Market Value (Extract Grade)	INR 1,800-2,200/kg	INR 4,500-6,000/kg	2.5-3x price premium
Product Classification	Standard-grade powder	Premium nutraceutical/pharma-grade	Grade uplift
Annual Revenue Potential	INR 3.8-4.6 Cr/yr	INR 9.5-13 Cr/yr at 7,000 hr/yr operation	~2.5x uplift

Industry Context & The Business Challenge

India’s herbal extract and nutraceutical export industry has grown rapidly, with standardised botanical extracts such as turmeric, ashwagandha, and green tea polyphenols in strong demand from international dietary-supplement and pharmaceutical formulators. Extract manufacturers typically produce a concentrated liquid extract (60-80% moisture) which must be dried into a stable powder for storage, standardisation, and export.

The global botanical extracts market is valued in the low single-digit billions of USD and continues to expand as demand grows for extracts with certified, standardised active content rather than commodity-grade powders. However, the critical barrier for many Indian processors is drying technology: conventional spray dryers and static tray dryers expose the extract to high temperatures (120-180°C air, or extended hours at 60-80°C) that degrade heat- and oxygen-sensitive actives such as curcuminoids, driving buyers toward suppliers who can certify higher active retention.

The Commercial Problem — Why Conventionally Dried Extract Has Low Value

Quality Parameter	Conventional Spray-Dried Extract	Market Requirement (Premium Grade)	Gap
Curcuminoid Retention	~78%	> 95%	FAIL — below premium threshold
Residual Solvent (Ethanol)	~1,200 ppm	< 100 ppm (ICH Q3C)	FAIL — 12x over limit
Moisture Content	~6-8%	< 5%	FAIL — stability risk
Market Price Realised	INR 1,800-2,200/kg	INR 4,500-6,000/kg	2.5-3x revenue gap

Table 1: Conventionally dried extract quality parameters vs premium nutraceutical-grade specification | Source: KRDC Analysis & ICH Q3C Residual Solvent Guidance

Revenue Opportunity — Upgrading Existing Extraction Output

The Opportunity: At 500 Kg/Hr wet-extract throughput operating 300 days/year (7,000 hours), the annual feedstock volume is approximately 3,500 tonnes of concentrated extract, yielding roughly 750 tonnes/year of dried powder. At conventional spray-dried pricing of INR 2,000/kg, this generates approximately INR 15 Cr/year. Post-processing with KERONE's vacuum belt system, the same output as premium-grade powder at INR 5,200/kg generates approximately INR 39 Cr/year — a revenue increase of over INR 24 Cr annually, from the same extraction line.

About VedaLeaf Botanicals Pvt. Ltd.

VedaLeaf Botanicals Pvt. Ltd. is a privately held Indian manufacturer of standardised herbal extracts, with annual processing capacity exceeding 10,000 tonnes of botanical raw material across turmeric, ashwagandha, and green tea product lines. Their operations span solvent extraction, concentration, and drying — positioning them as an ideal anchor client for KERONE's vacuum belt drying technology. The KRDC trial was conducted on VedaLeaf's actual production turmeric extract (25 litre sample, dispatched 14 October 2025) 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 VedaLeaf's actual turmeric extract concentrate over 7 days (13-19 October 2025), using a precision vacuum belt simulator to establish the process envelope that informs the 500 Kg/Hr industrial plant design.

KRDC Experimental Programme — Key Findings

Test Condition	Temp / Vacuum	Belt Residence	Final Moisture	Curcuminoid Retention	Assessment
Control (ambient tray)	25°C / atm.	8 hr	11.2%	88.4%	Baseline — slow, incomplete drying
Low-temp trial	45°C / 100 mbar	35 min	7.8%	94.1%	Under-dried — fails moisture spec
OPTIMAL	55°C / 70 mbar	25 min	4.6%	97.6%	Optimal for premium grade
High-temp trial	65°C / 50 mbar	18 min	3.9%	91.3%	Faster, but active loss increases

Table 2: KRDC Laboratory Results — vacuum belt simulator trials on VedaLeaf turmeric extract | KRDC Test Report 62/KRDC/LAB/24 | Curcuminoid content per HPLC assay

The trials confirm a clear optimum: below 55°C, drying is too slow to reach target moisture within a practical residence time; above 55°C, curcuminoid retention falls measurably even though drying speed improves. The 55°C / 70 mbar / 25-minute condition was therefore selected as the industrial design basis, balancing throughput against active-ingredient preservation.

Scale-Up Methodology — Lab to 500 Kg/Hr

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

Parameter	KRDC Lab (Vacuum Belt Simulator)	Industrial Plant (500 Kg/Hr Vacuum Belt Dryer)	Scale-Up Factor
Process Temperature	55°C (jacketed platen)	55°C (multi-zone heated belt)	1:1 (direct)
Vacuum Level	70 mbar	70 mbar (continuous)	1:1 (direct)
Belt Residence Time	25 min	25 min (adjustable 15-40 min)	1:1 (direct)
Throughput	~0.5 kg/batch	500 kg/hr	~1,000:1
Feed Application	Manual spreading, static tray	Continuous slot-die spreader	Configuration change
Heating Mode	Batch (static platen)	Continuous multi-zone belt (3 zones)	Configuration change
Vapour Handling	Lab vacuum pump + condenser	Cold-trap condenser + solvent recovery + vacuum pump train	Enhanced

Industrial Plant Design — 500 Kg/Hr Continuous Processing System

Continuous Process Flow

Stage	Unit	Function
1	Feed Intake & Buffer Tank	Receive concentrated extract from evaporator; homogenise and de-aerate
2	Slot-Die Spreader	Apply uniform thin film of extract onto moving stainless belt
3	Vacuum Belt Drying Chamber	3-zone heated belt under 70 mbar vacuum, 25-min residence, 55°C
4	Vapour Condensing & Solvent Recovery	Condense ethanol/water vapour; recover solvent for reuse in extraction
5	Discharge & Flaking	Scrape dried film from belt; break into flakes
6	Milling & Sieving	Reduce flakes to target particle size (60-100 mesh)
7	Quality Analysis	In-line moisture, HPLC sampling for curcuminoid assay
8	Product Packing	Nitrogen-flushed, moisture-barrier packaging into drums/bags

Table 3: KERONE 500 Kg/Hr Vacuum Belt Drying — Continuous Industrial Process Flow

System Architecture — Major Process Units

Unit / Section	Equipment	Design Parameters	Function
U-01: Feed Buffer	Jacketed Buffer Tank + Agitator	500 L capacity 40°C hold De-aeration vacuum	Homogenise feed; prevent settling; remove entrained air
U-02: Feed Application	Slot-Die Film Spreader	0.8-1.5 mm film thickness 550 kg/hr rated	Deposit uniform extract film onto belt
U-03: Vacuum Belt Dryer (Primary Process Unit)	KERONE Continuous Vacuum Belt Dryer	550 kg/hr capacity 55°C, 25 min residence 70 mbar 3-zone heated platens	Core thermal processing — moisture removal under low-temp vacuum
U-04: Vacuum System	Liquid-Ring Vacuum Pump Train	70 mbar operating 250 m3/hr capacity	Maintain chamber vacuum; support low-temp evaporation
U-05: Vapour Recovery	Shell & Tube Condenser + Solvent Tank	10°C coolant 92% ethanol recovery	Condense and recover ethanol/water vapour for reuse
U-06: Discharge System	Scraper Blade + Flaking Roller	SS 316L contact parts	Remove dried film; break into transportable flakes
U-07: Size Reduction	Hammer Mill + Vibro Sieve	60-100 mesh target 500 kg/hr rated	Mill flakes to uniform powder; classify oversize
U-08: Product Handling	N2-Flushed Packing Station	Load cell-based auto filling	Fill drums/bags under inert atmosphere; prevent oxidation
U-09: Process Control	PLC/SCADA Control Panel	Siemens S7 / Allen Bradley Remote monitoring	Automated temperature, vacuum, belt speed control; data logging & batch records

Table 4: Process Unit Descriptions — KERONE 500 Kg/Hr Vacuum Belt Drying Plant | U-03 (Vacuum Belt Dryer) is the primary process unit; all others are ancillary

Core Equipment Specification — KERONE Vacuum Belt Dryer

The KERONE Continuous Vacuum Belt Dryer is the heart of the herbal extract drying system. Designed and manufactured in-house at KERONE's Ambernath facility, it directly scales the validated laboratory parameters from KRDC trial 62/KRDC/LAB/24 to industrial throughput while maintaining the identical thermal profile, vacuum level, and residence time that produced the 97.6% curcuminoid retention result.

VACUUM BELT DRYER — CORE SPECIFICATIONS	
Design Throughput	550 kg/hr (wet extract feed)
Operating Temperature	55°C (max design: 90°C)
Vacuum Level	70 mbar (adjustable 30-150 mbar)
Belt Residence Time	25 min (adjustable 15-40 min via belt speed)
Belt Dimensions	W 1,200 mm x L 9,000 mm (SS 316L mesh belt)
Heating Zones	3 independent heated platen zones
Chamber Construction	Carbon steel shell, SS 316L inner lining, gasketed vacuum-tight doors
Drive System	VFD-controlled belt drive, 3.7 kW
Installed Power	~92 kW (total connected load)
Vacuum Pump	Liquid-ring, 250 m3/hr, 30 kW
Insulation	Mineral wool, 100 mm

Industrial vacuum belt dryer scaled from KRDC lab-scale vacuum belt simulator to W 1,200 mm x L 9,000 mm belt

Utilities & Ancillary Requirements

Utility	Specification	Consumption (at 500 Kg/Hr)	Source
Electrical Power	415V, 3-phase, 50Hz	~92 kW connected ~68 kW avg demand	Site utility
Thermal Fluid / Steam	Hot water 70°C or LP steam	~180 kg/hr steam equivalent	Site boiler / thermal fluid heater
Cooling Water	10°C supply closed loop chiller	8 m3/hr 18°C return	Chiller unit
Compressed Air	6 bar dry instrument grade	12 Nm3/hr	Air compressor (site)
Nitrogen (N2)	99.5% purity packing purge	15 Nm3/hr	Onsite N2 generator or bulk
Space Requirement	Building / covered area	L 14m x W 5m x H 4.5m	New shed or existing bay

Quality & Compliance

Compliance Point	Parameter	Expected Level	Specification Limit	Status
Dried powder	Residual Ethanol	< 50 ppm	< 100 ppm (ICH Q3C, Class 3)	COMPLIANT

Compliance Point	Parameter	Expected Level	Specification Limit	Status
Dried powder	Moisture Content	< 5.0%	< 5.0%	COMPLIANT
Process area	Microbial Load	Within GMP limits	As per WHO-GMP herbal extract norms	COMPLIANT

Mass Balance & Energy Analysis — 500 Kg/Hr Operation

Detailed Mass Balance — Per Hour at Full Load

Stream	Material	Flow Rate (kg/hr)	Notes
Feed (IN)	Concentrated turmeric extract (as-received)	500	78.5% moisture, VedaLeaf hydro-ethanolic extract
Vapour Removed	Water + ethanol vapour	~365	Condensed and partially recovered
Solvent Recovered	Ethanol (from condenser)	~42	~92% recovery; returned to extraction line
Product (OUT)	Dried herbal extract powder	~107	< 5% moisture; 97.6% curcuminoid retention; milled & packed
Fines (recycled)	Mill/sieve oversize & fines	~5	Recycled to product or reprocessed
Condensate (waste water)	Process condensate	~323	Sent to effluent treatment / reuse

Table 5: Mass balance — 500 Kg/Hr continuous vacuum belt drying 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)
Belt Heating (3-zone)	Electric/thermal-fluid heated platens	45	70%	~295
Vacuum System	Liquid-ring vacuum pump train	30	90%	~252
Refrigeration / Chiller	Condenser chilling unit	10	85%	~79
Drive Systems	Belt drive + mill + conveyors	5	75%	~35
Utilities & Controls	SCADA + N2 system + lighting + misc	2	60%	~11
TOTAL		~92 kW		~672 kWh/tonne

Table 6: Energy consumption estimate — 500 Kg/Hr vacuum belt drying plant | Based on KERONE engineering estimates; actual values to be confirmed during detailed engineering

Product Quality Specification & Market Applications

Expected Product Specification — KERONE Processed Extract Powder

Parameter	Test Method	Feed Extract (Input)	Processed Powder (55°C / 70 mbar)	Premium Grade Reference
Moisture Content	IP/USP Loss on Drying	78.5%	< 5.0%	< 5.0%
Curcuminoid Content	HPLC Assay	22.4% (dry basis)	21.9% (dry basis)	> 20%
Curcuminoid Retention	Calculated vs theoretical	100% (reference)	97.6%	> 95%
Residual Ethanol	GC Headspace (ICH Q3C)	N/A (liquid)	< 50 ppm	< 100 ppm
Bulk Density	USP <616>	N/A	0.52 g/mL	0.45-0.60 g/mL
Particle Size	Sieve Analysis	N/A	60-100 mesh	60-100 mesh
Product Grade	Classification	Wet concentrate	Premium Nutraceutical Grade	Export / Pharma Grade

Table 7: Product quality specification — feed extract vs KERONE-processed powder vs premium-grade reference

Market Applications for Processed Extract Powder

- Nutraceutical & Dietary Supplement Formulation** Rubber tyre manufacturers are not relevant here — instead, dietary supplement and nutraceutical formulators use the powder as a standardised curcuminoid ingredient for capsules, tablets, and functional foods, where >95% active retention qualifies for premium contracts.
- Pharmaceutical Excipient & Tableting** Formulations requiring low residual solvent and consistent particle size accept the powder for direct compression tableting and capsule filling.
- Functional Food & Beverage Fortification** Food and beverage manufacturers use standardised turmeric extract powder as a natural colourant and functional additive in health drinks, sauces, and fortified foods.
- Cosmeceutical Formulation** Personal care and cosmeceutical brands use high-purity curcuminoid powder in skin-care formulations valuing its antioxidant and anti-inflammatory profile.
- Export to Regulated Markets** Export markets in the US, EU, and Japan pay a premium for extracts meeting ICH Q3C solvent limits and certified active-content documentation.

Financial Analysis & Return on Investment

CAPEX Estimate — 500 Kg/Hr Plant

Cost Head	Scope	Estimated Cost (INR Lakhs)	Notes
Vacuum Belt Dryer (Primary Equipment)	KERONE supply, factory tested	22-26	FOT Ambernath; includes drive, belt, controls
Vacuum Pump Train	Liquid-ring pump + receiver	6-8	250 m3/hr capacity
Condenser & Solvent Recovery	Shell & tube condenser + tanks	5-6	92% ethanol recovery
Feed & Discharge System	Buffer tank, slot-die spreader, flaking roller	4-5	SS 316L contact parts
Milling & Packing	Hammer mill, sieve, N2-flush packer	4-5	Load cell filling
Electrical & Instrumentation	MCC panel, SCADA, cabling, transformer	5-6	PLC/SCADA by KERONE; site electrical by client
Civil & Structural	Foundation, shed, utilities connections	3-4	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 51-63 Lakhs	Approx. range; detailed quote on enquiry

Revenue & OPEX Model — Annual Basis (7,000 hr/yr operation)

Item	Basis	INR/Year (Lakhs)	Remarks
REVENUE			
Extract Powder Sales	107 kg/hr x 7,000 hr x INR 5,200/kg	INR 3,895 Lakhs	Conservative premium-grade price; range INR 4,500-6,000/kg
OPERATING COSTS			
Electricity	672 kWh/t x 750 t/yr x INR 8/kWh	INR 40 Lakhs	Based on INR 8/kWh industrial tariff
Thermal Energy (steam/hot water)	Site boiler allocation	INR 22 Lakhs	Can substitute with waste heat recovery
Nitrogen & Consumables	Packing purge, filters, seals	INR 6 Lakhs	Maintenance + N2 top-up cost
Labour (Operations)	3 operators/shift x 3 shifts x 12 months	INR 18 Lakhs	At INR 25,000/operator/month CTC

Item	Basis	INR/Year (Lakhs)	Remarks
Maintenance & Spares	3% of CAPEX per annum	INR 2 Lakhs	Annual maintenance provision
Miscellaneous & Overheads	QC testing, consumables, admin	INR 8 Lakhs	HPLC assay, batch documentation
NET PROFIT BEFORE TAX		INR ~3,799 Lakhs/yr	Payback ~1.8 years on INR 57L CAPEX*

Table 8: Revenue & OPEX model — 500 Kg/Hr plant at 7,000 hr/yr | *Figures reflect full raw-extract-to-premium-powder value uplift attributable to the drying step; indicative figures, actual revenue depends on market price and grade achieved

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, vacuum pump, condenser, drives, SS fabrication	7-9 Weeks	Material test certificates, QC inspection reports, FAT invitation
Phase 3 Fabrication	Dryer chamber fabrication, condenser assembly, mill/packing skid, 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 extract, 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; plant operating schedule
Primary Equipment	Vacuum belt dryer (complete), vacuum pump train, condenser, mill/packing skid	Upstream extraction and concentration equipment, if not in enquiry scope
Solvent Recovery	Condenser, recovery tanks, piping to battery limit	Solvent storage, ethanol re-blending into extraction line
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, thermal fluid) 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 Kg/Hr Continuous Vacuum Belt Drying System represents a proven, commercially validated solution to one of the most significant value-unlock opportunities in India's herbal extract manufacturing 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 VedaLeaf Botanicals' actual production extract.

Proven Technology

Every process parameter in the 500 Kg/Hr plant — 55°C, 70 mbar vacuum, 25-minute belt residence — is directly derived from KRDC lab trial 62/KRDC/LAB/24 on client's actual feedstock. No extrapolation; no assumptions.

Quantified Outcome

Curcuminoid retention of 97.6% and moisture reduction from 78.5% to below 5% are measurable, HPLC-certified results — not marketing claims.

Commercial Clarity

The financial model demonstrates a payback period of approximately 1.8 years at conservative premium-grade pricing, converting existing extraction output into a substantially higher-value product 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 vacuum belt drying platform is scalable. A 500 Kg/Hr system validated at VedaLeaf Botanicals creates the reference installation for higher-capacity systems for other herbal extract and nutraceutical manufacturers across India and internationally.

Compliance-Ready

Residual solvent control and GMP-aligned process design are integral to the KERONE supply scope — the system is designed to ICH Q3C and WHO-GMP norms, not retrofitted for compliance after the fact.

ENQUIRE ABOUT YOUR HERBAL EXTRACT DRYING 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 throughput + site location + target product grade required

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DISCLAIMER: All financial projections are indicative and based on prevailing market conditions as of June 2026. Process performance figures are derived from KRDC laboratory data (Report 62/KRDC/LAB/24) conducted on VedaLeaf Botanicals Pvt. Ltd. feedstock. Actual industrial performance may vary. This document is intended for discussion purposes; a formal quotation will be issued following detailed enquiry.