

PRESERFOOD™ SEADEx CD

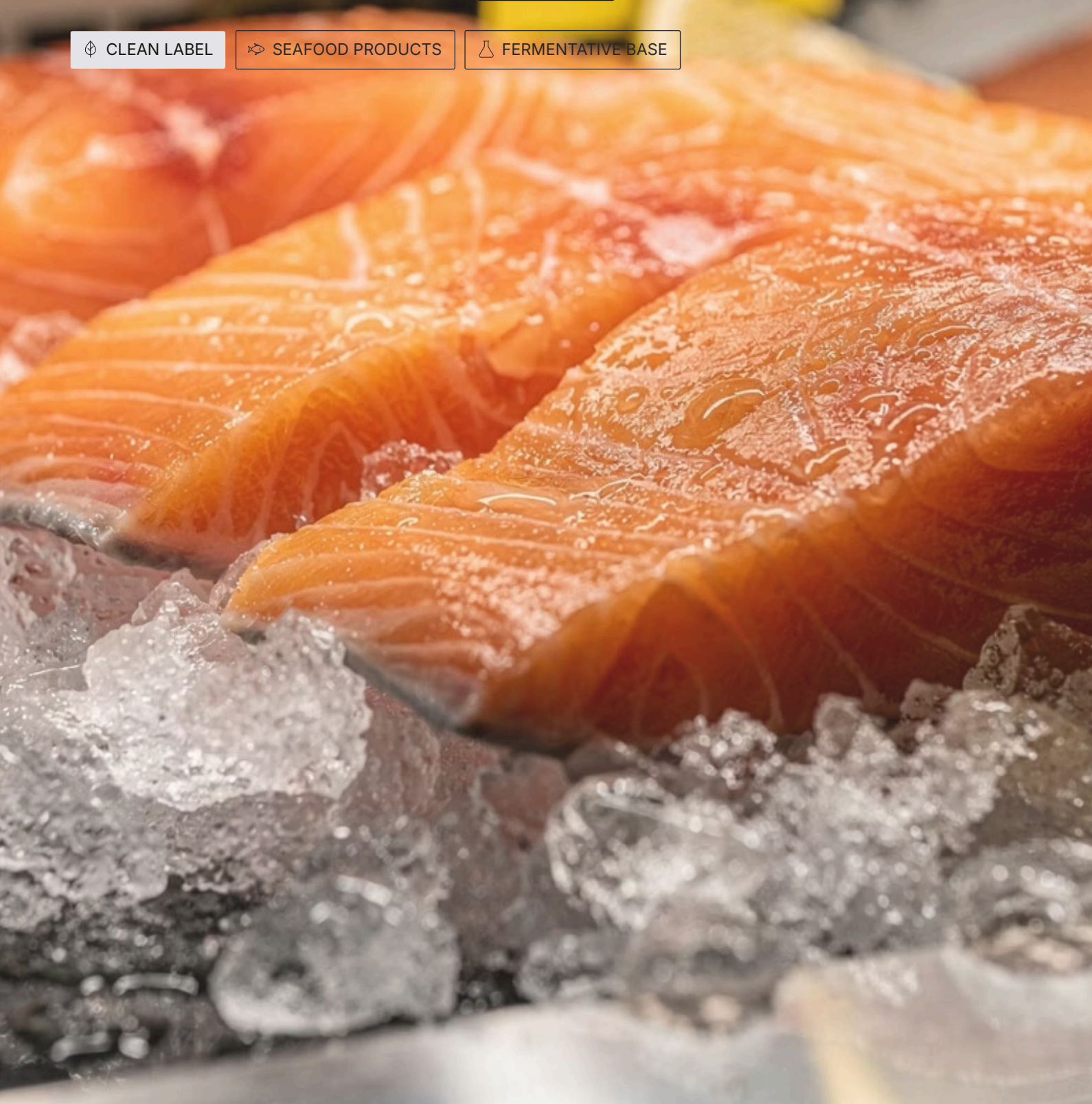
YTB (IntaBiotech)

PRESERFOOD SEADEx CD the fermentative reference solution for manufacturers seeking greater shelf life, microbiological stability and recognisable labelling across the full range of fish and seafood products.

🌿 CLEAN LABEL

🐟 SEAFOOD PRODUCTS

🧪 FERMENTATIVE BASE



Description

PRESERFOOD™ SEADEX CD is a fermentative-based solution designed to **improve the microbiological and sensory stability of refrigerated, cooked, marinated and ready-to-eat seafood products**. Its technology is based on the controlled fermentation of dextrose to generate natural antimicrobial metabolites that act as an additional barrier in multi-hurdle preservation systems.

Its clean label profile makes it possible to replace or reduce traditional synthetic preservatives in formulations where consumers demand recognisable ingredients and more natural processes. This feature makes it a strategically valuable tool for brands competing in quality, premium or labelling-transparency-focused segments.

PRESERFOOD™ SEADEX CD is versatile enough to be applied across a wide range of matrices: from refrigerated fresh fish to acidic marinades, as well as cooked shellfish, smoked salmon, surimi and functional glazes for frozen products. Each application has a guideline formulation adapted to the specific technological and legislative conditions of the segment.

Why SEADEX CD?

- Certifiable fermentative technology
- Reduction of synthetic preservatives
- Recognisable labelling for consumers
- Validated in multiple seafood matrices
- Commercially viable across the full range



Main Applications and Functionality

PRESERFOOD™ SEADDEX CD offers comprehensive coverage across the full range of seafood products, from fresh fish through to industrial and frozen preparations.

Application categories

Fresh Fish

Fillets, salmon
loins, desalted
cod, chilled tuna

Cooked Shellfish

Prawns,
langoustines,
mussels, cooked
octopus, seafood
salads

Smoked and RTE

Smoked salmon, trout, cooked fillets ready to eat

Marinades

Whitebait in
vinegar, industrial
ceviche, acidic
semi-preserves

Surimi and Prepared Products

Fish balls,
burgers, nuggets
and chilled
breaded products

Frozen Products

Prawns, langoustines, fillets, functional glazes

Key functionality



Shelf-life extension

Longer genuine commercial life under chilled conditions



Microbial control

Reduction of spoilage flora and support against *Listeria*



Waste reduction

Lower economic loss in production and distribution



Clean label positioning

Recognisable ingredients for today's consumer



Cultured D
Seafood

Cultured Dextrose
Seafood

Small container with white powder

Small container with white powder

Solutions by Product Type: Fresh Fish and Cooked Shellfish

SEADEx FRESH SYSTEM

Chilled fresh fish

Fresh fish is the most technically demanding matrix. The main issues are the growth of psychrotrophic flora, the generation of amine odour, drip loss and the rapid loss of freshness. The recommended solution integrates fermented dextrose (0.30–0.60%) with potassium/sodium lactate (1.0–2.0%), pH adjustment with citric acid or buffered acetate and, optionally, a natural antioxidant such as rosemary extract, green tea or tocopherols.

Application may be carried out by immersion, surface spray or incorporation in brine. Technically, radical effects cannot be guaranteed in fresh fish: the solution must be integrated with a strict cold chain (0–4 °C), CO₂-rich modified atmosphere packaging, good drainage, low initial load and validation through challenge testing or a real shelf-life study.

- ❗ Requires integration into a multi-hurdle system for optimal and commercially verifiable results.

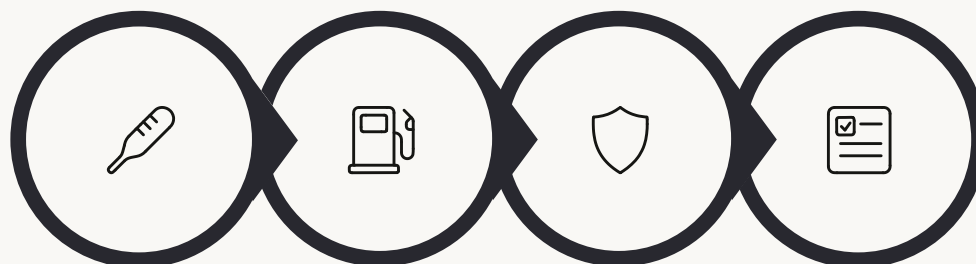
SEADEx COOKED SHELLFISH SYSTEM

Chilled cooked shellfish

In cooked shellfish, the most critical risks are post-cooking recontamination, the development of lactic flora, the potential presence of *Listeria monocytogenes* in RTE products, drip loss and the odour of aged cooked product. The indicative formulation includes fermented dextrose (0.40–0.80%), lactate/diacetate according to legislation and labelling objectives, buffered vinegar or natural acetate and, optionally, an antioxidant extract.

Application is carried out by post-cooking dipping, glazing or spray before packaging. This solution is particularly suitable for manufacturers seeking to reduce classic preservatives and improve the stability of chilled cooked shellfish under vacuum or modified atmosphere packaging, with a commercially viable proposition and cleaner labelling.

- ✅ High commercial value solution for premium chilled packaged shellfish segments.



Cold chain

MAP CO₂

SEADEx
treatment

Shelf-life
validation

The commercial success of SEADEx Fresh is based on its integration as an additional element within a well-designed multi-hurdle system, not as a sole substitute for good manufacturing practices.



Smoked Salmon and RTE Fish

SEADEx RTE CONTROL SYSTEM

Ready-to-eat (RTE) fish products, and smoked salmon in particular, represent one of the highest commercial value segments and, simultaneously, one of the highest-risk profiles within the food industry. The main technological challenge is the control of *Listeria monocytogenes* in a product with a relatively favourable pH, high water activity and extended shelf life under vacuum.

Target products

- Smoked salmon and smoked trout
- Smoked cod
- Chilled cooked fillets
- Vacuum-packed ready-to-eat fish


Indicative composition

0.25–0.60% Fermented dextrose	Lactate/acetate or equivalent natural acetate	Bioprotective cultures possible synergistic combination
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Critical technical consideration

In smoked salmon, fermented dextrose must be formulated with particular care so as not to alter the product's characteristic sensory profile. The balance between antimicrobial efficacy and preservation of smoky notes, texture and colour is decisive for commercial acceptance. Comparative testing with a sensory panel is required before any launch.

Application can be carried out by brine, spray, incorporation into marinade or surface treatment, depending on the production process and the target labelling profile. Combining it with specific bioprotective cultures can significantly enhance *Listeria* control and extend commercial shelf life.

 Mandatory sensory validation required before commercial launch for new developments

Marinated Fish, Whitebait, Ceviches and Semi-Preserved Products

SEADEX MARINADE SYSTEM

Marinated fish and acidic semi-preserved products are among the most favourable fields for the application of fermented dextrose. The characteristic acidic pH of these products synergistically enhances the effect of the organic acids generated by fermentation, creating an environment that is particularly hostile to spoilage flora without compromising the product's organoleptic characteristics.

Technological challenges



Yeasts and moulds

Acid-tolerant flora that proliferates even in acidic conditions



Loss of aroma

Deterioration of the fresh notes characteristic of marinated products



Softening

Textural degradation during shelf life

Indicative composition — SEADEX Marinade

Ingredient	Dosage
Fermented dextrose	0.20–0.50%
Vinegar or buffered acetic acid	according to profile
Citric/lactic acid	target pH adjustment
Salt	according to recipe
Antioxidant botanical extracts	optional

The lower doses in the range are sufficient thanks to the boosting effect of the acidic environment. This efficiency at reduced dosage improves the economic profile and commercial viability of the solution.

Surimi, Fish Balls and Fish Preparations

SEADDEX PROCESSED FISH SYSTEM

Target products

- Surimi
- Fish balls
- Fish burgers
- Fish meatballs
- Chilled nuggets
- Chilled breaded fish preparations

Indicative dosage

0.40–0.90% fermented dextrose incorporated into the mix or liquid phase

Technological challenges and integrated solution

Processed fish preparations present a combination of challenges that make them especially suited to a multifunctional solution such as SEADDEX Processed Fish. Limited shelf life, post-process contamination, the development of lactic flora, loss of elasticity in surimi, and syneresis in fish burgers are issues that directly affect commercial margins and the manufacturer's complaint rates.

The recommended formulation combines fermented dextrose (0.40–0.90%) with lactate/acetate, soluble fibre or hydrocolloid for water retention, and a natural antioxidant. Direct incorporation into the mix ensures a homogeneous distribution of the active ingredient throughout the matrix, maximising its technological effectiveness.

- ✔ Allows safety, shelf life, waste reduction and labelling improvement to be addressed simultaneously - four commercial arguments in one solution.

4

Key benefits

Safety, shelf life, waste and labelling

0,90%

Maximum dosage

in processed preparations

1

Application

Direct incorporation into the mix or liquid phase



Functional Frozen and Glazed Products

SEADEx GLAZE SYSTEM

Frozen seafood products present a different risk profile from chilled products. During deep-freezing, microbiological activity is virtually suspended; however, thawing creates a critical phase of high vulnerability in which the microbial load can multiply rapidly if no additional barriers are in place.

Indicative composition — SEADEx Glaze

0.10–0.30%

Fermented dextrose in a glazing formulation

Natural antioxidant

Protection against lipid oxidation during storage

pH regulator

Optimised environment for maximum efficacy

Water retention

System compatible with a clean label policy

Real-world use and commercial argument

SEADEx Glaze does not act on microbiological stability during deep-freezing — that is neither its objective nor its competitive advantage. Its commercial value is concentrated on protection after thawing and during the secondary refrigerated shelf life, which is precisely the critical period for the end-consumer experience and returns in the distribution channel.

Target products include frozen prawns and langoustines, frozen fillets of various species, squid, cuttlefish, octopus and frozen breaded fish. The application of a functional glaze allows SEADEx to be incorporated into the production process with minimal disruption to existing lines, which makes implementation straightforward and the proposal commercially viable from the very first batch.

- Functional glazing with SEADEx makes it possible to differentiate the product in the channel with a verifiable clean label argument.

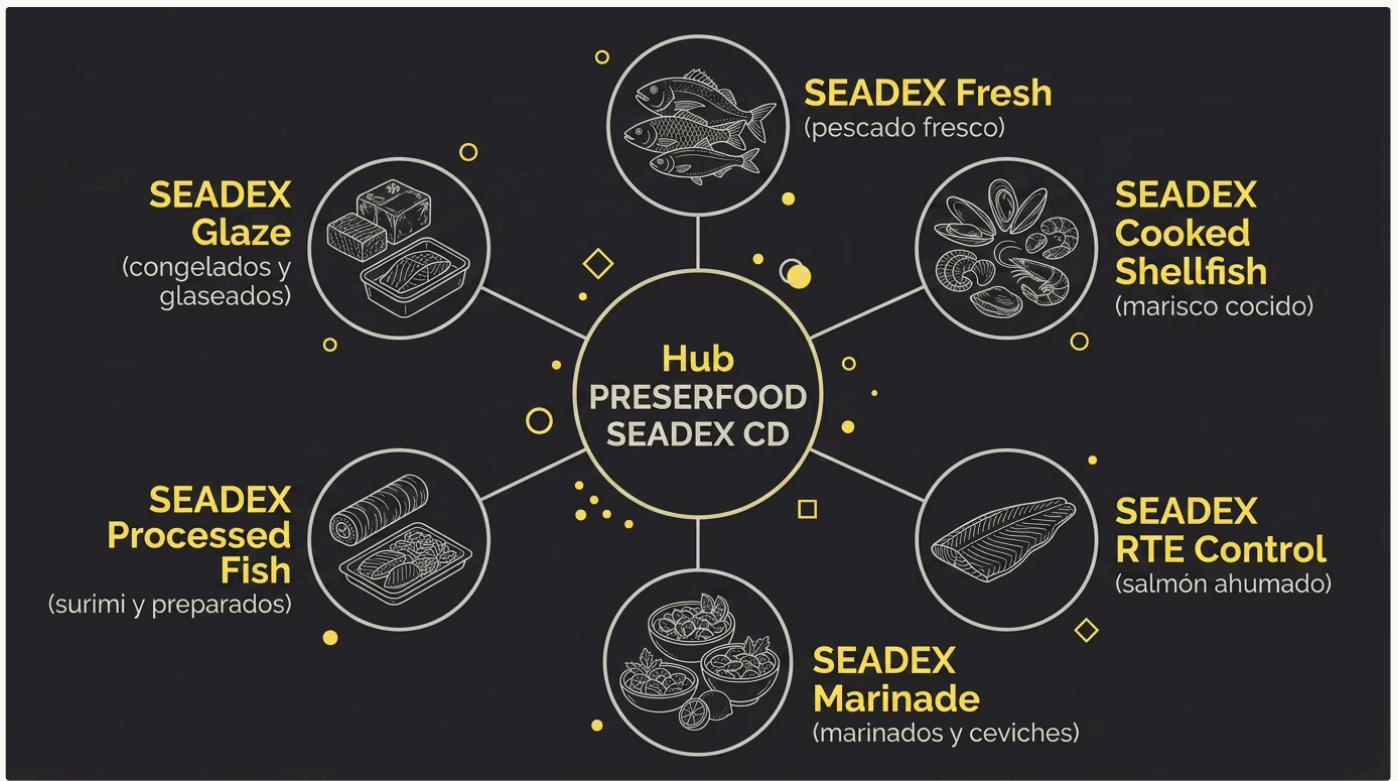
Application Matrix – Technical Commercial Summary

The following table consolidates the six SEADEx CD solutions, their application segments, main risks, indicative doses and key technical comments. This matrix is designed as a quick reference tool for technical, commercial and quality teams.

Segment	Main risk	Recommended solution	Indicative dose	Technical comment
Fresh fish	Psychrotrophic flora	SEADEx Fresh	0.30–0.60%	Needs cold storage + MAP. Validate with shelf-life study
Cooked shellfish	Post-cook recontamination	SEADEx Cooked Shellfish	0.40–0.80%	Highly useful in RTE. Apply in bath or spray post-cook
Smoked salmon	<i>Listeria monocytogenes</i>	SEADEx RTE Control	0.25–0.60%	Requires mandatory sensory validation
Marinades	Yeasts and moulds	SEADEx Marinade	0.20–0.50%	Particularly favourable field due to acidic pH
Surimi/prepared products	Lactic flora	SEADEx Processed Fish	0.40–0.90%	Direct incorporation into the mass or liquid phase
Frozen products	Post-thaw	SEADEx Glaze	0.10–0.30%	Protection in secondary refrigerated shelf life

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Inspired by Nature · Driven by Science



Legal Positioning and Labelling

European regulatory framework

In the context of the European Union, the legal positioning of fermented dextrose requires careful analysis. If the ingredient is marketed as a **fermented food ingredient**, it may be declared as such in the finished product's list of ingredients. However, when its primary technological function is preservative, it must be assessed on a case-by-case basis in accordance with the European framework for food additives, labelling and technological function.

European regulations require additives declared in the list of ingredients to be accompanied by their functional category — for example, "preservative" or "antioxidant" — when that function is the determining factor in their use in the product. This distinction is critical for the design of the labelling and the commercial strategy of each customer.

The recommendation for catalogues aimed at the European market is to avoid absolute claims that could give rise to legal or regulatory complaints. A technically honest and legally robust positioning is, in the long term, the most commercially viable and sustainable option.

Phrases to avoid for the end user

✗ "Without preservatives" if the actual function is preservative

✗ "Natural preservative" without legal validation

✗ "Replaces all preservatives"

✗ "Total control of *Listeria*"

Recommended formulations

✓ "Ingredient of fermentative origin"

✓ "Clean label solution for extending shelf life"

✓ "Support for microbiological control in hurdle systems"

✓ "Helps preserve freshness throughout shelf life"

✓ "Subject to validation in the final matrix"

Commercial Claims and Sales Argumentation

Acceptable and commercially viable claims

Fermentation-based solution for extending shelf life

Clean label ingredient for seafood products

Support for controlling spoilage flora

Reduction of food waste

Compatible with natural preservation strategies

Allows reformulation in place of conventional preservatives

Claims not supported by IntaBiotech

⊗ We avoid any claim that cannot be supported by the client's own validation studies in their specific final matrix or by our studies in the Research Laboratory.

- Eliminates pathogens
- Replaces heat treatment
- Guarantees absence of *Listeria*
- Legally universal natural preservative
- Extends shelf life without the need for refrigeration
- Natural antibiotic
- Biocidal product

PRESERFOOD™ SEADDEX CD enables the development of seafood products with longer shelf life, better microbiological stability and cleaner labelling, through a technology based on dextrose fermentation and natural antimicrobial metabolites.

Seafood products are one of the most sensitive categories in the food industry due to their high water activity, favourable pH for microbial growth and high oxidative sensitivity. **PRESERFOOD™ SEADDEX CD** offers a clean label tool for designing multi-hurdle preservation systems that help control spoilage flora, reduce losses, improve commercial life and respond to the growing demand for more recognisable ingredients - making every reformulation a commercially viable decision.

Technical Validation: Protocol for R&D and Quality of each customer or end user.

The efficacy of PRESERFOOD™ SEADEx CD must be validated in each customer's final matrix through a rigorous study protocol. No preservation solution can guarantee results without validation under the real production, distribution and consumption conditions of the specific product. This protocol is the technical foundation that gives the product commercial credibility with customers, distributors and regulatory authorities.

Microbiological parameters to assess

01

Mesophilic aerobic count

General indicator of total bacterial load

02

Psychrotrophic flora

Key determinant in refrigerated products with long shelf life

03

Enterobacteriaceae

Indicator of process hygiene and possible faecal contamination

04

Yeasts and moulds

Critical in marinades and acid semi-preserves

05

Listeria monocytogenes

Mandatory in RTE products under vacuum or MAP

Physicochemical and sensory parameters

pH and aw

Intrinsic conditions that modulate the system's efficacy

TVB-N / TMA


Freshness and spoilage markers in fish

Lipid oxidation

TBARS or equivalent for species rich in omega-3

Sensory panel

Assessment of colour, texture, smell and flavour against the control

 The shelf-life study should be carried out under real conditions and also under a thermal abuse scenario to cover the entire commercial distribution chain.



Challenge Test

Validation against pathogens under controlled conditions



Shelf-Life Study

Real conditions and thermal abuse during distribution



Comparative Analysis

Product with SEADEx vs. control and vs. current formulation



Regulatory Support

Documentation for legal records and labelling claims



Commercial Contact

Our commercial team is at your disposal to answer any queries about **PRESEERFOOD™ SEADEX CD**.



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