# FISHERIES SCIENCE COVERAGE IN FSTA®

**Trusted by researchers, scientists, students and government bodies in over 150 countries across the globe, FSTA is the definitive way to search over fifty years of historic and emerging research in the sciences of food and health.**

**Covering a wide range of interdisciplinary material, FSTA includes a wealth of international fisheries science content including:**

### All aspects of fish and seafood products as relevant to the food industry

- All types of fish and products made from fish, e.g. fish cakes, fish pastes, fish oils, smoked fish.
- Crustaceans, molluscs, and products made from crustaceans and molluscs.
- All types of edible seaweed.
- Other marine animals (e.g. sea urchins, tunicates, sea cucumbers) and products made from these.

### Properties of fish and seafood products

- Composition (e.g. macro- and micronutrient composition).
- Physical and processing properties.
- Sensory properties.
- Microbiological properties and shelf life.
- Impacts of fish and seafood consumption on health and nutrition.
- Toxicity and health risks.
- Analytical, microbiological and sensory techniques to determine quality, composition, safety, authenticity, traceability, etc.

### Fish & seafood processing

- All aspects of fish and seafood processing.
- Processing equipment.
- Quality control.
- Preservation and storage.
- Disposal and valorisation of by-products and wastes.

### Factors affecting the quality and safety of fish and seafood products

- Habitat and location, seasonal variation and environmental stressors, including pollution and contamination, e.g. water pollution, microplastic contamination, heavy metal bioaccumulation.
- Wild fisheries and aquaculture, including mariculture and aquaponics.
- Animal health and welfare.
- Aquaculture and rearing practices (e.g. stocking density, aquaculture feeds and nutrition, parasites and diseases).
- Genetics and physiology.

### Packaging, distribution and retail

- Packs and packaging materials.
- Packaging processes and equipment.
- Labelling, including nutritional labelling and health claims.
- Storage, distribution (including refrigerated transport), and retail.
- Handling practices.
- Post-harvest losses.

### Economic aspects, sustainability and consumer research

- Economics, including policy, regulations, supply chains, and the blue economy.
- Trade and consumption patterns.
- Marketing trends, pricing and profitability.
- Food systems and food security.
- Sustainability and environmental impact.
- Ecolabelling and sustainable seafood certification.
- Authenticity and traceability.
- Factors influencing consumer demand and purchasing behaviour.
- Consumer perception, preferences and trends.

### Fish and seafood alternatives

- Plant-based fish and seafood analogues.
- Fish and seafood alternatives produced using novel technologies, e.g. 3D food printing and cellular agriculture.

## USING FSTA FOR FISHERIES RESEARCH

**Example search questions**

- How can by-products from the fish and seafood industry be revalorised? *(sample record overleaf)*
- How effective are fruit extracts in extending the shelf life of seafood products?
- To what extent does sustainability certification influence consumer willingness to pay more for seafood products?
- How can DNA barcoding be employed as a method for fish authentication and traceability?
- How does exposure to microplastics affect the metabolism of fish?

## SOURCE EXAMPLES

**Fisheries science content is drawn from a wide variety of sources including journals, patents, books, reports and more. Here are just a few relevant journals indexed within FSTA, chosen to illustrate the diversity and breadth of content. This includes a mix of fisheries-focused journals and interdisciplinary journals publishing research on fisheries:**

- Croatian Journal of Fisheries
- Environmental Monitoring and Assessment
- Food and Waterbone Parasitology
- Fisheries and Aquatic Life
- Journal of Aquatic Animal Health
- Journal of Applied Ichthyology
- Marine Biotechnology
- Nippon Suisan Gakkashi *(Official journal of the Japanese Society of Fisheries Science)*
- South China Fisheries Science

## SAMPLE FSTA RECORD FOCUSED ON FISHERIES SCIENCE

**Optimization and characterization of prawn by-product protein-stabilized emulsions processed by high-intensity ultrasound.**

**Author:** Vilbett Briones-Labarca; Claudia Giovagnoli-Vicuna; Maria Jose Bugueno; Mario Perez-Won
**Correspondence Address:** Departamento de Ingenieria en Alimentos, Universidad de La Serena, Av. Raul Bitran Nachary 1305, La Serena, Chile.
**Source:** LWT -- Food Science and Technology; Volume 225, 117913
**DOI:** 10.1016/j.lwt.2025.117913 **Published:** 2025 **Document Type:** Journal Article

**Abstract:** This study explores the sustainable valorization of underutilized yellow prawn by-products by developing a novel food-grade emulsifier protein. A modified alkaline extraction process, enhanced by high-intensity ultrasound (HIU), yielded a protein concentrate with a 10.08 0.84 % extraction efficiency and a moderate purity of 45.03 0.91 %, reflecting the presence of naturally occurring components such as polysaccharides and lipids. Comprehensive characterization, including zeta potential and electrophoretic analysis, revealed maximum protein solubility at alkaline pH (10-12), attributed to increased electrostatic repulsion and unfolding, as confirmed by trypsin digestion and free sulfhydryl content measurements. These findings were further supported by improvements in water and oil holding capacities at this pH range. Emulsification parameters were optimized using response surface methodology (RSM), considering YPP concentration, oil content, HIU time, and HIU power. The RSM-optimized conditions resulted in stable emulsions at a food-compatible pH (7.0-7.5), characterized by small, uniform droplets (mean diameter: 0.35 0.02 mum) and a gel-like rheology (G' > G). These emulsions exhibited high emulsifying activity and stability, further reinforced by excellent thermal stability (45 % at 80 °C). This sustainable, functional emulsifier derived from prawn by-products offers significant potential for diverse food applications, promoting resource efficiency and waste reduction. 

**Keywords:** ADDITIVES, ANALYTICAL METHODS; ANALYTICAL TECHNIQUES; BY-PRODUCTS, BYPRODUCTS; CARBOHYDRATES; CHEMISTRY; COLLOIDAL STABILITY; COLLOIDS; CONCENTRATES; CRUSTACEA; CRUSTACEANS; DIGESTION; ECONOMICS; ELECTRICAL PROPERTIES; ELECTROPHORESIS; ELECTROSTATIC INTERACTIONS; EMULSIFICATION; EMULSIFIERS; EMULSION STABILITY; ENDOPEPTIDASES; ENVIRONMENT; EXTRACTION; FUNCTIONAL PROPERTIES; GELS; GLYCANS; HUMAN PHYSIOLOGY; HYDROGEN ION CONCENTRATION; LIPIDS; MECHANICAL PROPERTIES; NUTRIENTS; ORGANIC COMPOUNDS; ORGANIC SULFUR COMPOUNDS; ORGANIC SULPHUR COMPOUNDS; ORGANOSULFUR COMPOUNDS; ORGANOSULPHUR COMPOUNDS; PH; PHYSICAL PHASES; PHYSICAL PROPERTIES; PHYSIOLOGY; POLYSACCHARIDES; PRAWNS; PREPARED FOODS; PROCESSED FOODS; PROCESSING; PRODUCT TECHNOLOGY; PROTEIN CONCENTRATES; PROTEIN PRODUCTS; PURITY; RESOURCE EFFICIENCY; RESPONSE SURFACE METHODOLOGY; REVALORISATION; REVALORIZATION; RHEOLOGICAL PROPERTIES; RHEOLOGY; SERINE ENDOPEPTIDASES; SERINE PROTEASES; SERINE PROTEINASES; SHELL FISH; SHELLFISH; SIDE STREAMS; SOLUBILITY; STABILITY; SULFHYDRYL GROUPS; SULPHYDRYL GROUPS; TECHNOLOGY; THERMAL STABILITY; THERMOPHYSICAL PROPERTIES; THERMOSTABILITY; THIOLS; TRYPSIN; ULTRASOUND; VALORISATION; VALORIZATION; WASTE MANAGEMENT; WASTE MINIMISATION; WASTE MINIMIZATION; WATER HOLDING CAPACITY; WHC; alpha-TRYPSIN; beta-TRYPSIN