# Optimal utilization of seafood side-streams through the design of new holistic process lines

## Résultats

Informations projet

**WASEABI**

N° de convention de subvention: 837726

Site Web du projet

**DOI**
10.3030/837726

Projet clôturé

**Date de signature de la CE**
29 Avril 2019

**Date de début**
1 Mai 2019

**Date de fin**
31 Octobre 2023

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**Contribution de l'UE**
€ 3 197 397,00

**Coordonné par**
DANMARKS TEKNISKE UNIVERSITET
Denmark

CORDIS fournit des liens vers les livrables publics et les publications des projets HORIZON.

Les liens vers les livrables et les publications des projets du 7e PC, ainsi que les liens vers certains types de résultats spécifiques tels que les jeux de données et les logiciels, sont récupérés dynamiquement sur OpenAIRE.

## Livrables

## Documents, reports (5)

Selection of decision tool in one supply chain and recommendation of support tools

The deliverable D2.5: Selection of decision tool in one supply chain and recommendation of support tools is based on task 2.5 in connection to the output: : Development of a new support tool for the industries that ensure a more unbiased approach in the organizations.

Legal and regulatory barriers hindering WASEABI concept adoption

The deliverable D5.4: Legal and regulatory barriers hindering WASEABI concept adoption is based on task 5.4 and its output: Information to companies about how to adapt processes etc. to comply with the policies and regulations.

Report on consumers' barriers and motives

The deliverable D1.2 Report on consumers' barriers and motives is based on the output from task 1.3: Improved understanding of the link between consumer barriers and motives and their actual demands. This will be used for planning the work in WP3, 4 and 5.

New bio-based value chains

Deliverable 4.1: New bio-based value chains is based on task 4.1 and its output: Definition of new value chain for fish side-streams and pilots main results.

Report on hurdles and bottlenecks in maintaining and value-adding of seafood side-streams

The deliverable D1.1 Report on hurdles and bottlenecks in maintaining and value-adding of seafood side-streams is based on the outputs from task 1.1 Obtained knowledge and the results from the compositional analyses will be used in WP2 and WP3, and task 1.2 A map of the hurdles and bottlenecks. This will be used when planning the case studies in WP2, 3, 4 and 5.

## Websites, patent fillings, videos etc. (2)

Transnational conference

Deliverable D6.3: Transnational conference is based on task 6.5. and its output: Training module with guidelines

Website

The deliverable D6.4: Website is based on task 6.1 and its output: A design manual, templates and communication materials (M6), Communication of the project via bookmarks and press releases (continuous).

## Publications

### Peer reviewed articles (19)

Lipid oxidation and antioxidant delivery systems in muscle food

**Auteurs:** Haizhou Wu, Mark P. Richards, Ingrid Undeland
**Publié dans:** COMPREHENSIVE REVIEWS IN FOOD SCIENCE AND FOOD SAFETY, Numéro Volume 21, issue 2, 2022, Page(s) 1275-299, ISSN 1541-4337
**Éditeur:** International Life Sciences Institute
**DOI:** 10.1111/1541-4337.12890

Making the objectively best choice for side-stream resources—Verification of a debiasing method based on cognitive maps and attribute substitution

**Auteurs:** Schrøder Søren Espersen, San Martin David, Foti Giuseppe, Gutierrez Monica, Iñarra Chastagnol Bruno, Nielsen J. Rasmus, Larsen Erling
**Publié dans:** Frontiers in Food Science and Technology, 2023, ISSN 2674-1121
**Éditeur:** Frontiers
**DOI:** 10.3389/frfst.2023.1068974

Validation of a debiasing addition to Analytical Hieratical Process tools to increase the effects of side-stream utilization and the choice of the filtration system in the European mussel aquaculture and processing industry

**Auteurs:** Søren Espersen Schrøder, David San Martin, Bruno Iñarra, Giuseppe Foti, Mónica Gutiérrez, Erling Larsen, J. Rasmus Nielsen.
**Publié dans:** Frontiers in Food Science and Technology, Numéro 3, 2023, ISSN 2674-1121
**Éditeur:** Frontiers
**DOI:** 10.3389/frfst.2023.1258713

Inhibitory mechanisms of polyphenols on heme protein-mediated lipid oxidation in muscle food: New insights and advances

**Auteurs:** Haizhou Wu, Kathrine H. Bak, Gheorghe V. Goran & Nantawat Tatiyaborworntham
**Publié dans:** Critical reviews in food science and nutrition, Numéro 2022, 2022,

Page(s) 1-19, ISSN 1040-8398
**Éditeur:** Taylor & Francis
**DOI:** 10.1080/10408398.2022.2146654

Five cuts from herring (Clupea harengus): Comparison of nutritional and chemical composition between co-product fractions and fillets
**Auteurs:** Haizhou Wu; Bita Forghani; Mehdi Abdollahi; Ingrid Undeland
**Publié dans:** Food Chemistry: X vol.16(2022), Numéro 5, 2022, ISSN 2590-1575
**Éditeur:** Elsevier
**DOI:** 10.1016/j.fochx.2022.100488

Ultrasound-Aided pH-Shift Processing for Resource-Smart Valorization of Salmon and Herring Side Streams
**Auteurs:** Michaela V. Santschi; Ingrid Undeland; Mehdi Abdollahi
**Publié dans:** Ultrasonics Sonochemistry, Numéro 99, 2023, Page(s) 106539, ISSN 1350-4177
**Éditeur:** Elsevier BV
**DOI:** 10.2139/ssrn.4464774

Protein and Long-Chain n-3 Polyunsaturated Fatty Acids Recovered from Herring Brines upon Flocculation and Flotation—A Case Study
**Auteurs:** Bita Forghani; Mihaela Mihnea; Tore C. Svendsen; Ingrid Undeland
**Publié dans:** Acs Sustainable Chemistry and Engineering, Numéro 11 (17), 2023, Page(s) 6523-6534, ISSN 2168-0485
**Éditeur:** American Chemical Society
**DOI:** 10.1021/acssuschemeng.2c06795

Impact of Processing Technology on Macro- and Micronutrient Profile of Protein-Enriched Products from Fish Backbones
**Auteurs:** Mehdi Abdollahi, Haizhou Wu, Ingrid Undeland
**Publié dans:** Foods, Numéro 10/5, 2021, Page(s) 950, ISSN 2304-8158
**Éditeur:** MDPI
**DOI:** 10.3390/foods10050950

Oxidative Stability of Side-Streams from Cod Filleting—Effect of Antioxidant Dipping and Low-Temperature Storage
**Auteurs:** Sørensen A-DM, Wu H, Hyldig G, Bøknæs N, Mejlholm O, Undeland I, Jacobsen C.
**Publié dans:** Marine Drugs, Numéro 21 (11), 2023, Page(s) 591, ISSN 1660-3397
**Éditeur:** Multidisciplinary Digital Publishing Institute (MDPI)
**DOI:** 10.3390/md21110591

A Recyclable Dipping Strategy to Stabilize Herring (Clupea harengus) Co-products During Ice Storage

**Auteurs:** Haizhou Wu, Bita Forghani, Mursalin Sajib, Ingrid Undeland
**Publié dans:** Food and Bioprocess Technology, Numéro voolume 14, issue 12, 2021, Page(s) 2207–2218, ISSN 1935-5130
**Éditeur:** Springer Pub. Co.,
**DOI:** 10.1007/s11947-021-02717-9

Model systems for studying lipid oxidation associated with muscle foods: Methods, challenges, and prospects

**Auteurs:** Haizhou Wu, Nantawat Tatiyaborworntham, Mahdi Hajimohammadi, Eric A. Decker, Mark P. Richards & Ingrid Undeland
**Publié dans:** Critical Reviews in Food Science and Nutrition, Numéro 10408398, 2022, ISSN 1040-8398
**Éditeur:** Taylor & Francis
**DOI:** 10.1080/10408398.2022.2105302

Lipid oxidation in sorted herring (Clupea harengus) filleting co-products from two seasons and its relationship to composition

**Auteurs:** Haizhou Wu, Bita Forghani, Mehdi Abdollahi, Ingrid Undeland
**Publié dans:** Food Chemistry, Numéro Volume 373, Part B, 2022, 2022, Page(s) 131523, ISSN 0308-8146
**Éditeur:** Elsevier BV
**DOI:** 10.1016/j.foodchem.2021.131523

Production of Bioactive Peptides from Hake By-Catches: Optimization and Scale-Up of Enzymatic Hydrolysis Process

**Auteurs:** Iñarra, B.; Bald, C.; Gutierrez, M.; San Martin, D.; Zufía, J.; Ibarruri, J.
**Publié dans:** Marine Drugs, Numéro 21 (11), 2023, Page(s) 552, ISSN 1660-3397
**Éditeur:** Multidisciplinary Digital Publishing Institute (MDPI)
**DOI:** 10.3390/md21110552

Physicochemical and functional properties of protein isolated from herring co-products; effects of catching season, pre-sorting, and co-product combination

**Auteurs:** Eline van Berlo, Ingrid Undeland, Mehdi Abdollahi
**Publié dans:** Food Chemistry, Numéro 03088146, 2023, ISSN 0308-8146
**Éditeur:** Elsevier BV
**DOI:** 10.1016/j.foodchem.2022.133947

Pilot-Scale Antioxidant Dipping of Herring (Clupea harengus) Co-products to Allow Their Upgrading to a High-Quality Mince for Food Production

**Auteurs:** Haizhou Wu, John Axelsson, Martin Kuhlin, Rikard Fristedt, and Ingrid Undeland

**Publié dans:** ACS Sustainable Chemistry & Engineering, Numéro 11 (12), 2023, Page(s) 4727-4737, ISSN 2168-0485
**Éditeur:** American Chemical Society
**DOI:** 10.1021/acssuschemeng.2c07164

Recovery of Nutrients from Cod Processing Waters
**Auteurs:** Coque J, Jacobsen C, Forghani B, Meyer A, Jakobsen G, Sloth JJ, Sørensen A-DM.
**Publié dans:** Marine drugs, Numéro 21 (11), 2023, Page(s) 558, ISSN 1660-3397
**Éditeur:** Multidisciplinary Digital Publishing Institute (MDPI)
**DOI:** 10.3390/md21110558

Controlling hemoglobin-mediated lipid oxidation in herring (Clupea harengus) co-products via incubation or dipping in a recyclable antioxidant solution
**Auteurs:** Haizhou Wu, Mursalin Sajib, Ingrid Undeland
**Publié dans:** Food Control, Numéro 125, 2021, Page(s) 107963, ISSN 0956-7135
**Éditeur:** Elsevier BV
**DOI:** 10.1016/j.foodcont.2021.107963

Liquid Side Streams from Mussel and Herring Processing as Sources of Potential Income
**Auteurs:** Bita Forghani; Ann-Dorit Moltke Sørensen; Jens Jørgen Sloth; Ingrid Undeland
**Publié dans:** ACS Omega vol. 8(2023), Numéro 5, 2023, Page(s) 8355-8365, ISSN 2470-1343
**Éditeur:** ACS Omega
**DOI:** 10.1021/acsomega.2c07156

Effect of recovery technique, antioxidant addition and compositional features on lipid oxidation in protein enriched products from cod- salmon and herring backbones
**Auteurs:** Haizhou Wu, Mehdi Abdollahi, Ingrid Undeland
**Publié dans:** Food Chemistry, Numéro 2021, volume 360, 2021, Page(s) 129973, ISSN 0308-8146
**Éditeur:** Elsevier BV
**DOI:** 10.1016/j.foodchem.2021.129973

## Non-peer reviewed articles (1)

Developing new solutions for better utilization of seafood side-streams
**Auteurs:** Charlotte Jacobsen
**Publié dans:** Open Access Government, Numéro January, 2021, Page(s) 360,

ISSN 2516-3817
**Éditeur:** Open Access Government

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**Permalink:** https://cordis.europa.eu/project/id/837726/results/fr