



## SEAMARK DELIVERABLE 4.1: RESEARCH AND DEVELOPMENT PLAN FOR FERMENTATION PROCESSES AND PRODUCTS

*Maria Almind<sup>1</sup>, Leslie Foldager<sup>1</sup>, Marianne Kaiser<sup>1</sup>, Nilay Büdeyri Gökgöz<sup>2</sup>, Dennis Sandris Nielsen<sup>2</sup>, Sergey Kucheryavskiy<sup>3</sup>, Jens Legarth<sup>3</sup>, Rikke Matthiesen<sup>3</sup>, Ninfa Rangel Pedersen<sup>3</sup>, Rene Schepens<sup>3</sup>, Pia Sørensen<sup>3</sup>, Andrew Richard Williams<sup>3</sup>, Christian Kjær Olesen<sup>4</sup>, Reinhard Wimmer<sup>4</sup>*

<sup>1</sup>Aarhus University, Denmark, <sup>2</sup>The University of Copenhagen, Denmark, <sup>3</sup>Fermentation Experts, Denmark, <sup>4</sup>Aalborg University, Denmark.

Public summary of  
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### Edited by:

Marianne Kaiser, Aarhus University, Denmark; Maya Miltell, SUBMARINER Network for Blue Growth, Berlin, Germany.

### Reviewed by:

Urd Grandorf Bak and Ólavur Gregersen, Ocean Rainforest Sp/F, Kaldbak, Faroe Islands; Frederick Bruce, SUBMARINER NETWORK for Blue Growth EEIG, Berlin, Germany

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### Work Package / Task:

WP4 / T4.1 Seaweed as a food ingredient: Optimizing fermentation conditions for prebiotic and antinutritional content

### Keywords:

algae, fermentation, feed, food, circular economy, seaweed, Ulva, Saccharina, piglets, sows

Primary contact for further information: Marianne Kaiser, [marianne.kaiser@anivet.au.dk](mailto:marianne.kaiser@anivet.au.dk)

### Summary:

The primary goal of the SeaMark project is to demonstrate how to scale up innovative seaweed cultivation and processing into price competitive product applications. Fermentation Experts (FEXP) sells seaweed-based products to the pig market which have shown to be effective in promoting gut health and wellbeing of the sows. With the possibility of being able to understand the scientific reasons for the mentioned good effects and documentation of the same by scientific partners from the University of Copenhagen (UCPH) and Aarhus (AU), FEXP will confidently be able to sell more of their seaweed-based products to a larger international based market. FEXP is also slowly entering and gain traction in the food business using fermented products containing seaweed. Therefore, in this work package, our 4th partners Aalborg University (AAU) will work on optimizing fermentation conditions for increasing prebiotic potential, decreasing antinutritional content and improving taste using three different seaweeds with the goal of increasing the levels of the latter for use as a food ingredient. To be able to understand the prebiotic potential of the fermented prototypes AAU will be running the latter through an in vitro gut model simulating human gut digestion as well anti-inflammatory assays. To study how fermented seaweed can improve the productivity of sows as well as the health promoting effect on sows (from gilts until end of 2nd parity), UCPH and AU will investigate different biomarkers from sows fed with an experimental feed (EXP) consisting of commercial feed added fermented seaweed (EP119). The EXP-group will be compared with a group of sows fed control feed (C). The focus will be on the sow's ability to milk and how well their offspring will grow. The biomarkers used are, for example, inflammation markers, clinical markers and the like, which can describe the state of health of the sows. These parameters have been shown to have a decisive influence on the ability of sows to produce colostrum and milk, which in turn has an impact on the growth, health, and survival of piglets. In addition, faecal samples will be used to describe the microbiome at different times in the first life of the sows. AU is responsible for collecting the biological material (blood, saliva, milk, faeces).



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