

Lobster industry byproducts make tasty treats

January 27 2015



(L-R): Dr Stephen Pahl from SARDI, Andrew Ferguson from Ferguson Australia, Andrew Maronich, Raymond Tham from Flinders and Flinders PhD candidate Trung Nguyen.

Lobster lovers rejoice; for you could soon see lobster-infused chips, dips, crackers and seasonings stocked on your supermarket shelves.

In a bid to reduce waste from the harvest and export of southern rock lobsters – a multimillion dollar industry in South Australia – Flinders University and the South Australian Research and Development Institute (SARDI) have teamed up to find innovative ways of using leftover shells

and parts from the processing of this premium seafood.

The two institutes are working with Adelaide-based lobster exporter Ferguson Australia to help the company generate new products from lobster "offcuts", and to develop a cost-effective manufacturing process to improve Ferguson's annual turnover and environmental stewardship.

Prototypes developed so far at Flinders University's Centre for Marine Bioproducts Development include lobster essence oil, protein powder and chitin; derived 100 per cent from lobsters.

Flinders PhD candidate Trung Nguyen, who is working on the project, said the lobster oil and protein powder could be used as functional ingredients in a range of foodstuffs, from stock bases to crackers, while the chitin, chitosan and its derivatives could have a wide range of applications, from food and cosmetics to biomedicines, agriculture and the environment.

"We have extracted a variety of items, including protein hydrolysates, chitin, chitosan and oil, from food-grade lobster parts that would usually be thrown away," Mr Nguyen said.

"The oil has quite a strong smell so it could be used as a lobster flavour in chips and crackers, and it is also rich in astaxanthin which is a powerful antioxidant," he said.

"While this particular collaboration focuses on producing lobster-flavoured products for food, my PhD study as a whole explores the development of other high-value products for the food or pharmaceutical industries.

"For example, the lobster-derived chitin, chitosan, could be used as a food preservative, wound dressing to speed up the healing process or as a

surgical glue to bind cuts and wounds."

Mr Nguyen said the extraction of lobster compounds uses cutting-edge advanced manufacturing processes such as supercritical CO₂ extraction and microwave-assisted extraction, which produces a product that is of high purity while also being cost effective and environmentally sustainable.

Flinders Centre for Marine Bioproducts Development manager Raymond Tham said the products, once refined, will be marketed to potential partners in the food industry.

"There's a real opportunity to make sure none of our high value seafood is ever wasted, and that they are used to produce products that currently do not exist on the global market," Mr Tham said.

"Together with SARDI, our lab work has shown that we can create these products in very large quantities using sustainable technologies, ultimately increasing the competitiveness of South Australian foods in the national and international marketplace."

Ferguson Australia Managing Director Andrew Ferguson said the creation of new products from leftover lobsters would enable the company to reduce its waste management costs and improve environmental and resource sustainability.

"These [products](#) will reduce the amount of [lobster](#) waste sent to landfills, which has a high cost for both the business and environment, but will instead have a higher retail value and longer shelf life to reach wider export markets," Mr Ferguson said.

Provided by Flinders University

Citation: Lobster industry byproducts make tasty treats (2015, January 27) retrieved 26 April 2024 from <https://phys.org/news/2015-01-lobster-industry-byproducts-tasty.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.