

18<sup>th</sup> Global Summit on

# FOOD & BEVERAGES

October 02-04, 2017

Chicago, USA

## Fish protein hydrolysates: Application in deep-fried food and food safety analysis

**Shan He**

Guangzhou University, China

Four different processes (enzymatic, microwave-intensified enzymatic, chemical, and microwave-intensified chemical) were used to produce fish protein hydrolysates (FPH) from Yellowtail Kingfish for food applications. In this study, the production yield and oil-binding capacity of FPH produced from different processes were evaluated. Microwave intensification significantly increased the production yields of enzymatic process from 42% to 63%. It also increased the production yields of chemical process from 87% to 98%. The chemical process and microwave-intensified chemical process produced the FPH with low oil-binding capacity (8.66 g oil/g FPH and 6.25 g oil/g FPH), whereas the microwave intensified enzymatic process produced FPH with the highest oil-binding capacity (16.4 g oil/g FPH). The FPH from the 4 processes were applied in the formulation of deep-fried battered fish and deep-fried fish cakes. The fat uptake of deep-fried battered fish can be reduced significantly from about 7% to about 4.5% by replacing 1% (w/w) batter powder with FPH, and the fat uptake of deep-fried fish cakes can be significantly reduced from about 11% to about 1% by replacing 1% (w/w) fish mince with FPH. Food safety tests of the FPH produced by these processes demonstrated that the maximum proportion of FPH that can be safely used in food formulation is 10%, due to its high content of histamine. This study demonstrates the value of FPH to the food industry and bridges the theoretical studies with the commercial applications of FPH.

### Biography

Shan He has his expertise in the processing waste utilization of food industry, especially seafood industry. He has successfully completed 3 projects regarding processing food processing wastes into value-added, market-ready products, both in Australia and in China. Associate Professor Shan He's achievement does not only limit in laboratory but also in commercialization. He particularly focuses on the transition of lab outcome into profit for industry. Associate Professor Shan He also started his start-up company (Spencer Pacific Tech Pty Ltd) in Australia with the aim of commercializing advanced technologies. Due to the excellent achievement of this company, Associate Professor He was invited to join the China Mission Delegation of South Australia Government (R&D stream) to introduce Australian advanced food technologies in China. Associate Professor Shan He is currently taking this Australian experience into China, and establishing his R&D and commercialization career in both China and Australia.

he0091@gmail.com

### Notes: