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Assessment of fragmentation by mastication and the saltiness of surimi gels prepared with various heating conditions

Tran Thi My Hanh¹, Kaoru Kohyama², Kazufumi Osako¹ and Emiko Okazaki¹¹Tokyo University of Marine Science and Technology, Japan²National Agriculture and Food Research Organization, Japan

The strength of taste is thought to be affected not only by the content of tasting components, but also the texture properties of food. To clarify the relationship between the intensity of saltiness and texture of heat-induced surimi-based products, we are investigating by using heat-induced surimi gel as a model. In the previous study, we reported that the suwari gels with different gel strength, there was no significant relationship between the physical properties and saltiness. On the other hand, in the case of modori gels with different gel strength, a clear relationship between physical properties and saltiness was observed. In this study, the differences of fragments size among these samples after mastication was investigated to confirm the above mentioned phenomenon. To prepare various types of gels having different physical properties from the same material, surimi gels were prepared with different salt concentrations (1, 2, and 3%), heating conditions include setting at 30°C (suwari) and heat-induced degradation at 60°C (modori). The physical properties of surimi gels were evaluated by puncture test, two-bite texture profile analysis, and measurement of expressible moisture. The temporal change in saltiness during consumption of gel was also evaluated (time-intensity method) using trained sensory panels. The size and number of surimi fragments after mastication were analysed by WinROOF software. In the case of modori gels, the saltiness was strongly related to the fragment size of surimi gel after chewing which reflects the fragility of the samples. This result suggest that the gel property relating to the fragility will contribute the perceived saltiness.

Biography

Tran Thi My Hanh is pursuing his Doctor's degree in Departement of Food Science and Technology at Tokyo University of Marine Science and Technology (TUMSAT). She completed Master's degree in Aquatic Products Processing at Nha Trang University and Post-graduate training in Quality Management of Fish Handling and Processing at United Nations University-Fisheries Training Programme in Iceland in 2011. She is a Lecturer at Nha Trang University, Vietnam. Her research interests are in the area of "Food processing especially surimi paste products and sensory evaluation of food".

myhanh@ntu.edu.vn

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