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Taste and flavor characteristics of dried tuna stock: Comparisons and synergistic effects with other stocks

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Aim: In Japan, people generally make Japanese stock using dried bonito shavings. However, high-class Japanese-restaurants sometimes use stock that is a mixture of dried tuna and dried bonito. In Japan, dried bonito stock has been studied until now, and there are no scientific data or a recipe concerning dried tuna. The aim of this study is to investigate the taste and flavor characteristics of dried tuna stock compared with dried bonito stock, as well as the synergistic effect of dried tuna stock and kelp stock.

Materials & Methodology: Dried bonito stock was used as standard sample. The samples were 3 stock types, which were made from 2% dried tuna shavings and were boiled for different times (for 0 min, 1 min, 2 min) and left to stand for 3 min. Moreover, these 3 type samples were mixed with 1% kelp stock. The sample properties were characterized by the amount of inosine 5'-monophosphate (IMP), the taste characteristics and the odor strength. Moreover, the sensory (analysis and preference) evaluation and Temporal Dominance of Sensations (TDS) were carried out.

Results: In the sensory evaluation analysis, the flavor intensity of dried tuna stock boiled for 0 min was significantly higher than that boiled for 2 min. Moreover, the flavor intensity of mixed dried bonito stock boiled for 2 min with kelp stock was significantly higher than those boiled for 0 min and 1 min. In the preference sensory evaluation, mixed stock boiled for 0 min was significantly preferred over that boiled for 2 min.

Conclusions: Depending on the mixture of dried tuna stock with kelp stock, the students preferred it to dried tuna stock. Moreover, from multiple regression analysis results, the palatability for Japanese stock had a taste effect greater than a flavor effect.

Recent Publications

1. A Shimamura et al. (2017) Change of sensory evaluation characteristics of cooked rice over time. Journal of Home Economics of Japan 68(9):478-485.

Biography

Akiko Koizumi is currently studying animal food products in terms of cookery science and food science at Graduate School of Tokyo Kasei University in Japan. She will obtain her master's Degree in Home Economics from the same university in 2018. She received license as a Japanese Registered Dietitian in 2016.

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