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Changes in Taste Compounds of Seasoned-Dried Pacific Saury Treated with Liquid Smoke During Storage

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Introduction

Among dark fleshed fishes, especially, Pacific saury has not well been used for processing because of its properties of weak tissue and high lipid contents. As an aspect of utilization of dark fleshed fishes effectively, therefore, application of simple and modified technique such as liquid smoking method to Pacific saury could be beneficial to fishery processing field. The objective of this study is to examine taste compounds of seasoned-dried Pacific saury treated with liquid smoke during storage

Materials and Methods

Materials : Pacific saury, *Cololabis saira,* (28±2cm length, 93±6g weight) were purchased from Myungbo Fisheries Inc. (Changwon, Korea). The liquid smoke used in this study was scansmoke PB 2110 (P. Broste A/S, Denmark, SS).

Processing of seasoned-dried Pacific saury : The processing of seasoned-dried Pacific saury with seasoning, which was composed of sugar 12.21%, salt 1.74%, MSG 1.03% and sorbitol 3.02% to Pacific saury fillet (w/w), are shown in Fig. 1. Three products completely processed were packaged with 300 g each unit in a polypropylene film (0.08 mm thickness) and stored at ambient temperature (19± 5℃) during 80 days.

Analysis of fatty acid compositions : Oil extraction was followed by Bligh and Dyer method (1959), and then fatty acid compositions were determined by a method of Suzuki et al. (1985). GC (HP 6890, Hewlett-Packard Co., USA) and other analysis conditions were followed by Park et al. (2001).

Analysis of non-volatile organic acids : Non-volatile organic acids were analyzed by a modified method of Lee et al. (1993). The solution was concentrated to 1 mL by N_2 gas and used for analysis of GC(HP 6890, Hewlett-Packard Co., USA). GC and other analysis conditions were followed by Park et al. (2001).

Analysis of nucleotides and their related compounds : Nucleotides and their related compounds were determined by the method of Lee et al. (1984). The analysis of HPLC were followed by Park et al. (2001).

Analysis of free amino acids : Free amino acids were determined according to a modified method of Lee et al. (1981), and the free amino acids was quantitatively analyzed using amino acid analyzer (Biochrom20, Pharmacia Biotech, USA).

Results and Discussion

In the fatty acid compositions of C and T2, the contents of 14:0 and 16:0 in the saturates, the content of 22:1, 20:1 and 18:1 in the monoenes and the contents of 22:6 and 20:5 in the polyenes were higher, and the contents of saturates in C and T2 increased with increasing storage period, while that of polyenes decreased. After drying, the contents of 7 non-volatile organic acids contents detected in this study decreased, and the others of non-volatile organic acids, except for malic and citric acids, in both C and T2 decreased with increasing storage period. The contents of nucleotides and their related compounds in both C and T2 decreased with increasing storage period. The content of total free amino acids in raw sample was 556.96 mg/100g and increased up to 895.77 mg/100g and 958.40 mg/100g in C and T2, respectively, after drying, and total contents of free amino acids in both C and T2 somewhat decreased after 60 days of storage.

References

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